ORGANISATIONAL LEARNING, INNOVATIVENESS, CHIEF EXECUTIVE OFFICER VALUES, AND SUSTAINABILITY PERFORMANCE OF MEDIUM AND LARGE MANUFACTURING FIRMS IN UGANDA

BY

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DECLARATION

Student Declaration

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DEDICATION

I dedicate this PhD thesis to all those comrades who in one way or the other have supported me to reach this milestone in the academic journey.

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ABSTRACT

Medium and large manufacturing firms immensely contribute to global warming through air emissions, natural resources exhaustion, waste mismanagement and discharge of untreated effluents. These adversely affect the ecosystem and human health calling for research on corporate sustainability performance. Existing direct effect studies linking Organisational Learning (OL) to Sustainability Performance (SP) have produced inconclusive results in different contexts. Few conditional indirect effect studies have been conducted in this area, particularly in developing countries. Anchored on the stakeholder, organisational learning, dynamic capability, and upper echelon theoretical framework, this study contributes to literature by examining the moderating effect of CEO Values (CV) on the indirect relationship between OL-SP via Firm Innovativeness (FI) in the Ugandan manufacturing sector. The study was guided by 10 objectives; To examine the direct effect of OL, FI and CV on SP, OL and CV on FI. Further, the study examined the indirect effect of FI between OL-SP. Also, the moderating effect of CV was examined between OL-SP, FI-SP as well as between OL-SP. Lastly, the moderating effect of CV on the indirect effect of OL on SP via FI was examined. A positivist paradigm supported with an explanatory cross-sectional design was used to obtain quantitative data from a sample of 256 medium and large manufacturing firms drawn from a target population of 1221.The sampling of these firms followed a multistage procedure. Hierarchical multiple regression analysis was used to test hypotheses of the direct effect relationships while PROCESS macro was used to test the indirect, interactive and conditional indirect effect hypotheses. Findings show that; OL (β=.505, t=9.116), FI (β=.618, t=13.293), and CV (β=.128, t=2.427) significantly affect SP. Similarly, OL (β=.438, t=7.572) and CV (β=.511, t=9.737) significantly affect FI. FI significantly mediate the link between OL and SP (Coeff=.324, 95% Boot CI =.236, .417) while CV significantly moderates the link between FI and SP (Coeff= .13, t = 2.52, CI= .03,.23) and OL and SP (Coeff=.19, t =2.57, CI= .01,.34). Lastly, findings show that CV has an enhancing conditional effect on the indirect effect between OL on SP via FI (b=.080, BootS.E=.034, BootCI=.015, .146). Overall, this study provides new insight by revealing that FI significantly mediates the link between OL- SP, CV enhance the effect of FI on SP, as well as the effect of OL on SP. In addition, there is evidence of a moderated mediation effect of CV on the relationship between OL-SP via FI. Such that at higher levels of CV, the indirect effect of OL on SP via FI is stronger. Therefore, industry policy makers need to advance policies that promote learning and innovativeness among medium and large manufacturing firms. Such policies need to encourage organizing periodic learning sessions like dialogues, workshops, conferences, bench-marking tours, trade fares, and exhibitions where owners and managers of manufacturing firms are sensitized on innovative manufacturing practices that improve sustainability performance. Additionally, the existing industrial policy need to be reviewed to stress the importance of adopting sustainability manufacturing practices such as learning and innovativeness. To managers of manufacturing firms, learning should be treated as a firm resource and incorporated in the firm's objectives, strategies, and core values. In addition, practices such as teamwork that promote knowledge acquisition, sharing, utilisation and storage need to be put in place. There is also need to establish a research and development department that steers, guides, and oversees innovations in products and processes. Further still, CEO values should be assessed during the hiring processes using appropriate psychometric tests in order to identify and appoint CEOs value preposition is inclined towards openness to change, flexible, challenge, stimulation, and self-directed. The findings of this study withstanding, certain limitations were observed that call for further research to test the hypothesised model in another context, following a mixed method approach using a longitudinal design in order to validate the results obtained.

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OPERATIONAL DEFINITIONS OF KEY TERMS

Chief Executive Officer (CEO) is the dominant member of the Top Management Team (TMT) and the overall leader of the firm (Hambrick, 1994).

CEO Values are internal psychological principles that bring out differences in the way CEOs think, perceive situations and behave in the social setting (Berson et al., 2008; Rokeach, 1973)

Sustainability Performance refers to the firm's endeavors to meet shareholders' economic needs without compromising the ability to meet social and environmental demands of the present and future generation (Dyllick and Hockerts, 2002).

Economic Sustainability refers to the firm's ability to meet the economic needs of its minority shareholders on a long-term basis (Bansal, 2005).

Social Sustainability concerns the firm's ability to meet the welfare needs of people and the surrounding communities (Choi and Ng, 2011).

Environmental Sustainability concerns the firm's endeavors to ensure that its activities and influences do not lead to depletion of natural resources or contamination of the eco-system (Bansal, 2005)

Firm Innovativeness as an output variable involves the generation, acceptance and implementation of creative ideas in firm products, processes, systems, marketing and strategies (Wang and Ahmed, 2004).

Manufacturing Firms are establishments engaged in the mechanical, physical, or chemical transformation of materials, substances, or components into finished or semi-finished products, as well as

those engaged in assembling of component parts of manufactured products (Levinson, 2017).

Openness-To-Change is a person's psychological willingness to embrace organizational or environmental changes (Wanberg and Banas 2000).

Organisational Learning refers to the dynamic process of creation, acquisition, and integration of knowledge aimed at the development of resources and capabilities that contribute to organisational performance (Lopez et al., 2005).

Tripple Bottom Line is a sustainability performance approach that emphasises that to be sustainable, firms should gain a balance between economic growth, social progress as well as increased environmental management (Elkington, 1997).

ABBREVIATIONS

AGFI	:	Adjusted Goodness-of-Fit Index
AIC	:	Akaike Information Criterion
AMOS	:	Analysis of a Moment Structures
APA	:	American Psychological Association
CAIC	:	Consistent Akaike Information Criterion
CEO	:	Chief Executive Officer
CFA	:	Confirmatory Factor Analysis
CFI	:	Comparative Fit Index
CMB	:	Common Methods Bias
CMV	:	Common Methods Variance
CVR	:	Content Validity Ratio
DJSI	:	Dow Jones Sustainability Index
EFA	:	Exploratory Factor Analysis
FI	:	Firm Innovativeness
GDP	:	Gross Domestic Product
GFI	:	Goodness-of-Fit Index
HRM	:	Human Resource Management
IFI	:	Incremental Fit Index
KCCA	:	Kampala City Council Authority
KMO	:	Kaiser Meyer Olkin
MD	:	Managing Director
MFPED	:	Ministry of Finance, Planning and Economic Development
MGLSD	:	Ministry of Gender, Labour and Social Development
MSME	:	Micro, Small and Medium Enterprises
NEMA	:	National Environmental Management Authority
NFI	:	Normed Fit Index

NHS	:	National Health Service
OECD	:	Organization for Economic Cooperation and Development
OL	:	Organisational Learning
PNFI	:	Parsimony-Adjusted Normed Fit Index
RFI	:	Relative Fit Index
RMSEA	:	Root Mean Square Error of Approximation
SD	:	Standard Deviation
SP	:	Sustainability Performance
SPSS	:	Statistical Package for the Social Sciences
SSVS	:	Schwartz Short Value System
TBL	:	Triple Bottom Line
TLI	:	Tucker–Lewis Index
TMT	:	Top Management Team
UBOS	:	Uganda Bureau of Statistics
UMA	:	Uganda Manufacturers Association
UN	:	United Nations
UNCTAD	:	United Nations Conference on Trade and Development
UNIDO	:	United Nations Industrial Development Organisation
UNSDGs	:	United Nations Sustainable Development Goals
VIF	:	Variance Inflation Factor
WCED	:	World Commission on Environment and Development
WHO	:	World Health Organisation
3Ps	:	Profit, People and Planet
5Ps	:	Profit, People, Planet, Peace and Partnership

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter presents the background to the study, the statement of the problem, the research objectives, the hypotheses, the significance and the scope of the study.

1.1 Background to the Study

Globally, stakeholders are mounting great pressure on business organisations to improve their sustainability performance (United Nations, 2019). Sustainability performance involves an organisation's endeavour to simultaneously satisfy shareholders' economic interests and other stakeholders' social and environmental welfare demands on a long-term basis (UNCTAD, 2021; Kennedy and Bocken, 2020). Sustainability performance requires managers to devise strategies that promote business profitability, workplace safety, fair labour management practices, community engagement and well-being, use of efficient and cleaner renewable energy resources, greener production technologies, waste minimization, as well as production of environmentally friendly products (Yu and Ramanathan, 2016).

The idea of sustainability performance has gained prominence in the recent past beyond the conventional organisational performance concept due to increased pressure for businesses to contribute to the attainment of the 17 Sustainable Development Goals (UN Global Compact, 2017). By embracing sustainability performance mechanisms, businesses play a significant role in the global response towards attaining good health and well-being, decent work and economic growth, responsible consumption and production, as well as combating climate change and its impacts (United Nations, 2019). At business level, companies benefit from improved

stakeholder trust, reduced production costs, improved internal processes, product quality, market share, and long-term profitability (Horak et al., 2018; Abdul-Rashid et al., 2017).

Over the past two decades, business organisations in developed countries have made significant strides towards becoming more sustainable in their operations, and thus stakeholder grief over social and environmental degradation has progressively reduced in such countries (Global Sustainability Development Report, 2022; Laskar et al., 2017). On the contrary, the business sector in most of the developing countries is slow at embracing sustainability performance mechanisms (UNCTAD, 2021). For instance the manufacturing sector which is recognized for its considerable contribution of USD 12.259 trillions to global GDP (IMF Report, 2021), 12% to Sub-Saharan Africa's GDP (World Bank, 2021), 9.7% to East Africa's GDP (EAC, 2022), and 26.7% towards Uganda's GDP (MoFPED, 2022) has remained economically-focused in its operations and thus paying less attention to society's social and environmental demands (Abdul-Rashid et al., 2017).

In Sub-Saharan Africa, manufacturing firms are characterized of; unsafe working conditions, unfair labour management practices, community conflicts, natural resources depletion, pollution, and improper disposal of toxic waste material (UNCTAD, 2021; Abdul-Rashid et al., 2017). In Uganda, the manufacturing sector ranks second after the service sector in contributing to national economic growth (UMA, 2019). Manufacturing alone contributes about 27.6% to the country's GDP, employs over 30% of the young population, tangible products for domestic consumption, supply industrial inputs to other sectors of the economy, as well as payment of taxes that improve government domestic revenue (UMA, 2019).

The economic benefits withstanding, manufacturing activities in Uganda continue to threaten social and environmental welfare due to; inadequate house keeping, limited use of personal protective equipment (PPEs), increased industrial injuries, accidents and diseases, labour exploitation, use of firewood and charcoal as fuel, excessive carbon emissions, use of polythene bags and plastic bottles as packaging materials, and disposal of toxic waste materials in residential areas, drainage channels, and water bodies (National Environmental Management Authority (NEMA) Annual Corporate Report, 2018; Bananuka et al., 2021). Such practices accelerate global warming, food shortage, unexpected floods, heavy rains, and outbreak of diseases, which result in loss of life, property, and disruption of economic productivity.

Government through its various organs continues to enact and amend existing laws, regulations and standards aimed to mitigate social and environmental impacts arising out of manufacturing activity. However, the lapses in compliance and enforcement of such laws calls for top management's will and voluntary action towards embracing sustainability performance initiative among manufacturing firms (Bananuka et al., 2021; Namagembe et al., 2016). Accordingly, a mechanism through which sustainability performance can be increased in the manufacturing sector, particularly in developing countries such as Uganda is of great importance to researchers and management practitioners today (Abdul-Rashid et al., 2017).

Reflecting on the strategic human resource management literature, scholars suggest that organisational learning as an independent variable improves sustainability performance (Kowuttiphong and Fongsuwan, 2019; Vihari et al., 2018; Smith and Purdehnad, 2012). Organisational learning as a dynamic process enables firms to acquire, disseminate, exploit and store new knowledge and insights relevant to building firm capabilities and improving firm performance (Senge, 1990; Lopez,

Peon, and Ordas, 2005). The dynamics of today's business environment necessitate firms of all kind to continue learning in order to obtain information about the ever-changing market needs if they are to survive, grow as well as gain sustainable competitive advantage in the industry (Hernaus, Škerlavaj, and Dimovski, 2008).

In pursuit of sustainability performance, organisational learning equips members with relevant knowledge and insights about the changing stakeholder economic, social and environmental needs (Smith and Scharicz, 2011). Equipped with such knowledge resources, firms can proficiently respond to stakeholders' sustainability needs through formulating plans, strategies, core values, and activities that directly and/or indirectly balance shareholders' short-term economic needs alongside other stakeholders' social and environmental long-term needs (Sisaye, 2011).

Further, the dynamic capability theoretical view suggests that the relationship between organisational learning and sustainability performance could be indirectly improved through firm innovativeness (Teece et al., 1997; Hsiao and Chang, 2011). Notably, innovative firms ought to be more responsive to stakeholders' changing needs particularly in turbulent market environments (Ecuru et al., 2014; Globocnik, Rauter and Baumgartner, 2019). Being innovative concerns the firm's determination to radically and/or incrementally implement new ideas in products, processes, strategies, markets and business systems (Nybakk and Jenssen, 2012; Wang and Ahmed, 2004). Firms with higher level of innovativeness are more likely to respond to environmental threats faster and better than their counterparts.

Calantone et al. (2002), Hsiao and Chang (2011) argue that firm innovativeness can be built through organisational learning. Organisational learning facilitates the development, sharing and common interpretation of new knowledge among

organisational members. The new knowledge developed through learning is then utilized to effect changes (innovations) in products, processes, strategies, markets and systems (Christensen, 1997; Nonaka, 19994; Wang and Ahmed, 2004). In turn, such innovations steer firm's economic, social and environmental performance (Globocnik et al., 2019).

Additionally, upper echelons literature suggests top management personal characteristics (such as tenure, age, values, education background, and gender) to improve organisational processes such as learning and innovativeness which in turn influence firm outputs like sustainability performance (Hambrick and Mason, 1984; Hsiao and Chang, 2011). Particularly, the personal values of a CEO are of significant importance in strategic decision making. The CEO is not only the top leader of the entire organisation but also the leader of the top management team and therefore his/her personal values greatly influence the culture of the firm (Hoffmann and Meusburger, 2017). CEOs whose personal values are geared towards openness to change and self-transcendence are more likely to advance policies and strategies that support learning and firm innovativeness which could result into the firm's increased attention towards improving the well-being of all stakeholder groups (Aktas et al., 2011; Chiva et al., 2010).

Deriving from the foregoing debate, it is observed that existing literature is limited in providing an integrated model that comprehensively explains the inter-relationships between and among organisational learning, firm innovativeness, CEO values and sustainability performance, particularly within an African setting. This study empirically tested an integrated theoretical model that sought to examine the inter-relationship between organisational learning, firm innovativeness, CEO values and sustainability performance.

1.2 Statement of the Problem

The sustainability of the manufacturing sector is of great importance to national, regional and global economic development. This manifests through its contribution to GDP, employment, payment of taxes, and supply of both domestic and industrial products (UNIDO, 2020; UNCTAD, 2021). Despite such economic benefits, manufacturing activities especially in developing economies remain a danger to human health and the ecosystem (Abdul-Rashid et al., 2017). World Health Organisation (WHO) estimates that about 4.2 million deaths occur every year due to illnesses related to social and/or environmental impacts (WHO, 2018). In Uganda, this estimate stands at about 3,141 (39.3%) out of every 7,989 registered deaths (UNCTAD, 2021; NEMA Annual Corporate Report, 2018). According to the Global Sustainability Competitiveness Index (2020), Uganda stands at 37.55% in terms of embracing sustainability performance initiatives, which is below the minimum threshold of 50% and lower than any other East African country. By and large, medium and large manufacturing firms greatly contribute to this low sustainability performance in Uganda (NEMA Annual Corporate Report, 2018)

Accordingly, an understanding of factors that drive medium and large manufacturing firms towards improving their sustainability performance has significant implications for present day management practice and industry policy (Kennedy and Bocken, 2020). Extant literature shows that organisational learning is significantly associated with sustainability performance (Kowuttiphong and Fongsuwan, 2019; Vihari et al., 2018; Mader et al., 2013). Learning as an intangible resource enables organisations to generate, share and utilize knowledge relevant to understanding and addressing stakeholders' changing economic, social and environmental interests.

The contribution of existing studies linking organisational learning and sustainability performance withstanding, little knowledge exists about the role of firm innovativeness and CEO values in this relationship. Yet, previous studies show that firm innovativeness (Globocnik, 2019) and CEO values (Bhattacharyy, 2016) significantly affect organisational sustainability performance. Moreover, empirical literature on sustainability performance is still minimal in developing countries (Vihari et al., 2018; Smith, 2012). This study builds on the above research gaps to test the inter-relationship between organisational learning, firm innovativeness, CEO values and sustainability performance among medium and large manufacturing firms in Uganda.

1.3 General Objective

The study sought to examine the relationship between organisational learning, firm innovativeness, CEO values and sustainability performance among medium and large manufacturing firms in central and eastern, Uganda.

1.3.1 Specific Objectives

The study was guided by the following specific objectives:

1. To examine the effect of organisational learning on sustainability performance
2. To investigate the effect of firm innovativeness on sustainability performance
3. To analyse the effect of CEO values on sustainability performance
4. To determine the effect of organisational learning on firm innovativeness
5. To investigate the effect of CEO values on firm innovativeness
6. To analyse the mediating effect of firm innovativeness on the relationship between organisational learning and sustainability performance

7. To examine the moderating effect of CEO values on the relationship between organisational learning and firm innovativeness
8. To examine the moderating effect of CEO values on the relationship between firm innovativeness and sustainability performance
9. To find out the moderating effect of CEO values on the relationship between organisational learning and sustainability performance
10. To investigate the moderating effect of CEO values on the indirect relationship between organisational learning and sustainability performance via firm innovativeness.

1.4 Study Hypotheses

The study set out to test the following null hypotheses:

H_{01} Organisational learning has no significant effect on sustainability performance

H_{02} Firm innovativeness has no significant effect on sustainability performance

H_{03} CEO values have no significant effect on firm sustainability performance

H_{04} Organisational learning has no significant effect on firm innovativeness

H_{05} CEO values have no significant effect on firm innovativeness

H_{06} Firm innovativeness has no significant mediating effect on the relationship between organisational learning and sustainability performance

H_{07} CEO values have no significant moderating effect on the relationship between organisational learning and firm innovativeness

H_{08} CEO values have no significant moderating effect on the relationship between firm innovativeness and sustainability performance

H_{09} CEO values have no significant moderating effect on the relationship between organisational learning and sustainability performance

H_{010} There is no significant moderating effect of CEO values on the indirect relationship between organisational learning and sustainability performance via firm innovativeness

1.5 Significance of the Study

Theoretically, there is no single theory that sufficiently explains how manufacturing firms can attain sustainability performance in today's turbulent environment. This study integrated the stakeholder theory, organisational learning theory, dynamic capability theory, and upper echelons theory to develop a multi-theoretical model with inherent variables that provides a meaningful trajectory for understanding firm sustainability performance and its determinants in a developing economic context.

In the empirical world, research has concentrated on financial independence (Bowman, 2011; Carroll and Stater, 2009; Chikoto and Neely, 2013), social connectedness (Borwick, 2012; Moldavanova, 2014; Weerawardena, Robert and Mort, 2010), intellectual capital (Massaro et al., 2018; Dameri and Ricciardi, 2015) and organisational learning (Smith, 2012; Vihari et al., 2018) as direct determinants of firm sustainability performance and ignored the role played by other internal firm capabilities and contextual factors. This study brings to understanding the indirect effect of firm innovativeness and the interaction effect of CEO values in the link between organisational learning and firm sustainability performance among medium and large manufacturing firms in Uganda.

To the owners, managers, industry regulators, training institutions, and government agencies operating in the Uganda manufacturing sector, the study contributes knowledge relevant to developing and/or supporting policies, programmes, strategies and practices geared towards increasing learning that improves long-term business

success. Additionally, board members or any other appointing authorities gain knowledge about the relevant personal value(s) of CEOs that drive firms towards attaining greater sustainability performance. Specially, an assessment of top executive values is important during the hiring process or else on-the-job executive management trainings will be emphasised to inculcate in the executive members values that drive a culture of learning and innovation to improve firm sustainability performance.

1.6 Scope of the Study

Conceptually, existing literature typically approaches sustainability at three levels, namely; society level, firm level and individual level (Moldavanova and Goerdel, 2017). However, all the three levels could not be examined in this single study because of time and other resource constraints. This being a study anchored in strategic management, the researcher narrowed down the content scope to examine the construct of sustainability performance at firm level (Nag, Hambrick and Chen, 2007). Existing literature provides a range of factors that drive firms toward achieving sustainability performance and their inherent dimensions. In the current study, the researcher focused on organisational learning, firm innovativeness and CEO openness value as the main predictors of firm sustainability performance.

Geographically, manufacturing firms in Uganda operate in all the four regions, namely; Central, Eastern, Western and Northern region. Due to resource constraints, this study concentrated on medium and large manufacturing firms operating in the Central and Eastern regions. Moreover, these two regions account for about 80 per cent of manufacturing firms in Uganda (Buyinza, 2011; UBOS, 2010/11). The survey data used in this study was obtained from the targeted manufacturing firms for a period of seven months, starting from February to August, 2020.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter begins with a review of existing literature on the concept of sustainability performance, organisational learning, CEO values, and organisational firm innovativeness. This is followed with a review of relevant theories that underpin the study variables and their relationships. The chapter continues with a review of empirical literature in line with the study objectives. Based on the reviewed theoretical and empirical literature, hypotheses are formulated. A summary of empirical literature is also presented and the chapter ends with a conceptual framework.

2.1 The Concept of Sustainability Performance

The concept sustainability first appeared around 1968 at the International Conference for Rational Use and Conservation of the Biosphere focused on how to attain global sustainability (Faber et al., 2005). The concept reappeared around 1972 when the United Nations Conference on Human Environment coined the term sustainable development referring to development that meets the needs of the present without compromising the ability of future generations to meet their own needs (Hall et al., 2010). Fifteen years later in the UN World Commission on Environment and Development (WCED) conference (also referred to as the Brundtland report) sustainability was defined as “meeting the needs of the present generation without compromising the ability of future generations to meet their needs (WCED, 1987).

The WCED definition is credited for laying a foundation upon which other definitions have been framed. However, Kiewiet and Vos (2007) observes that the WCED definition does not provide a suitable definition for understanding sustainability

concerns at firm level. This is because the definition emphasises a holistic global strategy for preserving the ecological process, protection of natural heritage and biodiversity resulting from human activity which factors are far beyond the scope of a single business firm (Brown, 1987; Simon, 1969; Pirages 1977; Coomer, 1979 cited in Faber et al., 2005).

In the last two decades, there has been growing research work surrounding the operationalisation of the concept sustainability at firm level. This paradigm is inspired by the increasing need for firms to engage in activities that contribute towards attaining quality life within the firm as well as in the wider society (Globocnik et al., 2019; Kiewiet and Vos, 2007; Faber et al., 2005). Ironically, to-date there is no yet a consensual clear definition of sustainability performance at firm level. The conceptualization of what sustainability performance is or what it should be has varied widely in existing literature. Scholars from varying fields (biology, economics, ecology, sociology, public and strategic management) define sustainability performance differently given their unique fields of understanding (Wikstrom, 2010; Park et al., 2007; Steurer et al., 2005; Ketola, 2008; Faber et al., 2005). Many continue to cite the definition provided in the Brundtland report despite the limitation associated with such a definition. Other researchers have even gone further to craft customized definitions of sustainability performance tailored to particular firms or industry (Kiewiet and Vos, 2007; Isaksson and Steimle, 2009; Wasiluk, 2013). This signals that there is no yet a right or wrong definition of firm sustainability performance.

Thus, defining firm sustainability performance requires a comprehensive assessment and interpretation of the artefact (i.e what to attribute sustainability performance to),

goal orientation (i.e absolute or relative goals) as well as the degree of interaction with the environment (Faber et al., 2005). For this purpose, this thesis adopts Dyllick and Hockerts (2002) contextually adjusted definition cited in Kiewiet and Vos (2007) that firm sustainability performance involves the firm's endeavors to meet the needs of both direct and indirect current stakeholders without compromising the ability to meet the needs of the future stakeholders as well. Such a definition is deemed appropriate in strategic management since it reinforces meeting various stakeholder needs (both internal and external) as well as ensuring the continuity of the organisation within a dynamic environment (Bansal, 2002; Baumgartner and Ebner, 2010). Importantly, sustainability performance should be distinguished from a loosely used related concept of firm survival as the latter is narrowly focused on the firm's ability to withstand immediate pressure yet sustainability performance seeks to strategically position the firm within a dynamic environment to be able to meet present stakeholder needs as well as generate viable long-term responses to meet future society needs (Miragaia et al., 2016; Bansal and Desjardine, 2014; Bowman, 2011).

UN recently advanced the 'Five Ps' framework; prosperity/profit, people, planet, peace and partnership as indicators of sustainability progress (Global Sustainability Development Report, 2019). However, the dimensions of peace and partnership are more aligned to attaining sustainable development at society level rather than sustainability performance at firm level. Thus, the traditional Triple Bottom Line (TBL) approach is still a relevant framework for analyzing sustainability performance at firm level. TBL suggests that to be sustainable, a firm should gain a balance between economic growth, social progress as well as increased attention to environmental management. This has also been referred to as the three Ps area, that is;

Profit, People and Planet (Kiewiet and Vos, 2007; Elkington, 1997; Smith and Scharicz, 2011).

The profit dimension of sustainability performance also referred to as economic sustainability performance describes firm practices that support long-term economic growth (Sheth et al., 2011; Bansal, 2005; Vihari et al, 2018). The economic dimension is rooted in the classical shareholder and firm theory that emphasises that businesses exist to maximize profits (Marshall, 1961). Therefore, firms aiming to attain economic sustainability need to improve their economic performance, gain market growth as well as ensure long-term profitability. This can be achieved through firms being compliant, emphasise good governance and risk management, increased market share as well as control of production costs. The economic pillar of sustainability performance ensures a steady flow of cash, high profits, improved liquidity, improving debt-equity ratio and fair returns on shareholders' investment (Choi and Ng, 2011; Steurer et al., 2005). The economic dimension forms the main objective of almost every business in order for the business to be able to pay taxes to public authorities, pay attractive salaries and wages to workers, pay fair prices to suppliers, pay interest to creditors and at a certain point in time, dividends to shareholders (Fowler and Hope, 2007; Steurer et al., 2005).

The people dimension of sustainability performance (also referred to as social sustainability performance) concerns the well-being of people and communities as a non-economic form of wealth (Choi and Ng, 2011). The dimension focuses on finding a balance between personal and society needs to support human life and activity through fair distribution of wealth that ensures that all members of society have equal access to resources and opportunities (Bansal, 2005). Drawing on business ethics,

corporate social responsibility and occupational health and safety literature, a sustainability performing business needs to gain the support and approval of its employees, stakeholders and the community (Choi and Ng, 2011; Dunphy, 2003). The approaches to securing and maintaining this support are various, but it comes down to treating employees fairly, and being a good neighbour and community member (Mohr and Webb, 2005). On the employee side, businesses prioritize retention and engagement strategies, including more responsive benefits such as better maternity and paternity benefits, flexible scheduling, and learning and development opportunities (Saunila et al., 2012). For community engagement, companies have come up with many ways to give back, including; fundraising, sponsorship, scholarships and investment in local public projects (Dyllick and Hockerts, 2002).

The planet dimension also commonly referred to as environmental sustainability performance concerns the firm's endeavor to ensure that its activities and influences do not lead to depletion of natural resources or contaminating the eco-system (Bansal, 2005). Environmental sustainability has become increasingly important in today's business management sphere due to the reported effect of manufacturing processes on natural resources depletion and emissions causing global warming, climate change, diverges, increased drought, habitant destruction as well as rising sea levels (Choi and Ng, 2011; Steurer et al., 2005). Moreover, environmental sustainability is reported to be more important than economic sustainability. This is because the public may negatively appraise a firm whose actions are perceived to be causing damage to the environment irrespective of whether its products or services are of high quality and low priced. Thus, firms need to focus on reducing carbon footprints, packaging waste, water usage and their overall effects on the environment (Steurer et al., 2005; Choi and Ng, 2011). Research evidence suggests that engaging in environmental

management practices although costly can have far reaching positive economic benefits to the firm in the long run. For instance, decreasing the amount of material used in packaging usually reduces the overall spending on those materials and hence increased net revenue (Stead and Stead, 2004).

From the preceding literature, the concept of sustainability performance has been conceptualized as an integrated framework that ensures that the firm does not only focus on being economically viable but also continues to respond to people's social needs as well as mindful about being environmentally friendly in all her operations. Researcher and practitioners continue to reflect on the TBL framework as a guide to examine sustainability related performance (for instance, Moldavanora and Goerdel, 2018; Stazyk et al., 2014; Osborne, 2014). However, the TBL approach continues to be questioned as an appropriate indicators of firm sustainability performance since it is practically impossible to balance qualitative social and environmental bottom line results against the quantitative economic results. Critiques claim that global social and environmental challenges are still growing at alarming rates despite firms embracing the TBL performance framework (Norman and MacDonald, 2004; Milne and Gray, 2013; Ehrenfield, 2004). Steurer et al (2005) react to such critiques as the weak mind to the sustainability performance discourse which seeks to substitute long-term collective social and environmental corporate responsibility initiatives with selfish short-term economic gains. Nevertheless, researchers and industry practitioners continue to use the TBL approach as a valid framework for analyzing firm sustainability performance due its ability to mutually reinforce economic, social and environmental objectives (Elkington, 1997; Smith, 2012; Vihari et al., 2018).

2.2 The Concept of Organisational Learning

By around the early 1960's researchers had started examining the concept of Organisational Learning (OL). Early research focused on understanding the meaning, types, dimensions, process, agents and factors facilitating organisational learning (Cyert and March, 1963; Cangelosi and Dill, 1965; Chiva et al., 2010). Argyris and Schon's theory of action perspective is credited to have laid a foundational stone to the present-day organisational learning debate (Argyris and Schon, 1974, 1978). While Cyert and March (1963) had earlier defined organisational learning as the adaptive behaviour of organisations overtime, Argyris and Schon moved beyond this view to suggest that organisational learning described the process through which organisations detected and corrected errors. An error in this sense describes the discrepancy between what organisational members desire to achieve and what they actually achieve. To correct this error (i.e discrepancy), the organisation has to undergo a systematic learning process involving all members at different levels (Pourdehnad and Smith, 2012; Opuku and Fortune, 2011). While such a definition laid a foundation upon which the modern understanding of OL is premised, scholars and practitioners contend that OL goes beyond Argyris and Schon's detection and correction of error (Nonaka et al., 2000; Senge, 1990; Lopez et al., 2005).

In this regard, several definitions have been put forward by different scholars in an attempt to provide a more robust definition of OL that suits diverse organisational contexts. For instance, Lopez et al (2005) describes OL as a dynamic process of creation, acquisition and integration of knowledge aimed at the development of resources and capabilities that contribute to organisational performance. Similarly, Spicer and Sadler-Smith (2006) define OL as the development or acquisition of new knowledge or skills in response to internal or external stimuli that leads to a more or

less permanent change in collective behavior and that enhances organizational efficiency and/or effectiveness. Vera and Crossan (2005) define organizational learning as the process of collective learning activities through shared thoughts and actions, which is affected by the institutionalized climate. For the purpose of this thesis, OL is considered as an organisational-wide systematic and planned process of creating, acquiring, integrating and utilizing individual and group knowledge to enhance organisational processes and outcomes (Zgrzywa-Ziemak, 2015).

Important to note, organisational learning and learning organisation are two distinct concepts although commonly used interchangeably both in literature and management practice. A learning organisation prescribes a type of organisation where learning is taking place while OL describes the process through which organisations learn (Senge, 1990; Jensen, 2005; Tsang, 1997). The organisational learning concept has received wide research and industry attention across disciplines (such as economics, management science, psychology, sociology and anthropology) relative to the concept of learning organisation (Easterby-Smith and Lyles, 2011; Grieves, 2008). Researchers suggest that in today's knowledge economy, organisations that have the ability to create, acquire and integrate knowledge capabilities have a higher sustainable competitive advantage over their rivals (Drucker, 1999; Nonaka et al., 2000; Chan et al., 2004).

Another issue that has attracted the attention of organisational learning researchers is the question of who (agents) actually learns (Crossan et al., 1999; Berends and Lammers, 2011; Argyris and Schon, 1978). Crossan et al. (1999) guides that organisational learning is a multi-level construct; implying that learning within an organisational setting takes place at various levels. In their framework, the authors

clarify that the process of learning begins at individual employee level where the employee intuits and interprets new knowledge. This knowledge in form of information is then shared, interpreted and integrated at group level. In case members collectively find this information useful (value addition), it is then integrated and institutionalized at organisational level in form of policies, systems, standard operating procedures and routines (Chiva et al., 2010; Bappuji and Crossan, 2004).

Regarding the typologies of organisational learning; Argyris and Schon (1978) categorized learning into two, namely; single-loop and double-loop learning. On top of single-loop and double-loop learning, Li (2016) pointed out another category referred to as triple loop learning which concerns learning from the external environment. Bateson (1972) categorized organisational learning to take place at five levels. However, great research work has centred around Argyris and Schon's single and double loop typologies.

In single-loop learning which is also referred to as lower-level learning (Fiol and Lyles, 1985), first order learning (Watzlawick et al., 1974), Level I learning (Bateson, 1972) as well as adaptive learning (Senge, 1992), individuals, groups and the organisation as a whole modify their actions according to the difference between expected and obtained outcomes. This involves engaging with the demands of the internal and external environment by using or modifying current organisational practices but keeping basic assumptions about the organisation and its environment intact (Kim, 1993). Single loop learning seeks to refine and cause improvements in existing competencies, technology and paradigms without necessarily challenging or examining the underlying norms, beliefs or assumptions (Chiva et al., 2010). This form of learning is common within highly bureaucratic organisations (described as

type I organisations) where managers seek to improve operational efficiency for adaptation (Spicer and Sadler-Smith, 2006; Argyris and Schon, 1996).

On the other hand, double-loop learning which is also referred to as higher level learning (Fiol and Lyles, 1985), second order learning (Watzlawick et al., 1974), Level II learning (Bateson, 1972) as well as generative learning (Senge, 1992) goes beyond single-loop adaptive learning. Here individuals, groups and the organisation as a whole question the current values, norms, assumptions and policies that led to the current actions (theory in use). This leads to modification or even complete overhaul of the long-held values, assumptions, policies, routines, practices and objectives in order to come up with new actions (theory) geared towards fitting the organisation within the dynamics of the current and future environment (Jain and Moreno, 2015; Sadler-Smith et al., 2001; Kim, 1993). Such a form of learning is common in highly flexible organisations (described as type II organisations) where managers seek to improve operational effectiveness (Chan et al., 2004; Spicer and Sadler-Smith, 2006).

Worth noting, the two types of learning (single loop and double loop) mutually reinforce each other rather than compete in enhancing OL (Chiva et al., 2010). They only vary by degree since each sit at the opposite end of the same learning continuum. Depending on the prevailing circumstances, an organisation may prioritise either single or double-loop learning; for instance, managers seeking to improve current operational efficiency may emphasise more of single-loop learning while in situations where there is need to improve operational effectiveness, double-loop learning may dominate. The only difficulty lies in determining practically where one stops and where the other starts from (Spicer and Sadler-Smith, 2006; Sadler-Smith, 2001).

Turning to the dimensions of organisational learning, there is no yet a uniform set of dimensions and/or measures of organisational learning agreed upon by various scholars in the existing literature. (Hernandez and Watkins 2003; Yang et al., 2003; Yang et al., 2004; Jyothibabu et al., 2010; Argote, 2011). Quite different dimensions and measures have been adopted by different researchers to examine the organisational learning concept. For instance, Watkins and Marsick (1993, 2003) developed a seven dimensions measure comprising of continuous learning, inquiry and dialogue, team learning/collaborative skills, empowerment, embedded system, system connection and strategic leadership.

Garvin (1993) used a five dimensions instrument comprising of system problem solving, experimenting, shared learning, personal mastery and knowledge transfer. Hsu and Pereira (2008) applied a three dimensions measure of social learning, technological learning and market learning to explain OL. Chiva (2004) developed a five-dimension measure of OL comprising of experimentation, risk taking, interaction with the external environment, dialogue and participative decision making. Calantone et al (2002) considered OL as a function of commitment to learning, shared vision, open-mindedness, and intra-organisational knowledge sharing.

A critical review of the different OL dimensions documented in existing empirical literature reveal some relative degree of uniformity in operationalisation although with a few adjustments especially in terminology rather than in the content examined. For instance, what Watkins and Marsick (1993) describe as team learning is what Chiva refers to as dialogue, Garvin describes it as shared learning or collaborative skills, and Hsu and Pereira describe it as social learning. The inherent limitation across the dimensions used is that they are more inclined towards measuring the capabilities (facilitators) of organisational learning (Watkins and Marsick, 1993;

Chiva et al, 2007; Jerez-Gomez et al., 2005) as well as the outcome of organisational learning (Bontis et al., 2002; Tippins and Sohi,2003; Crossan et al., 1999) rather than the process of how learning takes place within an organisational setting (Zgrzywa-Ziemak, 2015; Jimenez-Jimenez and Sanz-Valle, 2011; Chiva *et al.,* 2010; Calantone et al., 2002).

Crossan et al. (1999) post that research focused on analyzing the concept of organisational learning is broadly categorized into six perspectives, namely; psychology, strategy, management science, production management, sociology and cultural. Each perspective attempts to explain and measure something unique and of critical importance regarding the concept of organisational learning. This study is premised on the strategy and management science perspectives. The strategic perspective analyses organizational learning in terms of its ability to give an organization sustainable competitive advantage over others of its kind (Halawi et al., 2006). Through learning, organisational members generate information about the internal and external environment, which information is used to devise competitive-survival strategies. The management science perspective concerns the gathering and processing of information within and outside the organization. In other words, it is concerned about how knowledge as an organisational intangible asset is acquired, distributed, interpreted and stored to improve performance (Huber 1991; Deng and Tsacle, 2003).

Huber (1991) advanced a four-activity process of organisational learning, which includes; knowledge acquisition which seeks to examine how firms generate knowledge from both external and internal sources, knowledge distribution which seeks to examine the process through which the acquired knowledge is spread

(shared) among employees within the firm, knowledge interpretation which examines whether individuals have a common understanding of organisational new knowledge and knowledge storage (also referred to as organizational memory) which examines how the firm ensures that valuable knowledge is stored for future use, either in organizational systems designed for this purpose or in the form of rules, procedures and other systems (Jimenez-Jimenez and Sanz-Valle, 2011; Nevis et al., 1995; Lopez et al., 2005).

2.3 The Concept of Firm Innovativeness

Today's highly volatile business environment characterized with global pandemics, rapid technological discontinuities, regulation, globalization, demographic changes, macroeconomic movements, stringent competitors' strategies, and ever-changing customer expectations necessitate organisations to become more innovative if they are to survive and grow (Carmona, 2022). Firm innovativeness involves the generation or acquisition, acceptance, dissemination and implementation of new ideas that improve products or services, processes, systems, competences as well as the structure (Christiansen, 2000; Calantone et al., 2002; Mafabi et al., 2012). Ecuru et al. (2014) observes that firm innovativeness involves the successful implementation of creative ideas within an organization either radically (i.e completely new products, processes or systems) or incrementally (i.e improvements in the existing products, processes or systems).

Drucker is one of the classical scholars who advanced the need for organisations to embrace innovation in the early 1950s. He argued that firms had to be innovative to survive amidst environmental complexities (Cavusgil et al., 2003). Since then, management researchers and practitioners continue to emphasise the strategic role played by innovation in enhancing various organisational outcomes. Much of the

work on innovation is found in the literature of innovation diffusion, given that the diffusion of knowledge and information is a key driver of firm innovative processes (Biondi et al., 2002; Rogers, 1995)

Today, all kinds of organisations recognize the need to be innovative within their respective environmental context. Researchers suggest that for innovation to flourish in any organisational setting, organizations have to improve their level of innovative capability (Saunila et al., 2012; Alasoini et al., 2007; Cavusgil et al., 2003; Laforet, 2011). Innovative capability underpins the type of culture that facilitates innovation. Such a work culture is recognized to strongly promote the generation of new ideas and implementation of those ideas with less fear of failure. Unlike in the olden days where firms could afford to ignore building their internal innovation capabilities, today firms are faced with intensive competition from within and outside the industry calling for proactive management styles and systems that consistently promote greater innovativeness in order for the business to succeed (Christiansen, 2000; Teece et al., 1997).

Innovativeness may be enhanced at individual employee level as well as at firm level (Meyer, 1998; Ghoshal and Bartlett, 1998). At the individual level, innovativeness manifests inform of the degree to which an individual discovers and adopts new and better methods of work that gradually improves his/her overall job performance relative to other members (Johnson et al., 1997). At firm level, innovativeness takes a collective approach where the firm's culture openly encourages and supports the generation and experimentation of new ideas in products, processes, markets, strategies and management systems. Schumpeterian describes this form of innovativeness as creative destruction (Ecuru et al., 2014; Wang and Ahmed, 2004; Hurley and Hult, 1998; Denrell and Powell, 2016). Similarly, Calantone et al. (2002)

adds that firm innovativeness should be viewed both as a behavioural factor as well as a management commitment. As a behavioural factor, firm innovativeness is analysed in terms of the rate at which a firm adopts new innovations while as a management commitment, firm innovativeness is analysed in terms of the overall organisation's willingness to change.

Amidst increased research attention surrounding the concept of firm innovativeness, no generally accepted measurement scales have yet been advanced in existing literature (Wang and Ahmed, 2004). The measurement of firm innovativeness remains both a theoretical and empirical challenge. To a greater extent, this challenge is attributed to the fact that the concept of firm innovativeness is intangible by nature and therefore may not easily be quantitatively measured (Saunila, Pekkola and Okko, 2014; Albaladejo and Romijn, 2000). Nonetheless, researchers continue to adopt a range of dimensions in an attempt to measure firm innovativeness. For instance, Capaldo et al (2003) proposed an innovation capability evaluating method with four resource sets: entrepreneurial resources, human resources, resources arising from external linkages, and economic resources. However, their model did not receive much attention. In 2004, Kaplan and Norton proposed a model that measures innovation process but this model is discredited for assuming a linear and separate identifiable construct of innovation process rather than measuring comprehensively the dimensions of firm innovativeness (Epstein, 2008).

Additionally, Cavusgil et al (2003) developed a four dimensions measure of firm innovativeness including; frequency of innovations, order of market entry, simultaneous entry in multiple markets and the firm's ability to penetrate new markets. Albaladejo and Romin (2000) measured firm innovativeness by analyzing a single factor of product innovativeness in terms of new product development, number

of patents and innovation outputs. Capon et al. (1992) considered market innovativeness, strategic tendency to pioneer, and technological sophistication as measures of firm innovativeness. Critiques of the aforementioned innovation measures argue that the above measures do not consider that firms are of different sizes and operate in diverse business areas thus necessitating unique measure of firm innovativeness tailored to their specific contexts (Carayannis and Provance, 2008). Further, the dimensions and measures suggested are more inclined towards measuring the factors enhancing firm innovativeness (e.g organisational culture) as well as the innovative processes rather than the output of firm innovativeness (Wang and Ahmed, 2004; Albaladejo and Romin, 2000).

Nybakk and Jenssen (2012), Wang and Ahmed (2004) and Tsai et al. (2001) post that firm innovativeness as an output variable manifest in form of changes in products, processes, markets, management/administrative systems and strategies. Product innovativeness concerns the newness, novelty, originality, uniqueness and meaningfulness of products introduced in the market. Process innovativeness captures the changes made in the firm's production methods, delivering inputs, packaging and distributing finished products. Market innovativeness concerns innovation related to market research, new market entry, new market exploitation, advertising and promotion. Management systems innovativeness concerns the changes a firm makes in its management or administrative systems and strategic innovativeness relates to the new competitive strategies adopted by the firm to create value amidst environmental complexities (Ecuru et al., 2014; Saunila et al., 2012; Henard and Szymanski, 2001; Andrews and Smith, 1996; Ali et al., 1995).

2.4 The Concept of CEO Values

Value is a multi-level construct that has been analysed following two broad orientations; group value orientation and individual value orientation (Hofstede, 2001; Munene et al., 2005; Schwartz, 1992, 2005; Rokeach, 1973). At the group level, values are further analysed from a national-cultural perpective as well as an organisational perspective (Hofstede, 2001; Murphy and Davey, 2002).

At national (also referred to as society level), values provide an understanding of what is held important and considered acceptable by the majority of members within a given broad social group. The shared understanding of values at society level provides insight into what is deemed ethical and a mechanism of determining good governance (Edward and Hall, 1990; Trompenaars, 1993; Lasserre, 2003). Hofstede's cultural dimensions research is highly regarded in international business management literature exploring how management styles and work-related values differed across countries (Hofstede, 1980). The author reported how managers in the 40 countries where his study was conducted differed in terms of value attached to power distance, individualism, uncertainty avoidance, masculinity and planning horizon (Hofstede, 2001). National cultural values as a section of group value orientation greatly shape the attitudes and behaviors of members who live in that country. In the African setting, numerous studies attest that there is a shared African cultural value system that shapes the value profile of people in many African nations. Values such as love of life and family, solidarity, respect for authority, kinship, among others are rooted from within the African broach social cultural-value system (Ahianzu, 1995; Gyekye, 1995, Munene et al., 2005; Onwuejeogwu, 1995).

At the organisational level, values as a shared facet of corporate culture relate to the set of cognitions that are shared by members of the same organisation (Murphy and

Davey, 2002). The strategic relevance of organisational values is premised on the assumption that an organisation is a social unit with a common goal(s) to accomplish. Hence, organisational values collectively shape, direct, and guide members to think, feel and behave coherently and consistently in ways that support the attainment of the organisation's vision, mission, goals and objectives. Organisational values act as the general principles by which the organisation lives. Examples of values at organisational level include being; responsive, professional, honesty, integrity, and respect for others (Pedersen et al., 2018; Holt, 1996). Values form part of the overall organisational culture and they are passed on from one member to another through social learning and the socialisation process (Willmott, 1993; Rousseau, 1990; Rosete, 2006). Numerous scholars call for the alignment of organisational value frameworks with individual employee values if organisations are to achieve cultural control, performance, or identity (Murphy and Davey, 2002; Padaki, 2000; Box, Odoun and Dunn, 1991; Elizur and Koslowsky, 2000).

Individual value orientation (which is the focus of this study) concerns an individual's internal psychological principles that bring out the differences in thinking, judgement and behaviour. Rokeach asserts that human values are enduring goals that serve as guiding principles in people's lives. They demonstrate a person's degree of importance attached to something deemed desirable in his/her life (Schwartz, 1992; Rokeach, 1973). Personal values are believed to be certain conditions that people yearn for and they are also the transcending concrete scene upon which judgement and choice standard in a series of behavioural patterns is based (Waldman et al., 2006; Schwartz, 1992, 2012; Rokeach, 1973).

This study examined the concept of personal values of a company Chief Executive Officer (CEO) and how such personal values interact with organisational learning and

firm innovativeness to cause variations in firm sustainability performance. The study of CEO values is rooted in the upper echelon literature that suggests top management personal characteristics to influence various organisational processes and outcomes (Hambrick and Mason, 1984). The CEO is a dominant member of the top management team whose personal characteristics or attributes can strongly influence not only the behaviour of other top management team members but also the functioning of the entire organisation (Hambrick, 1994, 1995; Scott, 1995).

Literature clearly highlights the key differences between personal values and other personality differences such as attitudes, beliefs, traits and norms although the concepts usually come together in explaining individual differences (Schwartz, 2012; Rokeach, 1973). As earlier noted, values are personal desires that act as guiding principles in life. Attitudes are relatively enduring evaluative feelings of like or dislike towards an object, person or group of people. However, it is common in real life situation for people to develop positive attitudes towards those events that promote the attainment of their values (i.e desired goals) and vice versa. On the other hand, beliefs are ideas about how true that what people perceive to be true is actually true and not about what people hold to be important to them in life. For example, a belief about how the world functions may not necessarily represent how some people would want the world to function (Leung and Bond, 2004).

Norms are standards or rules that inform members of a group or society regarding how they should behave (i.e acceptable and non-acceptable behaviour). While the two concepts are different, it is common that values dictate whether one will accept or reject certain social norms. Traits are tendencies to show consistent patterns of thought, feelings, and actions across time and situations. Although theory clearly distinguishes traits from values, in practice it is a bit difficult to find this difference.

This is because a value exhibited for a relatively long period of time becomes a known trait. Drawing on the distinctions between values and other personal differences, the researcher in this thesis sought to examine specifically the individual value orientation of the company CEO.

2.5 Theoretical Framework

From a review of extant organisational management theories, it emerged that no single theory could sufficiently explain the concept of sustainability performance and its predictor variables. Therefore, a multi-theoretical approach was adopted to explain the linkage between organisational learning, firm innovativeness, CEO values and sustainability performance. The multi-theoretical framework combined the; Stakeholder Theory (ST), Organisational Learning Theory (OLT), Dynamic Capability Theory (DCT), and Upper Echelons Theory (UET). The tenets, relevance and limitations of each theory is explained as follows;

2.5.1 Stakeholder Theory

The theory postulates that a firm is a constituency of stakes held by various actors who are referred to as stakeholders (Freeman, 2010). A stakeholder is any person or group of persons who can affect or is affected by the firm's achievement of its objectives (Rowley, 1997; Donaldson and Preston, 1995). Therefore, stakeholders are entitled to some form of consideration in the firm strategy formulation process due the risk they bear for the sake of the firm pursing its economic objectives (Goodpaster, 1991).

The genesis of the stakeholder perspective is traced as far back as Barnard (1938) in the sociological discipline. A few years later, Follett (1941) also contributed to the idea of managing stakeholder relationships although his work did not receive much

attention both in academic research and management practice. Around the early 1970s, stakeholder related concepts started appearing in the thinking of various systems theorists and corporate planners. It was not until Freeman (1984) in his seminal work that an integrated stakeholder theory came into play.

Since the works of Freeman (1984), the stakeholder theory has been adopted as a framework for analyzing and responding to larger public interests in various fields including; economics, law, politics, public management, corporate ethics and now strategic management (Mainardes et al., 2012; Soriano et al., 2011; Argenti, 1993). Scholars like Foley (2005) have even gone further to provide a more specific definition of stakeholders to mean those entities and/or issues, which a business identifies from the universe of all who are interested in and/or affected by the activities or existence of that business, and are capable of causing the enterprise to fail, or could cause unacceptable levels of damage, if their needs are not met. Additionally, anyone whose welfare is tied with a business firm is a stakeholder.

Amidst the various views put forward over the years attempting to understand the dynamics of stakeholder influence on firm performance, Freeman (1984)'s strategic approach to stakeholder management is still credited for providing a theoretical landmark. The theory provides a normative, descriptive and instrumental approach to managing the relationship between the firm and its various stakeholder groups (Donaldson and Preston, 1995). Normatively, the theory holds that all stakeholders are of intrinsic value to the success of a business. Thus, managers should acknowledge the legitimate existence of the various stakeholder groups, identify their unique interests and devise strategies that will guarantee a cooperative working relationship between the firm and the stakeholders. Descriptively, the theory

emphasises the features, conditions and actions the firm needs to adopt in order to effectively address the interests, needs and viewpoints of stakeholders.

Specifically, firms need to interact with their stakeholders in order to obtain information relevant to implementing innovative business strategies, processes and model behaviour that serve the mutual interests of the firm and its stakeholders. This is likely to reduce on the damage the firm may inflict on the majority stakeholders in pursuit of minority shareholder economic goals. Consequently, the management of stakeholders should instrumentally propel the firm towards the achievement of the set business goals in terms of; legitimacy, increased profitability, wide market access, reduced operational costs, growth and sustainability (Horak et al., 2018; Carroll and Buchholtz, 2014).

The stakeholder theory clarifies the role various stakeholder groups play in influencing firm performance as well as the role firms play in shaping society. As such, every firm must identify, analyse and categorize its stakeholders in terms of legitimacy, interest, power, and urgency so that appropriate strategic actions are taken to address simultaneously the specific needs of all stakeholder groups to ensure firm-stakeholder harmony (Friedman, 1970; Cuganesan, 2006). Accordingly, the researcher in the current study adopted the stakeholder theory as a focal theory to explain the sustainability performance phenomenon within the Uganda manufacturing sector. To put the theory into context, managers of manufacturing firms in Uganda need to identify, recognize, analyse, and devise strategies that address the economic, social, and environmental demands of the various stakeholder groups in order to improve their sustainability performance (Dyllick and Hockerts, 2002).

While the stakeholder theory is credited for emphasizing the need for business firms to identify, engage, analyse and address all stakeholders' needs, it is discredited for assuming that firms of all kinds have sufficient resources to simultaneously address stakeholder competing needs. This is never possible in a real practical business sense (Cheruiyot, 2018). Stakeholder management researchers continue to report that the resources that drive the firm towards attaining sustainability are associated more with firms of particular characteristics. These characteristics include for instance; business type, ownership, origin, size and age (Pedersen et al., 2018; Jackson and Apostolakou, 2010; Lawson and Samson, 2001; Opuku and Fortune, 2011). In addition, new stakeholder groups emerge with varying interests and moral claims. The stakeholder theory however is silent on how firms can get to know such new stakeholder groups as well as the ever-changing interests and moral claims of all stakeholder groups (Haleem et al., 2022).

To fill the observed gaps in the stakeholder theory, this study borrows from the organisational learning theory that suggests the need for firms to continously interact with both the internal and external environment in order to gain knowledge of the changing market demands, technological break-throughs, as well as stakeholder demands.

2.5.2 Organisational Learning Theory

The theory advances the view that organisations must continue learning in order to cope with the demands of ever-changing environment (Argyris, 1996). The theory is rooted in socio-psychology and greatly attributed to the research works of Argyris and Schon (1978) in their action perspective and later extended by Levitt and March (1996).

The theory holds that organisations learn through a systematic form of inquiry. Whenever managers find themselves in a situation where the planned or expected results are contrary to the achieved outcomes, an inquiry into the issue is commenced where organisational members as individuals as well as collectively dialogue into what could have gone wrong, its causes and the appropriate actions to be undertaken towards solving the problem or error. It is upon such cognitive thinking and behavioural actions that new organisational competences are generated, distributed, interpreted, and utilized to solve an organisational inefficiency (Leavitt, 2011). In line with this view, Argyris and Schon define organisational learning as a systematic process of detecting and correcting errors. The theory holds that organisational learning is the product of individual experience and group interactions (Argyris and Schon, 1978).

Argyris and Schon approach organisational learning from a descriptive perspective rather than prescriptive; implying that organisational learning occurs only under certain controlled organisational conditions (Tsang, 1977). Thus, a formal consciously designed learning strategy and process need to be put in place to support the development of knowledge-based core competencies in an organisational setting. Notably, the organisational learning theory provides a description on how organisations under single and double loop mechanisms learn by creating, disseminating, interpreting and memorizing knowledge both at individual and collective level.

Accordingly, the theory of organisational learning was employed in this study to underpin organisational learning as an independent variable that directly affects sustainability performance based on related studies that have utilised the same theory (e.g Battistella et al., 2020; Vihari et al., 2018; Smith, 2012). Essentially, firms that

engage in continuous learning processes of knowledge acquisition, distribution, interpretation and storage are more likely to understand their stakeholders' ever-changing demands (Huber, 1991). This information is utilised in making strategic decisions that address the social, environmental, and economic needs of the various stakeholder groups (Vihari et al., 2018).

The contribution of Argyris and Schon's organisational learning theory withstanding, the theory is limited in explaining how such knowledge accumulated through individual and collective learning is utilised within an organisational setting. To fill this gap in theory, the dynamic capability theory is employed to explain how knowledge competencies developed through organisational learning processes can steer firm innovativeness.

2.5.3 Dynamic Capability Theory

The dynamic capability theory holds that firms that have the capacity to obtain, build, integrate, and reconfigure internal and external resources or competencies are able to generate new sources of competitive advantage necessary for adapting in a rapidly changing and turbulent environment. The theory recognizes that the landscape of global business competition has fundamentally changed and that the new competitive environment requires new ways of thinking and action. Organisations need to coordinate internal and external information generated through learning in order to sustain their resource advantages. Notably, firms that are able to sense and seize market and technological opportunities stand high chances of succeeding within periods of rapid change (Teece, 2007).

The strategic relevance of knowledge-based competencies on firm performance and competitiveness was traditionally explained within the context of the resource-based

view. However, the resource-based view assumed a static environment and failed to explain how firms operating in rapidly changing environments would retain their competitive advantage when their competitive forces and resource advantages are subject to rapid obsolescence (Wernerfelt, 1984; Eisenhardt and Martin, 2000).

In response, Teece (1986) constructed from an evolutionary economics perspective the dynamic capability view to theoretically address the above strategic management concern. The dynamic capability concept is coined from two words; "dynamic" and "capability". Dynamic refers to the ability to regenerate resources and/or competencies that match with the rapidly changing environment and Capability stresses the degree of adaptation, integration, and reconfiguration of both internal and external firm resources in response to the changing environment (Teece, Pisano and Shuen, 1997 cited in Chien and Tsai, 2012).

Dynamic capabilities are embedded within the firm's processes, practices, systems, and routines and if captured and utilized effectively, can reconfigure existing resources and capabilities into new strategic paths and positions that impact firm performance and competitiveness (Denrell and Powell, 2016; Teece et al., 1997; Eisenhardt and Martin, 2000). The theory of dynamic capabilities has been extensively applied in various empirical studies examining topics such as innovation, mergers and acquisitions, top management decision-making, technological diffusion, strategic alliances, firm survival and growth to determine if it can explain the difference in performance and competitiveness among firms during periods of rapid change (Helfat and Peteraf, 2009; Zott, 2003; Cepeda and Vera, 2007).

Similarly, this study utilised the dynamic capabilities view to provide a theoretical explanation of firm innovativeness among manufacturing firms. In Uganda,

manufacturing firms experience intense competition at local, regional and global level coupled with increased regulation, and ever-changing customer tastes and preferences. Such environmental dynamics are reported to threaten the survival, growth and long-term success of the Ugandan manufacturing sector despite their recognized role in the country's economic growth journey (Babirye et al., 2014; MFPED, 2012; Buyinza, 2011). As suggested by Teece (1986) and Teece et al (1997) in the dynamic capability theory, manufacturing firms in Uganda ought to become more innovative in their products, processes, markets, strategies and business systems if they are to cope and survive in the turbulent globalized environment (Wang and Ahmed, 2004).

From the foregoing theoretical review, it is observed that the stakeholder theory, organisational learning theory, and dynamic capability theory explain the inter-link between organisational learning, firm innovativeness and sustainability performance. Despite the strengths of these theories combined, they are silent on bringing to understanding the role played by top management personal characteristics (particularly the CEO values) in influencing the organisational environment where learning, innovation and sustainability performance can thrive (Hambrick, 2007). To fill this gap in theory, the upper echelons theory was introduced to provide a more specific theoretical explanation on how CEO values relate with organisational learning, firm innovativeness and firm sustainability performance.

2.5.4 Upper Echelons Theory

The upper echelons theory holds that the unique experiences, values and personalities of executives can have an effect on the company's strategy, structure and performance outcomes. This is typical under contextual conditions where executives have a great

deal of discretion to consider whatever actions they deem appropriate. Executive discretion may be due to factors such board strong confidence in the executive team, a weak supervisory board, ambiguities in strategy decision alternatives, and limited decision-making time. Faced with such situations, it is common that executives will act on the basis of their personalized interpretation without necessarily depending on the company's decision-making structures, policies and norms (Hambrick, 2007).

The theory is rooted in the strategic management field and was originally inspired by the research works of Hambrick and Mason (1984) although it has been refined and extended by different scholars over the years (Hambrick, 1994, 1995, 2007). In essence, the theory suggests that organisational life is somewhat a reflection of top managers' demographic characteristics. These characteristics greatly influence executive managers' cognitive interpretation of situations and in turn affect the strategic choices they make regarding company strategy, policies, structures, culture, leadership, among other organisational processes and outcomes (Nuwagaba et al., 2018).

Connected to March and Simon (1958) bounded rationality view, the upper echelons theory observes that executive managers have limited access to complete information and therefore in face of complex situations, they rely on their unique experiences, values and personalities to analyse, interpret and take actions; which actions gradually impact the overall functioning of the organisation. This argument denotes that the personal biases and dispositions of executive managers greatly influence organisational priorities at times (Hambrick, 2007).

Hambrick and Mason (1984) emphasize the collective examination of top management team demographic characteristics effect on company strategy and

performance rather than consider each as an independent member of the executive. Such a view is premised on the belief that executive managers acting as a group or team have a stronger effect on organisational strategy and outcomes than when acting as individuals. This shared leadership behaviour is commonly observed during collective strategic decision making where all executive members contribute towards finding practical solutions to diverse firm strategic challenges.

Years later, Hambrick (1994, 1995) stressed the unique role played by CEOs as members of the executive team. The author observes that a CEO is not only the overall leader of the organisation but also the leader of the entire executive team and therefore can solely influence the behaviour of other executive members in strategy decision making. This implies that the strategic choices the firm opts for may not necessarily reflect the thoughts of the entire executive team but rather the independent personal views of the dominant CEO as may be stimulated by his or her experiences, values or personality (Scott, 1995; Peterson et al., 2003; Ling et al., 2008; Minichilli et al., 2010; Buyl et al., 2010; Simsek et al., 2005).

Several studies continue to draw on the upper echelons theory to examine the effect of various top management personalities and experiences on various organisational processes and outcomes (Nuwagaba et al., 2018; Buyl et al., 2010; Waldman et al., 2006; Hambrick, 1995). However, few of such studies have examined specifically the characteristic of top managements' personal values (particularly CEO values) in influencing company strategy and performance outcomes. In providing reason for the scholars' neglect of personal values in prior upper echelons empirical studies, Hambrick (2007) indicates the difficult in accessing valid cognitive psychometric measures of top management psychological and social profiles in the strategic management field. Nonetheless, social psychologists have over the years developed

psychometric measures of various human cognitions including values (Schwartz, 1992, 1994, 2012, 2005). Therefore, upper echelons researchers can now borrow from social psychology to examine with validity the effect of executive personal values on various company processes and outcomes (Berson et al., 2008; Aktas et al., 2011).

In summary, four theories are put together in this thesis to provide a comprehensive understanding of sustainability performance and its predictor variables within the Uganda manufacturing sector that is characterized with rapid environmental changes threatening its long-term success. The integration of theories enabled the researcher to overcome the limitations associated with each of the theory used.

Table 2.1: Summary of Theoretical Review

Theory and Author	Construct (s)	Assumption (s)	Strength (s)	Limitation (s)
Stakeholder Theory Edward Freeman (1984)	Firm Sustainability Performance	-A firm is a constituency of stakes -Each stakeholder has influence over the firm's success and/or failure -Firms can as well influence the actions of stakeholders - Firms possess sufficient resources to simultaneously respond to all stakeholder needs	-Legitimizes the existence and actions of various stakeholder groups -Confirms that stakeholders have power -Urges firms to develop strategies that address competing stakeholder interests	-Silent on which are the specific needs of the stakeholders -Assumes all firms have sufficient resources to address all stakeholder needs -Silent on how knowledge about changing stakeholder interests can be obtained -Silent on how firms can use their intangible resources to address stakeholders' competing needs simultaneously
Organisational Learning Theory (Argyris & Schon, 1978)	Organisational Learning	-Organisations operate in a changing environment that necessitate continued learning and change	-Fits the firm within a changing turbulent environment through continuous knowledge creation, sharing, utilisation and storage	-Silent on how the acquired knowledge competencies are integrated and configured into innovative outputs
Dynamic Capability Theory (Teece et al., 1997)	Firm Innovativeness	Firms operate in a complex, competitive, uncertain and turbulent market environment	Reconfiguration of existing firm knowledge resources and capabilities to cope with rapid market dynamics	-Dynamic capabilities are unstable processes that are difficult to sustain overtime
Upper Echelon Theory (Hambrick and Mason, 1984)	CEO Values	Top management demographic characteristics shape firm strategy, structure, culture and performance outcomes	Emphasises the influence of top managers' personal experiences, personalities and values in decision making	-Ignores the role of non-top managers and staff in strategy formulation and implementation -Limited in explaining human cognitions-values

Source: Literature review

2.6 Empirical Literature

This section presents the reviewed relevant literature from previous studies in relation to organisational learning, CEO values, firm innovativeness, sustainability performance and the control variables. The major focus is to find out what previous studies have reported about the relationships among the mentioned variables and the knowledge gaps left. The section begins with a review of literature on sustainability performance of manufacturing firms which is the main focus of the current study. This is then followed with empirical literature underpinning the relationships between the variables as stated under the specific objectives. It is upon this review that the hypotheses tested were formulated.

2.6.1 Sustainability Performance of Manufacturing Firms

Unlike in the early years where sustainability development was conceived as a macro-society concern, today the business sector world over is under stakeholder pressure to integrate sustainability performance principles in their strategies and activities (UNCTAD, 2021; Appeltofft, 2016). Particularly, the manufacturing sector has come to the forefront of this sustainability performance challenge (Hong et al., 2019; Salim et al., 2018; Katiyar et al., 2018; Schrettle et al., 2014).

Manufacturing firms particularly in developing countries are blamed for still using out-of-date technologies that are energy intensive and consume significant amount of natural resources, bring to the market environmentally unfriendly products, have failed to integrate green practices into their supply chain as well as subjecting their employees to unsafe conditions (Jacobs et al., 2010; Anstine, 2000). These manufacturing practices are globally condemned to not only accelerate global warming due to natural resources depletion and pollution but also affect the quality of human life within the firm and in the wider society (Wu and Pagell, 2011).

Stakeholders are increasingly demanding owners and/or managers of manufacturing firms to report on the extent to which they are delivering on social welfare as well as environmental protection, notwithstanding the traditional economic objectives (Brown, 2000; DiPiazza and Eccles, 2002). In response to the growing sustainability concerns, manufacturing firms in developed countries have in the last two decades largely embraced this call and adopted sustainability performance management principles in their strategic plans, values, activities and reporting mechanisms (Vachon and Klassen, 2008; Fujii et al., 2013; Wagner, 2007; Paulraj, 2011; Law and Gunasekaran, 2012; Amrina and Yusof, 2011).

Perhaps, the above positive social and environmental management practices adopted in developed economies could be attributed to the solid laws, policies and regulatory pressure observed in such economies (Porter, 1991; Porter and Linde, 1995). Contrary, some of the manufacturing firms in developing economic settings have not fully embraced stakeholder social and environmental sustainability concerns in their strategic plans, values and activities as it is with shareholder economic concerns (Vihari et al., 2018; Zailani et al., 2012; Smith, 2012).

In the Ugandan context, the manufacturing sector is recognized as the second largest contributor to the country's Gross Domestic Product (GDP) after the services sector (UMA, 2019; World Bank, 2012; MFEPD, 2012). By economic comparison, Uganda's GDP is ranked 93 among the major global economies, 13 on the African continent, and 3rd in the East African region (World Economic Outlook, 2022). In 2006, the manufacturing sector contributed up to 8.4% to the country's GDP. This tremendously increased to 21% in 2019 (UMA, 2019), and recently the contribution is estimated at about 26.7% (MoFPED, 2022). About 31 per cent of the total labour-force earn a living from the manufacturing sector (UBOS, 2018). Amidst such

economic benefits, medium and large manufacturing firms in Uganda are reported to be a great danger to social welfare and environmental protection. This is witnessed by excessive untreated emissions in the air, poor waste management, use of environmentally unfriendly product packages, excessive use of natural resources as raw materials as well as subjecting employees to unsafe working conditions (NEMA Annual Corporate Report, 2018; KCCA, 2018; MGLSD, 2017). Consequently, such practices have affected the country's climatic conditions paving way to unexpected heavy rains, prolonged drought periods, reduction of water levels and drying of wetlands.

Research and industry experience have shown that management failure to embed sustainability performance concerns in their strategies and operations is likely to affect the firm's long-term relationship with its employees, customers, suppliers, creditors, regulators and the general community on whom the firms depend for inputs, market, protection, reputation, continuity and growth (Besley and Ghatak, 2007; Funk, 2003; Faber et al., 2005). Thus, managers of medium and large manufacturing firms need to regard social and environmental sustainability issues as part of the firm's voluntary responsibility beyond being a regulatory requirement (Salim et al., 2018; Lyon and Maxwell, 2008; Lavanya and Anbalagan, 2012).

Classical scholars watered-down the social and environmental voluntary responsibility of business enterprises with the belief that businesses are created to solely make profits and therefore diverting into social and environmental management objectives would simply increase costs which in turn reduce the firm's profits (Milne and Gray, 2013; Savitz and Weber, 2006). In response, several scholars have questioned the relevance of this kind of thinking in the contemporary business environment and guided that social and environmental concerns are an inevitable

priority in business today. Therefore, neglecting such concerns may give a false impression of short-term profits but the firm's legitimacy and subsequent continuity is most likely to suffer in the long-run (Salim et al., 2018; Porter and Kramer, 2006; Vogel, 2005; Marcus and Fremeth, 2009; Baron, 2009; Falck and Heblich, 2007).

Thus, it is vital for manufacturing firms in developing economies to revise their current performance frameworks and integrate sustainability values into their strategies and activities in order to guarantee firm-stakeholder cooperation in the global competitive arena (Salim et al., 2018; Amrina and Yusof, 2011). Despite this call, there is scarcity of local empirical literature that has explored the strategies that could be adopted and implemented to achieve sustainability performance of medium and large manufacturing firms in the African setting. This thesis sought to contribute to this gap in empirical literature by testing the inter-relationships between and among organisational learning, firm innovativeness, CEO values and sustainability performance of medium and large manufacturing firms in Uganda.

2.6.2 Organisational learning and sustainability performance

Organisational learning involves a dynamic process of creation, acquisition, and integration of knowledge aimed at the development of resources and capabilities that contribute to better organisational performance (Lopez et al., 2005; Nevis et al., 1995). This description underlines the major difference between the concept of organisational learning and a learning organisation despite the terminologies being used interchangeably. The former is viewed as a process describing a set of activities through which organisations learn while the latter prescribes a form of organisation (Tsang, 1997).

In the fast-changing knowledge-intensive and volatile environment, organisations need to adopt strategies that enhance continuous learning among workers in order to remain competitive (Nonaka et al., 2000; Easterby-Smith and Lyles, 2011). This is because knowledge as an organisational resource is embedded within human resources. Thus, organisations need to motivate their human resources to develop a sense of empowerment that allows them to continuously explore and exploit learning opportunities (Bryson et al., 2006; Levinthal and March, 1993).

Organisational learning is presumed to take place at three levels, namely; 1) individual level, 2) group level, and 3) organisational level. At the individual level, employees intuitively depend on their past experiences, thoughts and images to form new mental models or ways of thinking. This is believed to lay a foundation upon which new knowledge is created. The new insights are then shared at group level through on-going communication and interactions. Gradually, the new insights become integrated into interactive systems and collective cognitive maps. If the new knowledge proves to be valuable to the organisation, it is more likely that management will institutionalize this knowledge at organisational level and ensure that it is freely accessible to all employees in form of policies, standard operating rules, procedures, manuals and routines (Crossan et al., 1999; Berends and Lammers, 2011). This affirms that employees act as agents in the organisational learning process, and therefore every organisation should motivate her employees to continuously learn and enhance performance (Argyris and Schon, 1978).

Consistent with the resource-based view; organisational learning facilitates the development of heterogeneous knowledge resources and capabilities necessary for the organisation to compete and survive longer in a fast-changing knowledge-intensive and volatile environment (Wernerfelt, 1984; Marsick, 2009; Dirani, 2009). Findings

from previous studies carried out in different contexts provide evidence on the imperative value of organisational learning. In Europe, studies by Lopez et al (2005), Hernaus and Vlado Dimovski (2008), and Santos-Vijande et al (2012) attest that organisational learning plays an important role in influencing the firm's innovation ability, competitiveness, financial performance and market orientation. In Asia, studies by Jain and Moreno (2015), Khandekar and Sharma (2006), Jashapara (2003), Hung et al (2011) Akhtar et al (2011), Rose et al (2009) and Panayides (2007) documented the positive impact of organisational learning on knowledge management practices, performance, culture, competition, commitment, job satisfaction, work performance, relationship orientation and logistic service effectiveness.

In the USA, Baker and Sinkular (1999) reported organisational learning to improve market orientation and innovation performance. In a study conducted in Australia, Murray (2003) found out that organisational learning improved employee competencies which in turn increased firm performance. In the Africa setting, an extensive review of literature revealed one study conducted in Ghana where Mohmoud and Yusif (2012) reported that organisational learning strengthened market orientation and performance of nonprofit organisations. Such empirical findings endorse the importance of learning as a precursor to business success in a rapidly changing environment.

In the wake of the sustainability discourse, company managers are searching for alternative strategies that could be adopted and implemented to attain sustainability performance. Prior studies highlight the importance of accountability, financial independence, social connectedness, intellectual capital, innovation, knowledge management and HRM practices as important predictors of organisational sustainability (Unerman and O'Dwyer, 2010; Chikoto and Neely, 2013; Moldavanova

and Goerdel, 2017; Massaro et al., 2018; Kowuttiphong and Fongsuwan, 2019; Gloet, 2006). However, there is scarcity of empirical literature that has examined the association between organisational learning and sustainability performance.

For instance, studies conducted in the USA by Pourdehnad and Smith (2012) and Epinosa and Porter (2011) support the view that learning and adaptation improves sustainability performance in the supermarket industry as well as increase air travel safety in the Commercial Aviation industry. In the United Kingdom, Opuku and Fortune (2011) and Mitleton-Kelly (2011) studies suggest that construction firms and NHS hospitals that engage in organisational learning delivered sustainable results. Similarly, Kowuttiphong and Fongsuwan (2019) reported a positive association between the learning and sustainability performance in Thailand Ceramic industry enterprises. Kiewiet and Vos (2007) study in a large multinational consulting firm of engineers in Netherlands and Vihari et al (2018) study among pharmaceutical companies in India produced similar findings.

The researcher in this thesis observes that while the dimensions and measures of organisational sustainability performance as a dependent variable principally have remained uniform across theoretical and empirical studies, there are substantial differences and inconsistencies in the dimensions and measures used to examine the organisational learning construct as the main predictor variable. For instance, Vihari et al (2018) examined organisational learning using a three-dimensional framework of; social learning, market learning and technological learning. Smith (2012) considered Argyris and Schon (1978) two-dimensional framework of single and double loop learning while Pourdehnad and Smith (2012) treated organisational learning as a function of detection, estimation, choice, identification, action and evaluation.

The dimensions examining organisational learning as a process have largely been ignored in existing empirical literature connecting organisational learning to sustainability performance. Besides, studies examining the contribution of organisational learning towards organisational sustainability have largely been conducted in developed economies and less in the developing economic context (Smith, 2012), with the exception of Vihari et al (2018) study in India. Particularly, little is known about this phenomenon on the African landscape.

Accordingly, there is need to increase researchers understanding on how organisational learning as a process takes place within an organisation and how such a process relates with firm sustainability performance. To address this gap in literature, the current study draws on the strategy and management science theoretical perspective to examine organisational learning as a process of knowledge acquisition, distribution, interpretation and storage (Huber, 1991; Lopez et al., 2005; Hernaus and Vlado Dimovski, 2008; Nevis et al., 1995) and its relationship with firm sustainability performance in the Uganda manufacturing sector.

Organisational learning as a process enables manufacturing firms to understand and respond to uncertainties associated with the changing stakeholder ecological, social and economic needs (Kewiet and Vos, 2007; Siebenhuner and Anold, 2007). Through learning, organisational members collectively understand and appreciate the value of engaging in sustainability-oriented practices. This paradigm shift in turn facilitates the smooth operationalization of sustainability performance related values in the day-to-day business activities (Senge Carstedt, and Porter, 2001; Vihari et al, 2018).

In the absence of a collective learning culture, firms are more likely to carry on with the old work practices, assumptions, policies, values, strategies and goals which may

not necessarily match their ever-changing stakeholders' needs, hence jeopardizing their legitimacy and long-term survival (Jain and Moreno, 2015; Garvin, 2000; Vihari et al., 2018; Opuku and Fortune, 2011). Deriving from the above literature, it can be argued that organisational learning is a precursor to attaining sustainability performance among manufacturing firms in Uganda. Hence, the researcher set a null hypothesis that;

H_{01}: *Organisational learning has no significant effect on sustainability performance*

2.6.3 Firm innovativeness and sustainability performance

Today, various stakeholder groups are mounting great pressure on all kinds of firms including manufacturing firms to adopt strategies that embrace sustainability management in their operations. This increased pressure surfaces as a result of the reported damage manufacturing firms are inflicting on people and the planet as they pursue their profit interests (UNCTAD, 2021; NEMA Annual Corporate 2018; Schrettle, 2013). Documented evidence continues to show that manufacturing firms engage in practices that put peoples' life at risk, use production technologies that consume a lot of natural resources, deliver environmentally unfriendly products to the market as well as have poor pollution and waste management infrastructure. These manufacturing processes are contributing heavily to natural resources depletion, pollution and global warming which factors are affecting the quality of life for both the present generation as well as the future generations to come (NEMA Annual Corporate, 2018).

From the TBL perspective, manufacturing firms therefore need to revise their current performance management frameworks and adopt frameworks that foster the balancing of shareholder economic (profit) needs together with other stakeholder social and

environmental needs if they are to attain stakeholder legitimacy (Schrettle, 2013; Wu and Pagell, 2011; Persaud, 2014). Taking a dynamic capabilities perspective, researchers demonstrate that innovation as a capability can ably improve the firm's sustainability performance level. Through innovative practices, firms are able to re-think and modify existing products, processes, systems, technologies, strategies and marketing approaches towards becoming more socially and environmentally responsive (Globocnik et al., 2019; Persaud, 2014). Sustainability innovation may take form of either incremental improvements or radical changes in product design, use of energy saving production methods, reduction in pollution and waste recycling infrastructure (Vanclay, 2004). Moreover, Mitleton-Kelly (2011) observes that innovative capabilities facilitate firms to co-evolve, adapt and sustain their operations within a complex environment.

From the practitioners' perspective, there could be fear that the investment in sustainability related innovation could compromise the primary economic objectives of the firm. However, several studies have documented evidence supporting the positive influence of innovation not only on social and environmental benefits but economic benefits as well. For instance, a study by Persaud (2014) among healthcare organisations in Canada reveals that organisations that institutionalize a dynamic learning culture indirectly promote innovation capability which in turn enhances social, economic and environmental sustainability.

Similarly, Pedersen et al (2018) in their study conducted within the fashion industry in Sweden concluded that companies with innovative business models possess resources and capabilities which facilitate the adoption of proactive corporate sustainability strategies. Globocnik et al (2019) also emphasise innovation to improve the three triple bottom line dimensions of sustainability among the selected Australian firms.

Such literature highlights that the path to attaining firm sustainability performance in today's volatile environment is complex but through innovation, firms can align existing competences, strategies, products, processes, technologies, and systems to meet the demands of the various stakeholder groups.

In light of the reviewed empirical literature, it is noticeable that firm innovativeness is a precursor to firms' engagement in sustainability activities (Vihari and Rao, 2017). Thus, manufacturing firms working towards achieving sustainability performance need to invest heavily in research and development in order to build knowledge resources that will steer continuous transformations in product or service design, process efficiency, systems and technological improvements that address not only the social and environmental needs of stakeholders but also serve the economic interests of the minority shareholders (Schrettle, 2013). Based on this view, the researcher set a null hypothesis that;

H_{02}: *Firm innovativeness has no significant effect on sustainability performance*

2.6.4 CEO values and firm sustainability performance

Drawing on the upper echelons' literature, business firms in the contemporary society could become more sustainably-oriented in their strategies and operations with the support of executive leaders whose personal values are inclined towards improving the social and environmental well-being of other stakeholders, besides their conventional economic objectives (Hambrick and Mason, 1984; Connor et al., 1993). Personal values act as guides in one's life and greatly influence an individual's attitude, ideology and social behaviour (Rokeach, 1973). Schwartz (1992) in his theory of basic human values identifies 10 lower-order value types which he later

aggregated into 4 higher-order values; openness to change, conservation, self-transcendence and self-enhancement.

In the business management context, the above personal values are reported to influence; what managers prioritize as of critical importance and hence allocation of scarce company resources, how they analyse and interpret the consequences of their business actions on people and the community, as well as the strategic alternatives to consider in addressing the prevailing situations (Bhattacharyya, 2016). Numerous studies attest to the fact that personal values are related to various organisational processes and outcomes. For instance, Fritzsche and Oz (2007) found a positive association between altruistic values and ethical behaviour and a negative association between self-enhancement values and ethical behaviour among managers and professionals.

Brief et al. (1996) found a positive but low correlation between self-interest and propensity to engage in fraudulent financial reporting. Wright, Cullinan, and Bline (1997) found a negative correlation between personal and moral values and moral intensity. In the same vein, Bhattacharyya (2016) and Ng and Burke (2010) suggest that a positive link between personal values and social and environmental sustainability, although this observation seem to receive limited empirical scrutiny at top management level, particularly concerning the CEO.

Thus, the personal values of a company CEO play an important role in influencing the company's strategic choices and actions that shape a work environment where members collectively acknowledge, understand and appreciate the strategic importance of engaging in sustainability-oriented business practices (Hambrick and Mason, 1984; Ng and Burke, 2010). This is attributed to the fact that a CEO is not just

the leader of the top management team but also the overall leader of the company. Thus, CEOs act as a role model; whom most of the lower-level managers and employees look up-to for guidance and mentorship (Hambrick, 2007). Like Lord and Brown (2001) observed, the personal values of executive leaders (particularly the CEO) serve as a strong regulatory guide upon which other organisational members rely to intrinsically gain the motivations, sentiments and cognitive acceptance to support the company's sustainability management initiatives.

Findings of prior studies provide empirical evidence that executive leaders (where the CEO is part) whose personal values are geared towards openness to change and are concerned about the well-being of others (self-transcendence) are more likely to support organisational policies, strategies and programmes that ensure social justice and environmental protection compared to executive leaders whose personal values are geared more towards conservation and self-enhancement (Fukukawa, Shafer, and Lee 2007; Papagiannakis and Lioukas, 2012; Davidov et al., 2008; Schultz, 2001; Stern et al., 1995). The former have a strong belief that business operations should ethically benefit all the affected stakeholders while the latter strongly believe that business firms are created solely to maximize profits through controlling costs and therefore engaging in social and environmental concerns amounts to diverting scarce company resources to non-core objectives. Thus, CEOs who hold such values are less likely to endorse initiatives that promote adherence to social and environmental standards. Drawing on the reviewed empirical literature, a null hypothesis was set that:

H_{03}: *CEO openness-to-change and self-transcendence values have no significant effect on firm sustainability performance*

2.6.5 Organisational learning and firm innovativeness

Firm innovativeness as an organisational capability involves generating, accepting and implementing new ideas and ways of doing things that improves current products, structures, processes, strategies, marketing and competencies (Christensen, 2006; OECD, 2005; Calantone et al., 2002). The innovation process involves the acquisition, dissemination, and use of new knowledge to create something of value. Firms with higher innovation capability respond to external environmental challenges faster and better than those firms with low or no innovation capabilities.

The strategic importance of firm innovativeness has been strongly emphasised by Christensen (1997) with a focus on the manufacturing sector where the author uses the term disruptive innovation capability to advance the view that successful firms carry out innovations by identifying and responding to customer needs as well as reacting to competitor strategies. Through innovativeness, firms adjust their strategies, structure, processes, products and human resource capacity to fit within the dynamics of the market environment, and hence gain long-term success (Lawson and Samson, 2001; Wang and Ahmed, 2004; Chell, 2000; Cope, 2003; Mafabi et al., 2012).

Drawing on the dynamic capability's perspective; organisational learning is understood to enhance firm innovativeness (Barney, 1991; Pisano, 1997; Teese et al., 1997). Organisations committed to learning are able to access and exploit knowledge resources from both the internal and external environment relevant to improve processes, products, structures, competences and technology (Baker and Sinkula, 2002; Balkin et al., 2000). The continued interaction with the environment generates information relevant to understanding changing market needs, technological breakthrough, competitor actions and public expectations. Organisations use this knowledge to facilitate the development of new or improvements in existing products

or services, strategies, markets, systems and processes that meet customer value (Damanpour, 1991; Gatignon and Xuereb, 1997; Cahill, 1996; Urban and Hauser, 1993; Calantone et al., 2002). Thus, organisational learning acts as a process through which new ideas are obtained, shared and configured into innovations.

Empirical studies conducted in various contexts provide evidence that support the above theoretical link. For instance, Dell'era and Verganti (2009) assert that the interaction with designers from different nations enabled the sharing of several approaches and work methods (knowledge resources) which in turn increased Italian furniture companies' capability to innovate and propose creative solutions. Similarly, Calantone et al (2002) study among a broad spectrum of US firms recognizes learning orientation as an important antecedent of firm innovativeness. In addition, Hsiao and Chang (2011) and Lee, Tan and Chiu (2008) affirm organisational learning to positively influence innovation within post-secondary schools and high-tech firms in Taiwan. In Canada, Persaud (2014) study shows that healthcare organisations that cultivate a culture of learning profited from innovative processes, products and services.

A critical review of existing empirical literature connecting organisational learning to innovation reveals three major gaps; firstly, scholars explored the predictor construct of organisational learning either as a capability or an outcome and less as a process (Jyothibabu et al., 2010; Hsiao and Chang, 2011; Chiva et al., 2010). Secondly, some scholars consider innovation as an integral component of learning (Mahat et al., 2018; Engestrom, 1999) yet other scholars suggest innovation to be an outcome of learning (Lundavall, 2010; Calantone et al., 2002). Thirdly, empirical studies investigating the association between organisational learning and innovation are mainly conducted in developed economies, with a few in Asia and little is known from the African setting.

The current study therefore contributes to existing innovation literature by examining organisational learning as a single construct and how it is associated with firm innovativeness (as an outcome variable) in the Uganda manufacturing sector. Manufacturing firms in Uganda are faced with hyper competition and dynamic conditions that necessitate continuous organisational learning and firm innovativeness if they are to remain competitive, attain growth and be sustainable (Babirye et al., 2014; Ecuru et al., 2014). Deriving from this line of argument, the researcher proposed a null hypothesis that;

H_{04}: *Organisational learning has no significant effect on firm innovativeness*

2.6.6 CEO values and firm innovativeness

The dynamics of today's environment pose a potential threat to the survival, growth and competitiveness of all kinds of business organisations. To cope and adapt to such environmental dynamics, researchers and industry managers concur that firms need to become more innovative (Carmona, 2022; Jaakson et al., 2019). Firm innovativeness as an outcome concerns the firm's effort to successfully introduce and implement new products, new processes, new marketing, new strategies and new organisational methods (Golgeci and Ponomarov 2015; Wang and Ahmed, 2004). Firm innovativeness can be both radical and/or incremental; where the former involves completely coming up with new changes while the latter seeks to make improvements in existing products, processes, markets, strategies and business systems. Innovation as a dynamic capability enables firms to build, integrate and reconfigure existing resources to respond to changes in the competitive market place (Weick and Jain, 2014; Teece et al., 1997). Thus, innovative firms are better positioned to respond to environmental uncertainties through continuous change.

To increase firm innovativeness, previous studies suggest various approaches; for instance, Chang et al (2013) advance the view that absorption capacity influenced by flexibility-oriented HRM systems positively associate with firm innovativeness among high-technology firms in China. Similarly, Riivari and Lamsa (2014) report a positive association between organisational ethical culture and the different dimensions of firm innovativeness among both public and private firms in Finland. Lundvall and Nielsen (2007) post that knowledge management is linked with firm innovation among private sector firms in Dutch while Mafabi et al (2012) report similar results in the Uganda parastatal entities. Sanchez de Pablo Gonzalez Del Campo and Škerlavaj (2011) in their study among selected firms in Spain report organisational learning process to positively enhance firm innovativeness. Additionally, Uzkurt et al. (2012) found market demand and technological turbulence as environmental uncertainty dimensions to positively affect firm innovativeness among Small and Medium Enterprises (SMEs) in Turkey.

Drawing on strategic leadership literature, the current study suggested that CEO values positively relate with firm innovativeness (Berson et al., 2008; Lefebvre and Lefebvre, 1992; Hambrick and Mason, 1984). CEOs are human beings who possess certain personal values just like other human beings. Accordingly, CEOs being the leader of the top management team it is likely that their personal values indirectly influence the nature and direction of the strategic choices adopted in an organisational setting (Berson et al., 2008). Essentially, CEO values may either support or limit the prevalence of an innovative organisational culture.

Reflecting on Schwartz human values system, it can be inferred that CEOs who score high on the value openness to change and self-transcendence are more likely to

promote a work culture where autonomy, risk taking, tolerance of mistakes, flexibility, attention, dialogue, inquiry, support and cooperation become part of the acceptable institutional norms and routines (Scott and Bruce, 1994; Chiva et al., 2010; Wilson and Holton, 2003; Berson et al., 2008). Such personal attributes intrinsically drive CEOs to model creative and innovative work behaviour among organisational members, pay greater attention to innovative opportunities and reward behaviours that support firm innovativeness (Miron et al., 2004). In this regard, CEOs create and maintain an innovation culture that supports creativity, entrepreneurship and a general openness to new ideas.

Consistent with the aforementioned literature, it is suggested that CEO value of openness to change and self-transcendence are likely to positively associate with firm innovativeness. Thus, the researcher proposed a null hypothesis that: -

H_{05}*: *CEO openness-to-change and self-transcendence values have no significant effect on firm innovativeness

2.6.7 Mediating effect of firm innovativeness on the relationship between Organisational Learning and Sustainability Performance

Previous empirical studies have examined the direct effect of organisational learning on sustainability performance in various contexts (Vihari et al., 2018; Eve Mitleton-Kelly, 2011; Opuku and Fortune, 2011). These studies are credited to have fundamentally laid a foundation upon which scholars depend to suggest that organisational learning has an essential influence on firm sustainability performance. However, a critical analysis of their findings reveals significant differences in the strength of this influence, ranging from strong, moderate to weak. Perhaps, the variations in results could be explained by the inconsistencies in the dimensions used

to measure the concept of organisational learning as the main predictor variable as well as the uniqueness in the contexts where such studies were conducted (Zgrzywa-Ziemak, 2015). Thus, the inconclusive results observed in prior studies create room for future researchers to further explore the effect of organisational learning on sustainability performance, in the presence of other organisational factors that could reinforce this relationship (Smith, 2012; Vihari et al., 2018; Hayes, 2018).

Theoretically, the dynamic capability theory supports innovation to improve firm performance, and several past studies have used the construct of innovation as a mediator in various relationships. For example, Mafabi et al (2012) in their study of parastatals in Uganda established that organisational innovation fully mediates the relationship between knowledge management and organisational resilience. Similarly, Zehir et al (2015) in their study among SMEs in Turkey found out that innovation capacity has a partial mediator effect on market orientation dimensions and export performance. Lopez et al (2005) found out that organisational learning influences financial performance indirectly through innovation and competitiveness. In the same vein, Jimenez et al (2008) reported that the impact of market orientation and organisational learning on performance is completely mediated by innovation. Calantone et al (2002) conceptual framework mirrors that learning orientation affects firm performance more through firm innovativeness although the authors did not go further to test this conceptual preposition in their analysis.

Despite several research works supporting the mediating role of firm innovativeness, little is known about the role of firm innovativeness in the relationship between organisational learning as a process variable and firm sustainability performance. In this study, the researcher suggests that the effect of organisational learning on firm sustainability performance could be transmitted through firm innovativeness. This

argument is rooted in the literature that shows that organisational learning as a process only generates and shares knowledge competencies among organisational members, but it is very possible that the knowledge may not actually be converted into something meaningful and acceptable to the organisation and her various stakeholders (Calantone et al., 2002; Lee et al., 2008; Nonaka, 1994; Lam, 1998). Thus, such learning remains worthless to the organisation and easily perishes. Learning that is meaningful and acceptable in the organisation must translate into something of value (innovation) which eventually shapes the firm's sustainability performance.

Ideally, organisational learning should result into the development of knowledge competencies that facilitate new developments in processes, systems and product or service (Cohen and Levinthal, 1990). Such changes are likely to strengthen firm economic, social and environmental performance (Globocnik, 2019; Persaud, 2014). Without innovation as a dynamic capability, organisational learning per se might not have a stronger effect on sustainability performance. In light of the reviewed literature, the researcher noted that the effect of organisational learning on sustainability performance could be transmitted through firm innovativeness. Hence, a null hypothesis was set that;

H06: *Firm innovativeness has no significant mediating effect on the relationship between organisational learning and sustainability performance*

2.6.8 Moderating effect of CEO values on the relationship between organisational learning and firm innovativeness

As earlier discussed, existing literature highlights the direct link between organisational learning and firm innovativeness (Jimenez-Jimenez and Sanz-Valle, 2011; Calantone et al., 2002; Hsiao and Chang, 2011; Hurley and Hult, 1998). This

affirms that innovative organisations exert great effort in the creation of a learning environment that allows members to freely explore and exploit learning opportunities. Thus, an organisation committed to learning is more likely to continuously obtain information from both the internal and external environment regarding the changing stakeholder needs, which information is utilised to improve her products or services, processes, systems, technology, competences and structure (Nawaz and Koc, 2018; Levinsohn, 2013). With the exception of Calantone et al (2002) and Lukas et al. (1996) who highlighted the moderating role of organisational age, many other researchers seem to have assumed that organisational learning and firm innovativeness operate in a vacuum with no other contextual influencing variables.

Nonetheless, it is quite important to note that both internal and external contextual factors play a considerable role in enhancing or limiting certain organisational processes and outcomes to take place (Aktas et al., 2011). In the current study, the researcher bases on Schein's (1992), Kerr and Slocum's (2005) and Agle et al's (1991) argument to suggest that the personal characteristics of top leadership (particularly CEO values) play a pivot role in creating a dynamic organisational learning culture that affects the firm's level of innovativeness. CEO values as earlier described using Schwartz (1992) short survey value system act as filters or guiding principles that could influence CEO's desire for learning and innovation at the workplace (Berson et al., 2008). Accordingly, CEOs' values have a substantial influence on how they analyse, process, interpret and perceive organisational strategic alternatives related to learning and innovation.

Specifically, CEOs values geared towards openness to change are more likely to foster a learning climate where individual members and groups feel motivated to search for new and better ways of doing business (Berson et al., 2008). In such a

learning environment, individual employees make their own choices on free thought and knowledge. There is great appreciation for creativity, risk taking behaviour and entrepreneurial orientation enhanced through the use of intrinsic rewards (Ireland, Hitt and Sirmon, 2003; Van Dijk and Kluger, 2004). Within this kind of work environment, CEOs are more likely to allow employees to use company time to adventure into new areas outside their designated scope of work for purpose of learning. The new knowledge gained from this process is likely to facilitate improvements or even radical changes in existing products, processes, systems, marketing and strategies (Slater and Narver, 1994; Calantone et al., 2002; Hsiao et al., 2009).

On the other hand, CEOs who score high on the value of self-transcendence are more likely to show great concern for the welfare of those whom they frequently get into contact (Schwartz, 2005). Within an organisational context, these would include but not limited to; employees, customers, suppliers, industry regulators, government agencies, shareholders and the wider local communities. Therefore, CEOs whose values are geared towards self-transcendence are more likely to create a warm work environment that is characterized by trust, safety and an encouraging, supportive and collaborative atmosphere (Berson et al., 2008). Such CEO values are indirectly behind the creation and preservation of a work culture that shows great appreciation and promotion of fairness and open interactions among employees as well as with management (O'Reilly, Chatman and Caldwell, 1991; Schwartz, 2005). Through this form of treatment, it is likely that organisational members develop a strong sense of attachment to their top managers (particularly the CEO) which in turn commits them to engage in learning activities that seek to cause changes in company products, processes and systems relevant to enhance firm competitiveness, survival and growth

(Senge et al., 2001; Persaud, 2014; Nonaka, 1994). Reflecting on the above reviewed literature, a null hypothesis was set that;

H_{07}: *CEO openness-to-change and self-transcendence values have no significant moderating effect on the relationship between organisational learning and firm innovativeness*

2.6.9 Moderating effect of CEO values on the relationship between firm innovativeness and sustainability performance

As earlier discussed, existing literature highlights the direct link between firm innovation and sustainability performance (Pedersen et al., 2018; Globocnik et al., 2019). This affirms that innovative organisations exert great effort in creating new products, processes, systems, strategies, competencies and structures that improve their economic, social and environmental performance. Impliedly, innovative organisations are more likely to cope with changing stakeholder demands relative to their counterparts (Nawaz and Koc, 2018; Levinsohn, 2013). However, existing studies that have examined the direct link between innovation and sustainability performance provide inconclusive results, calling for further empirical studies particulary in new contexts to validate results of previous researchers (Bhattacharyya, 2016). Hayes (2018) suggests further studies to consider other third variables that could provide a deeper understanding of the factors that enhance the direct relationship.

Based on literature from the upper echelon, it is proposed that CEO values may influence the level of a firm's innovativeness, which in turn increases sustainability performance (Berson et al., 2008; Lefebvre and Lefebvre, 1992). CEOs are humans with particular personal ideals, just like everyone else. As the leader of the top

management team, CEO values are likely to influence the kind and direction of strategic decisions made in an organization (Berson et al., 2008). Thus, the prevalence of a creative business culture may be aided or hindered by the CEO's personal ideals.

Connected to Schwartz's human values system, CEOs who place a high value on openness to change and self-transcendence are more likely to foster a work environment in which autonomy, risk-taking, tolerance for mistakes, flexibility, attention, dialogue, inquiry, support, and cooperation become accepted institutional norms and routines (Scott and Bruce, 1994; Chiva et al., 2010; Wilson and Holton, 2003; Berson et al., 2008). These personal characteristics inherently motivate CEOs to model creative and innovative work behavior in their employees, pay more attention to innovative chances, and reward behaviors that foster business innovation (Miron et al., 2004). CEOs have a role in this through cultivating and maintaining an innovative culture that encourages creativity, entrepreneurship, and openness to new ideas.

Drawing on the reviewed literature, CEO values of openness-to-change and self-transcendence are likely to moderate the effect of firm innovativeness on sustainability performance. Hence, the researcher in this study posed a null hypothesis that: -

H_{08}: *CEO openness-to-change and self-transcendence values have no significant moderating effect on the relationship between firm innovativeness and sustainability performance*

2.6.10 Moderating effect of CEO values on the relationship between organisational learning and sustainability performance

In order to deeply understand the relationship between organizational learning and firm sustainability performance, the researcher analysed the likely moderating effect

of CEO values on this relationship. Previous studies provide evidence on the possible direct link between organisational learning and sustainability performance (Vihari et al., 2018; Smith, 2012, Persaud, 2014; Opuku and Fortune, 2011). However, a comparative analysis of findings in these studies shows differences in the reported results as some scholars report a strong positive relationship while others report a moderate and weak relationship. This affirms that no conclusive results have been obtained so far regarding the direct relationship and hence a call for researchers to further explore this phenomenon, probably in the presence of other contingent factors to enable scholars and management practitioners to fully understand the contribution of organisational learning in shaping firm sustainability performance (Vihari et al., 2018; Smith, 2012).

From a review of extant literature, only the empirical study by Vihari et al (2018) was identified to have introduced the construct of institutional pressure as moderator variable in the relationship between organisational learning and organisational sustainability and tested this model within selected pharmaceutical companies in India. The findings of this study supported some of the dimensions of institutional pressure (market, regulatory, and competitive) to have a significant moderating effect on the relationship between organisational learning dimensions and the dimensions of organisational sustainability. The study recommends future researchers to consider other internal contextual factors that would shape this relationship for better understanding and insight of the literature.

Reflecting on the upper echelons and basic human values theoretical perspectives, the current study proposed that CEO values could moderate the effect of organisational learning on firm sustainability performance, although this view had received modest attention in existing strategic leadership literature. Existing empirical studies have

investigated the direct effect of CEO values on various organisational processes and outcomes and produced mixed results. For instance, Hoffmann and Meusburger (2017), Jiao et al. (2017), and Berson et al. (2008) indicate that CEO values positively relate with strategy making process, stakeholder-based performance, and organisational culture respectively. However, Agle et al. (1999) hypothesized that CEOs' values would be positively related to corporate financial and social performance although results provided limited support to this hypothesis.

The above inconsistencies in existing empirical results indicate that more research is needed to provide a comprehensive understanding on the type of CEO values that influence company leadership behaviour, strategy, culture and performance. Eisenbeiss, Van Knippenberg and Fahrbach (2015) noted that there is limited research that has examined the intervening links of CEO values in upper echelons studies. Most researchers have treated CEO values as the main predictor variable and less as a moderator variable (intervening process) that could perhaps shape organisational-relationship studies. An extensive review of empirical literature reveals the studies by Tang, Tang, and Cowden (2017), Liden, Fu-Jun and Song (2016) and Aktas et al. (2011) to have examined the moderating role of CEO values and found significant results. In this study, the researcher suggests that equally CEO values moderate the relationship between organisational learning and firm sustainability performance.

The personal values of CEOs indirectly influence how they interpret, perceive and approach the concept of firm sustainability performance especially in the recent times where economic performance is decreasingly being considered as the sole purpose of doing business (Carter and Greer, 2013; Hitlin and Piviavin, 2004). Depending on which side of the value continuum, CEOs may either support or incapacitate learning strategies aimed to improve sustainability performance. Specifically, CEOs whose

value system is geared towards openness to change are reported to place great importance on independent thoughts and show little concern for maintenance of the status quo (Hoffmann and Meusburger, 2017; Kaldschmidt, 2011). Such CEOs are unlikely to be strong proponents of the tradition since they have a strong desire for creativity, exploration, and taking on new challenges (Munene et al., 2005). Because of such value attributes, it is more likely that these CEOs will promote strategies that enhance learning and sustainability within the organisation. They recognize that employees who are at the strategy implementation level may have better views about how efficiently and effectively the company would pursue its strategic priorities and objectives amidst social and environmental demands (Lawson and Samson, 2001).

Thus, the role of top management and in particular the CEO is to stimulate a creative learning environment where members have the freedom to adventure into new knowledge zones and try out new ways of doing things with less fear for failure. This is more possible where the leader of the top management team and the key strategic decision maker (i.e the CEO) is in total support of the policies that promote both formal and informal learning opportunities (Van Dijk and Kluger, 2004). It is likely that through learning, members are able to collectively understand the value of embracing sustainability management practices in modern business organisations and gradually adjust from the conventional economic view to a more sustainable focused performance framework that reinforces simultaneously shareholder economic targets together with the social and environmental needs of other stakeholders (Hoffmann and Meusburger, 2017). In short, literature suggests that CEOs with more pronounced open to change values are likely to promote learning in organisations which in turn enhance sustainability performance.

Additionally, CEOs with a value system geared towards self-transcendence are reported to show great concern for the well-being of others (Hoffmann and Meusburger, 2017; Agle et al., 1999). CEOs who score high on this value preposition are recognized to be more tolerant and less concerned about their social status. Moreover, Agle et al (1999) emphasised that the transcendence value drives CEOs towards promoting a culture of trust, fairness and togetherness at the workplace where there is minimal control and dominance. Turning to the learning and firm sustainability discourse, literature-based evidence shows that the more the CEO is driven by transcendence values; the more he/she is likely to promote learning strategies that enhance social equity and environmental protection (Hoffmann and Meusburger, 2017). Such CEOs will always search and/or promote inclusive ways of doing business ethically and responsibly without harming the well-being of people and the local community (Agle et al., 1999). Deriving from the above literature review, the researcher proposed a null hypothesis that;

H_{09}: *CEO openness-to-change and self-transcendence values have no significant moderating effect on the relationship between organisational learning and sustainability performance*

2.6.11 Moderating effect of CEO values on the indirect relationship between organisational learning and firm sustainable performance via firm innovativeness

Early research streams focused on examining the direct relationship between the independent variable and the dependent variable. However, the inconclusive results produced by such studies paved way to what came to be described as indirect effect studies where the relationship between the independent variable and the dependent variable is transmitted through a third confounding variable. In a situation where the

strength of the relationship between the independent variable and the dependent variable is contingent on the behaviour of a third variable, then moderation is presumed to have taken place (Preacher, Rucker and Hayes, 2007; Hayes, 2013).

Numerous empirical studies have examined moderating effects (Vihari et al., 2018; Jimenez-Jimenez and Sanz-Valle, 2011; Aktas et al., 2011; Berson et al., 2008) as well as mediating effects (Hsiao et al., 2009; Mafabi et al., 2012; Zehir et al, 2015; Lopez et al., 2005) between organisational learning and performance. These studies have produced mixed results. Recent research stream is increasingly showing interest to go beyond testing for simple interaction and/or indirect effects, to exploring the robust combined effect of the moderator-mediator variables between the two main latent variables (Simiyu, Bonuke and Komen, 2020; Han, Yoon, Suh, Li, and Chae, 2019; Meyer, Ohana, and Stinglhamber, 2018).

This phenomenon is described as moderated mediation a concept that was coined by James and Brett (1984) although did not gain much methodological populace at the time. Under such analyses, it is hypothesized that the strength of the mediator variable may depend linearly upon the value of a moderator variable to influence the relationship between the two latent variables (Preacher et al., 2007). In fact, Borau, El Akremi, Elgaaied-Gambier, Hamdi-Kidar and Ranchoux (2015) argue that testing for moderated mediation effect is a more powerful tool that produces robust results although most studies have focused on examining just either the interaction or indirect effects.

To date, empirical scholars continue to embrace models requiring the testing of conditional indirect effects. For example, Han et al. (2019) tested the moderated mediation effect of job characteristics and organisational citizenship behaviour on the

relationship between perceived organisational support and knowledge sharing intention among IT companies in South Korea. Similarly, Meyer et al. (2018) tested the moderated mediation effect of employees' prosocial motivation and psychological contract breach on the relationship between supervisor interpersonal justice and supervisor-directed citizenship behaviour among fresh social enterprises. Also, Wu, Kwan, Yim, Chiu and He (2015) tested the moderated mediation effect of managerial discretion and organisational ethical culture on the relationship between CEO ethical leadership and corporate social responsibility among Chinese local firms. In all these studies, results supported the hypothesized moderated mediation effect.

From an extensive review of firm-level sustainability performance related literature, the researcher found less understanding about studies that have examined conditional indirect effects except Vihari et al.'s (2018) interaction effect study in India. Thus, the researcher proposed in this study that the indirect relationship between organisational learning and sustainability performance via firm innovativeness could vary according to the different levels of CEO values. In other words, the indirect effect of firm innovativeness between organisational learning and sustainability performance would be moderated with varying levels of CEO values (Jimenez-Jimenez and Sanz-Valle, 2011; Globocnik, 2019). Building on this line of argument, a null hypothesis was framed stating that;

H_{010}: *CEO openness-to-change and self-transcendence values do not significantly moderate the indirect relationship between organisational learning and sustainability performance via firm innovativeness*

2.7 Control Variables

The stakeholder theory assumes that all firms have sufficient resources to attain the required level of sustainability performance. However, in the practical business world, not all firms have such resources as theoretically assumed. Therefore, firms that engage in sustainability performance practices bear certain unique characteristics compared to those that do not. This theoretical assumption justified the inclusion of firm characteristics as control variables in this study to be able to identify those firm characteristics that could account for some variation in sustainability performance within the Ugandan manufacturing sector (Becker et al., 2016).

Studies on corporate sustainability revealed five firm characteristics that were controlled for in this study, namely; business type, ownership, origin, age and size. These firm characteristics are reported to cause significant variations in organisational learning, strategic leadership, innovation and sustainability performance (Pedersen et al., 2018; Jackson and Apostolakou, 2010; Sørensen and Stuart, 2000; Laforet, 2008; Damanpour and Schneider, 2006; Lawson and Samson, 2001; Tharenou, Donohue and Cooper, 2007; Ecuru et al., 2014).

Consistent with the research works of Ecuru et al. (2014), manufacturing firms are broadly categorized based on business type; food processing and non-food processing. This categorization facilitates an examination of which particular business type is significantly associated with the variables under study. Firm ownership was conceptualized based on the categorization given by Chow and Chen (2012); state owned, privately owned, partnership, family owned or sole proprietorship. Prior studies indicate that higher level of learning, innovation and sustainability management is associated with both state- and privately-owned business as compared to the other three categories (Vihari et al., 2018; Berson et al., 2008). This is attributed

to the fact that such firms have a slightly stronger resource base with long-term strategic focus.

Origin as a firm characteristic was based on Fujii et al. (2013) argument that foreign owned firms are more willing to continue engaging in sustainability performance initiatives even in their overseas business territories especially in developing countries where the enforcement of social and environmental protection laws is ineffective compared to domestically owned firms that are not exposed to global competitive business practices. Hence, greater learning, innovation and sustainability embeddedness is likely to be more associated with foreign owned firms than domestically owned firms (Porter and Linde, 1995).

Firm age as a control variable was examined in form of number of years the firm has existed in active operation. It is presumed that the longer the firm stays in active operation (described as old firms), the more it learns, gains experience and develops competencies relevant to change or atleast improve its operations more efficiently and sustainably (Sørensen and Stuart, 2000; Javalgi, Griffith and White, 2003; Damanpour, 1992).

Firm size as a control variable adopted in most organisational based studies is examined in terms of production output, sales turnover, sales revenue, employee numbers as well as number of clients served by the firm in a given period of time (Breakwell and Tytherleigh, 2010; OECD, 2005; Klepper and Simons 2000; Mata et al., 1995). Researcher argue that the extent of learning, firm innovativeness and engagement in sustainability management practices varies according to firm size. Literature evidence shows that medium and large size firms engage more in learning,

innovation and sustainability performance activities than small size firms (Pedersen et al., 2018; Jackson and Apostolakou, 2010; Articach et al., 2010).

The above assertion is premised on the view that medium and large firms are more visible in the business landscape, and thus more likely to be in the public limelight for causing social and environmental harm (Bowen, 2002). They are the prime target for public criticism by the various social and environmental activism groups (for instance the media and Non-Governmental Organisations). Due to their strong resource base and economies of scale built over time, medium and large firms are more likely to hire sustainability experts, establish sustainability departments, and develop policies and strategies to support learning and innovations geared towards attaining sustainability performance (McWilliams and Siegel, 2001).

Table 2.2: Summary of key empirical literature and gaps

No	Author (s)	Hypothesis	Theory	Context	Finding	Knowledge Gaps
1	Kowuttiphong & Fongsuwan (2019) Vihari et al (2018), Kiewiet & Vos (2007) Purdehnad & Smith (2012), Opuku & Fortune (2011), Eve Mitleton-Kelly (2011)	Organisational affects sustainability performance (H01)	-Organisational Leaning Theory -Stakeholder Theory	Taiwan India Netherlands USA UK Canada	Organisational learning has a direct effect on firm sustainability performance	-Measured organisational learning as a capability and/or outcome rather than as a process -Inconsistent results ranging from strong to moderate and weak effect -Ignored other contextual factors that could indirectly strengthen the relationship -Little is known in the African setting
2	Globocnik et al (2019) Pedersen et al (2018) Persaud (2014) Mitleton-Kelly (2011)	Firm innovativeness affects sustainability performance (H02)	-Dynamic capability Theory -Stakeholder Theory	Australia Sweden Canada UK	Firm innovativeness positively relates with firm sustainability performance	-Ignored learning as an antecedent of innovation -Inconsistent results ranging from strong to moderate and weak effect -Little is known in the African setting
3	Bhattacharyya (2016) Fukukawa et al (2007), Papagiannakis & Lioukas (2012) Schultz (2001) Stern et al (1995)	CEO values affect firm sustainability performance (H03)	-Upper Echelon Theory -Stakeholder Theory	India USA Greece	CEO values positively associate with sustainability performance	-Less is known about the specific human values that affect firm sustainability performance in the African setting
4	Dell'era & Verganti (2009) Calantone et al (2002) Hsiao & Chang (2011) Lee et al. (2008) Persaud (2014) Jiménez-Jiménez &	Organisational learning affect firm innovativeness (H04)	-Organisational Learning Theory -Dynamic capability Theory	Italy USA Taiwan Canada Spain	Organisational learning is positively associated with firm innovativeness	-Measured organisational learning from an input and output perspective rather than as a process -Inconsistent results ranging from strong to moderate and weak effect -Treated innovation as a process and not as an output

	Sanz-Valle (2011) Engestrom (1999) Mahat et al. (2018)					-Little is known in the African setting
5	Berson et al. (2008) Lefebvre and Lefebvre, 1992 Miron et al. (2004)	CEO values affect firm innovativeness (H05)	-Upper Echelon Theory -Dynamic capability Theory	Israel Canada	CEO self-directed values affect firm innovative culture	-Little is known about the effect of CEO value of openness to change on firm innovativeness in a developing country such as Uganda
6	Mafabi et al (2012) Zehir et al (2015) Lopez et al (2005) Calantone et al (2002)	Mediating effect of firm innovativeness (H06)	-Dynamic capability Theory	Uganda Turkey Spain USA	Supported the mediating effect of innovation in hypothesized models	-Little is known about the mediating effect of firm innovativeness in the relationship between organisational learning and firm sustainability performance
7	Tang et al. (2017) Liden et al (2016) Aktas et al (2011)	Moderating effect of CEO values (H07, H08 and H09)	-Upper Echelon Theory	China Turkey	Supported the moderating effect of CEO values in hypothesized models	Little is known about the moderating effect of CEO values in the relationship between organisational learning, firm innovativeness and sustainability performance
7	Han et al (2019) Meyer et al (2018) Wu et al (2015)	Moderated mediation (H010)	Upper Echelon Theory Dynamic capability	South Korea French China	Supported the hypothesized moderated mediation models	Little is known about the moderated mediation effect of CEO values on the indirect relationship between organisational learning and sustainability performance via firm innovativeness

Source: Literature review

2.8 Conceptual Framework

This study set out to identify and test variables that would increase sustainability performance of medium and large manufacturing firm in Uganda. From a review of extant literature, numerous studies have been conducted in various regions and industrial contexts examining the concept of sustainability performance and its predictor variables. The current study relied mainly on the stakeholder theory (among other related theories) and the literature of Vihari et al (2018), Smith and Purdehnad (2012) and Opuku and Fortune (2011) to hypothesize that organisational learning directly affects firm sustainability performance. Through learning, firms are able to generate knowledge concerning the changing internal and external stakeholders' economic, social and environmental needs. Based on this information, appropriate strategic actions are taken to address varying stakeholder needs. Therefore, manufacturing firms that are able to create and maintain a strong learning culture are better placed to achieve sustainability performance.

In addition, literature shows that organisational learning positively relates with firm innovativeness (Persaud, 2014; Hsiao and Chang, 2011; Calantone et al., 2002). Firms generate new knowledge competencies through learning which knowledge facilitates implementation of changes in products, processes, marketing, strategies and management systems. Hence, organisational learning serves as a process through which new ideas are obtained, shared and transformed into innovations. Literature further reveals that firm innovativeness positively relates with firm sustainability performance (Persaud, 2014; Pedersen et al., 2018; Globocnik et al., 2019; Vanclay, 2004). Innovation as a dynamic capability enables the firm to rethink and modify her products, processes, marketing style, strategies and systems with the aim of becoming

more socially and environmentally friendly. This in turn improves product-market economic performance.

Further still, it is proposed in this study that the relationship between organisational learning and firm sustainability performance would be reinforced through the mediating effect of innovation as well as the moderating effect of CEO values. This proposition is based on the argument that organisational learning is insufficient in explaining variations in firm sustainability performance (Vihari et al., *2018*; Smith, 2012) and that innovation and top management characteristics are critical in shaping this relationship (Mafabi et al., 2012; Zehir et al., 2015; Hambrick, 2007; Aktas et al., 2011). CEO's value of openness to change and self-transcendence as moderators are more likely to strengthen the indirect effect of firm innovativeness between organisational learning and sustainability performance as depicted in Figure 2.1 that follows;

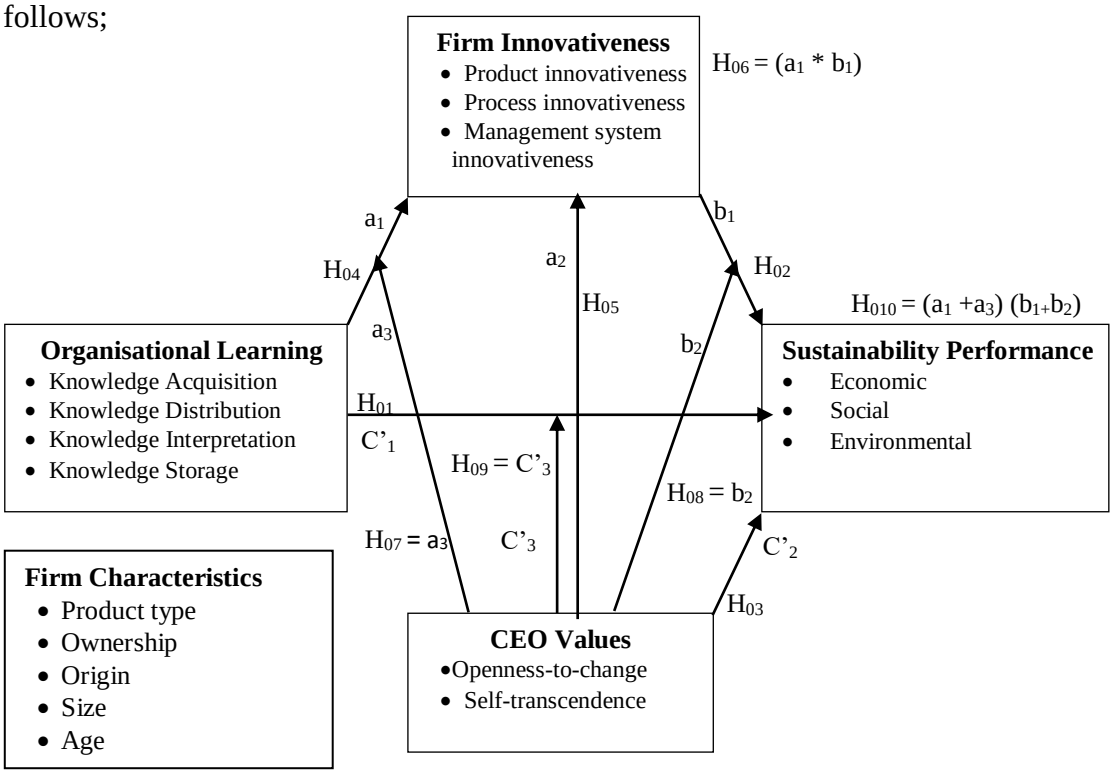


Figure 1: Conceptual framework for the study

Source: Adopted and modified from Hayes's moderated mediation model 59 (Hayes, 2013).

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the methodology that was employed to achieve the research objectives. The chapter highlights the research philosophy, approach, design, study setting, population, sampling procedure, method of data collection, unit of analysis, measurement of variables, control for potential biases and how the collected data was processed, analysed and presented. This is explained in detail as follows;

3.1 Research Philosophy

Philosophy in research concerns a set of beliefs, values, assumptions and practices related to the creation of knowledge and the nature of that knowledge (Saunders, Lewis and Thornhill, 2012). It is generally examined in terms of epistemology and ontology. Epistemology relates to what constitutes valid knowledge about the reality being investigated and how that knowledge can be obtained. On the other hand, ontology concerns what constitutes reality and how its existence can be accurately understood (Kubo and Saka, 2002; Guba and Lincoln, 1994). Literature reveals four major philosophies that underpin scientific inquiry, namely; positivism, realism, constructivism, and critical theory (McNabb, 2007; Sobh and Perry, 2006; Guba and Lincoln, 1994). These philosophies inform the approach, design and strategy to follow in order to generate the most valid data relevant to answering the central research question (Ericksson and Kovalainen, 2015).

This study followed a positivism philosophy. Positivists hold that reality in the social world is concrete, observable and apprehensible. Therefore, its meaning can be identified, recorded, studied and measured objectively using approaches of natural

science to generate law-like generalizations (Babbie, 2012; Sobh and Perry, 2006; Ardalan, 2009; Saunders et al., 2012). Positivists use theories and/or models to explain and predict complex social phenomena from which testable hypotheses are developed (Bhattacherjee, 2012). While conducting the research, the researcher remains an independent observer of an already-existing social reality under investigation (Collins and Hussey, 2009). The idea behind this philosophy is to conduct research which is value-free without any due influence of the researcher or the social actors. The researcher acts as an objective analyst who collects facts associated with the social reality and statistically analyses them in order to produce appropriate results. These results are commonly generalized to other similar situations (Sobh and Perry, 2006; Saunders, et al., 2012).

However, some scholars argue against the use of a purely positivism philosophy in management research (for instance, Kubo and Saka, 2002; Guba and Lincoln, 1994; Hubbard and Armstrong, 1994; Hubbard and Vetter, 1996). In particular, Hubbard and Armstrong (1994) and Hubbard and Vetter (1996) argue that the use of a positivist paradigm limits researchers from obtaining in-depth qualitative data from the social actors (people) when analyzing complex social science phenomena. Tapp (2004) and McKenzie et al. (2002) adds that neglecting the views of the social actors (e.g managers) who may influence the reality under investigation undermines the readership and application of positivist research results in business management practice.

Nonetheless, scholars continue to recognize the positivism philosophy as an appropriate philosophy that underpins management science research (Johnson and Duberly, 2000). Numerous studies (for instance, Globocnik et al., 2019;

Kowuttiphong and Fongsuwan, 2019; Vihari et al., 2018) investigating the construct of organisational sustainability performance have adopted the positivism philosophy and produced valid results. Besides, interpretivists or constructivists sustainability performance researchers recommend to future researchers to adopt a positivism paradigm in order to provide full understanding of the sustainability performance construct and its predictors (Smith and Purdehnad, 2012; Finger and Burgin-Brand, 1999).

Reflecting on the above debate, the researcher in this study considers firm sustainability performance as a reality that exists in the Uganda manufacturing sector. Therefore, to accurately examine its existence and predictors, the researcher reviewed relevant theories and empirical literature, from which the hypothesised multi-theoretical model with a set of variables was constructed and operationalized to provide an explanation of firm sustainability performance and its determinants. This theoretical model was tested using validated measurement scales adapted from prior studies to establish the causal relationships between variables (Bhattacherjee, 2012). This facilitated the quantification of constructs to aid in making statistical inferences (Collins and Hussey, 2009). The findings obtained generally apply to all medium and large manufacturing firms in Uganda (Coviello and Jones, 2004).

3.2 Research Approach

Consistent with the positivism philosophy, the researcher followed a deductive research approach (Neuman, 2007). This approach follows a general-to-specific logical-reasoning funnel in explaining social reality through theory or hypotheses development and testing using quantitative techniques. The results obtained under a deductive approach are used to reject or fail to reject the application of the hypothesised model in explaining and predicting the empirical world (Dudovskiy,

2018). In this study, a multi-theoretical model attempting to explain and predict firm sustainability performance was developed including the construct of; organisational learning, CEO values, and firm innovativeness. This was objectively tested using quantitative techniques on data obtained from medium and large manufacturing firms in Uganda. The results obtained were used to support or not support the set hypotheses.

3.3 Research Design

Research design is about organizing the research activity; including the collection and analysis of data in ways that are most likely to achieve the set research objectives (Easterby-Smith, Thorpe and Jackson, 2015). In this study, an analytical approach to research design suggested by Cooper and Schindler (2003) was followed. Firstly, it was a non-experiment survey that sought to directly obtain original data in its natural state without any form of control in the environment. Secondly, an explanatory design was employed to enable the researcher understand and explain the causal relationships between and among a set of variables (Saunders et al., 2012). Thirdly, a cross-sectional quantitative design was applied to enable the researcher to obtain large amount of data in a timely and cost-effective manner. Quantitative data enabled the researcher to perform descriptive and inferential statistical analyses needed to test hypotheses, confirm or reject the hypothesised theoretical model and generalize findings to the target population (Neuman, 2007; Saunders et al., 2012)

3.4 Study Setting

This study sought to examine the construct of firm sustainability performance and its determinant within the Uganda manufacturing sector. Geographically, Uganda is divided into four regions; Central, Eastern, Western and Northern (Appendix 2)

However, this study concentrated on manufacturing firms operating in the Central and Eastern regions. These two regions cover about 80 per cent of all manufacturing firms in the country (UMA, 2019; UBOS, 2018). Besides, most of the manufacturing firms in the Western and Northern regions have subsidiary production plants in the Central and Eastern region given that these two regions are the main industrial hubs with high concentration of manufacturing firms in the country (Page et al., 2016). Hence, the two regions adequately represent manufacturing firms in the entire country.

Within the manufacturing sector, focus was put on medium and large manufacturing firms. According to the Uganda MSME Policy (2015), medium size firms are considered to employ between 51-100 permanent employees and large firms employ above permanent 100 employees. Social and environmental management problems are reported more in medium and large manufacturing firms compared to small firms (Biondi et al., 2002). Besides, these firms are assumed to have clear formal policies, strategies, structures and systems that support learning, innovation and leadership. Thus, they are more likely to engage in sustainability performance initiatives unlike small size firms which are largely informal and characterized with persistent resource constraints and high failure rate (Lopez et al., 2005; Rooks et al., 2009). Only firms that had existed for atleast five years were included in this study as a proxy measure for firm stability (Buyinza, 2011).

3.5 Target Population

The target population included 1,221 medium and large manufacturing firms registered under the Uganda Manufacturers Association (UMA) as at July, 2019. UMA as the umbrella association brings together about 85% of medium and large size

manufacturers in the country (UMA Business Directory, July 2019; Ecuru et al., 2014).

3.6 Sample Size and Determination

The survey research design adopted in this study is associated with a number of large data collection constraints including; budget and time. This practically makes it difficult for the researcher to reach out to the entire target population. Sampling therefore becomes a critical component in the survey research design (Bartlett, Kotrlik and Higgins, 2001). A scientifically selected sample size has the power to adequately represent the characteristics of the target population when results are generalized (Zikmund et al., 2010). In this study, a sample size of 301 medium and large manufacturing firms was scientifically determined following the formulae provided by Yamane (1967). This is expressed as follows;

Yamane's (1967) formula is expressed as:

$n = N \div [1 + N (e)^2]$

Where;

n = required sample size.

N= the population size.

e = Margin of error (estimated at 0.05)

Hence;

$n = 1221 \div [1 + 1221 (0.05)^2]$

= 301

Worth noting, cross-sectional survey research is commonly associated with non-response bias due to voluntary participation, lost questionnaires, incomplete questionnaires and generally uncooperative participants (Serem et al., 2013). As a result, the chances of obtaining a return sample that is smaller than the calculated sample of 301 firms was high. A huge reduction in the targeted sample size was likely to affect the statistical power, confidence level and the possibility of generalizing the results to the target population as suggested by Bartlett et al. (2001).

Reflecting on past empirical studies conducted within the Uganda manufacturing sector, a non-response rate averaging at about 40 per cent is commonly reported (for instance Namagembe, et al., 2016; Sulait, 2010; Nakku, et al., 2013a, 2013b; Namakonzi and Inanga, 2014). This empirical observation signals that this study was likely to suffer the same limitation. To safeguard from the effect of high non-response rate, the researcher followed the guidance given by Serem et al. (2013) and Bartlett et al. (2001) to increase the computed sample size of 301 firms by 40 per cent. This gave an adjusted total sample size of 421 (301 * 0.4= 120 + 301) medium and large manufacturing firms. This is summarized in Table 3.1.

Table 3.1: Adjusted Target Sample Size

	Target Population	Calculated Sample Size	Adjusted Sample Size
No of Firms	1,221	301	421

Source: Researcher's Computation (2020)

Comfrey and Lee (1992) suggest that a sample size of 50-100 is considered very poor; 100-200 poor, 300-400 good; 400-500 very good, and over 1000- excellent. In light of Comfrey and Lee's threshold, the adjusted target sample size of 421 was considered large enough (i.e very good) to achieve high statistical power required to perform 5000 replications in bootstrapping in order to estimate standard errors as well as to construct confidence intervals for testing indirect, interaction and conditional indirect effects in PROCESS macro (Bentler, 2004; Gaver and Mentzer, 1999; Cohen, 1998; Preacher and Hayes, 2004).

3.7 Sampling Design and Procedure

The researcher employed a multistage sampling design to obtain an adequate representative sample of medium and large manufacturing firms and respondents following the guidance of Zikmund et al (2010);

i. Firstly, the study focused on medium and large manufacturing firms in the Central and Eastern regions as listed in the UMA Business Directory (2019),

ii. In each of the region mentioned under (i) above, stratum of medium and large manufacturing firms were formed,

iii. Firms within each statum were arranged in an alphabetical order using EPITABLE and thereafter each firm was assigned a serial number as a code following the guidance of Coviello and Jones (2004),

iv. MS Excel simple random number generator function ((=RANDBETWEEN (1, N)) was used to randomly select proportionate firms in each stratum to be included in the final study (Black, 2010; McCullough and Wilson, 1999; Quirk, Quirk and Horton, 2014).

v. Within each randomly selected firm, the researcher purposively selected at least two managers in order to control for single respondent bias following the guidance of Field (2009), Young (2009) and Baer and Frese (2003). Only managers who had worked with the firm for at least three years were selected to respond to the questionnaire as a proxy indicator for firm-management experience (Jain and Moreno, 2015; Vihari et al., 2018).

3.8 Unit of Analysis and Unit of Inquiry

A unit of analysis is a major entity that frames what is being investigated in any scientific study and the unit of inquiry is a sub-set of the unit of analysis (Trochim, 2006). In this study, a manufacturing firm formed the unit of analysis (Vihari et al., 2018) whereas managerial staff working in the manufacturing firm formed the unit of inquiry (respondents) on the presumption that as agents, they were more informed about firm-wide variables compared to other firm stakeholders (Young, 2009; O'Regan and Globadian, 2004).

3.9 Data Collection Method and Instrument

Primary methods were used to collect quantitative data directly from the target respondents with the aid of a structured questionnaire (Appendix 1) as the instrument of data collection. A structured questionnaire is deemed an efficient tool to collect timely large data from the respondents, especially when the researcher knows what is required and how to measure the variables of interest (Zailani et al., 2012). The questionnaire was developed based on the guidance given by Saunders et al (2012) and Neuman (2007). It is divided into five sections where; section I examined the demographic profile of the respondents and the characteristics of the firms that participated in this study. Section II examined the construct of firm sustainability performance, section III examined the construct of organisational learning, section IV examined the construct of firm innovativeness and section V examined the construct of CEO values. Section II-V constructs were measured on a continuous scale using close-ended statements anchored on a 7-point likert without a mid-point (Likert, 1932).

A seven-point likert scale was chosen because of its sensitivity and scholars such as Garland (1999) and Mattel and Jacoby (1972) discourage social science researchers from using likert scales that include mid-points in order to reduce social desirability bias that would arise out of respondents choosing the mid-point (neutral or uncertain or not sure) where the right answer is possibly negative. Additionally, all main variables were measured on a seven-point item-likert scale in order to facilitate easy transformation of data from the ordinal scale to the metric scale required to run regression analyses. The questionnaire was self-administered on a ‘drop and pick later’ basis to the selected managerial staff (Cooper and Schindler, 2003).

3.10 Data Collection Procedure

The procedure of data collection proceeded in four stages;

Stage 1: the first stage of data collection involved seeking expert opinion on the structure and content of the draft questionnaire since the measurement scales used were adapted from studies previous conducted in geographical contexts different from the Ugandan context. This was done in October, 2019. Each expert provided his/her independent opinion on how relevant and/or irrelevant each item in the questionnaire measured the intended variable.

Stage 2: improvements were made on the first draft questionnaire based on the guidance of the experts at stage 1. Thereafter, a pilot study was conducted in the month of November and December, 2019 which involved 102 manufacturing firms in the Western and Northern regions of Uganda. The pilot data collected enabled the researcher to further improve the validity and reliability of the questionnaire (Appendix 7). At this point, the questionnaire was considered ready for final data collection.

Stage 3: the process of final data collection started with the researcher seeking clearance from the relevant research authorities, namely; the School of Business and Economics, Moi University, Makerere University Business School (Appendix 4) and UMA (Appendix 5). UMA introduced the research idea to her member firms and encouraged managers to provide the research team the necessary support needed. The lead-researcher then contacted the top administration of the sampled firms seeking for their approval to participate in the study (Appendix 6). About 96 per cent (404) of the sampled firms agreed to participate in the study. With the help of the human resource management office, a list of managers available and easily accessible was presented

to the lead-researcher, from whom managers were purposively selected to respond to the questionnaire.

Stage 4: given the magnitude of collecting data from over 400 manufacturing firms concentrated in two distant regions, the researcher identified, trained and facilitated six (6) research assistants who provided full support in administering and collecting the filled questionnaires. The research team briefed each of the selected managers about the purpose of the study and left them with a copy of the questionnaire to fill. An on-site contact person was identified per firm and requested to collect the filled questionnaires. These were later handed over to the research team. Final data collection was scheduled to start in February and end in May, 2020. However, the outbreak of the COVID 19 Global pandemic in March and the eventual temporary lockdown of the business sector prolonged the data collection process until August, 2020. The lead researcher coordinated the whole process of data collection by providing technical guidance, facilitation and making polite follow-ups on the delayed responses as guided by Dillman (2007).

3.11 Operationalisation and Measurement of Variables

The operational definitions and measurement scales used in this study were adopted with minor modifications from previous studies. Modifications were made on item arrangement, clarity, and relevancy. This facilitated the contextualization of the measurement scales within the Ugandan manufacturing context since the measurement scales used were developed and validated in developed economic contexts whose social, political, technological and demographic depositions are far different from the Ugandan context. Gentle-Genitty et al (2014) and Churchill (1999) recommend that adapting measurement scales used by previous scholars enhances comparability of findings and standardization of the measurement scales in a given

field. The validity and reliability scores for all the dimensions and items adapted in this study scored above .5 and .7 respectively in the previous studies, which is the acceptable threshold (Hair et al., 2010).

3.11.1 Firm sustainability performance

This being a study rooted in strategic management, Dyllick and Hockerts (2002) contextually adjusted definition of firm sustainability performance was adopted. The authors observe that sustainability performance involves the firm's endeavors to meet the needs of both direct and indirect current stakeholders without compromising the ability to meet the needs of the future stakeholders as well. The TBL performance framework was adopted in operationalising the three dimensions of sustainability performance; profit (economic), people (social) as well as planet (environment).

To measure the latent construct of firm sustainability performance, the researcher adopted with minor modifications 29 items from the scales developed by Chow and Chen (2012) and Pedersen et al. (2018). These measurement scales have been found to be reliable and valid to measure organisational sustainability performance in the study of Globocnik et al (2019) and Vihari et al. (2018). 8 items measured economic sustainability, 8 items measured social sustainability and 13 items measured environmental sustainability. These items were further subjected to exploratory and confirmatory factor analysis to generate a more appropriate organisational sustainability performance factor structure that fit the Ugandan manufacturing context.

3.11.2 Organisational learning

In the current study, the researcher conceptualized organisational learning as a process variable and hence Zgrzywa-Zeimak (2015) operational definition was deemed

appropriate. The authors define organisational learning as an organisational-wide systematic and planned process of creating, acquiring, integrating and utilizing individual and group knowledge to enhance organisational processes and outcomes. Organisational learning was conceptualized as a single variable measured using 23 items adopted with minor modifications from the literature of Huber (1991), Lopez et al. (2005), Nevis et al. (1995), Jimenez-Jimenez and Sanz-Valle (2011) and Mafabi et al. (2012). 7 items measured Knowledge Acquisition, 7 items measured Knowledge Distribution, 4 items measured Knowledge Interpretation and 5 items measured Knowledge Storage. These items were further subjected to exploratory and confirmatory factor analysis to generate a more appropriate organisational learning factor structure that fit the Ugandan manufacturing context.

3.11.3 Firm innovativeness

Several definitions of firm innovativeness exist in literature but Globocnik et al. (2018) definition was deemed appropriate in the current study context. The authors post that firm innovativeness in the context of sustainability performance concerns the outcome of the firm's innovative activities with respect to product design, process efficiency and management systems that enable the firm to remain economically viable, socially responsive and environmentally friendly. Firm innovativeness was measured using a 18-item scale adopted with minor modification from the literature of Wang and Ahmed (2004), Tsai, Huang and Kao (2001) and Mafabi et al. (2012). 5 items measured product innovativeness, 5 items measured process innovativeness and 8 items measured management system innovativeness. These items were further subjected to exploratory and confirmatory factor analysis to generate a more appropriate firm innovativeness factor structure that fit the Ugandan manufacturing context.

3.11.4 CEO Values

In the current study, the researcher adopted the definition of CEO values provided by Berson et al. (2008). The authors indicate that CEO values are personal psychological evaluative feelings of CEOs that strongly influence the kind of strategic choices they make within an organisational setting. While the researcher desired to obtain the self reports of CEOs on their personal values, CEOs proved difficult to access due to their busy work schedule and probably less interested to participate in academic research. Following the guidance of Hambrick (2007) and Peterson et al. (2006), the perceptions of managers who work closely with the company CEOs were obtained regarding their CEO values. Moreover, seeking the opinion of other managers about the personal values of their company CEO controlled for social desirability bias that could arise out of CEOs' self-reports.

Schwartz (1992) developed a 10-dimensional measure of human values which he later aggregated into a four-dimensional measure, referred to as the Short Value System Scale (SVSS). Drawing on previous empirical research works that have adopted and further validated the SVSS (Tang et al., 2017; Liden et al., 2016; Aktas et al., 2011; Munene et al., 2005), the researcher extracted with minor modifications 12 items to measure CEO value of openness to change (6) and self-transcendence (6). These items were further subjected to exploratory and confirmatory factor analysis to generate an indicative factor structure for CEO values that fit the Ugandan manufacturing context.

3.11.5 Control variables

Firm characteristics were used as control variables to establish which kind of firms had the capacity to simultaneously serve the interests of their various stakeholder

groups as assumed by the stakeholder theory. Firm characteristics included; business type, firm ownership, firm origin, firm age and firm size. Previous studies show that such firm characteristics have an effect on organisational learning, firm innovativeness, and sustainability performance (Pedersen et al., 2018; Jackson and Apostolakou, 2010; Sørensen and Stuart, 2000; Laforet, 2008; Damanpour and Schneider, 2006; Lawson and Samson, 2001; Tharenou, Donohue and Cooper, 2007; Ecuru et al., 2014).

Business type was measured based on whether the firm is engaged in food processing activities-1 or non-food processing activities-2. Firm ownership was measured on the basis of whether the firm is privately owned-1, publically owned-2, partnership-3, family owned-4 or sole proprietorship-5. Firm origin was measured on the basis whether the firm is a foreign firm-1 or a local firm-2. Firm age was measured based on the number of years the firm had been in operation; <5 (1), 5-10 (2), 11-15 (3), 16 and above (4) and firm size was measured based on the number of permanent employees at the time this study was conducted; <51 (1), 51-100 (2) and above 100 (3).

Table 3.2: Summary of variable operationalisation and measurement

Variable	Operational Definition	Dimensions	Number of Measurement items	Questionnaire	Sample Items	Source
Firm Sustainable Performance	The firm's endeavor to meet the needs of both direct and indirect current stakeholders without compromising the ability to meet the needs of the future stakeholders as well	1.Economic Sustainability 2.Social Sustainability 3.Environmental Sustainability	28 items anchored on a 7 point-likert scale	Section II	-Our firm generates revenue from the sale of waste products -Our firm improved employees' safety at the workplace -Our firm reduced energy consumption	Dyllick & Hockerts (2002) Chow & Chen (2012) Pedersen et al (2018) Globocnik et al (2019)
Organisational Learning	An organisational-wide systematic and planned process of creating, acquiring, integrating and utilizing individual and group knowledge to enhance organisational processes and outcomes.	1.Knowledge Acquisition 2.Knowledge Distribution 3.Knowledge Interpretation 4.Knowledge Storage	23 items anchored on a 7 point-likert scale	Section III	- Our employees attend fairs and exhibitions regularly - We conduct meetings regularly to exchange experiences - Employees share business experiences by talking to each other - We have a system for keeping information	Argyris & Schon (1978) Zgrzywa-Zeimak (2015) Senge (1990) Lopez et al (2005) Huber (1991), Nevis et al (1995)
Firm Innovativeness	The firm's effort to successfully introduce and implement new products, new	1.Product Innovativeness 2.Process Innovativeness 3.Management	18 items anchored on a 7 point-likert scale	Section IV	- In the last five years our firm has introduced a range of new products -We constantly improve our business processes	Golgeci & Ponomarov (2015) Wang & Ahmed (2004) Globocnik et al

	processes, new marketing, new strategies and new organisational method	System Innovativeness			- We improve our leadership behaviour to enhance staff motivation	(2018) Tsai et al (2001)
CEO Values	Personal psychological evaluative feelings of CEOs that influence the kind of strategic choices they make within an organisational setting	1.Openness to change, 2.Self-transcendence	12 items anchored on a 7 point-likert scale	Section V	-Our CEO encourages staff to explore new ways of doing things -Our CEO encourages staff to take up new work challenges -Our CEO shows attention to the well-being of others	Hambrick (2007), Schwartz (1992), Berson et al. (2008), Tang et al. (2017), Liden et al. (2016), Aktas et al. (2011), Munene et al. (2005)

Source: ***Developed by the researcher from a review of relevant literature***

3.12 Validity and Reliability of the Instrument

3.12.1 Validity of the questionnaire

Validity refers to the extent to which a research instrument measures what it is intended to measure. Testing for validity ensures that the data obtained with the aid of a validated instrument truly represents the phenomenon under investigation (Jaccard and Jacoby, 2010; Zikmund et al., 2010; Golafshani, 2003). In the current study, both content and construct validity of the questionnaire was ensured, following a step-by-step process described below;

For content validity, the researcher first subjected the draft questionnaire to a panel of 10 experts who provided their independent and honest opinion on the design, structure, length, content and operationalisation of the constructs. The experts included renowned researchers and practitioners in the field of corporate sustainability, strategic human resource management, innovation and strategic leadership. Based on the experts' comments, modifications were made that improved the introduction information, lengths, language, wording, item arrangement, clarity and relevance.

Lawshe's online worksheet was used to compute Content Validity Ratio (CVR) for each variable based on the experts' ratings (Ayre and Scally, 2014). A CVR value of at least .7 was considered satisfactory for a given set of items to measure a given construct (Hair et al., 2010). Items that experts rated relevant but not clear were retained and revised for clarity and those they found irrelevant were completely excluded from the final questionnaire (Salkind, 2010; Saunders et al., 2012). The result of content validity analysis for each study variable is presented in Table 3.3 that follows;

Table 3.3: Content Validity Test Results from Expert Review

Constructs	Dimensions	Initial Items	Items Relevan	Items Irrelevant	Lawshe CVR
Firm Sustainability Performance	Economic	8	7	1	
	Social	8	7	1	.76
	Environmental	13	11	2	
Organisational Learning	Knowledge Acquisition	7	7	0	
	Knowledge Distribution	7	7	0	.73
	Knowledge Interpretation	4	4	0	
	Knowledge Storage	5	5	0	
Firm Innovativeness	Product Innovativeness	5	5	0	
	Process Innovativeness	5	5	0	.70
	Management System Innovativeness	8	7	1	
CEO Values	Openness To Change	6	6	0	
	Self-Transcendence	6	6	0	.82
	Total/Average	**82**	**77**	**5**	**.75**

Source: Researcher's computation (2020)

For construct validity, the revised questionnaire was pilot-tested on 102 manufacturing firms in the Western and Northern part of Uganda since the measurement scales used were adapted from studies previously conducted in contexts different from the Ugandan manufacturing environment (Neuman, 2007). These firms were presumed to have similar characteristics with those in the Central and Eastern part of Uganda where the main study was conducted. The data that was collected at pilot stage was used specifically to validate the questionnaire and not used in the final study analysis.

Exploratory Factor Analysis (EFA) using Principal Component Extraction Method was performed on the collected pilot data to establish those specific items that appropriately measured each study construct (Zikmund, 2000; Dimitrov and Rumrill,

2003). Items that loaded below correlation coefficient value of .5 were discarded. Only items that loaded on a particular factor with Eigen value > 1 and correlation coefficient value equal or greater than .50 were retained in the final questionnaire. The results of this analysis are presented in appendix 7.

3.12.2 Reliability of the questionnaire

Reliability ensures that the measurement items adapted in an instrument can produce consistent results on multiple administrations (Sekaran, 2000; Hair et al., 2010). In the current study, the reliability test was performed to assess whether the validated items under each variable were consistent within the domain for which they were designed. Using the pilot data, Cronbach Alpha test was performed to test for inter-item correlations. At pilot stage, a Cronbach Alpha value of at least .6 and not exceeding .95 was considered satisfactory to indicate that the extracted items reliably measured a given study variable (Hair et al., 2006; Cronbach, 2004; Nunnally and Bernstein, 1994). The results of the reliability test at pilot stage are appended 7.

3.13 Control for Potential Biases

In any cross-sectional research design, there are a number of potential biases (errors) that may affect the validity and reliability of the results. Mainly these include; common method bias, endogeneity bias, and non-response bias (Conway and Lance, 2010; Hamilton and Nickerson, 2003; Hair et al., 2010; Carpenter and Lynch, 1999). These are explained as follows;

Common Methods Bias (CMB) arises from Common Methods Variance (CMV), which is the difference (systematic error) in results due to the measurement method used rather than the constructs the measures represent. Scholars such as Organ and Ryan (1995) argue that the use of self-report data on all variables in a given study is a

major source of CMB. When not controlled for, Podsakoff, MacKenzie, Lee, and Podsakoff (2003) and Conway and Lance (2010) observe that CMB can affect the validity of results leading to misleading conclusions on relationships between constructs through committing either Type I error (inflated observed correlations) or Type II error (deflated observed correlations).

To control for CMB, the procedural and statistical method suggested by Podsakoff et al. (2003) were followed in this study. Procedurally, the researcher adopted measurement scales used in previous studies and contextualized them through piloting before full data collection. Secondly, respondent's identity was kept anonymous. A 7-point Likert scale without a middle point was adopted in order to reduce on errors arising out of social desirability. The researcher ensured that at least 2 managers provided data in each of the sampled firms to avoid single respondent bias and allow for variability. Data on CEO values was obtained based on the perceptions of managers who work closely with the CEO in order to avoid the bias associated with CEO self-reports.

Additionally, the measurement items were written in a very clear and concise manner to enable managers to easily understand and respond to the issues being examined under each study variable (Podsakoff et al., 2012; Krishnaveni and Deepa, 2013). Moreover, the final measurement scales used in this study passed all the validity tests an indicator that CMB could not be a problem according to the guidance given by Campbell (1982) cited in the literature of Conway and Lance (2010).

Statistically, Harman's one-factor statistical test was used to establish if a single factor accounted for majority of the variance in the indicator variables (Harman, 1960; Eichhorn, 2014; Unick and Stone, 2010; Podsakoff et al., 2012). The rule of the

thumb is that no single factor should account for more than half of the total variation, which is 50% (Podsakoff et al., 2012). The results of this analysis are presented in chapter four.

Endogeneity bias; given that the hypothesized model in this study contains two endogenous variables (firm innovativeness and sustainability performance); the researcher anticipated endogeneity bias to manifest. Endogeneity bias emerges when a regressor variable is correlated with the error term, thereby violating the homoscedasticity regression assumption (Hamilton and Nickerson, 2003). Failure to control for endogeneity results into biased estimates of the regressor variable on the criterion variable. To deal with potential endogeneity bias, control variables were added to the hypothesized model in order to cater for the omitted variables. In addition, hierarchical multiple regression analysis was used to establish the unique contribution of each regressor variable on the outcome variable while controlling for the effect of other variables in the hypothesized model (Stone and Rose, 2011; Bollen et al., 1995; Timpone, 2003). Path coefficients and changes in squared correlations (ΔR^2) were used to establish the independent effect of each regressor variable on the outcome variable.

Non-Response bias; the inability to study the entire population in survey-based research requires obtaining an adequate sample size in order for the findings to be accepted as a true representation of the characteristics of the intended population. Therefore, any cases of non-response within a given sample size affect the overall statistical power of the data, reduces randomness of the data and generally biases statistical estimates meant to represent the population (Hair et al., 2010; Green, 1991; Dalecki, Whitehead, and Blomquist, 1993).

To ensure an adequate response rate and control for non-response bias in this study, the researcher collaborated with UMA; the umbrella association of manufacturers in Uganda (Appendix 5). Prior to data collection, UMA sensitized her members about the significance of the current study to the manufacturing sector and urged firms to cooperate and accord the research team all the necessary support needed to make this study a success. Thereafter, questionnaires were distributed by the research team to all the target firms and respondents, with a polite request to fill and return the questionnaire within a period of two weeks (Appendix 6). An on-site contact person was identified at every sampled firm. After two weeks, the collection of the filled questionnaires commenced with the help of the on-site contact person and those respondents who had not yet filled the questionnaire were reminded and followed-up as guided by Dillman (2007) and Kwak and Radler (2002). Each collected questionnaire was cross-checked to ensure that all items are filled to reduce on missing data at the time of analysis. Through this rigorous process, an adequate response rate was obtained.

3.14 Data Analysis

Data analysis is a step-by-step process that deals with cleaning, transforming, and modeling of raw data to extract useful information for decision making (Serem et al., 2013; Scandura and Williams, 2000). Analysis helps the researcher to accurately describe the data and identify meaningful relationships between variables. Data analysis is broadly categorized into two; qualitative and quantitative data analysis. Qualitative data analysis involves manipulation of words, descriptions, images, objects, and sometimes symbols to find patterns and themes emerging in the data for easy identification and drawing meaning while quantitative data analysis involves the statistical manipulation of numerical data in form of figures to arrive at dependable

conclusions (Saunders et al., 2012; Kaplan and Maxwell, 2005). As earlier mentioned, the current study adopted a positivist research philosophy and therefore followed a purely quantitative research design.

3.14.1 Quantitative data analysis

According to Serem et al. (2013), quantitative data analysis involves three major steps, namely; data preparation, describing the data and testing hypotheses.

Data preparation

According to Fichman et al. (2005) data preparation in form of data processing and screening is a necessary step towards improving the quality of data collected and ensuring that collected data is sufficient enough to allow for generalization of the study findings. In the same vein, the researcher in the current study subjected the collected raw quantitative data to processing and screening.

Data processing: quite often in survey research designs, data comes loaded with errors related to some sections being incorrectly filled while others left out completely; either un-intended or deliberately. Therefore, it was fundamental for the researcher in the current study to crosscheck and confirm that the data provided was free from such errors. Largely incomplete questionnaires were disregarded at this stage. The process of data coding then followed with only the complete questionnaires. Data coding involved grouping and assigning values to items and responses to enable the quantification of constructs (Saunders et al., 2012).

Data screening: before data is subjected to any statistical test, it has to be screened for any irregularities. Following this guidance, the researcher in the current study established whether data was obtained from an adequate representative sample, free from missing values and outliers (Vardeman and Morris, 2003). An adequate sample

size enables the researcher to generalize the research finding to the population of interest. Missing data reduces the response rate on those particular items, hence affecting the overall statistical power when those affected items are eventually excluded from the final analysis. Outliers, which are extreme observations different from majority of the other observations affect the normality of data distribution, hence biasing the mean and inflate the standard deviation (Stephen, 2015; Field, 2010). All the mentioned concerns were addressed before subjecting the data to further statistical analyses.

Descriptive analysis

After data was processed and screened for sample adequacy, missing values and outliers, the researcher proceeded to run descriptive statistics. This involved the transformation of raw data into a more organised form that enabled the researcher to easily understand, interpret and describe the basic features of the data (Zikmund, 2000). Using the SPSS software (Version 21), descriptive statistics was performed on respondent profile, firm characteristics and the main variables to gain an understanding of the kind of managers and firms that participated in this study. Additionally, descriptive analysis described the state of the latent constructs in the sampled firms (Field, 2009).

Diagnostic tests

Before subjecting data to hypothesis testing using inferential statistics, diagnostic tests were carried out to ensure that the data conforms to the assumptions of parametric tests in order to achieve valid statistical estimates. These assumptions include; normality, linearity, homoscedasticity, non-multicollinearity and independence of errors (Hair et al., 2010). These are further explained as follows;

(i). Normality

Normality relates to the shape of the data distribution which is symmetrical, bell shaped and with a mean of zero and standard deviation of 1 (Field, 2009). Data which is not normally distributed affects the validity of subsequent parametric-statistical tests such F-Statistics and t-statistics (Hair et al., 2010). Thus, testing for normality in multivariate analysis is necessary to arrive at valid and robust results. Additionally, testing for multivariate normality takes care of bi-variate normality (two variables). Hair et al. (2010) observes that if a variable is multivariate normal, then it is also bi-variate normal; implying that bi-variate normality is a facet of multivariate normality (Nabatanzi, 2014).

(ii). Linearity

Linearity represents the degree to which a unit change in the dependent variable is associated with a unit change in the independent variable (Babin and Svensson, 2012). Linearity is a requirement to performing all multivariate analysis. Hence, it is important to examine any divergences from linearity that could affect the association between the study variables.

(iii). Homoscedasticity

Homoscedasticity is another important assumption to test before performing multivariate analysis. This assumption holds that the dependent variable should exhibit similar amounts of variance across the range of values for independent variables (Field, 2009). It is this variability that affects the standard error and makes hypothesis testing insensitive.

(iv). Multi-collinearity

Further still, data should conform to the assumption of non-multicollinearity between independent variables before running parametric tests. Multi-collinearity exists when there is a high correlation between two or more independent variables in a regression model. This makes it difficult for the researcher to establish the unique contribution of each independent variable on the dependent variable since collinearity increases the standard error, which in turn affects the size of regression coefficients and limits the size of multiple squared correlations (Field, 2009; Cooper and Schindler, 2006).

(v). Independence of errors

Lastly regarding observing the assumptions of parametric tests, data was tested for independence of errors. It is common in multivariate analyses for the residuals or error terms to correlate (ε_1 and ε_2), which biases the statistical estimates of the predictor variable (s) on the criterion variable (Field, 2009). The assumption of independence of errors in running parametric tests requires that the residuals in prediction do not follow a pattern from case to case.

Hypothesis Testing

Upon ensuring that data conformed to the assumptions of parametric tests, hierarchical multiple regression analyses were performed in SPSS software (Version 21) to test the hypotheses of the direct effect relationship. This enabled the researcher to establish the predictive power of each predictor variable to variations in the outcome variable (Hair et al., 2010; Schreiber et al., 2006). Hayes' PROCESS macro software (Version 4.0) was used to test hypotheses for the indirect effect (Model 4), interaction effect (Model 1) and conditional indirect effect (Model 58, 15, and 14). Path coefficients were used to determine the strength and direction of the effect.

Depending on whether the effect size is significant or non-significant, the researcher rejected or failed to reject a given hypothesis.

Data presentation

The results of the statistical analyses are presented in text, figures and tables in order to easily draw implications, conclusions and recommendations.

3.14.2 Statistical Model

In line with the moderated mediation conceptual model (Model 59) presented in Figure 2.1, Hayes (2013, 2018) provides the statistical diagram presented below to guide researchers in formulating relevant hypotheses and regression equations.

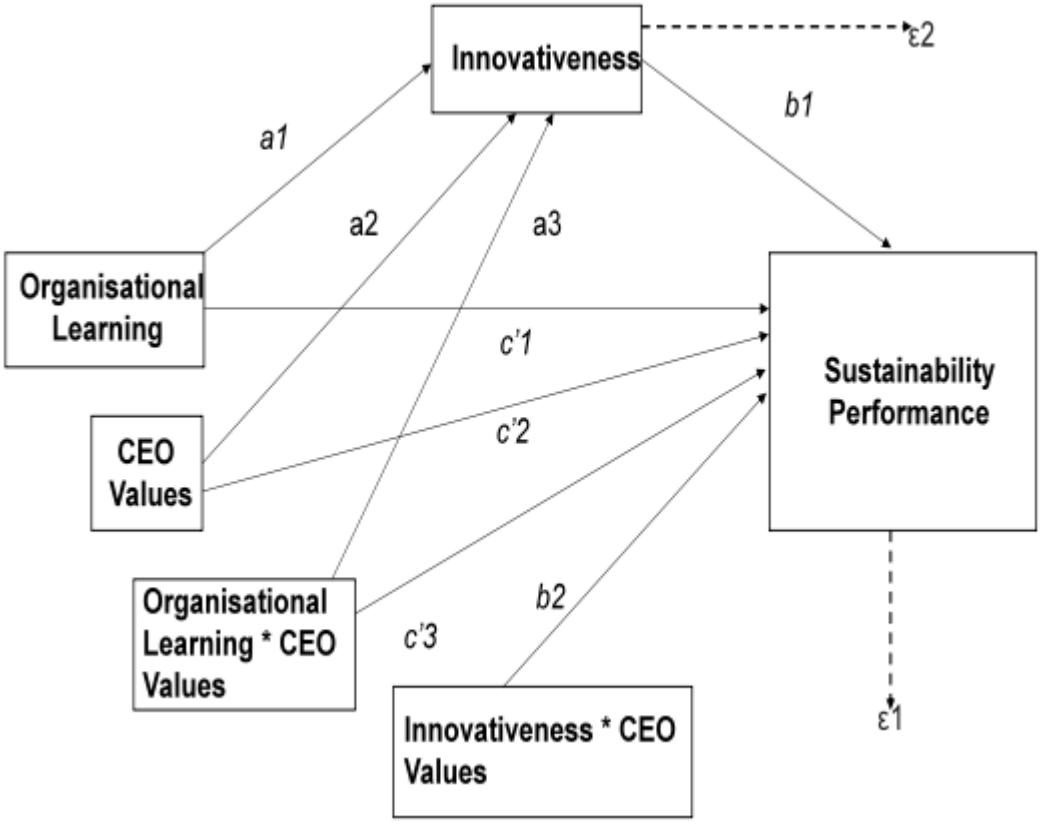


Figure 3.1: Statistical Model (Model 59). Source: (Hayes, 2013, 2018)

3.14.3 Regression Equations

In line with the statistical diagram presented in Figure 3.1, a series of regression equations were constructed to test the set hypotheses. These are presented as follows;

Model 1: Direct Effects

H_{00}: The effect of the Control Variables on Firm Sustainability Performance

Before testing the set hypotheses, the researcher first established the unique effect of the control variables on Firm Sustainability Performance (FSP) as denoted in equation 1 below;

$Y= \beta_0+C+ \varepsilon_1$

Where;

FSP=

$\beta_0+\beta_1BT+\beta_2FO+\beta_3Origin+\beta_4FA+\beta_5FS+\varepsilon_1$…….....**Equation 1**

H_{01}: The effect of Organisational Learning on Firm Sustainability Performance

To test for H01: the unique effect of Organisational Learning (OL) as an independent variable on Firm Sustainability Performance (FSP) as a dependent variable, hierarchical regression analysis was performed while controlling for the effect of the control variables (C) as denoted in equation 2 below;

$FSP= \beta_0 + C + \beta_1OL+ \varepsilon_1$……...…….....**Equation 2**

H_{02}: The effect of Firm Innovativeness on Sustainability Performance

To test for H02: the unique effect of Firm Innovativeness (FI) as a predictor variable on Firm Sustainability Performance (FSP) as a dependent variable, hierarchical regression analysis was performed while controlling for the effect of the control variables (C) and Organisational Learning (OL) as denoted in equation 3 below;

$FSP= \beta_0 + C + \beta_1OL+ \beta_2FI + \varepsilon_1$……...……...…….….. **Equation 3**

H_{03}: The effect of CEO Values on Firm Sustainability Performance

To test for H03: the effect of CEO Values (CV) as a predictor variable on Firm Sustainability Performance (FSP) as a dependent, hierarchical regression analysis was performed while controlling for the effect of the control variables (C), Organisational Learning (OL) and Firm Innovativeness (FI) as denoted in equation 4 that follows;

$FSP = \beta_0 + C + \beta_1 OL + \beta_2 FI + \beta_3 CV + \varepsilon_1$……...……...……..**Equation 4**

H_{04}: The effect of Organisational Learning on Firm Innovativeness

To test for H04: the unique effect of Organisational Learning (OL) as an independent variable on Firm Innovativeness (FI) as a dependent variable, hierarchical regression analysis was performed while controlling for the effect of the control variables (C) as denoted in equation 5 below;

$FI = \beta_0 + C + \beta_1 OL + \varepsilon_2$……...…….…….…….…. **Equation 5**

H_{05}: The effect of CEO Values on Firm Innovativeness

To test for H05: the unique effect of CEO Values (CV) as an independent variable on Firm Innovativeness (FI) as a dependent variable, hierarchical regression analysis was performed while controlling for the effect of the control variables (C) and Organisational Learning (OL) as denoted in equation 5 below;

$FI = \beta_0 + C + \beta_1 OL + \beta_2 CV + \varepsilon_2$……...……...…….....**Equation 6**

<u>Model 2: Mediation Effect</u>

H_{06}: To test for the mediating effect of Firm Innovativeness (FI) on the relationship between Organisational Learning (OL) and Sustainability Performance (SP) stated under hypothesis H06, MacKinnon (2012) four steps (listed hereafter) were followed. Preacher and Hayes's Bootstrapping method was used to test for the significance coefficient of the mediation effect (Preacher and Hayes, 2004; Hayes, 2018).

The mediation effect equation is statistically denoted as;

SP= a_1 * b_1 or c_1 - c' where c_1 = Total effect and c'= Direct effect….....**Equation 7**

Model 3: Moderation effects

H_{07}: To test for the moderating effect of CEO Values (CV) on the relationship between Organisational Learning (OL) and Firm Innovativeness (FI) stated under H07, the steps suggested by Aiken and West (1991) were followed. The regression equation for the moderation effect stated under H_{07} is denoted as;

$FI= \beta_0 + C+ \beta_1 OL + \beta_2 CV + \beta_3 OL*CV + \varepsilon_2$…….....**Equation 8**

H_{08}: To test for the moderating effect of CEO Values (CV) on the relationship between Firm Innovativeness (FI) and Firm Sustainability Performance (FSP) stated under H08, the steps suggested by Aiken and West (1991) were followed. The regression equation for the moderation effect stated under H08 is denoted as;

$FSP= \beta_0 + C+ \beta_1 OL + \beta_2 FI + \beta_3 CV + \beta_4 FI*CV + \varepsilon_1$…….....**Equation 9**

H_{09}: To test for the moderating effect of CEO Values (CV) on the relationship between Organisational Learning (OL) and Firm Sustainability Performance (FSP) stated under H09, the steps suggested by Aiken and West (1991) were followed. The regression equation for the moderation effect stated under H09 is denoted as;

$FSP= \beta_0 + C+ \beta_1 OL + \beta_2 CV + \beta_3 OL*CV + \varepsilon_1$…….....…….**Equation 10**

Model 4: Moderated-Mediation effect

H_{010}: The moderated–mediation effect stated under hypothesis H010 was tested under the regression equation denoted as;

$Y = b_0 + b_1 M + b_2 W + b_3 MW + c'X$

$M = a_0 + a_1 X + a_2 W + a_3 XW$

Algebra to calculate indirect and/or conditional effects by writing model as

$Y = a + bX$:

Where;

$Y = b_0 + b_1M + b_2W + b_3MW + c'X$

$M = a_0 + a_1X + a_2W + a_3XW$

Hence... substituting in equation for M

$Y = b_0 + b_1(a_0 + a_1X + a_2W + a_3XW) + b_2W + b_3(a_0 + a_1X + a_2W + a_3XW)W + c'X$

Hence... multiplying out brackets

$Y = b_0 + a_0b_1 + a_1b_1X + a_2b_1W + a_3b_1XW + b_2W + a_0b_3W + a_1b_3XW + a_2b_3WW + a_3b_3XWW + c'X$

Hence... grouping terms into form $Y = a + bX$

$Y = (b_0 + a_0b_1 + a_2b_1W + b_2W + a_0b_3W + a_2b_3WW) + (a_1b_1 + a_3b_1W + a_1b_3W + a_3b_3WW + c')X$

Hence... One indirect effect(s) of X on Y, conditional on W:

$= b_0 + C + a_1b_1 + a_3b_1W + a_1b_3W + a_3b_3WW = (a_1 + a_3W)(b_1 + b_3W) + \varepsilon_{1...}$ **Equation 11**

Source: Stride, Gardner, Catley and Thomas (2015)

Note;

b_0=Constant, C=Control Variables (BT=Business Type, FO=Firm Ownership, Firm Origin, Firm Age, and FS=Firm Size),

Y=Firm Sustainability Performance,

a= coefficient of a, b= coefficient of b, c= coefficient of c

X=Organisational Learning,

M=Firm Innovativeness,

W= CEO Values,

ε= error term,

3.15 Ethical Considerations

Like in any other survey design research, the researcher in this study adhered to certain ethical issues. These mainly related to the procedure of data collection as well as respect for the respondents. Before collecting data for the full study, the researcher obtained clearance from the School of Business and Economics (SBE), Moi University and UMA (Appendix 5). The researcher then contacted the HR Managers of the target manufacturing firms and briefed them on the objectives and relevance of the intended study (Appendix 6). Consequently, the research team was granted permission to carry out the study in the respective firms.

Thereafter, the research team contacted the targeted respondents and also briefed them on the objectives of the study and explained why they were particularly selected to provide information for this study. Their individual consent to participate in the study was sought and their individual opinion regarding voluntary participation was respected before engaging them in data collection. To safeguard the identity and integrity of those respondents who voluntarily agreed to participate in this study, the researcher ensured that no respondent writes his/her name or specific job title on the questionnaire. Instead, serial numbers were assigned to each questionnaire to enable the researcher to track the respondent in case of need for further reference.

A statement assuring respondents of anonymity and confidentiality was also included in the introductory section of the questionnaire (Appendix 1). Further still, respondents were only contacted during official working hours [between 9 am to 5 pm, Monday to Friday] to assure their privacy. Final data collected from each respondent was aggregated, analysed and reported at firm level which is the unit of analysis (Creswell, 2009; Rubin and Babbie, 2005).

3.16 Limitations of the Study

The contributions of this study withstanding, it is not free from limitations;

The present study sought to provide empirical evidence on the determinants of firm sustainability performance in a developing economic context. However, the findings are limited to the Ugandan context and therefore cannot be generalized to other developing countries, particularly in Africa. This is because the determinants of sustainability performance of medium and large manufacturing firms in Uganda may not necessarily be replicated in other developing countries. Any attempt to directly apply the findings of this study to manufacturing firms in other developing countries should be done with caution.

Additionally, the current study examined the construct of sustainability performance and its determinants within medium and large manufacturing firms in Uganda. Specifically, the firms contacted had been in operation for at least five years. Thus, the findings represent only such firms and cannot be generalized to small-size firms as well as those medium and large firms that had been in existence for less than five years.

Given that only managers were considered as a unit of inquiry to provide firm related data in this study, the risk of social desirability bias cannot be ruled out completely. This could come into play either consciously or unconsciously due to managers being agents of their employing firms with a duty obligation of protecting and defending the interests of these firms. Some of their responses could have been biased towards painting a picture of good management practice.

The study adopted a cross-sectional survey design to examine the construct of sustainability performance and its determinants within medium and large manufacturing firms in Uganda. While such a methodological approach has been applied widely in studies examining the construct of sustainability performance and produced valid results (Vihari et al., 2018; Globocnik et al., 2019), it is limited in terms of bring to understanding how the studied variables would behave across time, given that managers' perceptions are subject to change. Without such evidence, it is practically difficult to establish when organisational learning, CEO values and firm innovativeness have the strongest effect on firm sustainability performance.

Further still, the study adopted a purely quantitative design where a structured questionnaire was self-administered in the collection of survey data. While this technique is evident in existing studies that have investigated the sustainability performance phenomenon, it is limited in terms of providing an in-depth understanding of the issues at hand beyond the statistics. Thus, the results obtained through the use of a purely quantitative technique may not provide for the reasons outside the variables tested in the hypothesized model.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION, INTERPRETATION AND DISCUSSION OF THE FINDINGS

4.0 Introduction

This chapter presents the empirical results of the study as well as the interpretation of these results in line with the methodology laid-out in chapter three. The first section of the chapter covers the demographic profile of the respondents. This is followed with the characteristics of the sampled firms. Then results of exploratory factor analysis, confirmatory factor analysis, and regression assumptions test are presented. Thereafter, results of descriptive statistics, correlation analysis and hypotheses testing are presented. Path coefficient results in hierarchical multiple regression and PROCESS macro on the direct, indirect, interaction and conditional indirect effects are used to provide answers to the research objectives and support or not support the set null hypotheses. Consequently, the key issues emerging from the empirical results are discussed in line with findings of previous related studies.

4.1 Response Rate

This study targeted an adjusted sample size of 421 medium and large-size manufacturing firms operating in the Central and Eastern regions of Uganda. Within each sampled firm, an average of seven (7) questionnaires were given out to managerial staff. The data collection exercise started in February, 2020 and was scheduled to end in May, 2020. However, the outbreak of the COVID-19 pandemic in March disrupted the data collection process compelling the research team to extend the exercise for three more months. By the end of August, 2020, the research team had collected a total of 755 questionnaires from 257 firms (Appendix 3). 2-5 questionnaires were collected from each participating firm.

Out of the 755 questionnaires collected, only 738 questionnaires were found fit to serve the purpose of this study. The 17 questionnaires were discarded due to largely being incomplete (Scheffer, 2002). The usable questionnaires from the 257 firms gave a response rate of 61.045% (Table 4.1). A sample size of 257 firms was found to be high and above the required sample size of 119 firms computed using G*Power programme to achieve statistical power for this kind of study (Appendix 8). In the same line, Field (2009) and Sekaran (2000) endorse a response rate of 30 firms and above to facilitate running inferential statistics and generalization of results for studies where the unit of analysis is at firm/organisational level.

Table 4.1: Response Rate of Firms and Managers

Target Sample Size	Sample Response (Unity of Analysis)	Response rate (%)	No. of participating managers (Unit of Inquiry)
421	257	61.045%	738

Source: *Research Data (2020)*

4.2 Data Preparation and Screening

Raw data obtained from the 738 managers of 257 medium and large manufacturing firms was subjected to screening and cleaning in order to prepare it for further statistical analyses. Specifically, raw data at this stage was screened to check for the presence of missing values and uni-variate outliers.

4.2.1 Missing values analysis

The researcher controlled for the occurrence of large missing data right from the field. The respondents were briefed about the importance of providing an appropriate answer to every item in the questionnaire. Additionally, the on-site contact person who was in charge of collecting the filled questionnaire was notified to cross-check the questionnaire at the time of receiving it from the respondent to ensure that it was

duly filled. Where some items had been left out, he/she politely requested the respondent to fill-in the missing data.

The collected data was entered into a computer programme (SPSS Version 21) and explored for potential missing values using frequencies in descriptive statistics. Results appended 9 show that case number 387 did not provide data to item coded OTC1, case number 406 did not provide data to item coded ST2, and case number 600 did not provide data to item coded OTC6. Similarly, case number 677 and 719 did not provide data for item coded ENV3 and case number 719 did not provide data for item coded ENV1. Overall, a total of 733 cases had no missing values while 4 cases had 1 item missing data and 1 case had 2 items missing data. This distribution is summarized in Table 4.2.

Table 4.2: Distribution of Number of Missing Values by Case

No. of Missing Values	No. of Cases	%
0	733	99.50
1	4	.33
2	1	.17
Total	**738**	**100**

Source: *Research Data (2020)*

Given that about .005% of the cases had item values missing, it was necessary for the researcher to further understand whether this data was missing completely at random or systematically (Field, 2009). The Expectation-Maximisation (EM) algorithm method through Little's MCAR test was used to explore the pattern in the missingness of the data. Results of this test appended 9 shows; Chi-square =419.719, DF = 429, and Sig=.617. The acceptable cut-off point for Little's MCAR test is that a p-value above .05 indicates that data is missing completely at random. Hence, the significant

result of .617 obtained was above the thresh-hold of .05 (p>.05) implying data was missing completely at random (Little, 1988).

Furthermore, missingness in the dataset was explored with respect to each of the four main variables under study. Results presented in Table 4.3 show that no missing values were established with the construct of organisational learning and firm innovativeness, while sustainability performance had two (2) values missing and CEO values had three (3) values missing. Little's MCAR Test was also performed to establish the pattern in the missingness of the data by variable and results indicated that data for both sustainability performance (Chi-square=30.325, DF=43, Sig. =.927) and CEO values (Chi-square=92.819, DF=69, Sig. =.300) was missing completely at random.

Table 4.3: Distribution of Missing Values by Variable

Sub-group	No. of Missing Values	Chi-Square	DF	Sig.
Organisational Learning	0			
Firm Innovativeness	0			
Firm Sustainability Performance	2	30.325	43	.927
CEO Values	3	92.819	69	.300

Source: *Research Data (2020)*

A review of extant empirical studies shows various imputation methods available to researchers to deal with data missing completely at random. These methods include but not limited to; case deletion (Listwise or Pairwise), mean imputation, expectation-maximization imputation, regression imputation, multiple imputation and hot-deck imputation (Stephen, 2015; Gold and Bentler, 2000; Pallant, 2005; Scheffer, 2002; Kimwolo, 2018). However, these methods are reported to distort the inherent structure of the original dataset when used thus causing errors that affect the accuracy of further statistical inferences (Noor et al., 2015).

The researcher in the current study opted for the linear interpolation (Lint) method to replace missing values following Noor et al. (2015), Hair et al (2010) and Pallant (2005) argument that the method produces more robust results compared to other imputation methods, especially where inferential statistics are to be performed to test hypotheses. The linear interpolation equation is expressed as;

$$f(x) = f(x_0) + \frac{f(x_1) - f(x_0)}{x_1 - x_0}(x - x_0)$$

(Chapra and Canale, 1998)

Using the linear interpolation method, a new data set was created with Lint values. Frequencies in descriptive statistics were re-run to explore the new dataset and all missing values had been replaced. However, some replaced values slightly deviated from the scale used in the questionnaire. For instance; item coded OTC1 for case 387 was replaced with a value of 4.5, item coded ST2 for case 406 was replaced with a value of 2.5, item coded OTC6 for case 600 was replaced with a value of 5.5, item coded ENV3 for case 677 was replaced with a value of 5.5 and item coded ENV1 for case 719 was replaced with a value of 4.5. The researcher used the "record into different variables function" (SPSS Version 21) to smoothen those specific values to fit in the scale used in the questionnaire, where the value of 2.5 became 3.0, 4.5 became 5.0, and 5.5 became 6.0 as guided by the research work of Kawalya (2018).

4.2.2 Analysis of uni-variate outliers

As earlier indicated in chapter three, it was imperative to explore the data set for the existence of outliers before subjecting the data to further descriptive and parametric tests that work only on data which is normally distributed. Several options are available in literature guiding researchers on how to check out for the existence of outliers in a given data set (Beaumont and Rivest, 2009; Field, 2010; Hair et al., 2006;

Pallant, 2005). In the current study, the researcher used frequencies in descriptive statistics to explore the presence of uni-variate outliers (i.e outliers in a single variable). The result of the frequency tables showed non-existence of uni-variate outliers arising out of errors in data entry. Graphically, the results of Stem-and-Leaf box plots revealed some cases with outliers (both extremely high-7 and extremely low-1 observations) denoted with small circles and figures attached, laying outside the shaded box. All the study variables were associated with some cases of outlier values as summarized in Table 4.4.

Table 4.4: Uni-variate Outliers Analysis

Construct	Case Number							
Organisational Learning	284	125	83	131	553	574		
Firm Sustainability Performance	726	700	662	683	706	709	715	
CEO Values	593	368	662	444	726	709	706	
Firm Innovativeness	706	703	709	189	52	700	726	662

Source: *Research Data (2020)*

From a review of extant literature, the researcher came across a range of methods that could be applied to deal with uni-variate outliers (Stephen, 2015; Field, 2010). For instance, deleting cases with extreme values from the dataset so as it becomes a missing value or else the entire variable can be deleted in case it is associated with many outliers. However, deletion of outliers could reduce the response rate on particular items and/or variables thus affecting statistical power. In light of this challenge, Field (2010) recommends researchers to use methods that facilitate transformation of outliers into normally distributed data rather than deletion. Following Field (2010) guidance, the researcher in the current study transformed the Lint values data into standardized values (z-scores), whose distribution has a mean of 0 and a standard deviation of 1. Standardization was used in order to be able to

compare data across variables using a uniform scale. Transformation of data followed the formula expressed as;

$$Z = \frac{X-\mu}{\sigma}$$ (Field (2010))

Where;

Z= standardised score
x=observed value
μ = mean of the sample
σ=standard deviation of the sample

Field (2010) suggests that z-scores laying outside the value of + (-) 2.5 should be considered outliers. Following this guidance, the researcher identified 7 outliers associated with sustainability performance, 6 outliers associated with organisational learning, 8 outliers associated with firm innovativeness and 7 outliers associated with CEO values. Consequently, all outliers were corrected to the nearest high value under each variable (Field, 2010). Further stem and leaf uni-variate outlier analysis results presented under appendix 10 showed that all variables were cleaned of outliers.

4.2.3 Analysis of Common Methods Bias

Since a single respondent (i.e., firm managers) provided data on both the predictor and outcome variables, it was essential to statistically test for the presence of Common Methods Bias (CMB) in addition to the earlier instrument design procedures taken. Harman's single factor test was performed to establish whether majority of the variance in the measures were accounted for by a single common factor. All the 75 indicator variables (i.e items) measuring the four main variables were entered into un-rotated exploratory factor analysis using principal axis extraction method. The results presented under Appendix 11 showed that the first factor explained up-to about 15.067% of the total variance and indicated a structure of 22 potential factors with eigenvalues greater than 1. Since the value of 15.067% was far below the

recommended maximum thresh-hold of 50%, the researcher concluded that no single factor accounted for majority of the total variance and therefore common methods bias was not an issue expected to affect parameter estimates in this study (Aguirre-Urreta and Hu, 2019; Nabatanzi, 2014; Podsakoff et al., 2012).

4.3 Profile of Participating Managers

Although firms constituted the unit of analysis in this study, the researcher found it important to understand and report on the profile (characteristics) of the unit of inquiry-the managers who participated in the study. The results presented in Table 4.5 indicate that;

Majority of the respondents (32.9%) were in the age bracket ranging from 36-40 years. The least represented age group comprised of respondents aged above 50 years who accounted for only 3.3% of the entire respondent group. Generally, over 87.4 % of the managers who participated in this study were above 30 years of age. No manager was below the age of 25 years. This result indicates that majority of the managers who participated in this study were mature enough to comprehend the issues being investigated. There is a likelihood that their age rhyme with their managerial work experience (Sahu and Agarwal, 2016).

Participating managers also reported on their respective education levels and generally, results showed that majority (61.8%) of the respondents had attained a master's degree and 22.4% postgraduate diploma. 8.7% had a bachelor's degree and 7% held a diploma. Unlike with the service sector, it emerged that within the manufacturing setting some managerial positions are assumed based on technical hands-on experience rather than attainment of higher academic qualifications. Interestingly, one (1%) respondent had attained a Doctorate. This education

distribution confirmed that respondents had attained adequate college training and therefore knowledgeable in their specific fields of work.

Majority of the respondents served as middle (59.5%) as well as lower-level managers (21.3%) in their respective firms. Senior managers constituted about 12.7% of the entire respondent group and 6.5% were at the supervisory level. This indicates that managers who take part in firm-wide decision-making processes participated in this study. This respondent group fits Young's (2009) suggestion regarding the suitability of managers to provide information related to organisational variables.

Managers who participated in this study were drawn from the most critical departments, relevant to understanding the extent to which their respective firms engaged in the variables under study. Majority of whom came from Production/ Operations (24.3%), Research and Development (22.1%) and Human Resource Management (15.6%). The other departments included; Finance/Accounting (15.6%), Marketing, Public Relations and Communications (6.1%), Procurement and Logistics (8.5%), Information Technology Management (5.6%), and Corporate Affairs (2.3%).

Regarding their managerial tenure, 63.6% had served for a period ranging from 7-9 years, 24.5% for 3-6 years and 11.9% for a period of 10 years and above. The distribution of managerial tenure revealed that all the managers who participated in this study had served in the managerial position for at least three (3) years. This signals that responding managers had accumulated sufficient knowledge and experience about the variables being investigated in this study. Jain and Moreno (2015) emphasize managerial experience in studies examining organisational issues.

Table 4.5: Profile of Participating Managers

Factor	Category	Frequency	Percentage
Age Group	<25 years	0	.0
	25-30years	93	12.6
	31-35years	186	25.2
	36-40years	243	32.9
	41-45years	113	15.3
	46-50years	79	10.7
	Above 50years	24	3.3
	Total	**738**	**100**
Education Level	Diploma	52	7
	Bachelor's Degree	64	8.7
	Postgraduate Diploma	165	22.4
	Masters	456	61.8
	PhD	1	.1
	Total	**738**	**100**
Managerial Level	Senior Management	94	12.7
	Middle Management	439	59.5
	Lower Management	157	21.3
	Supervisor	48	6.5
	Total	**738**	**100**
Department of Work	Finance or Accounting	115	15.6
	Human Resource Management	115	15.6
	Marketing, Public Relations and Communications	45	6.1
	Procurement and Logistics	63	8.5
	Production or Operations	179	24.3
	Information Technology Management	41	5.6
	Corporate Affairs	17	2.3
	R & D	163	22.1
	Total	**738**	**100**
Tenure	<3years	0	.0
	3-6years	181	24.5
	7-9years	469	63.6
	10 and above years	88	11.9
	Total	**738**	**100**

Source: *Research Data (2020)*

4.4 Data Aggregation

This study sought to examine relationships between firm-based variables. Therefore, after cleaning data for missingness, outliers and establishing the characteristics of the individual respondents, the researcher aggregated the data from individual manager responses to firm level data using composite scores (means).

4.5 Firm Characteristics

In the current study, manufacturing firms formed the unit of analysis. Therefore, it was imperative to first describe the kind of firms that participated in the study prior to presenting the key findings of the study. Table 4.6 shows a summary of the firm characteristics related to; business type, ownership, origin, age and size. These are presented as follows;

As earlier mentioned, the main study was conducted in the Central and Eastern regions of Uganda. Majority of the firms (68.5%) that participated in the study were drawn from the Central region and the 31.5% came from the Eastern region. This result affirms the present geographical distribution of the industrial sector in the country. In the early years, the eastern region had the highest number of industrial concentration due to easy access to hydro-electricity power. However, the rapid growth of Kampala-the capital city of Uganda and the surrounding areas stimulated increased industrialization in the central region. By the financial year 2006/07, the region dominated the country's industrial sector by 61%; this is further expected to grow at about 40% (Page et al., 2016; Buyinza, 2011; UBOS, 2018)

The results further showed that firms engaged in both food and non-food processing participated in this study. 45.1% of these firms engaged in the processing of food products such as; meat, fish, dairy products, grain-milling, coffee, tea, cotton, bakery,

beverages, and tobacco products. 54.9% of the participating firms engaged in the processing of non-food products like; leather, saw-milling, printing and publishing, chemicals, plastics, metal, furniture, among other related products. These results indicate that the entire manufacturing sub-sector was fairly represented in this study as described in the literature of Ecuru et al. (2014) and Namagembe et al. (2016).

Regarding the legal ownership of the firms that participated in this study, results showed that majority were privately owned (74.7%). These were followed by firms owned under some form of partnership (19.5%) and state-owned firms formed the least part of the study at 5.8%. This statistic indicates that all firms under the legal ownership category were fairly represented as suggested in the research work of Chow and Chen (2012). This result affirms MFPED (2012) report that the private sector forms the largest part of Uganda's economy. This is equally reflected within the manufacturing sector. Government retained manufacturing of a few critical products such as the processing, printing and publication of national important security documents, manufacture of fire arms, and assembling of military equipment.

Both domestic and foreign firms participated in this study. A large number of them were domestic firms (57.6%) while the foreign firms covered up-to 42.4 % of the entire study sample. This statistic shows that the Ugandan manufacturing sub-sector is open to free cross-border trade where both local and international manufacturers are encouraged to favorably compete with limited restrictions. Many foreign firms continue to join the Ugandan manufacturing sector due to Government's policy to promote Foreign Direct Investment (FDI) through the Uganda Investment Authority (UIA) as noted by Page et al (2016).

Regarding the length of firm existence, majority (45.1%) of the firms that participated in this study had been in existence for 16 years and above. These were followed by firms that had been in existence for a period ranging from 11-15 years (41.8%). Firms that had been in operation for a period ranging from 5-10 years were the minority, standing at 12.1%. The fact that no participating firm had been in existence for less than 5 years implied firm stability. In line with Javalgi, Griffith and White (2003) argument, these firms were assumed to have accumulated a wealth of business knowledge and experience relevant to addressing the concerns of this study.

Overall, only medium and large size firms participated in this study. Of these, 66.1% were medium size and 33.9% were large firms. This distribution is consistent with UMA (2019) categorization which indicates that medium size firms are more in numbers than large firms. No small size firm participated in the study. Moreover, Pedersen et al. (2018) attest that the variables under investigation are more evident in medium and large size firms compared to small-size firms.

Table 4.6: Firm Characteristics

Firm Characteristic	Category	Frequency	Percentage
Region	Central	176	68.5
	Eastern	81	31.5
	Total	**257**	**100**
Business Activity	Food processing	116	45.1
	Non-food processing	141	54.9
	Total	**257**	**100**
Firm Ownership	State	15	5.8
	Private	192	74.7
	Partnership	50	19.5
	Total	**257**	**100**
Firm Origin	Foreign	109	42.4
	Domestic	148	57.6
	Total	**257**	**100**
Firm Age	<5 years	00	.0
	5-10years	31	12.1
	11-15years	110	42.8
	≥ 16 years	116	45.1
	Total	**257**	**100**
Firm size	<51 Employees	00	.0
	51-100 Employees	170	66.1
	>100 Employees	87	33.9
	Total	**257**	**100**

Source: *Research Data (2020)*

4.6 Factor Analysis

Prior to performing actual factor analysis, data was examined to establish whether it was adequate to support factor analysis. This is referred to as factorability. The Sample-To-Variable (STV) ratio method suggested in the literature of Garson (2008) and Nunnally (1978) was used to verify factorability of the items. This ratio is expressed as; S/V where S denotes the sample size and V the number of observable variables/items. A ratio of at least 10 cases for each item (10:1) is deemed sufficient and desirable to execute factor analysis (Hair et al., 2010). In the current study, STV ratios were obtained for each of the main variables and results presented in Table 4.7 revealed a ratio of 11 responses per item under Organisational Learning (OL), 15 responses for each item under Firm Innovativeness (FI), 21 responses for each item

under CEO Values (CV) and 11 responses for each item under Sustainability Performance (SP). All the STV ratios for the four main variables were above the threshold of 10:1 indicating that data was adequate to support factor analysis.

Table 4.7: Results of Sample-To-Variable Ratio Analysis

Scale	OL	FI	CV	SP
No. of Variables (V)	23	17	12	23
No. of Subjects (S)	257	257	257	257
Ratio (S/V)	11	15	21	11

Source: *Research Data (2020)*

4.6.1 Exploratory factor analysis

Exploratory factor analysis (EFA) is a type of factor analysis used for validating observed variables and reducing them into a more manageable and easier to understand factor structure. EFA enables researchers to explore the underlying factor structure in the data set in relation to; hidden patterns, factor overlaps and the general characteristics in multiple patterns. EFA endeavors to retain the original factor structure as much as possible (Idinga, 2015; Hair et al., 2010). Factors were extracted using Principal Component Analysis (PCA) with the help of an orthogonal rotation (Varimax) method. PCA was chosen due to its ability to establish linear components in the data set as well as ability to align a set of factors that account for common and unique variance in a set of measured variables (Field, 2009). The orthogonal rotation (Varimax) method was chosen because of its ability to maximize the dispersion of loadings within factors. By doing this, fewer factors are loaded on each component, thereby forming clusters which are easy to interpret (Idinga, 2015; Child, 1990).

Using the Varimax rotation method of Principal Component Analysis (PCA) with Kaiser Normalization criterion, factors were checked for low loading (<.5), acceptable loading (≥.5), cross-loading and appropriate loading on a given component of interest.

Factor loadings indicated the level of significance a given item holds on a specified factor (Hair et al., 2010; Steven and Keenan, 2002). Following the guidance given by Comfrey and Lee (1992), factors with low loadings (<.50) were categorized as insufficient and suppressed from the final factor structure. For cross-loading factors, oblique rotation method was applied to test whether such factors could be refined to generate a better factor structure. However, these cross-loadings persisted even after applying the oblique rotation method. Consequently, cross-loading factors were discarded since the difference in their loadings was less than .2 (Hair et al., 2010).

Finally, only factors that loaded on a specific dimension or component of interest with values of .5 and above (≥.5) were retained for further statistical analysis. This extraction cut-off point is consistent with Pituch and Steven (2015)'s critical values table which indicates that for a sample size of 100 cases and above, factor loadings of .5 and above are considered significant. This study used a sample of 257 cases and therefore a cut-off of (≥.5) was deemed appropriate. The extracted factors had Eigen values greater than one (Nunnally, 1978). These were presumed to sufficiently account for common variance in a given a set of measured variables.

4.6.1.1 Exploratory factor analysis for organisational learning

Exploratory factor analysis was used to extract the most important factors that account for greater common variance in organisational learning. The results presented in Table 4.8 indicate a KMO value of .72 which indicated that the sample was adequate to facilitate factor analysis (Field, 2009). Further still, Bartlett's test of Sphericity produced Approx. Chi-Square =1040.549, DF =78, Sig. = .000. This result indicates that correlations between items were sufficiently large for factor analysis to be executed (Hair et al., 2010).

Using the Varimax rotation method with Kaiser Normalization, a total of 13 items out of the initial 23 items were extracted to measure the main variable of organisational learning. These were clustered along four components; Knowledge Acquisition (Coded as KA)-4 items, Knowledge Distribution (Coded as KD)-4 items, Knowledge Interpretation (Coded as KI)-3 items, and Knowledge Storage (Coded as KS)-2 items. Seven (7) items coded KA1, KA2, KD6, KI4, KS1, KS3 and KS4 were suppressed because they loaded below .5 while three (3) items coded KA7 (.551), KD5 (.549), and KD7 (.641) overlapped. The items that overlapped were discarded from the final factor structure used to measure organisational learning (Hair et al, 2010). The four components accounted for 66.012% of the total variance in organisational learning. Comparatively, Knowledge Distribution contributed up to 18.9 % of the total variance in organisational learning, followed by Knowledge Acquisition (17.9%), Knowledge Interpretation (16.2%) and Knowledge Storage emerged as the least contributor (13%). All the four components had Eigen values greater than 1.

Table 4.8: Exploratory Factor Analysis Results for Organisational Learning

Rotated Component Matrix

		Component			
Code	**Items**	**Knowledge Acquisition**	**Knowledge Distribution**	**Knowledge Interpretation**	**Knowledge Storage**
KA4	Our employees learn through attending trade fairs and exhibitions	.801			
KA6	New ideas on work performance are experimented continuously in our firm	.736			
KA3	Some of our employees bring in new knowledge from their professional associations	.708			
KA5	Our firm has a consolidated and resourceful Research and Development policy	.608			
KD3	We have employees who work with several units and act as links between them		.833		
KD2	Our firm has mechanisms that facilitate the sharing of best practices among units		.791		
KD4	We have staff who are responsible for collecting, assembling and distributing ideas		.729		
KD1	We conduct meetings regularly where employees share new experiences		.707		
KI2	Employees share business experiences by talking to each other			.862	
KI3	Teamwork is a very common practice observed across work units in our firm			.845	
KI1	Our staff understand our aim of doing business and feel committed to its achievement			.738	
KS2	We have a system for retrieving information				.886
KS5	Codes are used in the storage of firm knowledge				.874
	Eigen Values	2.327	2.463	2.107	1.684
	% of Variance	17.901	18.945	16.211	12.954
	Cumulative %	17.901	36.846	53.058	66.012

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.
Kaiser-Meyer-Olkin measure of sampling adequacy = .715
Bartlett's test for Sphericity: Approx. Chi-Square =1040.549, df =78, Sig.=.000

Source: *Research Data (2020)*

4.6.1.2 Exploratory factor analysis for firm innovativeness

Firm innovativeness was operationalized as tri-dimensional construct measured using a total of 17 items anchored on a 7-point Likert scale. The EFA results presented in Table 4.9 indicate a KMO value of .806 indicating that data was adequate to facilitate factor analysis (Field, 2009). Bartlett's test of Sphericity produced Approx. Chi-Square=1106.298, DF=36, Sig.=.000 implying that correlations between items were sufficiently large for factor analysis to be performed (Hair et al., 2010).

Using the Varimax rotation method with Kaiser Normalization, all the three components measuring firm innovativeness loaded separately. However, the component of management system innovativeness (Coded as SY) had only one factor that loaded appropriately (SY6) with a loading of .64, and an Eigen value of .892. Item (SY1, SY3 and SY5) had lower loadings (<.5) as well as item (SY2, SY4 and SY7) overlapped onto other components. Accordingly, the component of management system innovativeness was dropped following the guidance of Hair et al. (2010) and only the component of product innovativeness(Coded as PT), and process innovativeness (Coded as PC) were used in further statistical analyses to explain the main variable of firm innovativeness. Related studies examining the concept of firm innovativeness within the manufacturing context (for instance, Al-Sa'di, Abdallah, and Dahiyat, 2017; Ecuru et al., 2014 and Hilmi et al., 2010) consider the two dimensions of product innovativeness and process innovativeness as dominant factors.

Overall, the two components accounted for 66.59% of the total variance in firm innovativeness. Comparatively, product innovativeness explained up to 38.12% of the total variance in firm innovativeness and process innovativeness explained about 28.47%. All the two components had Eigen values greater than 1.

Table 4.9: Exploratory Factor Analysis Results for Firm Innovativeness

Rotated Component Matrix

Code	Items	Component		
		Product Innov.	**Process Innov.**	**Mgt System Innov.**
PT1	Our firm introduced a range of new products in the last 5 years	.822		
PT2	Our firm has often been first to the market with new products	.859		
PT3	Customers have often considered our new products as very novel	.875		
PT4	Our firm has been successful in launching new products compared to competitors	.791		
PT5	Our new products have been often imitated by competitors	.757		
PC1	We constantly improve our business processes		.782	
PC2	Our firm changes production methods faster than competitors		.827	
PC3	Our firm is faster in adopting newer manufacturing technologies relative to major competitors		.83	
PC5	Competitors often imitate our new production methods		.714	
SY6	We improved our performance management system			.64
	Eigen Values	3.836	2.157	.892
	% of Variance	38.115	28.47	
	Cumulative %	38.115	66.586	
	Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 3 iterations. Kaiser-Meyer-Olkin measure of sampling adequacy =.806 Bartlett's test for Sphericity: Approx. Chi-Square =1106.298, df=36, Sig.= .000			

Source: *Research Data (2020)*

4.6.1.3 Exploratory factor analysis for CEO values

CEO values as a bi-dimensional construct was measured using a total of 12 items anchored on a 7-point Likert scale. The EFA results presented in Table 4.10 indicate a KMO value of .762 indicating that the sample size was appropriate to facilitate factor analysis (Field, 2009). Bartlett's test of Sphericity produced Approx. Chi-Square=335.271, DF=6, Sig. = .000 implying that correlations between items were sufficiently large to support factor analysis (Hair et al., 2010)

Using the Varimax rotation method with Kaiser Normalization, only the value of openness-to- change (Coded as OPT) emerged the dominant component that sufficiently explains CEO positive value within the Ugandan manufacturing context. Four items were extracted to measure the component of CEO value of openness to change (OTC1, OTC2, OTC3 and OTC5). Items (ST3 and ST6) measuring the component of CEO value of self-transcendence (Coded as ST) had low loadings (<.5) while items (ST1, ST2, ST4 and ST5) had cross-loadings.

Consequently, the component of self-transcendence was discarded from further statistical analysis following the guidance of Hair et al. (2010) and only the component of openness-to-change was used to explain the main variable of CEO values. Nonetheless, similar studies examining CEO values in the manufacturing context continue to emphasise the dominant role of CEO value of openness-to-change compared to other human values (for instance, He, 2018; Datta et al., 2003). The extracted component of CEO value of openness-to-change explained up-to 63.44% of the total variance in CEO values, and had an Eigen value of 2.538 which is greater than 1.

Table 4.10: Exploratory Factor Analysis Results for CEO Values

Rotated Component Matrix

		Component
Code	**Items**	**Openness to Change**
OTC1	Our CEO supports staff to have some degree of autonomy in their work	.789
OTC2	Our CEO emphasizes individual creativity at work	.818
OTC3	Our CEO encourages staff to explore new ways of doing things	.841
OTC5	Our CEO is very flexible in his/her work methods	.734
	Eigen Values	2.538
	% of Variance	63.438
	Extraction Method: Principal Component Analysis Rotation Method: Varimax with Kaiser Normalization. a. Rotation converged in 3 iterations. Kaiser-Meyer-Olkin measure of sampling adequacy =.762 Bartlett's test for Sphericity: Approx. Chi-Square =335.271, df=6, Sig.= .000	

Source: *Research Data (2020)*

4.6.1.4 Exploratory factor analysis for sustainability performance

To validate the 23 items used to measure the dependent variable of sustainability performance, exploratory factor analysis was conducted. The results presented in Table 4.11 indicate a KMO value of .805 confirming that the sample size was adequate to facilitate item factor analysis (Field, 2009). Bartlett's test of Sphericity produced Approx. Chi-Square =1404.083, DF=91, Sig. =.000 implying that factors had significant correlations sufficient to measure sustainability performance (Hair et al., 2010)

Using the Varimax rotation method with Kaiser Normalization, a total of 14 items out of the 23 items were extracted to measure the main variable of sustainability performance. These were clustered along three components; Economic sustainability (Coded as ECO)-4 items, Social sustainability (Coded as SOC)-5 items, and Environment sustainability (Coded as ENV)-5 items. Item coded ECO 5 measuring the economic dimension was suppressed because it had a loading below the cut-off of .5. Item coded ENV 6 was discarded due to cross-loading on both environmental sustainability (.603) and economic sustainability (.509) (Hair et al, 2010). After discarding items coded; ECO 5 and ENV 6, 5 relevant items loaded on economic sustainability, 6 items loaded on social sustainability and 10 items loaded on environmental sustainability. Although the 21 retained items combined met the KMO and Bartlett's Test threshold of $.7\leq$ and $p<.05$ respectively, the items had a low cumulative percent of variance explained (53.9%). To achieve the recommended, threshold of at least 60 percent, items coded ECO 6(.508), SOC 6 (.578), ENV7 (.607), ENV8 (.538), ENV 9 (.628), ENV 10 (.596) and ENV (.626) were removed from the factor structure due to having relatively lower loadings.

Consequently, fourteen (14) items out of twenty-three (23) were extracted to measure the latent construct of sustainability performance. These factors combined accounted for 60.995% of the total variance in sustainability performance. Comparatively, economic sustainability explained more (21.219%) of the total variance in sustainability performance, followed by social sustainability (20.59%) and environmental sustainability emerged as the least contributor at 19.186%. The three extracted factors had Eigen values greater than 1.

Table 4.11: Exploratory Factor Analysis Results for Sustainability Performance

Rotated Component Matrix

Code	Items	Component		
		Economic	**Social**	**Environmental**
ECO2	Our firm has reduced the cost of inputs for the same level of output	.858		
ECO1	Our firm has been generating revenue from the sale of waste products	.830		
ECO3	Our firm has reduced the cost of waste management for the same level of output	.828		
ECO4	Our firm's market share has increased relative to our competitors	.691		
SOC5	Our firm has trained managers and employees in sustainability management practices		.773	
SOC2	Our firm has funded a number of local community initiatives		.755	
SOC1	Our firm has improved employees' safety		.737	
SOC3	Our firm has protected the rights of the local community		.733	
SOC4	Our firm is mindful of all stakeholders' interests in investment decisions		.728	
ENV4	Our firm has reduced environmental impacts of its products			.804
ENV3	Our firm has reduced its impact on natural habitats			.764
ENV2	Our firm has greatly reduced emissions from operations			.688
ENV5	Our firm has reduced the risk of environmental accidents			.675
ENV1	Our firm has considerably reduced on energy consumption			.645
	Eigen Values	2.971	2.883	2.686
	% of Variance	21.219	20.59	19.186
	Cumulative %	21.219	41.809	60.995

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.
Kaiser-Meyer-Olkin measure of sampling adequacy =.805
Bartlett's test for Sphericity: Approx. Chi-Square =1404.083, df=91, Sig.= .000

Source: *Research Data (2020)*

4.7 Construct Reliability

Yin (2009) suggests that items extracted using factor analysis need to further be tested for reliability to ensure internal consistency between multiple items used to measure a given construct. Reliable measurement items guarantee consistent results upon multiple administrations. In the current study, the researcher used the results of the Cronbach Alpha coefficient (α) statistical test to establish the level of internal consistency among items extracted to measure a given study construct (Cronbach, 2004). While at pilot stage the researcher considered a Cronbach alpha value of at least .6 ($\alpha \geq .6$) as an acceptable degree of reliability, for the final study items were considered reliable with a Cronbach alpha coefficient of at least 0.7 but not greater than .95 ($.7 \leq \alpha \leq .95$) as suggested by Hair et al. (2010). The reliability scores of each study construct are presented as follows;

4.7.1 Reliability analysis for organisational learning

Organisational learning was operationalized as a multi-dimensional construct measured using a total of 13 items extracted using principal component factor analysis. Cronbach alpha coefficient test was used to check for internal consistency of the measurement items used. The results of this test are presented in Table 4.12 where a Cronbach alpha coefficient score of .709 and a standardized (z) item alpha of .714 were obtained. These values fell slightly above the minimum acceptable Cronbach alpha coefficient of .7 suggested by Hair et al. (2010) indicating that the items used to measure the construct of organisational learning were reliable.

However, items coded KA5 (.283*****), KD1 (.106*****) and KD2 (.268*****) had Correlated Item-Total Correlation **(**CI-TC) values below .30. According to Nunnally and Bernstein (1994), items with CI-TC values less than .30 tend to lay outside the

domain measuring a given variable of interest. The authors recommend that such items should be deleted from further analysis or otherwise subject them to further confirmatory factor analysis. In this study, the three items with CI-TC values less than .30 were subjected to further composite reliability analysis in confirmatory factor analysis for verification.

Table 4.12: Reliability Analysis Results for Organisational Learning

Code	Items (13)	CI-TC	CAID	Cronbach (α)	Cronbach (α) based on Z-Items
KA3	Our firm works with external professional and technical experts	.409	.689	.709	.714
KA4	Our employees attend fairs and exhibitions regularly	.461	.680		
KA5	Our firm has a consolidated and resourceful Research and Development policy	.283*	.705		
KA6	New ideas on work performance are experimented continuously in our firm	.379	.690		
KD1	Meetings are held periodically where employees are informed about the latest innovations	.106*	.726		
KD2	Our firm has formal mechanisms that facilitate the sharing of best practices among work units	.268*	.704		
KD3	We have employees who work with several units and act as links between them	.469	.678		
KD4	We have staff who are responsible for collecting, assembling and distributing ideas	.331	.697		
KI1	All our staff share the same understanding about the aim of doing business and feel committed to its achievement	.307	.700		
KI2	Employees share business experiences by talking to each other	.329	.697		
KI3	Teamwork is a very common practice observed across work units in our firm	.309	.699		
KS2	We have a system for retrieving stored information	.373	.691		
KS5	Codes are used in the storage of knowledge	.382	.690		
	Notes: ***CI-TC****=Corrected Item-Total Correlation,* ***CAID****=Cronbach's Alpha if Item Deleted* ** = CI-TC <.30*				

Source: *Research Data (2020)*

4.7.2 Reliability analysis for firm innovativeness

The two components (with 9 items) extracted using EFA to measure firm innovativeness were subjected to a reliability statistical test. Cronbach alpha coefficient test was used to check for internal consistency of the measurement items used. The results of this test are presented in Table 4.13 where a Cronbach alpha coefficient score of .829 and a standardized item alpha of .825 were obtained. These

values fell far above the minimum acceptable Cronbach alpha coefficient of .7 suggested by Hair et al. (2010). This indicates that the 9 items extracted to measure the latent construct of firm innovativeness were reliable.

Further analysis of the Cronbach Alpha If Deleted (CAID) values show that all the items had values equal or below .829 ($\alpha \leq .829$) implying that the highest level of measurement reliability was obtained. Additionally, all CI-TC values were above the minimum cut-off of .30 suggested by Nunnally and Bernstein (1994), implying that all the 9 items correlated well in measuring the latent construct.

Table 4.13: Reliability Analysis Results for Firm Innovativeness

Code	Items (9)	CI-TC	CAID	Cronbach (α)	Cronbach (α) based on Z-Items
PT1	Our firm introduced a range of new products in the last 5 years	.636	.799		
PT2	Our firm has often been first to the market with new products	.659	.795		
PT3	Customers have often considered our new products as very novel	.649	.796		
PT4	Our firm has been successful in launching new products compared to competitors	.641	.799		
PT5	Our new products have been often imitated by competitors	.612	.803	.829	.825
PC1	We constantly improve our business processes	.392	.825		
PC2	Our firm changes production methods faster than competitors	.347	.829		
PC3	Our firm is faster in adopting newer manufacturing technologies relative to major competitors	.442	.821		
PC5	Competitors often imitate our new production methods	.401	.826		

***Notes: CI-TC**=Corrected Item-Total Correlation, **CAID**=Cronbach Alpha if Item Deleted*

***Source:** Research Data (2020)*

4.7.3 Reliability analysis for CEO Values

EFA extracted 4 items to measure the component of CEO value of openness-to-change. These were subjected to a reliability statistical test using Cronbach alpha (α) coefficient technique to check for the internal consistency of the extracted

measurement items. The results of this test are presented in Table 4.14 where a Cronbach alpha coefficient (**α**) score of .797 and a standardized item alpha (α Z-Items) of .807 were obtained. These values fell above the minimum acceptable Cronbach alpha coefficient (α) of .7 suggested by Hair et al. (2010) confirming that the measurement items extracted were reliable. Further analysis of the CI-TC and CAID scores showed that the items extracted conformed to the statistic threshold of above .3 and below .797 respectively.

Table 4.14: Reliability Analysis Results for CEO Openness-To-Change Value

Code	Items	CI-TC	CAID	(α)	(α) Z-Items
OTC1	Our CEO supports staff to have some degree of autonomy in their work	.592	.755	.797	.807
OTC2	Our CEO emphasizes individual creativity at work	.643	.740		
OTC3	Our CEO encourages staff to explore new ways of doing things	.692	.704		
OTC5	Our CEO is very flexible in his/her work methods	.549	.789		

Notes: ***CI-TC****=Corrected Item-Total Correlation,* ***CAID****=Cronbach Alpha if Item Deleted*

Source: *Research Data (2020)*

4.7.4 Reliability analysis for sustainability performance

EFA extracted 3 components with a total of 14 items to measure the construct of sustainability performance. Cronbach alpha coefficient test was used to check for internal consistency of the measurement items extracted. The results of this test are presented in Table 4.15 where a Cronbach alpha coefficient score of .824 and a standardized item alpha of .825 were obtained. These values fell above the minimum acceptable Cronbach alpha coefficient of .7 suggested by Hair et al. (2010) indicating that the items extracted to measure the latent construct of sustainability performance were reliable. However, the CI-TC value for item coded ENV3 (.233*) was below the minimum cut-off of .30 suggested by Nunnally and Bernstein (1994). The authors suggest that such an item should be deleted to further improve the measurement scale

reliability. In the current study, the researcher subjected the measurement item to further composite reliability test in confirmatory factor analysis.

Table 4.15: Reliability Analysis Results for Sustainability Performance

Code	Items (14)	CI-TC	CAID	Cronbach (α)	Cronbach (α) based on Z-Items
ECO 1	Our firm has been generating revenue from the sale of waste products	.495	.810	.824	.825
ECO 2	Our firm has reduced the cost of inputs for the same level of output	.590	.802		
ECO 3	Our firm has reduced the cost of waste management for the same level of output	.564	.805		
ECO 4	Our firm's market share has increased relative to our competitors	.421	.815		
SOC1	Our firm has improved employees' safety	.355	.819		
SOC2	Our firm has funded a number of local community initiatives	.441	.814		
SOC3	Our firm has protected the rights of the local community	.391	.817		
SOC4	Our firm is mindful of all stakeholders' interests in investment decisions	.520	.808		
SOC5	Our firm has trained managers and employees in sustainability management practices	.404	.816		
ENV1	Our firm has considerably reduced on energy consumption	.519	.808		
ENV2	Our firm has greatly reduced emissions from operations	.539	.807		
ENV3	Our firm has reduced its impact on natural habitats	.233*	.828		
ENV4	Our firm has reduced environmental impacts of its products	.481	.810		
ENV5	Our firm has reduced the risk of environmental accidents	.401	.816		
	Notes: CI-TC**=Corrected Item-Total Correlation, **CAID**=Cronbach Alpha if Item Deleted, ** = CI-TC <.30*				

Source: *Research Data (2020)*

4.7.5 Summary of construct reliability

The 13 items extracted to measure the latent construct of organisational learning have a Cronbach alpha value (α =.709). Similarly, the 9 items extracted to measure the latent construct of firm innovativeness have a Cronbach alpha value (α =.829). The 4 items measuring the latent construct of CEO values have a Cronbach alpha value (α =.797) and the 14 items extracted to measure the outcome variable of sustainability performance have a Cronbach alpha value (α =.824). The reliability test results

confirm that the measurement items extracted for each of the variables conformed to the Cronbach alpha coefficient criteria ($\alpha \geq .7$) suggested by Hair et al. *(*2010) and Nunnally (1978). Overall, the measurement items used averaged at a Cronbach alpha value (α =.79). The summary of the construct reliability results after exploratory factor analysis is presented in Table 4.16.

Table 4.16: Summary of Construct Reliability Results

	Pilot Study		**Main Study**	
Construct	No. of Items	Alpha (α)	No. of Items Retained	Alpha (α)
Organisational Learning	23	.86	13	.71
Firm Innovativeness	17	.83	9	.83
CEO Values	12	.67	4	.80
Sustainability Performance	23	.83	14	.82
Total/Average	75	.80	40	.79

Source: *Research Data (2020)*

4.8 Confirmatory Factor Analysis

Confirmatory Factor Analysis (CFA) was performed to further verify EFA validity and reliability results as well as refine the factor structure before subjecting the data to further correlation and regression analysis (Hair et al., 2010).

A computer programme (Analysis of Moments of Structures-AMOS, Version 23) was used to run CFA through Structural Equation Modeling (SEM). Model fit indices were used to establish whether the extracted components (dimensions) and factors (items) in EFA were the most suitable measures of the latent constructs or needed further refinement (Field, 2010). For an acceptable measurement model fit, researchers suggests that the test statistic of the Chi-square(χ^2) value should range from 2.0 to 9.0 and not-significant ($p>.05$), relative/normed Chi-square (χ^2/DF) value need not exceed 3.0 ($\leq$ 3.0), CFI, GFI, AGFI, IFI, RFI and TLI values should be at least .9 while the RMSEA value should be less than .08, although a RMSEA value of

.05 and below is considered a good model fit (Schreiber, 2006; Barrett, 2007; Kline, 2005; Hair et al., 2010; Hooper et al., 2008; Tabachnick and Fidell, 2007 MacCallum et al., 1996).

To further verify the validity of the factors extracted under EFA, the Average Variance Extracted (AVE) values were computed in CFA using the formula below, where a value of .5 and above confirmed the presence of convergent validity.

$$\textbf{AVE} = \frac{(\Sigma \text{ Standardized Factor Loading})^2}{(\Sigma \text{ 1-Standardised Loading})^2 + \Sigma(\text{var.}\varepsilon)}$$

Where = var. ε =Variance of the error

Fornell and Larcker (1981)

A comparison between the AVE values and the squared correlations (R^2) between them was used to establish discriminant validity, whereby AVE values greater than the squared correlation (R^2) between them provided statistical evidence for the presence of discriminant validity (Hair et al., 2010; Nunally and Bernstein, 1994; Fornell and Larcker, 1981).

For construct reliability, Composite Reliability (CR) tests were performed using the formula denoted below, where a CR value of .7 and above indicated internal consistency of the items measuring a given latent construct.

$$\textbf{Composite Reliability} = \frac{(\Sigma \text{ Standardized Loadings})^2}{(\Sigma \text{ Standardized Loadings})^2 + \Sigma(\text{ME})}$$

Where ME = Measurement Error = 1-(Standardized Loading)^2

Hair et al. (2010)

4.8.1 CFA for Organizational Learning

As earlier presented in Table 4.8, EFA extracted a factor structure of four (4) components measuring the latent construct of organizational learning. The component

of knowledge acquisition had 4 items that loaded well, knowledge distribution had 4 items as well, knowledge interpretation had 3 items and knowledge storage had 2 items. Babin and Svebsson (2012) and Hair et al. (2010) suggest that components with less than 3 item loadings need to be dropped from further CFA. However, Anderson and Gerbing (1988) suggest that two items loading on a given component can be subjected to further CFA as long as they both have higher loadings (≥.7). This was applied in the research work of Kawalya (2018). Based on this empirical evidence, the component of knowledge storage was subjected to further CFA since its two items had EFA loadings above .8. Consequently, all the four components were included in the CFA measurement model for organizational learning.

The CFA results presented in Figure 4.1 confirmed all the four components; knowledge acquisition, knowledge distribution, knowledge interpretation and knowledge storage together with their respective indicator variables as suitable measures of organizational learning. CFA extracted two (2) items to measure knowledge acquisition (KA3 and KA4), two (2) items to measure knowledge distribution (KD3 and KD4), three (3) items to measure knowledge interpretation (KI1, KI2 and KI3) and two (2) items to measure knowledge storage. However, items coded KA5 (.48), KA6 (.55), KD1 (.49) and KD2 (.64) had relatively low corresponding regression weights; implying that they were not significantly reflected by their respective components. These items were dropped in order to improve the goodness of the measurement model. Moreover, these items had earlier been reported to have CI-TC values below the minimum threshold of .30 in Table 4.12.

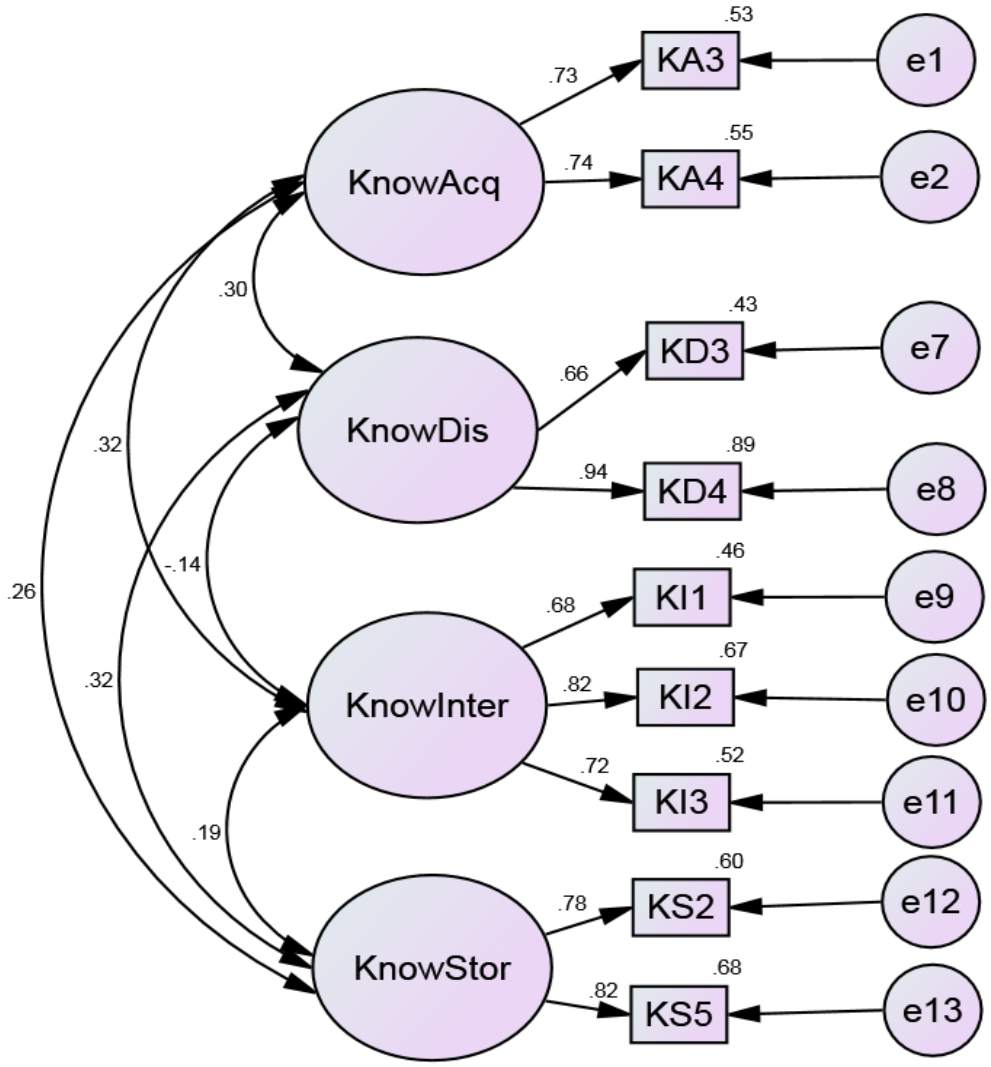
Accordingly, the model generated a Chi-square value of 35.239 at p=.027 for 21 Degrees of Freedom. The p-value less than .05 suggested ‘badness of model fit’

(Kline, 2005). However, Chi-square being a test of statistical significance is very sensitive to sample size (both large and small) and therefore could not solely be relied on to make conclusions on measurement model fit (Kenny, 2015; Hooper et al., 2008). Therefore, other indices were used to analyze the goodness of the measurement model fitness. The relative chi-square test produced a value of 1.678, which value is below the maximum threshold of 3.0, an indication of a fairly good model fit (Kline, 2005). The GFI, AGFI, NFI, RFI, IFI, TLI and CFI were all above the minimum cut-off point of .9 and RMSEA =.051 which values further indicated a fairly good measurement model fit (Tabachnick and Fidell, 2007; Steiger, 2007).

The result of the model estimates presented in Table 4.17 show that the regression weights (Beta) for all the indicator variables were above .5 with their corresponding low standard errors; an indication that the constructs of; knowledge acquisition, knowledge distribution, knowledge interpretation and knowledge storage together with their respective indicator variables suitably reflected the main variable of organisational learning (Kenny, 2015). The Critical Ratio (C.R.) values range from 5.428 to 9.333 (above the minimum threshold of 1.96) with corresponding p-values less than .05. Additionally, all squared factor regressions (L^2) values were above the minimum cut-off point of .20. These results confirmed existence of significant relationships between organisational learning components and their respective indicator variables.

Further still, the results presented in Table 4.18 indicate that the Average Variance Extracted (AVE) values for the retained factors are above the minimum cut-off of .5, thus confirming the presence of convergent validity (Hair et al., 2010; Urbach and Ahlemann, 2010). The Composite Reliability (CR) statistic for the each of the four

latent constructs is above the minimum cut-off of .70 further confirming the presence of convergent validity and construct reliability among the indicators of each of the factors. Similarly, the AVE values for all the factors being greater than the squared correlation (R^2) values between them provides evidence for discriminant validity (Fornell and Larcker, 1981; Hair et al., 2010; Nunally and Bernstein, 1994).



CMIN (χ^2) =35.239; DF=21; P-Value=.027; CMIN/DF=1.678; GFI=.972; AGFI=.940; NFI=, 948; RFI=.910; IFI=.978; TLI=.962; CFI=.978; RMSEA=.051

Figure 4.1: A Four-Factor CFA Measurement Model for Organizational Learning

Table 4.17: CFA Model Estimates for Organizational Learning

Path			B	S.E.	Beta	C.R.	L^2	P
KA3	<---	KnowAcq	1		.728		1	
KA4	<---	KnowAcq	1.157	.213	.742	5.428	1.339	***
KD3	<---	KnowDis	1		.659		1	
KD4	<---	KnowDis	1.374	.250	.942	5.484	1.888	***
KI1	<---	KnowInter	1		.681		1	
KI2	<---	KnowInter	1.045	.112	.818	9.333	1.092	***
KI3	<---	KnowInter	.89	.097	.721	9.199	.792	***
KS2	<---	KnowStor	1		.777		1	
KS5	<---	KnowStor	1.097	.194	.825	5.656	1.203	***

*Note: *** =p<.001, ** =p<.01, *=p<.05*

Source: *Research Data (2020)*

Table 4.18: Composite Reliability and AVE Test Results for Organizational Learning

Variables	Composite Reliability		No of Items	Average Variance Extracted		Squared Correlations (R^2) 1	2	3	4
Knowledge Acquisition	.702		2	.54		1			
Knowledge Distribution	.790	.93	2	.66	.59	.092	1		
Knowledge Interpretation	.785		3	.55		.100	.020	1	
Knowledge Storage	.782		2	.64		.068	.100	.035	1

Source: *Research Data (2020)*

4.8.2 CFA for Firm Innovativeness

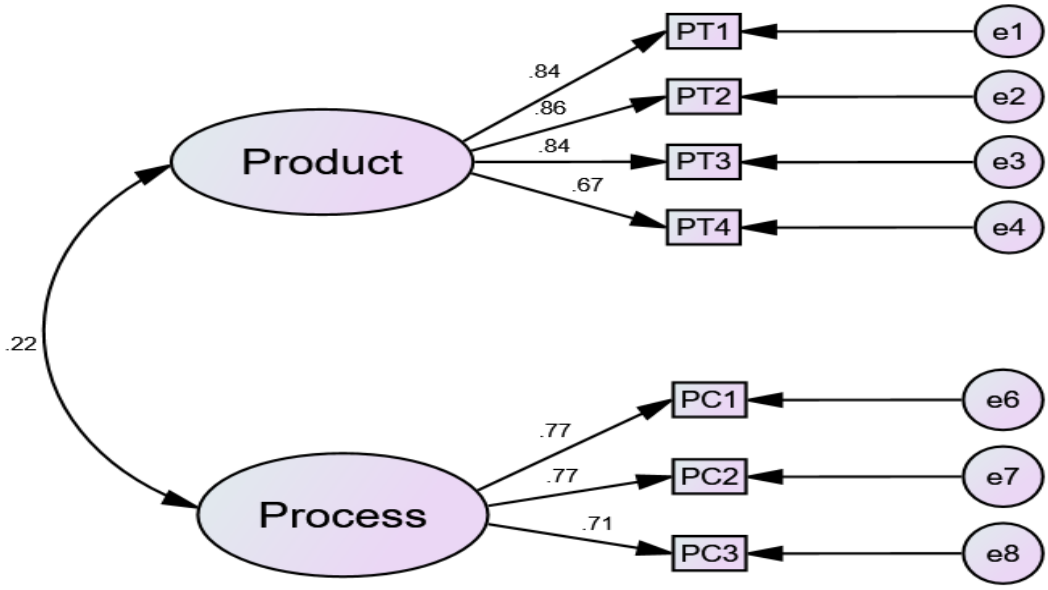
EFA extracted a factor structure of two (2) components to measure the construct of firm innovativeness. The component of product innovativeness had 5 factors that loaded well, and process innovativeness had 4 factors. These were further subjected to a CFA test and results presented in Figure 4.2 show that CFA extracted 4 factors to measure product innovativeness (PT1, PT2, PT3, and PT4) and 3 factors to measure process innovativeness (PC1, PC2 and PC3). Indicator variables coded PT5 (.67), and PC5 (.63) had relatively lower corresponding regression weights, implying that their contribution to the model was relatively lower. These indicator variables were dropped in order to improve the goodness of the measurement model.

Accordingly, the model generated a Chi-square value of 21.652 at p=.061 for 13 Degrees of Freedom. The p-value above 0.05 suggested 'goodness of model fit' (Kline, 2005). However, the Chi-square being a test of statistical significance is very sensitive to sample size (both large and small) and therefore the researcher could not independently rely on the result of a significant Chi-square to make conclusions on measurement model fit (Hooper et al., 2008). Other indices were used to analyze the goodness of the measurement model. The relative chi-square test produced a value of 1.666, which figure is below the maximum threshold of 3.0, an indication of a fairly good model fit (Kline, 2005). The GFI, AGFI, IFI and TLI were all above the minimum cut-off point of .90 and RMSEA =.051 which values further indicated a fairly good measurement model fit (Tabachnick and Fidell, 2007; MacCallum et al., 1996).

The result of the model estimates presented in Table 4.19 show that the regression weights (Beta) for all the indicator variables were above .5 with their low corresponding standard errors; an indication that the component of product innovativeness and process innovativeness together with their associated indicator variables strongly explained the construct of firm innovativeness (Kenny, 2015). The Critical Ratio (C.R.) values ranged from 9.606 to 15.624 (above the minimum threshold of 1.96) with corresponding p-values significant at .001. Additionally, all squared factor regressions (L^2) values were above the minimum cut-off point of .20. These results confirmed existence of significant relationships between firm innovativeness components and their respective retained indicator variables.

More so, the results presented in Table 4.20 indicate that the Average Variance Extracted (AVE) values for the retained components (.65, .56) are above the

minimum acceptable threshold of .50 thus confirming factor convergent validity (Hair et al., 2010; Urbach and Ahlemann, 2010). The Composite Reliability (CR) statistic for each of the components was above .70 implying that there was strong shared variance among the indicator variables extracted. Similarly, the AVE values for the two components being greater than the squared correlation (R^2) between them (.046) was evidence for the presence of factor discriminant validity (Fornell and Larcker, 1981; Hair et al., 2010; Nunally and Bernstein, 1994).



CMIN (χ^2) =21.652; DF=13; P-Value=.061; CMIN/DF=1.666; GFI=.977; AGFI=.951; NFI=.973; RFI=.956; IFI=.989; TLI=.982; CFI=.989; RMSEA=.051

Figure 4.2: A Two-Factor CFA Measurement Model for Firm Innovativeness

Table 4.19: CFA Model Estimates for Firm Innovativeness

Path			B	S.E.	Beta	C.R.	L^2	P
PT1	<---	Product	1		.836		.699	
PT2	<---	Product	.946	.061	.856	15.624	.733	***
PT3	<---	Product	.936	.061	.838	15.265	.702	***
PT4	<---	Product	.649	.057	.669	11.383	.448	***
PC1	<---	Process	1		.766		.587	
PC2	<---	Process	.876	.089	.771	9.789	.594	***
PC3	<---	Process	.987	.103	.714	9.606	.510	***

Notes: ****=p<.001, **=p<.01, *=p<.05*

Source: *Research Data (2020)*

Table 4.20: Composite Reliability and AVE Test Results for Firm Innovativeness

Variables	Composite Reliability		No. of Items	Average Variance Extracted		Squared Correlations (R^2)	
						1	2
Product_Innov	.878	.916	4	.65	.61	1	
Process_Innov	.795		3	.56		.046	1

Source: *Research Data (2020)*

4.8.3 CFA for CEO Values

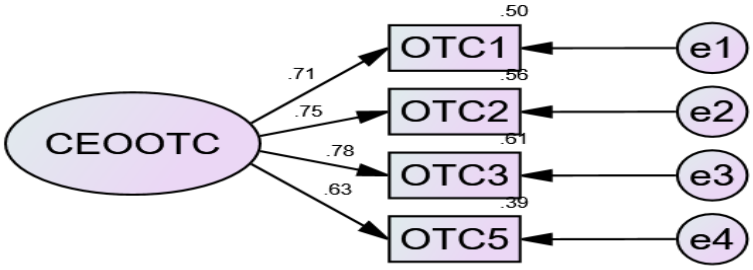
EFA extracted only the component of openness to change to measure the moderator variable of CEO values, with four (4) factors. These were subjected to a CFA test and results presented in Figure 4.3 confirmed the four factors to satisfactorily measure the latent construct of CEO values.

Accordingly, the model generated a Chi-square value of 17.009 at p=.000 for 2 Degrees of Freedom. The significant p value (<.05) suggested a bad model fit. However, other indices were checked to further verify the status of the model fit. The relative chi-square test produced a value of 1.466, which figure is below the maximum threshold of 3.0, an indication of a fairly good model fit (Kline, 2005). The GFI, AGFI, NFI, RFI, IFI, TLI, and CFI values were all above the minimum cut-off point of .9 and RMSEA =.043 which values further indicated approximately good measurement model fit (Tabachnick and Fidell, 2007; Hu and Bentler, 1999).

The result of the model estimates presented in Table 4.21 show that the standardized regression weights (Beta) for all the indicator variables were above .5 with their corresponding low standard errors, an indication that the four indicator variables strongly reflected the construct of CEO value of openness to change (Kenny,2015). The Critical Ratio (C.R.) values range from 8.648 to 10.209 (above the minimum

threshold of 1.96) with corresponding p-values significant at .001. Additionally, all squared factor regressions (L^2) values were above the minimum cut-off point of .20. Such results confirmed existence of significant relationships among the items extracted to measure CEO value of openness to change.

In addition, the results presented in Table 4.22 indicate that the Average Variance Extracted (AVE) values for the retained factors = .52, which value fell above the minimum threshold of .5 to confirm the presence of convergent validity among measurement factors retained (Hair et al., 2010; Urbach and Ahlemann, 2010). The Composite Reliability (CR) statistic for the extracted factors is .81 (>.7) meaning that there was strong convergent validity and construct reliability among the indicators variables (Fornell and Larcker, 1981; Hair et al., 2010; Nunally and Bernstein, 1994).



CMIN (χ^2) =17.009; p-value=.000; DF=2; CMIN/DF=1.466; GFI=.966; AGFI=.952; NFI=.950; RFI=.964; IFI=.955; TLI=.988; CFI=.955; RMSEA=.043

Figure 4.3: A One-Factor CFA Measurement Model for CEO Values

Table 4.21: CFA Model Estimates, C.R. and AVE for CEO Values

Path			B	S.E.	Beta	C.R.	L^2	P
OTC1	<---	CEO_OTC	1		.71		.504	
OTC2	<---	CEO_OTC	.9	.09	.75	9.96	.557	***
OTC3	<---	CEO_OTC	1.2	.12	.78	10.2	.615	***
OTC5	<---	CEO_OTC	1.1	.13	.63	8.65	.392	***

Notes**: CR=Composite Reliability, AVE=Average Variance Extracted, ***=p<.001, **=p<.01, *=p<.05, **CR=.81, AVE=.52

***Source:** Research Data (2020)*

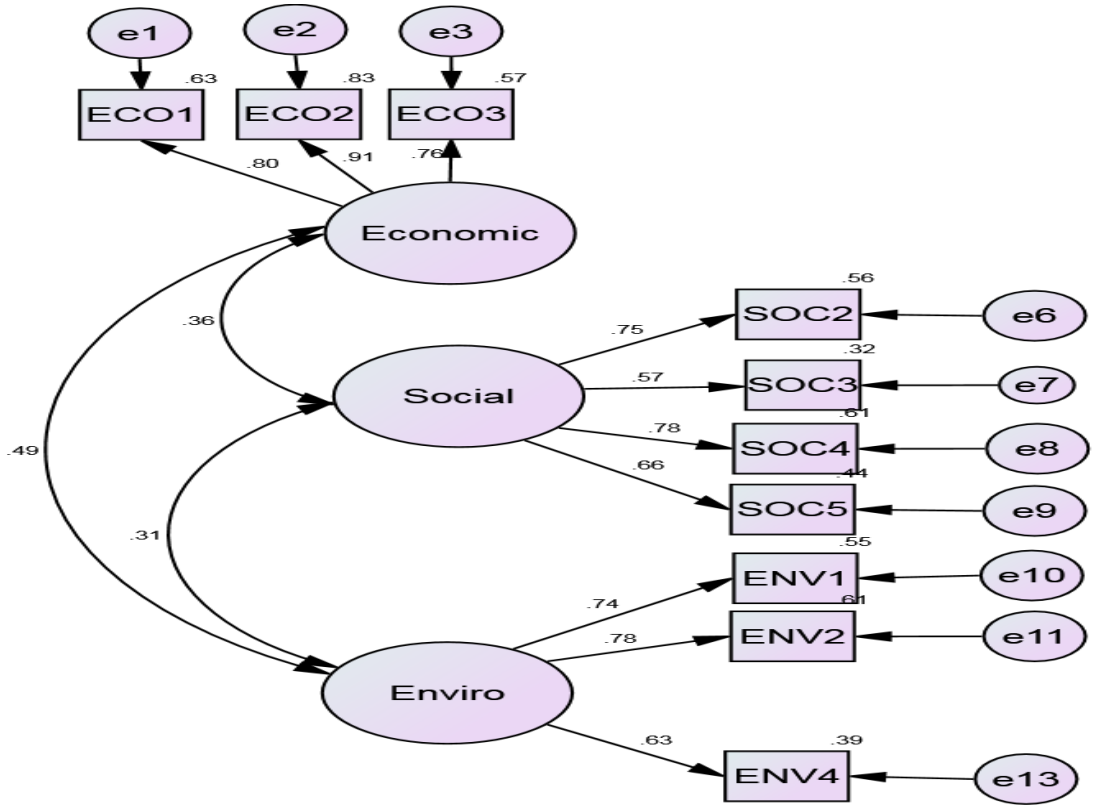
4.8.4 CFA for sustainability performance

EFA extracted a factor structure of three (3) components to measure the outcome variable of sustainability performance. Economic sustainability had 4 factors that loaded well, social sustainability had five (5) and environmental sustainability had five (5) factors. These were subjected to a further CFA test and results presented in Figure 4.4 confirmed all the three components as suitable measures of sustainability performance. CFA confirmed three (3) indicative measures for economic sustainability (ECO1, ECO2 and ECO 3), four (4) indicative measures for social sustainability (SOC 2, SOC 3, SOC 4, and SOC 5) and three (3) indicative measures for environmental sustainability (ENV 1, ENV 2 and ENV 4). Indicator variable coded ECO 4, SOC 1, ENV3 and ENV 5 had relatively lower corresponding regression weights (.59, .61, .49 and .58 respectively) implying that their contribution to the model was low. Hence, these indicator variables were dropped in order to improve the measurement model fit.

Accordingly, the model generated a Chi-square value of 49.587 at p=0.024 for 32 Degrees of Freedom. The p-value less than .05 suggested 'badness of model fit' (Kline, 2005). However, the Chi-square being a test of statistical significance is very sensitive to sample size (both large and small) and therefore cannot be independently relied on to make conclusions on model fit (Hooper et al., 2008). Therefore, other indices were used to analyze the fitness of the measurement model. The relative chi-square test produced a value of 1.550, which figure is below the maximum threshold of 3.0, an indication of a fairly good model fit (Kline, 2005). The GFI, AGFI, NFI, RFI, IFI and TLI were all above the minimum cut-off point of .9 and RMSEA =.046 which values further indicated a fairly good measurement model fit (Tabachnick and Fidell, 2007; Hu and Bentler, 1999).

The result of the model estimates presented in Table 4.22 show that the standardized regression weights (Beta) for all the indicator variables were above .50 with their low corresponding standard errors, an indication that economic, social and environmental dimensions together with their retained indicator variables adequately reflected the construct of sustainability performance (Kenny,2015). The Critical Ratio (C.R.) values range from 8.045 to 14.322 (above the minimum threshold of 1.96) with corresponding p-values significant at .001. Additionally, all squared factor regressions (L^2) values were above the minimum cut-off point of .20. These results confirm existence of significant relationships among the three dimensions of sustainability performance together with their respective retained indicator variables.

Also, the results presented in Table 4.23 indicate that the Average Variance Extracted (AVE) values for the retained factors range from .50 to .68, which values fell within the acceptable threshold ($\geq$.5) to confirm presence of convergent validity among measurement variables (Hair et al., 2010; Urbach and Ahlemann, 2010). The Composite Reliability (CR) statistic for all extracted components were above .70, implying that there was strong convergent validity and construct reliability among the indicator variables associated with each of the factors. Similarly, the AVE values for all factors being greater than the squared correlations (R^2) between them was evidence for the presence of discriminant validity among variables (Fornell and Larcker, 1981; Hair et al., 2010; Nunally and Bernstein, 1994).



CMIN (χ^2) =49.587; DF=32; P-Value=.024; CMIN/DF=1.550; GFI=.962; AGFI=.935; NFI=.949; RFI=.928; IFI=.981; TLI=.973; CFI=.981; RMSEA=.046

Figure 4.4: A Three Factor CFA Measurement Model for Sustainability Performance

Table 4.22: CFA Model Estimates for Sustainability Performance

Path			B	S.E.	Beta	C.R.t	L^2	P
ECO3	<---	ECOPERF	.708	.056	.756	12.705	.572	***
ECO2	<---	ECOPERF	1.002	.07	.911	14.322	.830	***
ECO1	<---	ECOPERF	1		.796		.634	
SOC4	<---	SOCPERF	.927	.09	.783	10.294	.613	***
SOC3	<---	SOCPERF	.577	.072	.568	8.045	.323	***
SOC2	<---	SOCPERF	1		.747		.558	
SOC5	<---	SOCPERF	.762	.082	.662	9.259	.438	***
ENV1	<---	ENVPERF	1		.744		.554	
ENV2	<---	ENVPERF	1.083	.116	.783	9.336	.613	***
ENV4	<---	ENVPERF	1.008	.119	.628	8.483	.394	***

Note: **** = p<.001, ** = p<.01, * = p<.05*

Source: *Research Data (2020)*

Table 4.23: Composite Reliability and AVE Test Results for Sustainability Performance

Variable	Composite Reliability		No. of items	Average Variance Extracted		Squared Correlations (R^2)		
						1	2	3
Economic performance	.86		3	.68		1		
Social performance	.79	**.92**	4	.50	**.55**	.132	1	
Environment performance	.76		3	.52		.239	.098	1

Source: *Research Data (2020)*

4.9 Descriptive Statistics

Descriptive statistical analyses were performed for each latent construct based on the components and items confirmed through CFA. This enabled the researcher to understand the behaviour of the data in a more specific, meaningful and easy to interpret manner. Means and Standard Deviations (SD) were generated using a computer program (SPSS Version 21) to provide a basic understanding about the sample and measures. Means represent the average opinion of the respondents on a given factor. Standard deviation shows the level of deviation of individual responses from the mean (Field, 2010). In particular, means were used to establish whether there was a good fit of the observed data (Pallant, 2005). The result of descriptive statistics for each of the latent construct is presented in the proceeding sub-sections.

4.9.1 Aggregated Descriptive Statistics for Organisational Learning

To examine the extent to which the sampled manufacturing firms engaged in learning processes, the researcher subjected respondents to a series of statements to which they indicated their level of agreement or disagreement. CFA confirmed two (2) items examining how firms acquired knowledge, two (2) items examining how the acquired knowledge is distributed or shared amongst internal members, three (3) items examining how knowledge is interpreted and two (2) items examining how knowledge is stored. A 7-point Likert scale ranging from; 1-Very Strongly Disagree, 2-Strongly Disagree, 3-Disagree, 4-Moderately Agree, 5=Completely Agree,

6=Strongly Agree and 7-Very Strongly Disagree was used to elicit responses from firm managers. A summary of their responses is presented in Table 4.25 where;

On average, managers completely agreed that their firms worked with various external professional and expert technicians to acquire new knowledge (Mean=5.172, Std. Error =.043, Std. Dev. = .683). Working with such technical persons from a broad range of disciplines created an opportunity for firms to obtain relevant professional and technical knowledge and experiences which is then utilised to improve internal business processes. Similarly, managers completely agreed that their employees regularly participated in fairs and exhibitions as another way through which firms acquired new knowledge (Mean=5.220, Std. Error = .049, Std. Dev. =.779). Trade fairs and exhibitions bring together manufacturers of all sorts across the globe. This forms a community of practice where manufacturers meet and freely exchange information concerning the challenges and opportunities facing the industrial sector and how to probably overcome those challenges and exploit any emerging opportunities.

Once knowledge is generated and recognized as potentially useful to the firm, this knowledge is distributed (shared) amongst the internal members through various means. When the managers of the sampled firms were asked to indicate some of the common means, through which knowledge is shared across work units, they completely agreed that employees who work with several units facilitated the flow of information from one work unit to another (Mean=5.339, Std. Error=.052, Std. Dev.=.834). Employees working with more than one unit or section or department indirectly act as links between those units/sections/departments. They carry with them knowledge that is voluntarily transferred from one work unit to another. Similarly,

managers completely agreed that there were individuals within the respective firms who were responsible for collecting, assembling and distributing new knowledge generated in form of ideas or suggestions (Mean=5.437, Std. Error=.050, Std. Dev.=.804). Such individuals are normally appointed in positions such as office messengers or internal communication officers.

The sharing of information among internal members eases the process of information interpretation. Managers moderately agreed that it was through continued information sharing that employees collectively understood the overall company aim and developed commitment towards its achievement (Mean=4.552, Std. Error=.054, Std. Dev.=.862). Information interpretation enables members to think and act uniformly in a more coordinated manner. This facilitates consensus at problem analysis and decision making where members base on their individual work experiences to propose strategies relevant to improve business performance. As long as company members assign similar meaning to events unfolding in the environment, it increases the level at which they share knowledge and business experiences by way of talking to each other (Mean=4.794, Std. Error=.047, Std. Dev.=.752). Moreover, managers moderately agreed that team work was a common practice observed across work units in their respective firms (Mean=4.831, Std. Error=.045, Std. Dev.=.723).

After new knowledge has been accepted as useful, managers agreed that they had systems in place that ensured effective storage of this useful knowledge for example through a codification system (Mean=4.879, Std. Error=.512, Std. Dev.=.819). When such information is needed for future use, it could easily be retrieved by organisational members (Mean=5.013, Std. Error=.049, Std. Dev.=.797).

Overall, the descriptive results indicate that managers completely agreed that their firms engaged in learning processes. This implies that manufacturing firms embraced a culture of continuous learning where new information is acquired through interacting with both the external and internal environment. Once new information is obtained, it is then shared internally among organizational members across the different work fields. Information sharing enables the interpretation and utilization of this information in a more coordinated manner. As long as new knowledge is found to be useful, it is then stored in form of policies, systems, standard operating procedures, work routines and other forms to enable its future utilisation. The learning processes reported in the sampled firms is consistent with the process suggested in the literature of Huber (1991), Lopez et al (2005) and Nevis et al. (1995).

Table 4.24: Aggregated Descriptive Statistics Results for Organizational Learning

Code	Items	Min.	Max.	Mean	Std. Error	Std. Deviation
KA3	Some of our employees bring in new knowledge from their professional associations	2.33	7.00	5.172	.043	.683
KA4	Our employees learn through attending trade fairs and exhibitions	2.67	7.00	5.220	.049	.779
KD3	We have employees who work with several units and act as links between them	1.67	6.67	5.339	.052	.834
KD4	We have staff who are responsible for collecting, assembling and distributing ideas	2.50	7.00	5.437	.050	.804
KI1	Our staff understand our aim of doing business and feel committed to its achievement	2.33	6.33	4.552	.054	.862
KI2	Employees share business experiences by talking to each other	2.33	6.67	4.794	.047	.752
KI3	Teamwork is a very common practice observed across work units in our firm	3.00	6.67	4.831	.045	.723
KS2	We have a system for retrieving information	2.00	7.00	5.013	.050	.797
KS5	Codes are used in the storage of knowledge	2.50	6.67	4.878	.051	.819
	Valid N (listwise)=256					

Source: *Research Data (2020)*

4.9.2 Aggregated Descriptive Statistics for Firm Innovativeness

Firm innovativeness concerns the firm's ability to introduce and implement new and useful ideas that transform products, processes and systems with intent to improve its competitiveness. In this study, factor analysis extracted only two components representing the extent to which the sampled manufacturing firms engaged in products and processes innovativeness.

Results presented in Table 4.25 show that managers moderately agreed that their firms introduced a range of new products in the last five years (Mean=4.923, Std. Error=.0803, Std. Dev.=.902), have often been first to the market with new products (Mean=4.267, Std. Error=.074, Std. Dev.=.927), customers often considered their new products as very novel (Mean=4.481, Std. Error=.075, Std. Dev.=.888) and their firms were successful in launching new products compared to competitors (Mean=4.868, Std. Error=.0651, Std. Dev.=.907). This result reveals that the sampled manufacturing firms appreciate the strategic importance of being innovative in their product offers. Like Wang and Ahmed (2004) posted, firms with innovative products are more likely to be perceived as more superior by customers thus establishing themselves as dominant players in the competitive marketplace.

Regarding innovations in processes, managers completely agreed that their firms; constantly made improvement in business processes (Mean=5.247, Std. Error=.052, Std. Dev.=.829), made periodic changes in their production methods faster than competitors (Mean=5.127, Std. Error=.0451, Std. Dev.=.722), as well as ensured that newer manufacturing technologies were adopted relative to major competitors (Mean=5.166, Std. Error=.0549, Std. Dev.=.879). This result reveals that process innovation is vital in the overall firm innovative capability. Innovations in processes

enable firms to explore and exploit creative production methods and technologies which are critical to meet stakeholder changing expectations as suggested in the literature of Globocnik et al (2019).

Overall, the descriptive results indicate that managers agreed that their firms had made fundamental innovations in products and processes in the past five years. This signals managements' awareness of the complexities of the current market environment necessitating continuous improvements in products and manufacturing processes in order to survive and remain competitive. Innovations in products took form of changes in design, packaging and distribution methods. Innovations in processes involved improvements in existing production methods and technologies. Consistent with Wang and Ahmed's (2004) assertion, such innovations enable the firm to cope with changes in the market environment.

Table 4.25: Aggregated Descriptive Statistics Results for Firm Innovativeness

Code	Items	Min.	Max.	Mean	Std. Error	Std. Deviation
PT1	Our firm introduced a range of new products in the last 5 years	1.00	7.00	4.923	.0803	.902
PT2	Our firm has often been first to the market with new products	1.00	6.33	4.267	.0742	.927
PT3	Customers have often considered our new products as very novel	1.00	7.00	4.481	.0750	.888
PT4	Our firm has been successful in launching new products compared to competitors	1.00	7.00	4.868	.0651	.907
PC1	We constantly improve our business processes	2.00	7.00	5.247	.0519	.829
PC2	Our firm changes production methods faster than competitors	2.50	7.00	5.127	.0451	.722
PC3	Our firm is faster in adopting newer manufacturing technologies relative to major competitors	1.67	7.00	5.166	.0549	.879
	Valid N (listwise)=256					

Source: *Research Data (2020)*

4.9.3 Aggregated descriptive statistics for CEO values

The opinions of managers were captured in relation to examining their CEO's value of openness to change. Results presented in Table 4.26 show that majority of the respondents completely agreed that their CEOs were more open to change. This was evident with the CEOs' support for staff to have some degree of autonomy in their work (Mean=5.247, Std. Error=.052, Std. Dev.=.830), CEOs' emphasis for individual creativity at work (Mean=5.127, Std. Error=.045, Std. Dev.=.722), openly encourages staff to explore new ways of doing things (Mean=5.166, Std. Error=.055, Std. Dev. =.879) as well being very flexible in their work methods (Mean=5.157, Std. Error=.063, Std. Dev.=1.013). This result provides evidence that on average CEOs in the sampled firms valued change and were more willing to support initiatives geared towards causing positive change intended to enable the firm cope and adapt amidst environmental dynamics. CEOs who value change are more likely to nurture a work environment where employees find the freedom to adventure into new ways of doing things with less fear for failure.

Table 4.26: Aggregated Descriptive Statistics Results for CEO Values

Code	Items	Min.	Max.	Mean	Std. Error	Std. Dev.
OTC1	Our CEO supports staff to have some degree of autonomy in their work	2.00	7.00	5.247	.052	.830
OTC2	Our CEO emphasizes individual creativity at work	2.50	7.00	5.127	.045	.722
OTC3	Our CEO encourages staff to explore new ways of doing things	1.67	7.00	5.166	.055	.879
OTC5	Our CEO is very flexible in his/her work methods	2.00	7.00	5.157	.063	1.013
	Valid N (listwise)					

Source: *Research Data (2020)*

4.9.4 Aggregated descriptive statistics for sustainability performance

Sustainability performance was conceptualized as an outcome variable of the study. Using a 7-point Likert scale, managers were asked to respond to a series of statements that examined the extent to which their respective firms engaged in sustainability performance practices. Based on the obtained mean scores, results summarized in Table 4.28 show that;

Managers moderately agreed that their firms were economically viable based on the performance for the past five years. They reported that their firms had been generating revenue from the sale of waste products (Mean=4.759, Std. Error=.075, Std. Dev. =1.194), the overall cost of inputs for the same level of outputs had significantly reduced (Mean=5.077, Std. Error=.065, Std. Dev.=1.046) and there was a great reduction in the cost of waste management for the same level of output (Mean=4.971, Std. Error=.056, Std. Dev.=.0889). The firms' endeavor to improve their revenue streams as well as control production costs over the years implied that the sampled manufacturing firms were sustainably profitable. Like Fowler and Hope (2007) observed, firms that are sustainably profitable are able to pay taxes to public authorities, pay attractive salaries and wages to workers, offer fair prices to suppliers, guarantee attractive dividends to shareholders as well as engage in corporate social responsibility initiatives.

Regarding paying attention to the social needs of the firms' stakeholders, managers moderately agreed that firms funded a number of local community initiatives (Mean=4.559, Std. Error=0.065, Std. Dev. =1.047), actively participated in protecting the rights of the local community (Mean=4.667, Std. Error=.050, Std. Dev.=.796), were very mindful of all stakeholders interests when making any investment decisions

(Mean=4.565, Std. Error=.058, Std. Dev.=.927) as well as offered training opportunities to both managers and employees in sustainability manufacturing practices (Mean=4.56, Std. Error=.056, Std. Dev.=.901). This result is indicative of the fact that the sampled manufacturing firms had peculiar interest in the social well-being of people and the wider-communities. Consistent with Horak et al (2018) argument, firms that are responsive to the social needs of their various stakeholders benefit from increased employee morale as well as improved community relations.

The sustainability performance debate also pays great attention to firms' endeavors to protect the environment. In the same vein, managers of the sampled manufacturing firms were asked to provide information related to their firms' efforts towards safeguarding the environment for both the current and future generations. Generally, managers completely agreed that firms had considerably reduced on natural energy consumption (Mean=5.033, Std. Error=.052, Std. Dev.=.838), greatly reduced emissions from operations (Mean=5.131, Std. Error=.054, Std. Dev.=.862) as well as reduced environmental impacts of their products (Mean=5.172, Std. Error=.063, Std. Dev. =1.002). Such efforts signal managements' commitment towards ensuring that manufacturing firms do not contaminate the eco-system through depletion of natural resources and emission of pollutant toxic substances into space and water. Consistent with the literature of Schultz (2001), managers ensure that improvements are continuously made to conserve the environment.

Overall, there is evidence that suggests that manufacturing firms in Uganda are mindful about the impact of their manufacturing processes to people and the planet. Therefore, deliberate strategic initiatives are made to achieve shareholder economic

objectives without compromising the social and environmental needs of other stakeholders.

Table 4.27: Aggregated Descriptive Statistics Results for Sustainability Performance

Code	Items	Min.	Max.	Mean	Std. Error	Std. Deviation
ECO1	Our firm has been generating revenue from the sale of waste products	1.0	7.00	4.759	.075	1.194
ECO2	Our firm has reduced the cost of inputs for the same level of output	1.0	7.00	5.077	.065	1.046
ECO3	Our firm has reduced the cost of waste management for the same level of output	1.0	7.00	4.971	.056	.889
SOC2	Our firm has funded a number of local community initiatives	1.0	7.00	4.559	.065	1.047
SOC3	Our firm has protected the rights of the local community	2.0	6.33	4.667	.05	.796
SOC4	Our firm is mindful of all stakeholders' interests in investment decisions	1.0	6.67	4.565	.058	.927
SOC5	Our firm has trained managers and employees in sustainability management practices	2.0	6.33	4.456	.056	.901
ENV1	Our firm has considerably reduced on energy consumption	1.0	7.00	5.033	.052	.838
ENV2	Our firm has greatly reduced emissions from operations	1.5	7.00	5.131	.054	.862
ENV4	Our firm has reduced environmental impacts of its products	1.5	7.00	5.172	.063	1.002
	Valid N (listwise)=256					

Source: *Research Data (2020)*

4.9.5 Aggregate descriptive statistics for the composite variables

The mean scores of the descriptive statistic results for the four composite variables range from 4.914 to 5.207 on a 7-point Likert scale (Table 4.29). This result is indicative that managers agreed that their firms engaged in learning, innovation and sustainability performance practices. Additionally, majority of the participants agreed that their firm CEOs exhibited the value of openness to change. The standard

deviation for each of the four variables was relatively smaller to its mean; below 1.00, ranging from .403 to .629. This implies that the means provided a good fit of the observed data. Moreover, the standard errors ranged from .025 to .039 implying that the sample mean was a good estimate of the population mean. Hence, the data was reliable to facilitate further statistical analyses (Field, 2009). Furthermore, the minimum and maximum values ranged from 3.350 and 6.883 respectively. This result further confirmed non-existence of uni-variate outliers since the measurement scale used ranged from 1.00 to 7.00 (Hair et al., 2010).

Comparatively, CEO value of openness to change had the highest mean (Mean=5.207, Std. Error= .039, Std. Dev. =.629, Skewness= .064, Kurtosis= ˉ.132). This suggests that majority of the managers contacted completely agreed that they regarded their CEOs to have a strong personal desire for change. The organizational learning variable had the second highest mean (Mean=5.078, Std. Error= .025, Std. Dev. =.403, Skewness= .076, Kurtosis= ˉ.161). This suggests that manufacturing firms demonstrated more capability to learn through interacting with both the external and internal environment.

Sustainability performance had a Mean=4.914, Std. Error= .030, Std. Dev. =.484, Skewness= .061, and Kurtosis= ˉ.114; which results indicate that managers moderately agreed that the sampled manufacturing firms were economically viable, socially responsive and environmentally friendly. Similarly, respondents moderately agreed that their firms made numerous innovations in product offers and manufacturing processes over the years (Mean=4.884, Std. Error= .038, Std. Dev. =0.605, Skewness= ˉ.558, Kurtosis= .005).

Table 4.28: Aggregate Mean Descriptive Analysis for Composite Variables

Variables	Min.	Max.	Mean	Std. Error	Std. Deviation	Skewness	Kurtosis
Organisational Learning	4.154	6.151	5.078	.025	.403	.076	-.161
Firm Innovativeness	3.351	6.300	4.884	.038	.605	.060	-.114
CEO Values	3.671	6.883	5.207	.039	.629	.064	-.132
Sustainability Performance	3.619	6.199	4.914	.030	.484	.061	-.114
Valid N (listwise)=256							

Source: *Research Data (2020)*

4.10 Analysis of Variance

Drawing on previous related studies, firm characteristics are considered to be important determinants of the main study variables. As such, a one-way Analysis Of Variance (ANOVA) statistical test was performed to establish if the level of organisational learning, firm innovativeness, perception of CEO values and sustainability performance of medium and large manufacturing firms in Uganda varied considerably with respect to the type of business engaged in, ownership, origin, age, and size. The results of this statistical analysis are presented in Table 4.29-33 that follows;

4.10.1 Business type against the study variables

Business type concerns the type of product that the contacted firm manufactured. Based on Ecuru et al. (2014), business type was broadly categorized into food processing and non-food processing. Out of the 256 sampled firms, 116(45%) firms were engaged in food processing while 140(55%) firms were engaged in non-food processing.

Following the above categorization, the researcher sought to establish whether the type of business had a statistically significant effect on the study variables. Results

summarized in Table 4.29 show that there was no statistically significant difference between business type and organizational learning (F=.097, Sig.=.755), business type and firm innovativeness (F = .012, Sig.=.914), business type and perception of CEO values (F = .082, Sig.=.774) as well as business type and firm sustainability performance (F = .007, Sig.=.934). These results imply that the type of product manufactured did not have profound effect on the level of organisational learning, firm innovativeness, perception of CEO's openness value and sustainability performance in the sampled firms. Whether the firm was engaged in food processing or non-food processing, this did not have any major influence on variations in the study variables.

Table 4.29: Business Type against the study variables

		Descriptives			ANOVA	
Variables	**Business Type**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Organisational Learning	Food Processing	116	5.087	.398	.097	.755
	Non-Food Processing	140	5.071	.409		
	Total	256	5.078	.403		
Firm Innovativeness	Food Processing	116	4.888	.579	.012	.914
	Non-Food Processing	140	4.880	.628		
	Total	256	4.884	.605		
CEO Values	Food Processing	116	5.195	.601	.082	.774
	Non-Food Processing	140	5.217	.653		
	Total	256	5.207	.629		
Sustainability Performance	Food Processing	116	4.917	.483	.007	.934
	Non-Food Processing	140	4.912	.485		
	Total	256	4.914	.484		

Source: *Research Data (2020)*

4.10.2 Firm ownership against the study variables

Firm ownership was also considered among the key firm characteristics examined in this study. Out of the 256 sampled firms, 15(5.8%) were state owned, 191(74.7%)

were privately owned and 50(19.5 %) were under some form of partnership ownership.

Following the above categorization, the researcher sought to establish whether firm ownership had a statistically significant effect on the study variables. Results presented in Table 4.30 show that there was no statistically significant difference between firm ownership and organizational learning (F =.286, Sig.=.751), firm ownership and firm innovativeness (F=1.867, Sig.=.157), firm ownership and perceptions of CEO's openness to change value (F=.178, Sig.=.837) as well as firm ownership and firm sustainability performance (F = 2.040, Sig.=.132). The above results suggest that firm ownership has no effect on the level of organisational learning, firm innovativeness, perception of CEO's openness to change value and sustainability performance in the sampled firms. Whether the firm was owned by the state or privately owned or under some form of partnership, this did not have any major influence on variations in the study variables.

Table 4.30: Firm ownership against the study variables

		Descriptives			ANOVA	
Variables	**Ownership**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Organisational Learning	State Owned	15	5.152	.453	.286	.751
	Privately Owned	191	5.071	.419		
	Partnership	50	5.084	.322		
	Total	256	5.078	.403		
Firm Innovativeness	State Owned	15	4.999	.625	1.867	.157
	Privately Owned	191	4.841	.620		
	Partnership	50	5.011	.526		
	Total	256	4.884	.605		
CEO Values	State Owned	15	5.233	.641	.178	.837
	Privately Owned	191	5.194	.640		
	Partnership	50	5.251	.589		
	Total	256	5.207	.629		
Sustainability Performance	State Owned	15	5.089	.429	2.040	.132
	Privately Owned	191	4.881	.503		
	Partnership	50	4.989	.403		
	Total	256	4.914	.484		

Source: *Research Data (2020)*

4.10.3 Firm Origin against the study variables

Firm origin as a firm characteristic examined whether the contacted manufacturing firm had a foreign /international or local/domestic origin. Out of the 256 sampled firms, 108 (42.4%) had a foreign origin while 148 (57.6%) had a local origin. Based on the aforementioned categorization, the researcher sought to establish whether firm origin had a statistically significant effect on the study variables.

Results presented in Table 4.31 show that firm origin has a statistically significant effect on the level of organisational learning (F= 4.206, Sig.=.041). Further analysis of the differences in means shows that local firms engaged more in learning (Mean=5.122, Std=.407) compared to foreign firms (Mean=5.018, Std.=.392). This result suggests that domestic firm engage in learning more than the foreign firms. On the other hand, firm origin did not significantly affect firm innovativeness (F=.076, Sig.=.783), CEO openness value (F =.787, Sig.=.376) as well as firm sustainability performance (F =2.193, Sig.=.140) implying that variations in firm innovativeness, perception of CEO's openness value and sustainability performance are not dependent on firm origin.

Table 4.31: Firm Origin against the study variables

		Descriptives			ANOVA	
Variables	**Origin**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Organisational Learning	Foreign	108	5.018	.392		
	Local	148	5.122	.407	4.206	.041
	Total	256	5.078	.403		
Firm Innovativeness	Foreign	108	4.896	.530		
	Local	148	4.875	.657	.076	.783
	Total	256	4.884	.605		
CEO Values	Foreign	108	5.166	.577		
	Local	148	5.237	.664	.787	.376
	Total	256	5.207	.629		
Sustainability Performance	Foreign	108	4.862	.508		
	Local	148	4.952	.463	2.193	.140
	Total	256	4.914	.484		

Source: *Research Data (2020)*

4.10.4 Firm Age against the study variables

Firm age as a firm characteristic has been widely reported to have a significant effect on organizational wide variables. In the same vein, the researcher in this study examined whether firm age could have similar effect of the study variables. Firm age was broadly categorized into less than 5 years, 5-10 years, 11-15 years and 16 and above years. Out of the 256 sampled firms, 31 (12.1%) firms had been in existence for a period approximated to 5-10 years, 109 (42.8%) firms had been in existence for 11-15 years while 116 (45.1%) firms had been in operation for about 16 years and above.

Following the above categorization, the researcher sought to establish whether firm age had a statistically significant effect on the study variables. Results presented in Table 4.32 show that age had no statistically significant effect on organizational learning (F=.804, Sig.=.449), firm innovativeness (F=2.480, Sig.=.086), perception of CEO's openness to change value (F=1.142, Sig. =.321) as well as firm sustainability performance (F=2.210, Sig.=.112). Reflecting on such results, it can be inferred that the age of a manufacturing firms has no major effect on its ability to engage in learning, innovativeness, perceptions of CEO's openness to change value and sustainability performance. In other words, whether the firm was 'old' or 'young', this does not account for its level of organisational learning, firm innovativeness, perceptions of CEO's openness value or sustainability performance.

Table 4.32: Firm Age against the study variables

		Descriptives			ANOVA	
Variables	**Age**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Organisational Learning	5 - 10 Years	31	5.009	.384	.804	.449
	11 - 15 Years	109	5.066	.406		
	16+ Years	116	5.107	.407		
	Total	256	5.078	.403		
Firm Innovativeness	5 - 10 Years	31	4.732	.540	2.480	.086
	11 - 15 Years	109	4.973	.545		
	16+ Years	116	4.840	.665		
	Total	256	4.884	.605		
CEO Values	5 - 10 Years	31	5.052	.544	1.142	.321
	11 - 15 Years	109	5.212	.697		
	16+ Years	116	5.244	.579		
	Total	256	5.207	.629		
Sustainability Performance	5 - 10 Years	31	4.772	.481	2.210	.112
	11 - 15 Years	109	4.972	.423		
	16+ Years	116	4.898	.530		
	Total	256	4.914	.484		

Source: *Research Data (2020)*

4.10.5 Firm Size against the study variables

Similarly, firm size as a firm characteristic has been widely reported in empirical studies to have significant effect on organizational wide variables. Thus, it was deemed important in this study to establish whether firm size could have similar effect of the study variables. By firm size, this study focused on medium size (employing from 51-100 permanent workers) and large size (employing above 100 permanent workers). Out of the 256 sampled firms, 169 (66.1%) firms were medium size and 87 (33.9%) firms were large size firms.

Following the above categorization, the researcher examined the effect of firm size on the study variables. Results presented in Table 4.33 indicate that there was no statistically significant difference between firm size and learning (F=2.707, Sig.=.101), Firm size and firm innovativeness (F=.655, Sig.=.419), firm size and perceptions of CEO openness to change value (F=.091, Sig.=.763), as well as firm

size and sustainability performance (F=.433, Sig.=.511). Reflecting on such results, the researcher argues that size had no major influence on firm learning, firm innovativeness, perception of CEO openness to change value and sustainability performance in the sampled manufacturing firms. Whether the firm was medium or large, this factor did not matter in causing major variations in the level of firm's learning, innovativeness, perception of CEO openness to change value or sustainability performance.

Table 4.33: Firm Size against the study variables

		Descriptives			ANOVA	
Variables	**Size**	**N**	**Mean**	**Std. Deviation**	**F**	**Sig.**
Organisational Learning	50-100 Employees	169	5.108	.383	2.707	.101
	100+ Employees	87	5.020	.436		
	Total	256	5.078	.403		
Firm Innovativeness	50-100 Employees	169	4.862	.630	.655	.419
	100+ Employees	87	4.926	.555		
	Total	256	4.884	.605		
CEO Value	50-100 Employees	169	5.216	.626	.091	.763
	100+ Employees	87	5.191	.636		
	Total	256	5.207	.629		
Sustainability Performance	50-100 Employees	169	4.929	.484	.433	.511
	100+ Employees	87	4.887	.485		
	Total	256	4.914	.484		

Source: *Research Data (2020)*

4.11 Tests for Regression Assumptions

Prior to running correlation and regression models, the researcher ensured that the data conformed to the assumptions of parametric tests in order to ensure model robustness (Hair et al., 2010). The assumptions include;

4.11.1 Metric measurement level

This assumption holds that the dependent variable should be metric and the independent variables may be metric or dichotomous. Sustainability performance as the dependent variable was measured on a continuous scale ranging from 1 (Very Strongly Disagree) to 7 (Very Strongly Agree). Organisational learning, firm innovativeness and CEO openness-to-change value are predictor variables that were also measured on a continuous scale ranging from 1 (Very Strongly Disagree) to 7 (Very Strongly Agree). The distance across the values was equal throughout the scale (1). This satisfied the metric measurement requirement for the dependent and independent variables. Furthermore, composite scores (means) were computed for each main variable through data transformation in order to migrate from the ordinal scale to the metric scale required for regression analysis. Firm characteristics as a control variable was measured on an interval scale which also meets the metric measurement requirement (Lewis-Beck et al., 2003).

4.11.2 Multivariate outliers

This assumption holds that data must be free from any significant multivariate outliers. When not cleaned out of the data, outliers affect statistical estimates causing Type I or II error (Tabachnick, 2013). Moreover, the uni-variate outlier analysis earlier dealt with in this chapter does not take care of bi-variate and multivariate outliers. This therefore necessitated the researcher to further explore the dataset for the presence of outliers across variables. Multivariate outlier analysis also takes care

of bi-variate outliers. Mahalanobis Distance (D2) measures were calculated using linear regression method to come up with Mahalanobis D2 scores. The results presented under appendix 12 show that all cases had Mahalanobis D2 scores ranging from .147 (minimum) to 22.986 (maximum), Mean= 3.984, Std. Dev. =3.168 and N=257.

To identify which specific Mahalanobis D^2 score(s) could be associated with multivariate outliers, the researcher computed probability Mahalanobis D^2 Chi-square value distribution using 3 degrees of freedom since the hypothesised model in this study had three (3) predictor variables and one (1) outcome variable. Hair et al. (2010) suggests that a probability Mahalanobis D^2 test value of less than .001 ($p<.001$) signals existence of outliers across variables and sets the criteria to reject the assumption that the case came from the same population. This statistical test was performed and results showed that all probability Mahalanobis D^2 were greater than .001 with the exception of case 245 (.00013). Following the guidance of Tabachnick (2013), the case with a probability Mahalanobis D^2 value less than .001 was excluded from further analysis. This reduced the sample size from 257 cases to 256.

4.11.3 Sample adequacy

An adequate sample size increases statistical power by reducing the sampling error as well as improving data normality. Besides, hierarchical multiple regression analysis requires that the minimum ratio of valid cases to independent variables be at least 5 to 1, although a ratio of 20:1 is considered ideal. If the Stepwise method is to be used, then the ratio of at least 40:1 is recommended (Kibet, 2017; Tabachnick and Fidell, 1996). The hypothesised model in this study has three (3) predictor variables and usable data came from 256 firms. This gave a ratio of 85:1 which was high and above

the minimum threshold of 40:1. Therefore, the requirements for an adequate sample size was met.

4.11.4 Normality of data distribution

Normality is the degree to which the distribution of the data corresponds to a normal distribution. To perform any inferential statistics test, data need to be multivariate normally distributed (Hair et al., 2010). Accordingly, in this study normality of the data distribution was examined using Kolmogorov-Smirnov and Shapiro-Wilk statistical test. Specifically, attention was put to the result of Shapiro-Wilk's test since the sample size was less than 2000 cases. According to Ghozali (2005), if the p-value labeled as Sig. is greater than 5% significance level (p>.05), the residuals are considered to be normally distributed. The normality test results presented in Table 4.34 show that only the variable of organisational learning had Shapiro-Wilk p-value greater than .05 indicating that its data was normally distributed. The p-values for all other study variables were lower than .05 suggesting significant departure from normality.

Table 4.34: Kolmogorov-Smirnov and Shapiro-Wilk Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Variables	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Organisational Learning	.043	256	.200*	.994	256	.419
Firm Innovativeness	.045	256	.200*	.987	256	.021
CEO Values	.077	256	.001	.980	256	.001
Sustainability Performance	.083	256	.000	.981	256	.002

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction

Given that Kolmogorov-Smirnov and Shapiro-Wilks' statistic test of normality are sensitive to sample size, there is a possibility of rejecting a true null hypothesis (Type I error) especially for large sample data that is commonly associated with small standard errors (Templeton, 2011; Powell and Owen-Smith, 2002). Hence, the

researcher further verified the above Kolmogorov-Smirnov and Shapiro-Wilk test result using skewness and kurtosis statistical tests. The test statistic holds that a skewness and kurtosis value close to zero signifies normality of the data distribution. The results presented in Table 4.35 reaffirm the non-normality of the data distribution for firm innovativeness, CEO openness to change value and sustainability performance as earlier indicated by Kolmogorov-Smirnov and Shapiro-Wilk test since the skewness and kurtosis statistical scores were relatively distant from zero.

Table 4.35: Skewness and Kurtosis Test for Normality

					Skewness		Kurtosis	
Variables	**Min.**	**Max.**	**Mean**	**Std. Deviation**	**Statistic**	**Std. Error**	**Statistic**	**Std. Error**
Organisational Learning	4.07	6.11	5.073	.405	-.049	.152	-.043	.303
Firm Innovativeness	3.03	6.21	4.721	.648	-.284	.152	-.368	.303
CEO Value	3.44	7.00	5.200	.633	-.420	.152	.385	.303
Sustainability Performance	3.69	6.07	4.909	.485	-.386	.152	-.271	.303

Source: *Research Data (2020)*

Consequently, data needed to undergo some form of transformation to ensure normality of the distribution (Field, 2009). The fractional ranking technique was used to transform the main study variable data to normal- *idfn (fractional rank, series mean, standard deviation*). Templeton (2011) suggests that the fractional ranking technique is a robust approach for transforming data measured on a continuous scale commonly used in social science studies. The transformed variables were again subjected to the Kolmogorov-Smirnov and Shapiro-Wilk test for normality in order to establish whether data had conformed to the normality distribution assumption.

The results summarized in Table 4.36 show that data for the transformed variables is normally distributed (Sig.>.05). Further examination of the shape of the histograms, normal Q-Q and normal P-P plots appended 13A and 13B reaffirm that the

transformed variables were both uni-variate and multivariate normally distributed. Additionally, the results of the skewness test appended 13 C show values that are relatively close to zero indicating approximately normal distribution of the data.

Table 4.36: Test of Normality for the Transformed Variables

Transformed Variables	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Organisational Learning	.019	256	.200*	.996	256	.739
Firm Innovativeness	.021	256	.200*	.998	256	.985
CEO Value	.039	256	.200*	.995	256	.507
Sustainability Performance	.013	256	.200*	.998	256	.991

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Source: *Research Data (2020)*

4.11.5 Linearity

This assumption holds that for any regression analyses to be performed, the independent variables and the dependent variable must be linearly related. Non-linearity affects the predictive power of the independent variable(s) on the dependent variable. Linearity of the study variables was tested using both numeric and graphical statistical methods. Numerically, Pearson Product Moment correlation coefficient matrix was used establish the strength and direction of the relationships between variables. Correlation matrix results appended 14A show that the correlation coefficient for the corresponding independent and dependent variables were positive and significantly different from zero; an indication that the study variables were positive and linearly related. Further still, the ANOVA test results appended 14B show an F-statistic (3,252) =112.192, Sig.= .000; an indication that the model was linear and significant. Graphically, the shape of the scatter plot appended 14C show that there is a linear relationship between the dependent variable and the independent variables.

4.11.6 Multicollinearity

The regression assumption of multicollinearity holds that independent variables should not be highly correlated when regressed against each other. To check for multicollinearity, a collinearity diagnostic test was carried out on the hypothesised model. Particularly, the Tolerance Value and its reciprocal Variance Inflation Factor (VIF) value were examined. Researchers suggest different cut-off points for the above multicollinearity statistical tests. For this study, the researcher adopted Field (2010) and Ghozali (2005) cut off points whereby a Tolerance Value of at least .2 ($T \geq .2$) and a VIF value of at most 10 ($VIF \leq 10$) to indicate non-existence of multicollinearity. The collinearity diagnostic test results appended 15 shows that all the predictor variables had Tolerance Values above .5 and VIF values less than 2. This statistic confirms that multi-collinearity was not a problem since predictor variables were not highly correlated.

4.11.7 Homoscedasticity

The regression assumption of homoscedasticity holds that the dependent variable exhibits similar amounts of variance across the range of values for the independent variables. Levene's statistic test of equality of error variance was used to test for the assumption of homoscedasticity. Pallant (2005) and Martin and Bridgmon (2012) observe that if Levene's F-statistical test is not significant ($p > .05$), then data meets the assumption of homoscedasticity. This statistical test was performed using the transformed variables and results presented in Table 4.37 show that all the study variables were not significant (Sig.>.05), an indication that data conformed to the assumption of homoscedasticity. Therefore, it was concluded that there was equal error variance in scores on all the study variables across the sampled manufacturing firms.

Table 4.37: Levene's Test of Homoscedasticity

Variables	Levene's F-Statistic	df1	df2	Sig.
Organisational Learning	1.077	1	254	.300
Firm Innovativeness	2.680	1	254	.103
CEO Value	.001	1	254	.977
Sustainability Performance	.002	1	254	.963

Source: *Research Data (2020)*

4.11.8 Independence of Errors

The hypothesised model in this study has two outcome variables (i.e sustainability performance and firm innovativeness). Therefore, it was possible that error terms (ε_1 and ε_2) could auto-correlate and bias the estimates of the predictor variables on the outcome variables. For accurate prediction estimates, regression analysis requires that error terms are independent and not correlated. Durbin-Watson statistical test is commonly used to test for independence of residuals in time series data which follows a systematic pattern. Despite concerns that the test may not yield accurate results in survey data that does not follow a systematic pattern over time, social science researchers continue to use Durbin-Watson statistical test to establish independence of error terms. Tabachnick and Fidel (2007) suggest that a Durbin-Watson statistical test value ranging from 1.5 to 2.5 provide sufficient evidence to show lack of serial auto-correlation among the error terms. The linear regression analysis results appended 16 show a Durbin Watson statistical test value =1.883; an indication that error terms (residuals) were positive and not serially correlated.

4.12 Correlation among main study variables

Correlation analysis was carried out to test the hypothesised relationships among the main study variables. Pearson Product-Moment Zero-Order correlation was employed to establish the direction and strength of the relationship among the main variables. Particularly, Pearson Product-Moment method was chosen because the variables were

measured on a metric scale and data had conformed to key parametric assumptions. Results presented in Table 4.38 show that organisational learning had a positive and significant relationship with sustainability performance (*r=.506, p=.01*), firm innovativeness (*r= .419, p=.01*) and CEO openness to change value (*r= .374, p=.01*). Similarly, firm innovativeness had a positive and significant relationship with sustainability performance (*r =.713, p=.01*), and CEO openness to change value (*r= .597, p=.01*). Lastly, CEO openness to change value had a positive and significant relationship with sustainability performance (*r =.540, p=.01*).

Generally, all the relationships were positive and statistically significant, an indication of linearity and a strong predictive power of the independent variables on the dependent variable. Moreover, correlation coefficients less than .8 further confirmed non existence of multicollinearity (Hair et al., 2010).

Table 4.38: Zero-Order Correlation Statistics for the Study Variables

Correlation Matrix

Transformed Variables	Mean	Std. Deviation	1	2	3	4
Sustainability Performance (1)	5.078	0.403	1			
Organisational Learning (2)	4.884	0.605	.506**	1		
Firm Innovativeness (3)	5.207	0.629	.713**	.419**	1	
CEO Value (4)	4.914	0.484	.540**	.374**	.597**	1

*Notes; N=256, **. Correlation is significant at the .01 level (2-tailed).*

Source: *Research Data (2020)*

4.13 Testing Hypotheses for Direct Effects on Sustainability Performance

Hierarchical multiple regression analysis was performed in SPSS (Version 21) to test the hypotheses for direct effects on sustainability performance. The model parameters were estimated using the linear method since data conformed to the key parametric test assumptions. Path coefficients (Beta values) were estimated and tested for significance (p-values). The rejection or fail to reject decision of the set null hypothesis depended on whether the effect size was significant or non-significant.

4.13.1 The effect of control variables on sustainability performance

In regression model 1, all the five firm characteristics as control variables (business type, firm ownership, firm origin, firm age and firm size) were entered to determine their unique effect on sustainability performance. The regression results appended 17A and summarized in Table 4.39 show that business type (β=-.045, t=-.622, p>.05), firm ownership (β=.047, t=.698, p>0.05), firm origin (β=.100, t=1.460, p>0.05), firm age (β=.016, t=.255, p>0.05) and firm size (β=-.024, t=-.332, p>0.05) had no significant effect on firm sustainability performance. Thus, changes in firm sustainability performance are explained by other factors rather than the firm characteristics examined in this study.

The results of the model statistics summary further show that firm characteristics as control variables combined accounted for up-to 1.2% of the variance in firm sustainability performance (R^2=.012). However, the ANOVA test results show that model 1 was not statistically significant (F= .600, p>.05) indicating a bad model fit. Nonetheless, these were just control variables and the study did not have a specific objective intended to examine the causal effect of controls on sustainability performance.

4.13.2 The effect of organisational learning on sustainability performance

Hypothesis **H_{01}** stated that organisational learning has no significant effect on sustainability performance. In regression model 2, organisational learning was entered as a second variable after the control variables. The results appended 17A and summarized in Table 4.39 show that organisational learning has a positive and significant effect on sustainability performance (β=.505, t =9.116, p=.001). Therefore, **H_{01} was rejected** and the alternative suggesting that there is a positive and significant

relationship between organisational learning and sustainability performance supported.

The inclusion of organisational learning increased the model predictive power from 1.2% to 25.9% of the variance in firm sustainability performance. This implies that organisational learning alone contributed about 24.7% to the variance in firm sustainability performance (R^2 Change=.247). Therefore, manufacturing firms that engage in continuous processes of knowledge acquisition, sharing, interpretation and storage have greater potential to address their stakeholder economic, social and environmental demands compared to those firms that pay less attention to learning in today's highly dynamic business world. The ANOVA test results further confirm that the model was statistically significant (F=14.516, p=.000).

4.13.3 The effect of firm innovativeness on sustainability performance

Hypothesis **H_{02}** states that firm innovativeness has no significant effect on sustainability performance. In regression model 3, firm innovativeness was entered as a third variable in addition to model 1 and model 2 variables. The results appended 17A and summarized in Table 4.39 show that firm innovativeness has a positive and significant effect on sustainability performance (β=.618, t=13.293, p=.001). Therefore, **H_{02} was rejected** and the alternative suggesting that firm innovativeness has a positive and significant effect on sustainability performance was supported. This implies that innovations in product offers and manufacturing process have the capacity to increase manufacturing firms' economic, social and environmental performance.

The results of the model summary showed that the inclusion of firm innovativeness in the regression model greatly increased its predictive power from 25.9% to 56.7%.

This indicates that firm innovativeness alone contributed about 30.8% to variations in firm sustainability performance (R^2 Change=.308). The effect size of organisational learning reduced from .505 to .234 (but remained statistically significant) when firm innovativeness was introduced in model 3, reconfirming its stronger effect on sustainability performance. The ANOVA test results further show that the model was statistically significant (F=46.464, p=.000).

4.13.4 The effect of CEO values on sustainability performance

Hypothesis **H_{03}** suggests that CEO values have no significant effect on firm sustainability performance. In regression model 4, CEO value of openness-to-change was introduced in addition to model 1, 2 and 3 variables. The results appended 17 A and summarized in Table 4.39 show that CEO value of openness-to-change has a positive and significant effect on firm sustainability performance (β=.128, t=2.427, p=.001). Therefore, the null hypothesis **H_{03} was rejected** and the alternative suggesting that CEO value of openness-to-change has a positive and significant effect on sustainability performance was supported. This implies that CEO's who value change are more likely to support policies, strategies and actions that improve firm sustainability performance.

The results of the model summary indicate that the addition of CEO value of openness-to-change slightly increased the predictive power of the hypothesised model from 56.7% to 57.7%. Thus, CEO value of openness-to-change alone accounted for about 1% of the variance in firm sustainability performance (R^2 Change=.010). The ANOVA test results further show that the model was statistically significant (F=42.194, p=.000).

4.14 Testing Hypotheses for Direct Effects on Firm Innovativeness

Hierarchical multiple regression analysis was perform in SPSS (Version 21) to test the hypotheses for direct effects on firm innovativeness as another outcome variable in the hypothesised model. The model parameters were estimated using linear regression method since data conformed to the key parametric test assumptions. Path coefficients (Beta values) were estimated and tested for significance (p-values). The rejection or fail to reject decision of the set null hypothesis depended on whether the effect size was significant or non-significant. The results of this analysis are presented in Table 4.40.

4.14.1 The effect of control variables on firm innovativeness

In regression model 1, five control variables were entered to determine the extent to which each firm characteristic mentioned contributed to the variance in firm innovativeness. The results appended 17B and summarized in Table 4.40 indicate that business type (β=.004, t=.058, p>.05), firm ownership (β=.071, t=1.055, p>.05), firm origin (β=.015, t=.222, p>.05), firm age (β=.005, t=.073, p>.05) and firm size (β=.065, t=.880, p>0.05) were not significantly related to firm innovativeness. This implies that firm innovativeness in the sampled firms was determined by other factors and not the firm characteristics examined in this study.

Nonetheless, firm characteristics were just control variables and the study did not have a specific objective intended to examine the causal effect of controls on firm innovativeness. The results of the model statistics summary further show that the five control variables combined accounted for up-to .7% of the variance in firm innovativeness (R^2=.007). The ANOVA test results show that the model was not

statistically significant (F= .370, p=.087) indicating a relatively bad model fit (Kenny, 2015).

4.14.2 The effect of organisational learning on firm innovativeness

Hypothesis **H_{04}** holds that organisational learning has no significant effect on firm innovativeness. In regression model 2, organisational learning as an independent variable was entered in addition to the control variables in model 1. The results appended 17B and summarized in Table 4.40 show that organisational learning has a statistically significant positive effect on firm innovativeness (β=.438, t=7.572, p=.001). Based on this result, the null hypothesis **H_{04} was rejected** and the alternative suggesting that organisational learning has a positive and significant effect on firm innovativeness was supported. This implies that improvements in organisational learning increases a firm's innovative capacity.

The results of the model summary further show that organisational learning increased the model predictive power from .7% to 19.3% confirming that organisational learning alone contributes about 18.6% to changes in firm innovativeness (R^2 Change=.186). The ANOVA test results show that the model was statistically significant (F=9.935, p=.000) indicating a relatively good model fit.

4.14.3 The effect of CEO values on firm innovativeness

Hypothesis **H_{05}** holds that CEO values have no significant effect on firm innovativeness. In regression model 3, CEO value of openness-to-change was entered as a third variable in addition to model 1 and 2 variables. The results appended 17B and summarized in Table 4.40 show that CEO value of openness-to-change had a positive and significant effect on firm innovativeness (β=.511, t=9.737, p=.001). Based on this result, the null hypothesis **H_{05} was rejected** and the alternative

suggesting that CEO value of openness-to-change has a positive and significant effect on firm innovativeness was supported. This implies that manufacturing firms headed by CEOs who score high on the value of openness to change are more likely to promote various innovative activities compared to where CEOs score low on the value of openness to change.

The results of the model summary further show that CEO value of openness-to-change greatly increased the model predictive power from 19.3% to 41.6%, confirming that CEO value of openness-to-change alone contributes about 22.3% to changes in firm innovativeness (R^2 Change=.223). Moreover, the effect size of organisational learning on firm innovativeness reduced from .438 to .247 (but remained significant) when CEO value of openness-to-change was introduced in regression model 3. Additionally, the ANOVA test results show that the model was statistically significant (F=25.268, p=.000) indicating a relatively good model fit.

Table 4.39: Hierarchical Multiple Regression Analysis for Sustainability Performance

	Model 1			Model 2			Model 3			Model 4		
	β	**t**	**Sig.**	**β**	**t**	**Sig.**	**β**	**t**	**Sig.**	**β**	**t**	**Sig.**
(Constant)		15.492	***		3.936	***		3.249	***		2.922	***
Business Type	-.045	-.622	.534	.001	.016	.987	-.026	-.544	.587	-.028	-.584	.56
Ownership	.047	.698	.486	.038	.660	.510	-.001	-.020	.984	.000	-.009	.992
Origin	.100	1.460	.146	.045	.757	.450	.065	1.424	.156	.061	1.342	.181
Age	.016	.255	.799	-.012	-.215	.830	.000	.007	.994	-.008	-.198	.843
Size	-.024	-.332	.741	.027	.424	.672	-.041	-.823	.412	-.040	-.811	.418
Organisational Learning				**.505**	**9.116**	*******	.234	4.983	***	.217	4.601	***
Firm Innovativeness							**.618**	**13.293**	*******	.549	10.141	***
CEO Value-OTC										**.128**	**2.427**	*******
Model Summary Statistics												
R	.109			.509			.753			.76		
R2	.012			.259			.567			.577		
Adj R2	-.008			.241			.555			.564		
Std Error Estimate	.485			.421			.323			.319		
R2 Change	.012			.247			.308			.010		
F Change	.600			83.109			176.696			5.891		
Sig F Change	.700			.000			.000			.016		
Durbin Watson										1.880		
F	.600			14.516			46.464			42.194		
Sig.	.700			.000			.000			.000		

Notes; **** Significant at .001, Dependent Variable: Sustainability Performance, OTC=Openness To Change*

Source: *Research Data (2020)*

Table 4.40: Hierarchical Multiple Regression Analysis for Firm Innovativeness

	Model 1			Model 2			Model 3		
	β	**t**	**Sig.**	**β**	**t**	**Sig.**	**β**	**t**	**Sig.**
(Constant)		11.855	***		2.208	.028		.721	.472
Business Type	.004	.058	.954	.044	.671	.503	.025	.450	.653
Ownership	.071	1.055	.293	.063	1.048	.296	.048	.927	.355
Origin	.015	.222	.824	-.032	-.517	.606	-.041	-.761	.448
Age	.005	.073	.942	-.020	-.343	.732	-.049	-.992	.322
Size	.065	.880	.380	.110	1.639	.103	.083	1.456	.147
Organisational Learning				**.438**	**7.572**	*******	.247	4.649	.000
CEO Value-OTC							**.511**	**9.737**	*******
Model Summary Statistics									
R	.086			.44			.645		
R2	.007			.193			.416		
Adj R2	-.013			.174			.4		
Std Error Estimate	.609			.55			.469		
R2 Change	.007			.186			.223		
F Change	.370			57.343			94.809		
Sig F Change	.869			.000			.000		
Durbin Watson							1.501		
F	.370			9.935			25.268		
Sig.	.869			.000			.000		

Notes; **** Significant at .001, Dependent Variable: Firm Innovativeness, OTC=Openness To Change*

Source: *Research Data (2020)*

4.15 Testing for Mediating Effect

Hypothesis **H_{06}** holds that firm innovativeness does not significantly mediate the relationship between organisational learning and firm sustainability performance. Hayes PROCESS macro software (Version 4.0) was used to test **H_{06}** through Model 4. The mediation conditions suggested by MacKinnon (2012) were observed. The results appended 18 and summarized in Table 4.41 showed that;

Path (a_1): Organisational learning has a significant direct effect on firm innovativeness (***Coeff=.657, SE=.095, t=6.904, p< .001***)

Path (b_1): Firm innovativeness has a significant direct effect on sustainability performance (***Coeff =.494, SE=.044, t =11.139, p< .001***)

Path (c_1): Organisational learning has a significant direct effect of on sustainability performance (***Coeff =.281, SE=.065, t =4.326, p< .001***).

Table 4.41: Direct effect test results between organisational learning, firm innovativeness and sustainability performance

	Dependent Variables									
	Firm Innovativeness					Sustainability Performance				
Variables	**Coeff.**	**S.E.**	**t**	**LLCI**	**ULCI**	**Coeff.**	**S.E.**	**t**	**LLCI**	**ULCI**
Business type	0.054	0.082	0.656	-0.107	0.215	-0.026	0.05	-0.510	-0.124	0.073
Firm Ownership	0.079	0.072	1.094	-0.063	0.221	-0.001	0.045	-0.020	-0.089	0.087
Firm Origin	0.039	0.080	-0.493	-0.197	0.118	0.064	0.046	1.384	-0.027	0.155
Firm Age	0.018	0.052	-0.341	-0.119	0.084	0.000	0.031	0.007	-0.062	0.062
Firm Size	0.140	0.093	1.511	-0.042	0.322	-0.041	0.055	-0.759	-0.149	0.066
Organisational Learning	**.657*** **	**0.095**	**6.904**	**0.47**	**0.844**	**.281*** **	**0.065**	**4.326**	**0.153**	**0.409**
Firm Innovativeness						**.494*** **	**0.044**	**11.139**	**0.407**	**0.581**
R^2	0.193					0.567				
F	9.269***					30.710***				
Notes: ***p < .001										

Source: *Research Data (2020)*

Accordingly, the mediation conditions suggested by MacKinnon (2012) were met since path a_1 and b_1 are significant. When the mediator (firm innovativeness) was introduced in the model, the direct effect of organisational learning on sustainability performance dropped from *Coeff=.505(H_{01})* to *Coeff=.281* but remained significant.

This result indicates existence of a partial mediating effect (Jose, 2013), implying that variations in organisational learning affect variations in firm innovativeness which in turn partly cause variations in firm sustainability performance.

Preacher and Hayes (2004) suggest that it is insufficient for researchers to stop at reporting the effect of the independent variable on the dependent variable (direct effect) when the mediator is added to the model. Researchers should go further and establish the significance of the indirect path to confirm existence or non-existence of mediation. To test the significance of the indirect path, bootstrapping test was preferred to Baron and Kenny's Sobel z-test due to its ability to produce robust results (Zhao et al., 2010). Thus, bootstrapping was performed and 5000 samples were requested with a bias-corrected and accelerated confidence interval (CI) at 95%.

The bootstrap results presented in Table 4.42 indicate that there is a significant mediation effect: $a_1 \times b_1$; *Coeff=.324, Boot S.E = .036, 95% Boot CI where LLCI=.236 and ULCI=.417.* Hence, **H_{06} was rejected** and the alternative suggesting that firm innovativeness has a significant partial mediating effect on the relationship between organisational learning and sustainability performance was supported. This is because zero does not lay along the obtained lower and upper confidence intervals. Therefore, at 95% confidence the researcher states that improvements in organisational learning have the capacity to increase the firm's level of innovativeness, which in turn improves firm sustainability performance.

Table 4.42: Bootstrap mediation results

	Coeff.	S. E	t	p	LLCI	ULCI
Total effect	.606	.067	8.973	***	.473	.739
Direct effect (X on Y)	.281	.065	4.326	***	.156	.406
Indirect effect ($a_1 * b_1$)	.324	.036		***	.236	.417

Notes: *p<.001, LLCI=Lower Confidence Interval, ULCI=Upper Confidence Interval*

Source: *Research Data (2020)*

4.16 Estimation of moderating effect of CEO values on the relationship between organisational learning and firm innovativeness

Hypothesis **H_{07}** holds that CEO values have no significant moderating effect on the relationship between organisational learning and firm innovativeness. To test this hypothesis, the researcher used Model 1 in PROCESS macro (Hayes, 2013,2018) following the steps suggested in the literature of Aiken and West (1991);

Step 1: Centered the mean values of the variables of interest (Organisational learning, and CEO value of openness to change). This mitigated the secondary multicollinearity effects that could emerge in regression analyses (Lacobucci et al., 2017).

Step 2: Established whether the moderator variable (CEO value of openness to change) had a significant effect on the dependent variable (firm innovativeness), where results show; *Coeff.=.49, S.E=.05, t=9.74, p<.001*

Step 3: Computed the products of the independent variable and the moderator variables to generate the interaction term. The value obtained for the interaction term was different from zero.

Step 4: The researcher then tested the moderating effect of CEO value of openness to change on the relationship between organisational learning and firm innovativeness in the presence of control variables, through a moderated hierarchical regression model.

Step 5: For the moderation effect to exist, the amount of variance (R^2) accounted for in the dependent variable should significantly be higher with the interaction of the independent and moderator variable compared to the direct effects without interaction (Preacher, Curran and Bauer, 2006).

The moderated regression results appended 19 and summarized in Table 4.43 shows that CEO value of Openness-To-Change had a negative non-significant moderating effect on the relationship between organisational learning and firm innovativeness (*Coeff= -.08, S.E=.09, t = -.87, CI= -.27,.10*). The direct effect of the individual predictors (organisational learning and CEO value of Openness-To-Change) on firm innovativeness in model 1 is greater (R^2=.42) than their interaction effect (R^2 Change =.00). None of the control variables included in model had a statistically significant effect on firm innovativeness. The non-significant moderation effect of CEO value of openness to changes was further probed with the shape of the moderation graph suggested by Jose (2013) and Hayes (2005). The Mod-graph presented in Figure 4.5 shows that the simple slope lines are relatively parallel to each other, confirming absence of moderation effect of CEO value of openness to changes between organisational learning and sustainability performance.

Based on the above results, **H_{07} was supported** confirming that CEO value of openness to change has no significant moderating effect on the relationship between organisational learning and firm innovativeness. This result implies that at different levels of CEO value of openness-to-change, the effect of organisational learning on firm innovativeness remains relatively unchanged. Whether a manufacturing firm is headed by a CEO who values change or not, this does not cause major variations in the level of organisational learning to cause variations in firm innovativeness.

Table 4.43: Moderating Effect of CEO Value of Openness to Change between Organisational Learning and Firm Innovativeness

	Dependent Variable: Firm Innovativeness											
	Model 1						Model 2					
Predictors	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**
Constant	0.35	0.48	0.72	0.47	-0.60	1.30	4.79	0.30	16.20	***	4.21	5.37
Business type	0.03	0.07	0.45	0.65	-0.10	0.16	0.04	0.07	0.53	0.59	-0.10	0.17
Ownership	0.06	0.06	0.93	0.35	-0.07	0.19	0.06	0.06	0.87	0.39	-0.07	0.18
Origin	-0.05	0.07	-0.76	0.45	-0.18	0.08	-0.05	0.07	-0.71	0.48	-0.17	0.08
Age	-0.04	0.04	-0.99	0.32	-0.13	0.04	-0.04	0.04	-0.98	0.33	-0.13	0.04
Size	0.11	0.07	1.46	0.15	-0.04	0.25	0.11	0.07	1.47	0.14	-0.04	0.25
Organisational Learning (OL)	**0.37**	**0.08**	**4.65**	***	**0.21**	**0.53**	0.37	0.08	4.65	***	0.21	0.53
CEO Value of Openness To Change (OTC)	**0.49**	**0.05**	**9.74**	***	**0.39**	**0.59**	0.49	0.05	9.75	***	0.39	0.59
Int_1(OL*OTC)							**-0.08**	**0.09**	**-0.87**	**0.39**	**-0.27**	**0.10**
R2	0.42						0.42					
R2 Change							0					
F	25.27						0.75					
Sig.	0						0.39					

***Note**: *p<.05, **p<.01, ***p<.001*

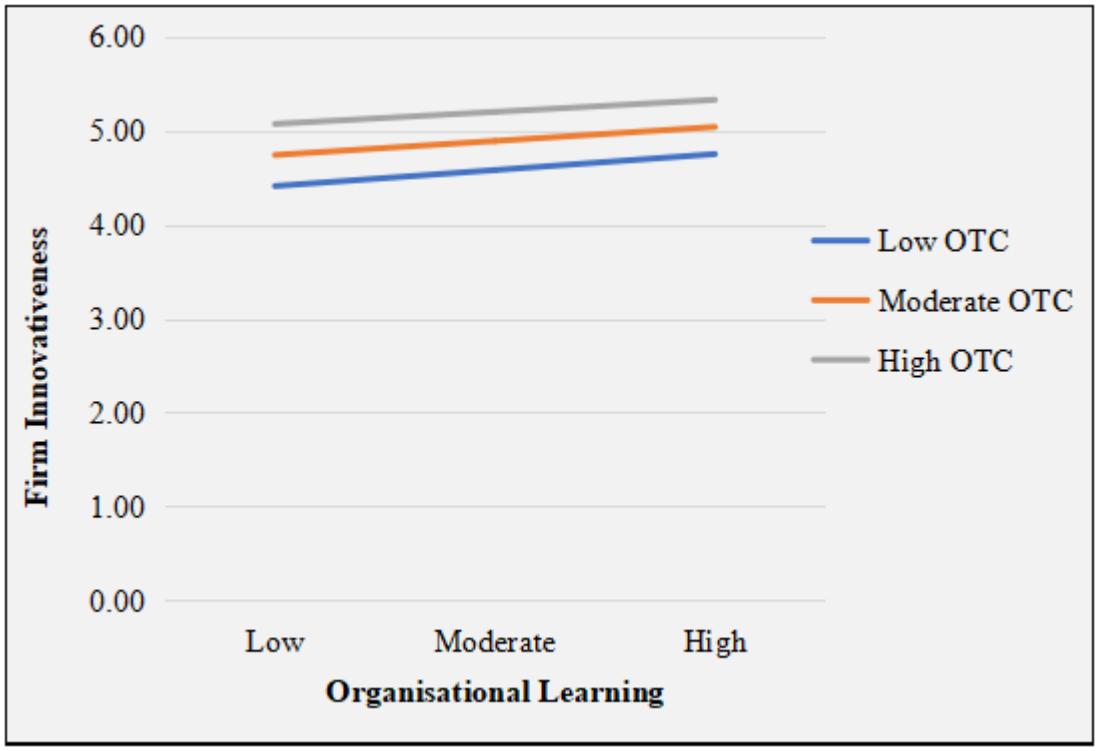


Figure 4.5: Graph showing the Moderating Effect of CEO Value of Openness to Change between Organisational Learning and Firm Innovativeness

4.17 Estimation of Moderating Effect of CEO Values between Firm innovativeness and Sustainability Performance

Hypothesis **H_{08}** holds that CEO values have no significant moderating effect on the relationship between firm innovativeness and sustainability performance. To test **H_{08}**, the researcher used Model 1 in Hayes PROCESS macro (Version 4.0) and followed the steps suggested in the literature of Aiken and West (1991);

Step 1: Centered the mean values of the variables of interest (Firm innovativeness, and CEO value of openness to change). This mitigated the secondary multicollinearity effects that could emerge in regression analyses (Lacobucci et al., 2017).

Step 2: Established whether the moderator variable (CEO value of openness to change) had a significant effect on the dependent variable (sustainability performance), where the results show; *Coeff.=.13, S.E=.04, t=3.05, p<.001*

Step 3: Computed the products of the independent variable and the moderator variables to generate the interaction term. The value obtained for the interaction term was different from zero.

Step 4: The researcher then tested the moderating effect of CEO value of openness to change on the relationship between firm innovativeness and sustainability performance in the presence of control variables, through a moderated hierarchical regression model.

Step 5: For the moderation effect to exist, the amount of variance (R^2) accounted for in the dependent variable should significantly be higher with the interaction of the independent and moderator variable compared to the direct effects without interaction (Preacher, Curran and Bauer, 2006).

The moderated regression results appended 20 and summarized in Table 4.44 show that CEO value of Openness-To-Change has a positive and significant moderating effect on the relationship between firm innovativeness and sustainability performance (*Coeff= .13, S.E=.05, t = 2.52, CI= .03,.23*). The interaction effect of firm innovativeness and CEO value of openness to change in Model 2 has a slightly higher contribution to variations in sustainability performance (R^2=.56) compared to the direct individual effect of each variable in Model 1 (R^2=.54). None of the control variables included in model had a statistically significant effect on sustainability performance. The significant moderating effect of CEO value of openness to change was further probed with the shape of the moderation graph suggested by Jose (2013) and Hayes (2005). The Mod-graph presented in Figure 4.6 shows that the simple slope lines are not parallel to each other, confirming presence of moderation effect. The upward sloping shape of the curves/lines from left to right imply that sustainability performance is higher in the context of high levels of organisational learning and high levels of CEO value of openness to change.

Based on these results, **H_{08} was rejected** and the alternative suggesting that CEO value of openness to change has a significant moderating effect on the relationship between firm innovativeness and sustainability performance was supported. This result implies that at different levels of CEO value of Openness-to-change, the effect of firm innovativeness on sustainability performance varies accordingly. Particularly, CEOs who score high on the value of openness to change enhance the effect of organisational learning on sustainability performance.

Table 4.44: Moderating Effect of CEO Value of Openness-to-Change between Firm Innovativeness and Sustainability Performance

	Dependent Variable: Sustainability Performance											
	Model 1						Model 2					
Predictors	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**
Constant	1.88	0.27	6.90	***	1.34	2.42	4.98	0.21	23.86	***	4.57	5.39
Business type	-0.05	0.05	-0.97	0.33	-0.14	0.05	-0.07	0.05	-1.38	0.17	-0.17	0.03
Ownership	0.00	0.05	-0.07	0.94	-0.09	0.09	0.00	0.05	0.06	0.96	-0.09	0.10
Origin	0.08	0.05	1.73	0.08	-0.01	0.17	0.07	0.05	1.46	0.15	-0.02	0.16
Age	0.00	0.03	0.01	0.99	-0.06	0.06	0.00	0.03	0.02	0.99	-0.06	0.07
Size	-0.07	0.05	-1.33	0.19	-0.17	0.03	-0.08	0.05	-1.49	0.14	-0.19	0.03
Firm Innovativeness (FI)	**0.50**	**0.04**	**11.47**	***	**0.41**	**0.58**	0.49	0.05	10.77	***	0.40	0.58
CEO Value of Openness To Change (OTC)	**0.13**	**0.04**	**3.05**	***	**0.04**	**0.21**	0.14	0.04	3.24	***	0.06	0.22
Int_1(FI*OTC)							**0.13**	**0.05**	**2.52**	**	**0.03**	**0.23**
R2	0.541						0.557					
R2 Change							0.015					
F	41.798						31.909					
Sig.	0						0					

***Note**: *p<.05, **p<.01, ***p<.001*

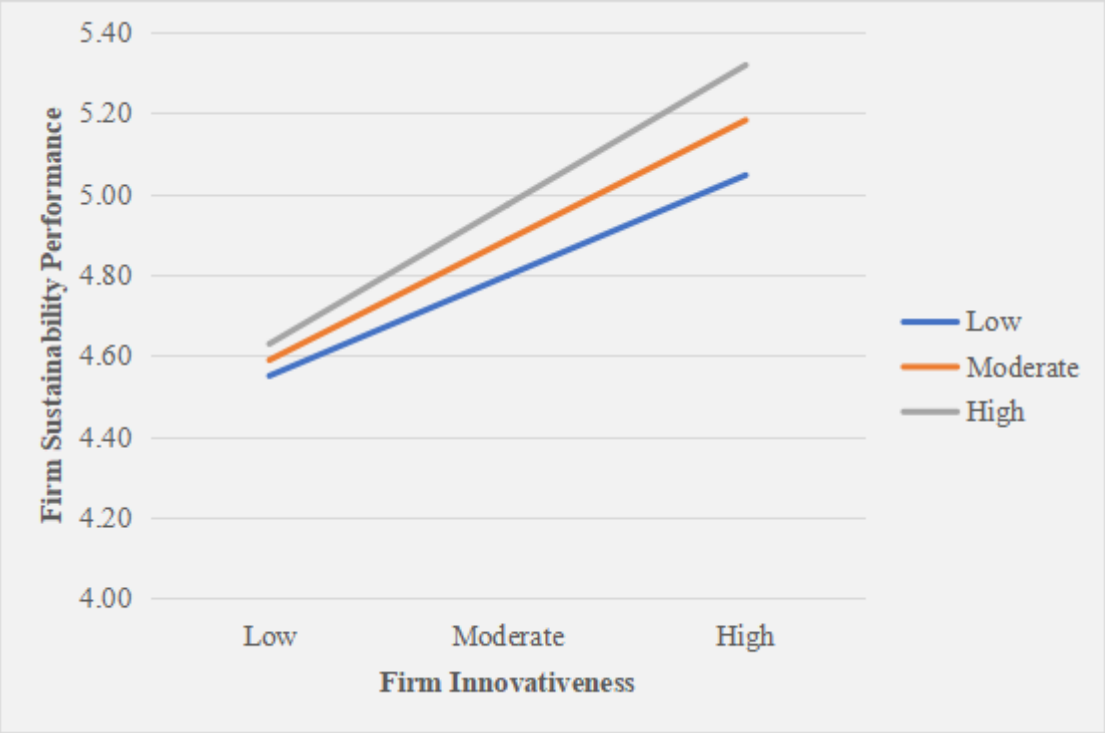


Figure 4.6: Graph showing the Moderating Effect of CEO Value of Openness to Change on the Relationship between Firm Innovativeness and Firm Sustainability Performance

4.18 Estimation of Moderating Effect of CEO Values between Organisational Learning and Sustainability Performance

Hypothesis **H_{09}** holds that CEO values have no significant moderating effect on the relationship between organisational learning and sustainability performance. To test this hypothesis, the researcher used Model 1 in PROCESS macro (Hayes, 2013, 2018) following the steps suggested in the literature of Aiken and West (1991);

Step 1: Centered the mean values of the variables of interest (Organisational learning, and CEO value of openness to change). This mitigated the secondary multicollinearity effects that could emerge in regression analyses (Lacobucci et al., 2017).

Step 2: Established whether the moderator variable (CEO value of openness to change) had a significant effect on the dependent variable (sustainability performance), where results show; *Coeff.=.31,S.E=.04, t=7.68, p<.001*

Step 3: Computed the products of the independent variable and the moderator variables to generate the interaction term. The value obtained for the interaction term was different from zero.

Step 4: The researcher then tested the moderating effect of CEO value of openness to change on the relationship between organisational learning and sustainability performance in the presence of control variables, through a moderated hierarchical regression model.

Step 5: For the moderation effect to exist, the amount of variance (R^2) accounted for in the dependent variable should significantly be higher with the interaction of the independent and moderator variable compared to the direct effects without interaction (Preacher, Curran and Bauer, 2006).

The moderated regression results appended 21 and summarized in Table 4.45 shows that CEO value of Openness-To-Change had a positive significant moderating effect on the relationship between organisational learning and sustainability performance (*Coeff=.19, S.E=.08, t =2.57, CI= .01,.34*). The interaction effect of organisational learning and CEO value of openness to change in Model 2 has a slightly higher contribution to variations in sustainability performance (R^2=.42) compared to the direct individual effect of each variable in Model 1 (R^2=.40). None of the control variables included in model had a statistically significant effect on firm innovativeness. The significant moderating effect of CEO value of openness to change was further probed with the shape of the moderation graph suggested by Jose (2013) and Hayes (2005). The Mod-graph presented in Figure 4.7 shows that the simple slope lines are not parallel to each other, confirming presence of moderating effect of CEO value of openness to change between organisational learning and sustainability performance.

Based on the above results, **H_{09} was rejected** and the alternative suggesting that CEO value of openness to change has a positive and significant moderating effect on the relationship between organisational learning and sustainability performance was supported. This result implies that at higher levels of CEO value of openness-to-change, the effect of organisational learning on sustainability performance is enhanced.

Table 4.45: Moderating Effect of CEO Value of Openness-to-Change between Organisational Learning and Sustainability Performance

	Dependent Variable: Sustainability Performance											
	Model 1						Model 2					
Predictors	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**
Constant	1.11	0.39	2.85	*	0.35	1.88	4.90	0.24	20.73	***	4.43	5.36
Business type	-0.01	0.06	-0.25	0.804	-0.12	0.09	-0.03	0.05	-0.51	0.61	-0.14	0.08
Ownership	0.03	0.05	0.49	0.621	-0.08	0.13	0.03	0.05	0.67	0.50	-0.07	0.14
Origin	0.04	0.05	0.72	0.473	-0.07	0.14	0.03	0.05	0.57	0.57	-0.07	0.13
Age	-0.02	0.04	-0.70	0.482	-0.09	0.04	-0.03	0.04	-0.73	0.46	-0.09	0.04
Size	0.01	0.06	0.10	0.918	-0.11	0.12	0.00	0.06	0.05	0.96	-0.11	0.12
Organisational Learning (OL)	**0.42**	**0.06**	**6.56**	***	**0.30**	**0.55**	0.42	0.06	6.61	***	0.30	0.55
CEO Value of Openness To Change (OTC)	**0.31**	**0.04**	**7.68**	***	**0.23**	**0.39**	0.31	0.04	7.71	***	0.23	0.39
Int_1(OL*OTC)							**0.19**	**0.08**	**2.57**	**	**0.05**	**0.34**
R2	0.4						0.42					
R2 Change							0.02					
F	23.77						22.09					
Sig.	0						0					

Note: *p<.05, **p<.01, ***p<.001

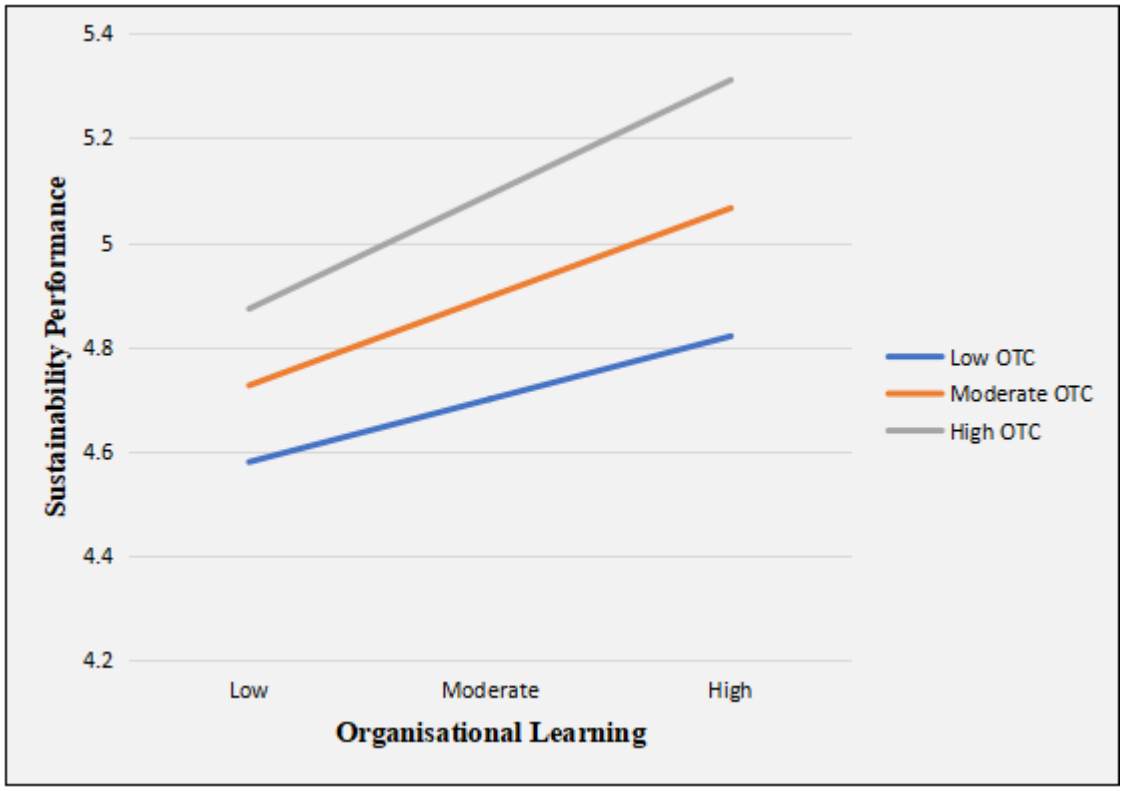


Figure 4.7: Graph showing the Moderating Effect of CEO Value of Openness to Change on the Relationship between Organisational Learning and Sustainability Performance

4.19 Estimation of Moderated-Mediation Effect (Model 14)

Finally, **Hypothesis H_{010}** holds that the indirect effect of firm innovativeness would be stronger between organisational learning and sustainability performance, under high levels of CEO value of openness to change. To test this hypothesis, the researcher followed the three conditions suggested in the literature of Muller et al. (2005) and Preacher et al. (2007);

1. Examined the direct effect of organisational learning on sustainability performance, and results show a positive and statistically significant effect *(Coeff. =.279, t=4.372, CI =.153,.405)*

2. Examined the mediating effect of firm innovativeness between organisational learning and sustainability performance, and results show a positive and statistically significant mediating effect *(Coeff. =.324, SE=.047, CI =.236, .417)*

3. Examined the moderating effect of CEO value of openness to change between firm innovativeness and sustainability performance, and results show a positive and statistically significant moderating effect *(Coeff. =.127, t=2.367, CI =.021, .232)*

Having satisfied the conditions suggested by Muller et al. (2005) and Preacher et al. (2007), the researcher proceeded to test whether the strength of the indirect effect of firm innovativeness between organisational learning and sustainability performance differs across the three levels of CEO value of openness to change. The results appended 22 and summarized in Table 4.46-7 indicate that the conditional indirect effects were found to be significant between organisational learning and sustainability performance via firm innovativeness. At low levels of CEO value of openness to change (mean minus one standard deviation = −1), the effect is significant although relatively weak (*Coeff.=.217, SE = .039, CI = .144, .298*), at moderate levels of CEO value of openness to change (mean= 0), the effect is significant and slightly moderate (*Coeff.=.267, SE = .042, CI = .187, .353*) and at higher levels of CEO value of

openness to change (mean plus one standard deviation = +1), the effect is significant and comparatively stronger (*Coeff.=.317, SE = .054, CI = .213, .424*).

To further validate the presence of a significant moderated mediation relationship, the researcher examined the index of the moderated-mediation model following the guidance of Hayes (2015). Results presented in Table 4.48 show that CEO value of openness to change has a positive and significant moderating effect on the indirect relationship between organisational learning and sustainability performance via firm innovativeness (*b=.080, BootS.E=.034, BootCI=.015, .146*). This result implies that at different levels of CEO value of openness to change, the indirect effect of innovativeness on the relationship between organisational learning and sustainability performance varies. These results are further supported by the shape of the simple slopes in Figure 4.7. Based on these results, **Hypothesis H_{010} is rejected** and the alternative was supported.

Table 4.46: Moderation-Mediation Test Results

	Dependent Variable											
	Model 1(FI)						Model 2 (SP)					
Predictors	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**	**Coeff.**	**SE**	**t**	**p**	**LLCI**	**ULCI**
Organisational Learning (OL)	0.63	0.09	6.78	***	0.45	0.81	0.28	0.06	4.37	***	0.15	0.41
Firm Innovativeness (FI)							0.42	0.05	8.20	***	0.32	0.53
CEO Value of Openness To Change (OTC)							0.11	0.04	2.57	**	0.03	0.20
Int_1(FI*OTC)							0.13	0.05	2.37	*	0.02	0.23
R2	0.175						0.558					
F	45.922						69.712					
Sig.	0						0					

***Note**: *p<.05, **p<.01, ***p<.001*

Table 4.47: Bootstrap Conditional Indirect Effect(s) at different levels of the moderator

Different levels of CEO Value of OTC on the Indirect Effect	Coeff.	S.E	LLCI	ULCI
Low CEO Value (Mean minus one standard deviation = −1)	.217	.039	.144	.298
Moderate CEO Value (mean= 0)	.267	.042	.187	.353
High CEO Value (Mean plus one standard deviation = +1)	.317	.054	.213	.424

Note: *CI = 95% confidence interval for indirect effect: if CI includes zero, the indirect effect is considered statistically not significant.*

Table 4.48: Index of Moderated-Mediation

Mediator	*b*	S.E (Boot)	Boot LLCI	Boot ULCI
Firm Innovativeness	.080	.034	.015	.146

Note: *CI = 95% confidence interval for indirect effect: if CI does include zero, the indirect effect is considered statistically not significant.*

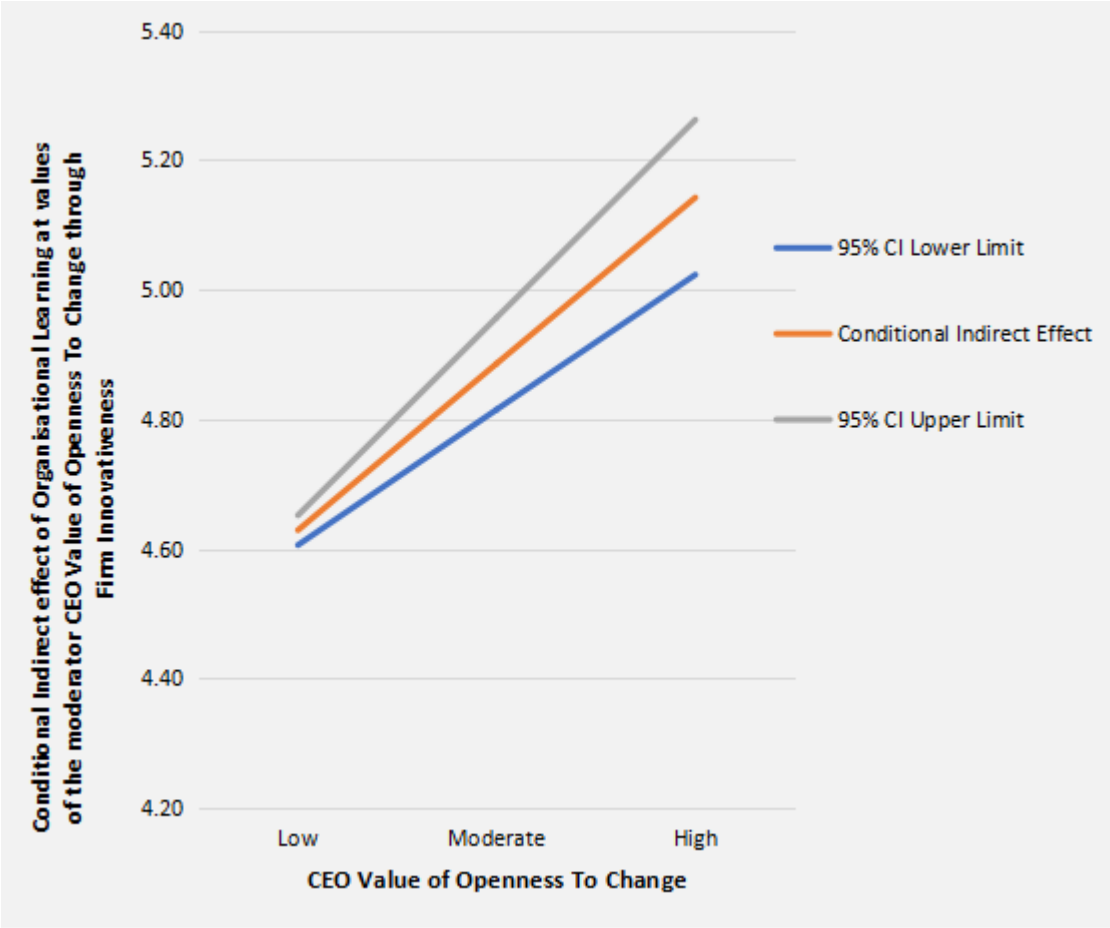


Figure 4.8: Graph showing the Conditional Indirect effect at the different levels of CEO Value of Openness to Change on the Relationship between Organisational Learning and Sustainability Performance via Firm Innovativeness

4.20 Summary Results of Hypothesis Testing

As observed from section 4.13-18, parameter estimates were used to support or reject a given null hypothesis. A null hypothesis with statistically significant path coefficients (t-value = ≥+-1.96, p≤.05) was rejected whereas a null hypothesis with non-significant path coefficients (t-value = <+-1.96, p>.05) was supported. Overall, the results of the tested hypotheses are summarized in Table 4.49.

Table 4.49: Summary of Hypotheses Testing Results

Code	Null Hypotheses	Decision
$\mathbf{H_{01}}$	Organisational learning has no significant effect on firm sustainability performance.	Rejected
$\mathbf{H_{02}}$	Firm innovativeness has no significant effect on firm sustainability performance.	Rejected
$\mathbf{H_{03}}$	CEO value of openness to change has no significant effect on sustainability performance.	Rejected
$\mathbf{H_{04}}$	Organisational learning has no significant effect on firm innovativeness.	Rejected
$\mathbf{H_{05}}$	CEO value of openness to change has no significant effect on firm innovativeness	Rejected
$\mathbf{H_{06}}$	Firm innovativeness has no significant mediating effect on the relationship between organisational learning and sustainability performance	Rejected
$\mathbf{H_{07}}$	CEO value of openness to change has no significant moderating effect on the relationship between organisational learning and firm innovativeness	Fail to Reject
$\mathbf{H_{08}}$	CEO value of openness to change has no significant moderating effect on the relationship between firm innovativeness and sustainability performance	Rejected
$\mathbf{H_{09}}$	CEO value of openness to change has no significant moderating effect on the relationship between organisational learning and sustainability performance	Rejected
$\mathbf{H_{010}}$	CEO value of openness to change has no significant moderating effect on the indirect relationship between organisational learning and sustainability performance via firm innovativeness	Rejected

Source: *Research Data (2020)*

4.21 Final Model Specification

The current study set out to test 10 hypotheses derived from the statistical model presented under Figure 3.1 (Model 59). From the analysis and results presented earlier in this chapter, most of the hypotheses were significant except hypothesis seven ($\mathbf{H_{07}}$) whose results indicate that CEO value has no significant moderating effect on the

relationship between organisational learning and firm innovativeness. Consequently, moderated mediation model 59 was not significant.

Having found model 59 non significant, the researcher dropped the the non-significant path (H_{07}) in order to establish a moderated-mediation model that fairly fit the data. Moderated-mediation model 15 was tested first but results appended 22 show an index; *b=.032, BootSE=.045, and BootCI=-.051, .126* which indicates that the model is not significant. Finally, the moderated-mediation model 14 presented in Figure 4.9 was tested and found to be significant *(b=.080, BootS.E=.034, BootCI=.015, .146)*. The model demonstrates that at different levels of CEO value of openness to change, the conditional indirect effect of organisational learning on sustainability performance via firm innovativeness varies. The final model specified deviates from the one originally hypothesized in Figure 2.1 based on the reviewed theories and literature.

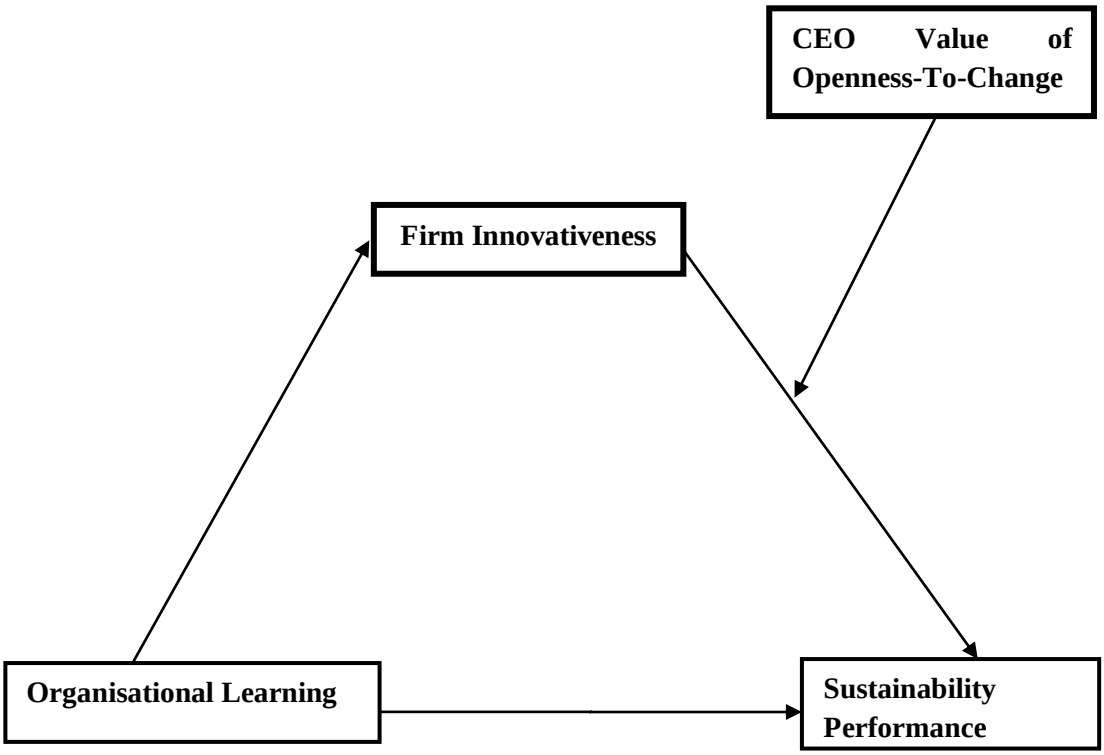


Figure 4.9: The final model (Model 14) predicting Sustainability Performance among medium and large manufacturing firms in Uganda

4.22 Discussion of Research Findings

In this study, the researcher tested an integrated moderated mediation model to address two major gaps identified in existing sustainability performance literature. Based on the developed theoretical model, 10 null hypotheses were formulated to guide the study. Using data from managerial staff of 256 medium and large manufacturing firms in Uganda, findings show that null hypotheses; H_{01}, H_{02}, H_{03}, H_{04}, H_{05}, H_{06}, H_{08}, H_{09} and H_{010} are statistically significant and only H_{07} is non significant. Accordingly, the significant null hypotheses are not supported while the non significant null hypothesis is supported. These findings are further discussed focusing on the key emerging issues as well as findings of previous related studies.

4.22.1 The effect of control variables on the study variables

Drawing on past studies, firm characteristics were assumed to have a significant effect on the study variables. These characteristics include; business type, firm ownership, firm origin, firm age and size. Contrary, the results obtained show that business type, firm ownership, firm age and size had no significant effect on the main study variables. This result reveals that the specified firm characteristics do not contribute to variations in learning, innovation, perceptions of CEO values, and sustainability performance in the context where this study was conducted. This finding contradicts the findings of Ecuru et al. (2014), Chow and Chen (2012), Vihari et al. (2018), Fujii et al. (2013) who argue that the above-mentioned firm characteristics significantly account for variations in learning, firm innovativeness and organisational sustainability.

The non-significant effect of business type, firm ownership, firm age and size on organisational learning, firm innovativeness and sustainability performance could

perhaps be explained by the difference in the context where this study was conducted. Unlike studies conducted in developed economies (Purdehnad and Smith, 2012; Mitleton-Kelly, 2011; Kowuttiphong and Fongsuwan, 2019; Kiewiet and Vos, 2007) and a few in Asia (Vihari et al., 2018), studies conducted in the East African region consistently report non-significant effect results of such firm characteristics on various organisational wide variables (Bananuka et al., 2020; Simuyu et al., 2020; Nabatanzi, 2014; Kibet, 2017). Thus, manufacturing firms in Uganda engage in learning activities, innovation and sustainability performance initiatives regardless of which product(s) they produce, their ownership, age and size.

Only the characteristic of firm origin had a statistically significant effect on organisational learning. This suggests that the origin of the firm partly accounts for variations in the level of learning. Specifically, the differences in means indicates that domestic firms engage more in learning activities compared to foreign firms. This result resonates with the finding of Babirye et al (2014) who observed that local manufacturing firms in Uganda are undergoing a stage of industrial transformation which calls for greater learning in order to adopt global manufacturing practices that are likely to increase their level of competitiveness. Foreign firms are presumed to have gone through similar intensive learning stages on their way to attain international presence.

4.22.2 The effect of organisational learning on sustainability performance

The first objective of the study sought to examine the effect of organisational learning on sustainability performance among medium and large manufacturing firms in Uganda. Consequently, it was hypothesized that organisational learning has no significant effect on sustainability performance. Contrary, results obtained show that

organisational learning has a positive and statistically significant effect on sustainability performance.

This finding suggests that manufacturing firms that engage in continuous learning by way of interacting with both the external and internal environment generate vital information relevant to understanding the changing stakeholder demands. This information is then shared amongst the internal organisational members who intuitively digest it and jointly come up with ideas that inform company plans, policies, strategies and activities geared towards addressing stakeholders' economic, social and environmental demands. Therefore, organisational learning as a continuous process enables individual employees to gain knowledge about the strategic importance of embracing sustainability management practices in the contemporary society. This knowledge is then shared at group level and later integrated into organisational policies, strategies, systems, routines and standard operating procedures. In doing so, organisational learning becomes a vehicle for achieving sustainability performance.

The above finding coincides with findings of several past studies; Van Mierlo and Beers (2020), Vihari et al (2018), and Quartey and Wells (2020) who argue that in a knowledge-based economy, the survival and continuity of business organisations hinges on the extent to which they engage in continuous learning. Learning equips internal organisational members with knowledge of the changes occurring within the marketplace. The knowledge resources obtained through learning enable organisational members to collectively understand and appreciate sustainability management as a voluntary commitment rather than a regulatory compliance issue. With such changed organisational mental models, relevant decisions are deliberately

taken by managers to cater for the present as well as long-term well-being of the various stakeholder groups.

4.22.3 The effect of firm innovativeness on sustainability performance

The second objective of the study sought to examine the effect of firm innovativeness on sustainability performance among medium and large manufacturing firms in Uganda. Consequently, it was hypothesized that firm innovativeness has no significant effect on sustainability performance. Results obtained show that firm innovativeness has a positive and significant direct effect on sustainability performance. This finding shows that continuous improvements in the firm's products and manufacturing processes have the capacity to increase the firm's level of sustainability performance. Within the manufacturing context, changes made in existing product design and packaging, production technologies as well as distribution processes not only increase the firm's financial performance but also improve the firm's social and environmental performance.

Contrary to Santos et al. (2014), Kandybin (2009) and Hall and Vredenburg (2003) non-significant findings on the link between innovation and organisational performance variables, the findings of this study is consistent with Globocnik et al (2019), Persaud (2014) and Lee and Chen (2009) who assert that innovation enable firms to rethink, modify and align existing products/services, processes, technologies and business models to the social, environmental and economic needs of the various stakeholder groups amidst environmental dynamics. Particularly, this is important for the manufacturing sector that is globally condemned for its continued adverse impact on the ecosystem and human life.

4.22.4 The effect of CEO values on sustainability performance

Objective three of the study sought to examine the effect of CEO values on sustainability performance among manufacturing firms in Uganda. Consequently, CEO values were hypothesized to have no significant effect on firm sustainability performance. Results of EFA extracted only the component of openness to change as the dominant factor that sufficiently explains the theoretical construct of CEO values within the Ugandan manufacturing context. The results obtained show that CEO's value of openness-to-change has a positive and statistically significant effect on sustainability performance.

The above result provides evidence that CEOs who value change are more likely to advance, support and promote policies, strategies and practices that increase sustainability performance of their respective manufacturing firms. In other words, CEOs who are open to change are more desirous to create a work environment where employee creativity, flexibility, freedom, challenge, and self-determination is encouraged. Such CEOs are never satisfied with the status quo and exhibit a strong desire for increased dynamism in firm operations. The fact that CEOs occupy the top most position in the executive hierarchy, driven by the value of openness to change, they are able to influence strategic decisions that improve simultaneously the economic, social, and environmental performance of the business.

In spite of Grebitus, Steiner, and Veeman (2013) argument that persons who value openness-to-change may have lower propensity towards making decisions that support environmental sustainability, the findings of this study concur with Bhattacharyya (2016) and Datta et al. (2003) who noted that persons who score high on the value of openness to change will be more concerned about social and

environmental issues and therefore take action to address those issues compared to persons who score high on self-transcendence (benevolence) value. Inferring from this kind of argument, it is suggested that equally CEOs who are open to change are more likely to advance policies and actions that not only improve the firm's financial performance but also simultaneously address the social and environmental demands of other stakeholders.

To put this to a more practical perspective, CEOs who score high on the value of openness to change are more likely to create a work environment where employees collectively acknowledge, understand, and appreciate the strategic importance of engaging in social and environmental sustainability performance practices. Such CEOs urge staff members to continually come up with new and better work methods aimed to reduce natural energy consumption, waste material, and pollution. By doing so, firms are able to reduce considerably their operating costs thereby increase economic performance, improve people's quality of life as well as become more environmentally friendly.

4.22.5 The effect of organisational learning on firm innovativeness

The fourth objective of the study sought to examine the effect of organisational learning on firm innovativeness among medium and large manufacturing firms in Uganda. Accordingly, it was hypothesized that organisational learning had no significant effect on firm innovativeness. However, results obtained show that organisational learning has a positive and statistically significant effect on firm innovativeness. This finding suggests that learning as a resource enables manufacturing firms to interact with both the external and internal environment from which relevant information regarding the changing market needs, regulatory

framework, technological breakthroughs, competitor actions and stakeholder expectations is obtained.

Results show that manufacturing firms in Uganda learn mainly through partnering with external professional bodies and participating in periodic trade exhibitions. Such learning platforms enable firms to access new knowledge pertaining to industrial and market developments. This knowledge is then internally shared, processed and utilised in developing new ideas relevant to causing changes in the firm's products and processes. This affirms that organisational learning which involves the process of knowledge acquisition, distribution, interpretation and memory is a key determinant of firm innovativeness in the sampled manufacturing firms.

Consistent with Lundvall (2010) and Calantone et al (2002), the above finding clarifies that innovation is an outcome of learning rather than a component of learning as implied in the literature of Mahat et al (2018). Therefore, manufacturing firms oriented towards greater learning are able to attain high levels of firm innovativeness. Through learning, firms increase their level of intelligence and knowledge base. This knowledge is then utilised to generate new ideas that cause transformations in products/service offers, and manufacturing processes aimed to competitively position the firm in the dynamic market environment. In the same vein, Nonaka (1994) noted that when employees acquire and collectively share knowledge, new insights and capabilities are generated that drive innovation within the organisation.

Thus, this study provides evidence that firm innovativeness resides in its employee's competencies, which competencies are built and sustained through continuous organisational learning initiatives. Therefore, nurturing a work culture where qualified employees are hired, developed, motivated, empowered and recognized for exploring

and exploiting learning opportunities increases the firm's innovative capacity. These soft human resource management interventions facilitate positive attitude change which is the foundation upon which individual as well as collective learning potential is built. Members openly interact and share individual experiences. New knowledge is generated through sharing scattered experiences and in turn this knowledge is utilised to push for radical and/or incremental changes in products/services and processes aimed to increase stakeholder value.

4.22.6 The effect of CEO values on firm innovativeness

Under objective five, the study sought to examine the effect of CEO values on firm innovativeness. As earlier discussed, the value of openness to change emerged the dominant component that measured the theoretical construct of CEO values within the Ugandan manufacturing firm context. In line with this value, results obtained show that CEO value of openness-to-change has a positive and statistically significant effect on firm innovativeness. This finding indicates that CEOs whose value preposition is inclined more towards openness to change are more likely to create a work environment that encourages self-directed thoughts, self-directed actions and stimulation among fellow managers and employees. In turn, such behaviour improves the organisation's innovative potential.

In other words, CEOs who are open to change are more likely to advance policies and strategies that support increased adoption of new work methods. They are particularly enthusiastic about trying new things for the sake of continuous improvements. Related studies by Berson et al., (2008), Agle et al. (1999) and Clark (2001) present similar results suggesting that CEOs who are openness to change (self-directed and/or stimulation value) are more associated with innovative-oriented organisational

cultures compared to other human values. Such leaders value freedom and creativity which are key attributes that influence the firm's innovative potential.

4.22.7 Mediating effect of firm innovativeness between organisational learning and sustainability performance

The sixth objective of the study sought to examine the mediating effect of firm innovativeness on the relationship between organisational learning and sustainability performance among medium and large manufacturing firms in Uganda. In light of this objective, it was hypothesized that firm innovativeness does not significantly mediate the relationship between organisational learning and sustainability performance. Contrary, the result obtained shows that firm innovativeness has a significant partial mediating effect on the relationship between organisational learning and sustainability performance.

This result indicates that part of the potential benefits of organisational learning on sustainability performance are enabled through innovations in products and manufacturing processes. Thus, the result is indicative that the knowledge resources developed through learning support organisations to develop new products and/ make improvements in existing product/service offers and production processes. Changes in product offers may take form of improvements in product design and packaging well as changes in processes normally manifests in form improvements in business models, technology used, and distribution channels. In turn, such changes facilitate improvements in the firm’s economic, social and environmental performance simultaneously.

Unlike Tjahjadi and Soewarno (2018) and Al-Sa’di et al. (2017) whose study findings indicate that innovation capability and product innovation have no significant

mediating effect respectively, the significant partial mediating effect of firm innovativeness obtained in this study is consistent with the findings of Durmus-Ozdemir and Abdukhoshimov (2018) and Ruiz-Jiménez and del Mar Fuentes-Fuentes (2013) who contend that innovations in products and processes mediate the link between knowledge management capabilities and firm performance variables.

Accordingly, manufacturing firms that engage in continuous learning processes build knowledge resources that enable them to develop new products, make improvements in existing product quality and features, adopt less pollutant production technologies, use renewable energy resources, develop mechanisms of recycling and maximizing re-use of waste materials as well as adopt green supply chain management practices. Such innovations are projected not only to improve the firm's economic performance but also enable the firm to respond to the social and environmental demands of other stakeholder groups. Thus, sustainability performance of manufacturing firms in Uganda hinges directly on learning as well as through firm innovativeness.

4.22.8 Moderating effect of CEO values between organisational learning and firm innovativeness

Objective seven sought to examine the moderating effect of CEO values on the relationship between organisational learning and firm innovativeness. Accordingly, the researcher under hypothesis 7 stated that CEO value of openness to change has no significant moderating effect on the relationship between organisational learning and firm innovativeness. Based on the results obtained, the null hypothesis is supported confirming that CEO value of openness to change has a negative non-significant moderating effect on the relationship between organisational learning and firm innovativeness.

The result obtained under this hypothesis suggests that learning as a driver of firm innovativeness is not supported by CEO value of openness to change, but rather learning and CEO value of openness to change act independent of each other in contributing to variations in firm innovativeness. In an ideal situation, institutionalizing a culture of learning that improves firm innovativeness requires a top management team that is open minded, self-directed, adventurous and with a high sense of self-stimulation. But empirical evidence emerging from the Ugandan medium and large manufacturing environment shows that firms have the capacity to engage in knowledge acquisition, sharing, utilization and storage without the interaction effect of CEO value of openness to change.

The knowledge competencies accumulated through learning independently facilitate the introduction of new products, improvements in existing product features, adoption of new production technologies, improvements in business processes as well as changes in distribution processes. The negative effect is indicative of the view that the effect of organisational learning on firm innovativeness reduces where the company is headed by a CEO who strongly values change. However, the non-significant results do not provide conclusive evidence to support this observation.

The above result is inconsistent with findings of many previous upper echelon studies that support the conditional effect of CEO values on various organisational processes and outcomes (Hoffman and Meusburger, 2018; Agle et al., 1999; Berson et al., 2008; Winkler and Fyffe, 2016). One possible explanation that could account for such result is that large and medium manufacturing firms in Uganda may be lacking systems that support the integration between top leader personal characteristics and values with organisational learning processes. That is why probably organisational learning and

CEO value of openness to change distinctively contribute towards variations in firm innovativeness.

In line with Hambrick (2007) and Hemingway and Maclagan (2004) observation, executives leading organisations with strong independent supervisory boards, well-defined policies, and vigilant top management team have less discretion on company strategic choices. Thus, it can be argued that the process of acquiring, sharing, utilizing and storage of knowledge resources in medium and large manufacturing firms in Uganda is clearly guided and supported by policy and structure, and therefore does not require the influence of CEO value of openness to change.

4.22.9 Moderating effect of CEO values on the relationship between firm innovativeness and sustainability performance

Objective eight sought to examine the moderating effect of CEO values on the relationship between firm innovativeness and sustainability performance. Consequently, the researcher hypothesized that CEO values have no significant moderating effect on the relationship between firm innovativeness and sustainability performance. Based on the results obtained, the null hypothesis is not supported revealing that CEO value of openness to change has a positive and statistically significant moderating effect on the relationship between firm innovativeness and sustainability performance.

This result suggests that the contribution of firm innovativeness on sustainability performance is enhanced by CEOs who are open to change. In other words, large and medium manufacturing firms headed by CEOs who are more self-directed, stimulated, and adventurous are more likely to engage in innovative activities that result into new product development, improvements in existing products as well as transformations in

existing manufacturing processes. This is because CEOs holding openness-to-change values tend to welcome any change and encourage the pursuit of new ideas and experiences. Sustainability performance represents a major change in the contemporary business society and therefore calls for greater innovations in company products and processes in order for the business to remain economically viable as well as meet other stakeholders' social and environmental demands. Empirical evidence emerging from this study confirms that innovation that improves business sustainability performance is possible in manufacturing firms headed by CEOs whose value preposition is higher on openness-to-change.

The findings obtained under hypothesis H_{08} lend support to the upper echelon theory by Hambrick and Mason (1984) which posits that the demographic characteristics and personal values of top managers influence organisational processes and outcomes. In this context, CEOs who are self-directed and therefore value freedom, independence, curiosity, creativity, and self-respect are more likely to nurture a work environment that supports individual and team innovativeness. With increased innovative potential, manufacturing firms are in positions to increase their economic, social and environmental performance simultaneously. The findings are further supported by previous empirical studies of Berson et al. (2008) and Aktas et al. (2011) who assert that CEOs who value stimulation and self-direction foster a work culture of innovation through encouraging and rewarding employee creativity, risk taking and entrepreneurial orientation. Consequently, this enhances firm sustainability performance.

4.22.10 Moderating effect of CEO values between organisational learning and sustainability performance

Objective nine of this study sought to examine the moderating effect of CEO values on the relationship between organisational learning and sustainability performance. In light of this objective, it was hypothesized that CEO values have no significant moderating effect on the relationship between organisational learning and sustainability performance. The results obtained reveal that CEO value of openness-to-change has a positive and significant moderating effect on the relationship between organisational learning and sustainability performance.

The above finding suggests that the effect of organisational learning on sustainability performance is enhanced by CEOs who value openness to change. Medium and large manufacturing firms in Uganda that embrace a learning culture and are headed by CEOs who value of openness-to-change are more likely to engage in sustainability performance practices compared to their counterparts. A CEO who values change is likely to create a work environment that motivates employees to seek out learning opportunities from within and outside the organisation. Internally, employees freely interact and share meaningful work experiences. Externally, policies are put in place that enable the organisation to interact with the environment from which knowledge about the changing customer expectations, regulatory framework, technological break-through as well as competitors' strategic actions and moves is obtained and used for sustainability-focused decision making.

In a related study, Aktas et al. (2011) found out that CEO's value of stimulation and self-direction (openness-to-change) significantly moderated the relationship between organisational culture and efficiency. Such findings confirm the conditional role

played by CEOs' value of stimulation and self-direction in enhancing study relationships. In the current study it can be deduced that neither organisational learning nor CEO value of openness to change is exclusively sufficient to cause greater positive change in firm sustainability performance. But rather, the two variables mutually reinforce each other to cause greater variations in firm sustainability performance. In other words, learning that has a stronger effect on sustainability performance hinges on the support of a CEO who is open to change, values diversity, and has a strong desire for creativity, independence, and freedom.

4.22.11 Moderating effect of CEO values on the indirect relationship between organisational learning and sustainability performance via firm innovativeness

Finally, objective 10 of this study sought to test different conditional indirect effect of organisational learning on sustainability performance via firm innovativeness, across low, moderate and high levels of CEO values. Accordingly, it was hypothesised that CEO values have no significant moderating effect on the indirect relationship between organisational learning and sustainability performance via firm innovativeness among medium and large manufacturing firms in Uganda. The results obtained show that CEO value of openness to change significantly moderates the indirect relationship between organisational learning and sustainability performance via firm innovativeness among medium and large manufacturing firms in Uganda. In other words, the indirect effect of firm innovation between organisational learning and sustainability performance is susceptible to differences in CEO value of openness to change when sustainability performance is being predicted.

The study findings indicate that at low levels of CEO value of openness to change, the indirect effect of firm innovativeness on the link between organisational learning and sustainability performance is significant but relatively weak. Essentially, CEOs who score low on the value of openness to change emphasise a great deal of social order, stability, conformity and personal protection. Such leaders discourage other organisational members from engaging in various innovative activities due to fear of the unpleasant consequences that may arise out of staff deviating from the acceptable norm. Consistent with findings of Blekesaune (2019) and Berson et al. (2008), leaders who score high on the value of security but low on the value of openness to change are more likely to promote bureaucratic organisational culture where stability, conformity and social order is prioritized. This is achieved by creating and preserving clear and explicit work practices, set routines and call for strict adherence to rules and procedures. Security minded leaders view change as a potential threat to social order and therefore less likely to support new developments arising out of innovations.

On the other hand, findings of this study show that at higher levels of CEO value of openness to change, the indirect effect of firm innovativeness on the link between organisational learning and sustainability performance is significant and strongly enhanced. This indicates that medium and large manufacturing firms in Uganda led by CEOs who appreciate creativity, freedom and independence are more likely to support programmes that increase firm innovativeness in products and processes, which in turn indirectly improves firm sustainability performance. This finding resonates with previous studies by Van Dijk and Kluger (2004), Blekesaune (2019) and Berson et al. (2008) who assert that self-directive and stimulation values guide leaders' attention and action towards intrinsically rewarding intellectual opportunities, risk taking behaviour and innovation. Driven by openness to change values, leaders

(CEOs in particular) are likely to model a work atmosphere that supports innovation, which in turn strengthens the indirect effect between organisational learning and firm sustainability performance via firm innovativeness.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter contains the summary of the key findings in line with the hypotheses tested. The findings are based on whether the hypothesis is supported or not supported and the reason for the decision made. The chapter continues with the conclusions, implications, and areas suggested for further research, based on the key issues that emerged from the study findings.

5.1 Summary of the Findings

The current study set out to test an integrated moderated mediation model within the Ugandan manufacturing sector. From the model, five (05) hypotheses of the direct effect were formulated, one (01) hypothesis testing the mediating effect, three (03) hypotheses of the moderating effect and one (01) conditional indirect effect hypothesis. Hierarchical multiple regression analysis was used to test hypotheses of the direct effect while Hayes's PROCESS macro (Version 4.0) was used to test hypotheses of the mediating, moderating and conditional indirect effects. In summary, the result of each hypothesis is presented as follows;

The first null hypothesis (H_{01}) formulated in line with objective one anticipated that organisational learning has no significant effect on sustainability performance. However, results obtained show a positive and statistically significant effect *(β=.505, t= 9.116, p<.001)*. Hence, the null hypothesis (H_{01}) is rejected and the alternative suggesting that organisational learning has a positive and significant effect on sustainability performance is supported.

The second null hypothesis (H_{02}) formulated in line with objective two predicted that firm innovativeness has no significant effect on sustainability performance. However, results obtained show a positive and statistically significant effect *(β=.618, t=13.293, p<.001)*. Hence, the null hypothesis (H_{02}) is rejected and the alternative suggesting that firm innovativeness has a positive and significant effect on sustainability performance is supported.

The third null hypothesis (H_{03}) formulated in line with objective three projected that CEO values do not significantly affect firm sustainability performance. However, the results obtained show a positive and statistically significant effect *(β=.128, t=2.427, p<.001)*. Hence, the null hypothesis (H_{03}) is rejected and the alternative suggesting that CEO value of openness to change positively and significantly affect firm sustainability performance is supported.

The fourth null hypothesis (H_{04}) formulated in line with objective four claims that organisational learning does not significantly affect firm innovativeness. However, the results obtained show a positive and statistically significant effect *(β=.438, t=7.572, p<.001)*. Hence, the null hypothesis (H_{04}) is rejected and the alternative suggesting that organisational learning positively and significantly affect firm innovativeness is supported.

The fifth null hypothesis (H_{05}) formulated in line with objective five suggests that CEO values do not significantly affect firm innovativeness. However, the results obtained show a positive and statistically significant effect *(β=.511, t=9.737, p<.001)*. Hence, the null hypothesis (H_{05}) is rejected and the alternative suggesting that CEO openness to change value positively and significantly affect firm innovativeness is supported.

The sixth null hypothesis (H_{06}) formulated in line with objective six sought to examine the mediating effect of firm innovativeness on the relationship between organisational learning and sustainability performance. Results obtained show a positive and statistically significant partial mediating effect *(a_1 × b_1; Coeff=.324, Boot S.E = .036, 95% Boot CI=.236, .417).* Thus, the null hypothesis is rejected and the alternative suggesting that firm innovativeness significantly mediates the relationship between organisational learning and sustainability performance is supported.

Objective seven sought to analyse the moderating effect of CEO values on the relationship between organisational learning and firm innovativeness. Consequently, it was hypothesized under H_{07} that CEO values do not significantly moderate the relationship between organisational learning and firm innovativeness. The results obtained supported the null hypothesis (*Coeff= -.08, S.E=.09, t = -.87, CI= -.27,.10*) confirming that CEO value of openness to change has a negative non-significant moderating effect on the relationship between organisational learning and firm innovativeness.

Objective eight sought to examine the moderating effect of CEO values on the relationship between firm innovativeness and sustainability performance. A corresponding null hypothesis was formulated (H_{08}) claiming that CEO values do not significantly moderate the relationship between firm innovativeness and sustainability performance. Contrary, the results obtained show a positive and significant moderating effect (*Coeff= .13, S.E=.05, t = 2.52, CI= .03,.23*). Hence, the null hypothesis H_{08} is rejected and the alternative suggesting that CEO openness to change

value significantly moderate the relationship between firm innovativeness and sustainability performance is supported.

The ninth objective sought to analyse the moderating effect of CEO values on the relationship between organisational learning and sustainability performance. In line with this objective, a null hypothesis was formulated (H_{09}) stating that CEO values do not significantly moderate the relationship between organisational learning and sustainability performance. However, the results obtained show a positive and statistically significant moderating effect (*Coeff=.19, S.E=.08, t =2.57, CI= .01, .34*). Thus, the null hypothesis H_{09} is rejected and the alternative suggesting that CEO openness to change values positively and significantly moderate the relationship between organisational learning and sustainability performance is supported.

Finally, objective ten sought to test the conditional indirect effect between organisational learning and sustainability performance via firm innovativeness, across different levels of CEO values. H_{010} is used to test this null hypothesis. The results obtained show that at the different levels of CEO values, the indirect effect of firm innovativeness between organisational learning and sustainability performance is significantly enhanced. This is further validated with a positive and significant index of the moderated mediation effect (*b=.080, BootS.E=.034, BootCI=.015, .146*). Hence, H_{010} is rejected and the alternative suggesting that CEO openness to change values significantly moderate the strength of the mediated relationship between organisational learning and sustainability performance via firm innovativeness was supported.

5.2 Conclusions of the Study

Sustainability performance has become a central debate on every manufacturing firm's agenda. In the present study, a theoretical model examining the interrelationship between organisational learning, firm innovativeness, CEO values and firm sustainability performance was developed, and empirically tested among medium and large manufacturing firms in Uganda. Based on the findings and the discussion made in chapter four, the researcher concludes that;

Medium and large manufacturing firms in Uganda recognise the need to improve their sustainability performance levels as a strategic path to improve their reputation and competitiveness at local, regional and international marketplace. This is attributed to the fact that the manufacturing sector serves multiple stakeholder groups who come with various competing interests. Unlike in the past were great emphasis was put on satisfying the economic interests of the minority stock-owners, today all stakeholder groups; both within and outside the firm matter are as important as the stock-owners who contribute financial capital. Therefore, understanding and strategically addressing other stakeholder social and environmental needs is critical to the long-term success of the Ugandan manufacturing sector.

In order to improve manufacturing sustainability performance, this study demonstrates the importance of organisational learning which facilitates the process of acquiring, sharing, utilization and storage of information relevant to understanding and addressing shareholders' changing economic, social and environmental demands. Additionally, the study has demonstrated that organisational learning, per se, is insufficient to attain higher levels of manufacturing sustainability performance, pointing out the partial mediating role of firm innovativeness. Hence, the knowledge

resources created, acquired, shared, utilized and stored through the process of organisational learning need to be used to facilitate innovations in products and processes. Such innovations in turn improve sustainability performance of medium and large manufacturing firms in Uganda.

Another learning point is that CEO value of openness to change is a critical factor that enhances the effect of learning, and firm innovativeness on sustainability performance. This is because CEOs who value self directedness, stimulation, risk taking, independence and experience promote a work culture where learning, and innovation is encouraged and rewarded. This study shows that both a learning and innovative organisational culture are required for sustainability performance, and therefore can be enhanced where the company CEO has a strong value for change.

The main contribution of this study is the proof that firm innovativeness partially mediates the relationship between organisational learning and sustainability performance as well as CEO value of openness to change moderates the relationship between firm innovativeness and sustainability performance. As such, some medium and large manufacturing firms in Uganda, to some extent have failed to improve their levels of sustainability performance due to low engagement in knowledge creation, acquisition, sharing and storage, coupled with limited innovations in products and processes. Further still, low levels of sustainability performance among medium and large manufacturing firms in Uganda could be attributed to CEOs who have less desire for change.

5.3 Implications of the Study

Manufacturing firms are compelled to balance the interests of stock-owners together with the interests of other stakeholders in order to guarantee their survival and long-term success. This calls for embracing sustainability performance practices that not only improve the company's economic performance but also take care of the socio-environmental demands of the broader society. In this thesis, the researcher identified and empirically tested factors that would provide a more comprehensive understanding on how medium and large manufacturing firms in Uganda would increase their levels of sustainability performance. Taken together, the findings of this study highlight several important implications to theory, policy and management practice;

5.3.1 Implication to theory

Prior studies used the institutional theory (Vihari et al., 2018), social capital theory (Moldavanova and Goerdel, 2017), and resource-based theory (Darcy et al., 2014) to explain organisational sustainability performance. While the use of a single theory is acceptable, it may be limited in bringing to understanding the several factors accounting for organisational sustainability performance within a given operating environment. Therefore, this study contributes a multi-theoretical model that explains sustainability performance among medium and large manufacturing firms in Uganda. The multi-theoretical model brings together the stakeholder theory, organizational learning theory, dynamic capability theory, and the upper echelon theory.

Specifically, the study findings validate the relevance of Argyris and Schon's organisational learning theory in predicting organisational performance related variables. The theory advocates for continuous learning as a mechanism through

which firms interact with both the internal and external environment to detect and exploit emerging opportunities as well as bridge missing gaps. Through such interactions, information is cumulatively obtained concerning the specific interests of each stakeholder group. This information is then shared among all the internal members of the firm who use it to develop policies, strategies, and operational activities geared towards satisfying stakeholder economic, social and ecological interests. Thus, learning as an internal resource prepares manufacturing firms to become more responsive to the changes occurring within the stakeholder environment. The findings of this study lender support to this theoretical view and add to the existing body of empirical literature suggesting a positive and significant direct relationship between organisational learning and organisational sustainability performance.

In addition, findings of the mediating effect extend the views put forward by Teece et al. (1997) in the dynamic capabilities' theory. Today's manufacturing environment is becoming increasingly dynamic characterized by increased regulation, changing customer tastes and preferences, rapid technological changes and uncertainties. To guarantee survival and long-term success, managers of medium and large manufacturing firms in Uganda should not only build knowledge resources through facilitating learning processes but also use this knowledge to re-think, modify, integrate and reconfigure existing firm resources in order to adapt and respond to the varying stakeholder demands. This finding brings to understanding the less examined mediating effect of product and process innovativeness in the link between organisational learning and sustainability performance of medium and large manufacturing firms in Uganda, a developing country.

With respect to CEO values as a moderator, the study findings lend support to the application of the upper echelons theory in explaining how CEO values influence organisational processes and outcomes. In particular, findings provide evidence that CEOs with strong value for change enhance the effect of organisational learning on sustainability performance as well as the effect of firm innovativeness on sustainability performance. This finding adds to the findings of various previous upper echelons empirical studies that emphasise the conditional effect of top management demographic characteristics, values and personalities on firm processes and outcomes.

5.3.2 Implication to policy

In light of the key findings, discussion, conclusion and theoretical inferences of this study, the following policy implications are generated;

National Environment Management Authority need to develop a policy in support of periodic learning sessions where managers are sensitized on how sustainability performance practices would be increased among medium and large manufacturing firm in Uganda. Through such learning sessions, information concerning the social and environmental impacts arising out of manufacturing processes would be generated and shared with the various key stakeholders in the industry for appropriate management action. Based on such information, a sustainability performance evaluation tool could be developed to provide manufacturers with knowledge on how they could reduce on the excessive use of natural resources, adopt energy-efficient technologies, reduce emissions, effectively manage waste materials as well as ensure the safety of people.

National Council of Higher Education need to develop a policy that requires the inclusion of sustainability performance topics in the curriculum taught in all institutions of higher learning in Uganda. Through such formal institutional learning programmes, the students (who are either the current or future company managers/leaders) will be equipped with knowledge regarding the importance of adopting strategies and practices that not only aim to maximize the economic gains of the business but also ensure that the business is responsive to the social and environmental demands of the wider society. The fact that the trained managers are active members of the company decision making processes, they are more likely to share sustainability performance information with their fellow managers which in turn influences company policy, strategy, values and activities.

Ministry of Science, Technology and Innovation need to design industry policies that support and facilitate increased product and process innovations among medium and large manufacturing firms. Such policies should be geared towards strengthening manufacturing firm's internal research and development capabilities, human capital development, local content development and foreign technology adoption. This is because a highly innovative manufacturing sector does not only drive the country towards economic prosperity but also serves as a mechanism through which Government responds to the global call for climate change by protecting and preserving the ecosystem and the quality of public health.

Uganda Manufacturers Association as an umbrella body of the manufacturers in Uganda should put in place an interaction forum that brings together all medium and large manufacturers to periodically meet and brainstorm on the factors limiting them from attaining greater sustainability performance. From such knowledge creating and

sharing interactions, appropriate interventions would be sought and implemented at firm level. The policy could go further to recognise those firms that endeavor to invest in learning and innovation processes geared towards embracing global sustainability manufacturing practices. The evaluation tool for such manufacturing awards could be bench-marked on the parameters used in the global sustainability competitive index.

5.3.3 Implication to management practice

From a practitioner's view point, the findings and conclusions of this study inform managers and leaders of medium and large manufacturing firms to undertake the following strategic initiatives;

Manager can improve firm sustainability performance by institutionalisng an organisational culture that promotes learning among employees. Employees, who perceive the work culture as being supportive to learning, are more likely to develop the urge to engage in learning and freely share the knowledge and experiences obtained with their team members and/or managers. This knowledge informs policies, strategies, and actions geared towards addressing stakeholders' varying interests. A culture of learning can be promoted by investing in staff training and development activities, encouraging teamwork, reinforced with rewards, partnering with external technical experts and knowledge creating institutions, use of external consultants and professionals, as well as participating in external business shows, exhibitions, conferences and professional dialogue.

Furthermore, firm sustainability performance can be improved through implementing programmes that increase product and process innovativeness. Generally, this can be achieved by managers putting in place a research and development department charged with the responsibility of steering and supporting changes resulting into new

product development, improvement in product features and design, adoption of energy efficient production technologies, reduction in air emissions, improvements in waste management as well as improvements in distribution processes.

The findings of this study confirm that there are specific CEO values that drive manufacturing firms towards becoming more sustainable in their operations. Therefore, in addition to the technical and other behavioural competences, the hiring decision of a member of the top management team and in particular the CEO/Managing Director need to be based on a thorough assessment of his/her personal values. It is more likely that CEOs who value change will advance policies, strategies and activities that not only increase the firm's economic performance but also ensure that business operations are managed in a more environmentally and socially responsible manner.

For the incumbent CEO/Managing Directors whose value of openness to change is either low or completely non-existent, customized management training and development programmes should be organised aimed to sensitize them about the strategic imperative of business sustainability performance in the contemporary globalized society. Through such training and development initiatives, top managers will be convinced to embrace values that support manufacturing sustainability performance. With a changed mindset towards sustainability, top leaders gradually become more open to change and support company activities that safeguard the well-being of people and nature.

Lastly, managers of medium and large manufacturing firms should adopt a balanced performance management framework that seeks to evaluate the firm's overall performance on the three pillars of sustainability performance; economic, social and

environmental performance. This can further be cascaded to guide performance management at departmental/sectional and /unit level, including employee performance.

5.4 Areas for Further Research

The findings of this study withstanding, the researcher took account of some limitations which provide avenues for further research;

EFA extracted the component of product and process innovativeness as indicative measures of firm innovativeness in the Uganda manufacturing context, leaving out management system innovativeness. Similarly only the component of openness to change was extracted to measure the construct of CEO values, leaving out self transcendence. Thus, this study could not establish the effect of management system innovativeness and CEO value of self-transcendence on firm sustainability performance. Future studies may consider investigating such individual effects.

This study found out that CEO value of openness to change does not significantly moderate the effect of organisational learning on firm innovativeness, which contradicts findings of various previous upper echelon studies. Therefore, further research is needed to validate this finding focusing on medium and large manufacturing firms in other developing countries where such studies are scarce.

This study adopted a purely quantitative design which is limited to statistics and leaves out the vital qualitative data. Future researchers can replicate this study following a mixed method approach and data need to be collected from multiple respondents rather than managers alone. This is likely to provide an in-depth understanding of sustainability performance and its predictors within the

manufacturing context, hence improving validity of the results and allowing for generalisability.

A cross-sectional time-frame was adopted in this study due to time and other resource constraints. This method enabled the researcher to obtain large amount of data within a relatively short period of time. However, the cross-sectional design is limited in providing for how variables would behave if data were repeatedly collected from the same sample at different stages over a relatively long period of time. Therefore, this calls for a replication of this study following a longitudinal design so as to check on the effects of time lags.

The hypothesized model explained up to 57.7 % of the variance in firm sustainability performance. This reveals that there are other factors in the operating environment that were not explained by the model, accounting to 42.3 % of the variance in sustainability performance. Hence, future researchers can investigate these factors focusing on other business sectors in order to reduce on the un-explained variance.

REFERENCES

Abdul-Rashid, S. H., Sakundarini, N., Ghazilla, R. A. R., & Thurasamy, R. (2017). The impact of sustainable manufacturing practices on sustainability performance. *International Journal of Operations & Production Management.*

Agle, B.R., Mitchell, R.K., & Sonnenfeld, J.A. (1999). Who matters to CEOs? An investigation of stake-holder attributes and salience, corporate performance, and CEO values: *Academy of Management Journal,* 42(5), 507–525.

Aguirre-Urreta, M. I., & Hu, J. (2019). Detecting Common Method Bias: Performance of the Harman's Single-Factor Test. ACM SIGMIS Database: the DATABASE for Advances in Information Systems, 50(2), 45-70.

Ahianzu, A. (1995). Type A Method for Management Research in Africa: Enunciating a Culture-Specific Paradigm, International Annual Management Conference on Competing in the 21st Century, Kampala, Makerere University Business School.

Aiken, L. S., West, S. G., & Reno, R. R. (1991). Multiple regression: Testing and interpreting interactions. sage.

Akhtar, M. F., Ali, K., & Sadaqat, S. (2011). Factors influencing the profitability of Islamic banks of Pakistan. International research journal of finance and economics, 66(66), 1-8.

Aktas, E., Cisek, I., & Kiyak, M. (2011). The Effect of Organizational Culture on Organizational Efficiency: The Moderating Role Of Organizational Environment and CEO Values: 7th International Strategic Management Conference, *Procedia Social and Behavioral Sciences* 24, 1560–1573

Alasoini, T., Heikkila¨, A., Ramstad, E. & Ylo¨stalo, P. (2007), Enquiry as New Way of Gathering Information in Tykes-Program: Preliminary Results, Finish Ministry of Labour, Helsinki, pp. 55-71.

Albaladejo, M. & Romijn, H. (2000). "Determinants of innovation capability in small UK firms: an empirical analysis", Working Paper 00.13, Eindhoven Centre for Innovation Studies, Eindhoven.

Ali, A., Krapfel, R. & LaBahn, D. (1995) 'Product innovativeness and entry strategy: impact on cycle time and break-even time', *Journal of Product Innovation Management*, Vol. 12, pp.54–69.

Al-Sa'di, A. F., Abdallah, A. B., & Dahiyat, S. E. (2017). The mediating role of product and process innovations on the relationship between knowledge management and operational performance in manufacturing companies in Jordan. *Business Process Management Journal.*

Amrina, E., & Yusof, S. M. (2011, December). Key performance indicators for sustainable manufacturing evaluation in automotive companies. In 2011 IEEE international conference on industrial engineering and engineering management, pp. 1093-1097.

Anderson, C. (2010). Presenting and evaluating qualitative research. *American journal of pharmaceutical education*, 74(8), 141

Andrews, J., & Smith, D. C. (1996). In search of the marketing imagination: Factors affecting the creativity of marketing programs for mature products. *Journal of Marketing Research*, 33(2), 174-187.

Anstine, J. (2000). Consumers' willingness to pay for recycled content in plastic kitchen garbage bags: a hedonic price approach, *Applied Economics Letters*, 7(1), 35-39.

Appeltofft, E. (2016). Making sense of sustainability-A study on how sustainability ambitions affect sustainability performance in a retail company; Faculty of Natural Resources and Agricultural Sciences, Swedish University of Agricultural Sciences.

Ardalan, K. (2009). Globalization and culture: four paradigmatic views, *International Journal of Social Economics*, Vol. 36 No. 5, pp. 513-534.

Argenti, J. (1993). Stakeholders: the case against; Long *Range Planning*, Vol. 30, No. 3, pp. 442 to 445,

Argote, L. (2011). Organizational learning research: past, present and future. Management Learning, DOI: 10.1177/1350507611408217: 1-8.

Argyris, C. & Schön, D.A. (1996). *Organizational Learning II: Theory Method and Practice.* Reading, MA: Addison-Wesley.

Argyris, C., & Schon, D. (1978). *Organizational Learning: A theory of Action Perspective.* Reading MA: Addison Wesley. Barlow.

Argyris, C., and Schön, D. (1974). *Theory in practice: Increasing professional effectiveness*, San Francisco: Jossey-Bass.

Ayre, C., & Scally, A. J. (2014). Critical values for Lawshe's content validity ratio: revisiting the original methods of calculation. *Measurement and Evaluation in Counseling and Development*, 47(1), 79-86.

Babin, B. J., & Svensson, G. (2012). Structural equation modelling in social science research: Issues of validity and reliability in the research process. *European Business Review*, 24(4), 320-330.

Babirye, S., B., Aggrey, N., & Eseza, K. (2014). Firm Size and Rate of Growth of Ugandan Manufacturing Firms. *Journal of Applied Economics & Business Research*, 4(3).

Baer, M., & Frese, M. (2003). Innovation is not enough: Climates for initiative and psychological safety, process innovations, and firm performance. Journal of Organizational Behavior: *The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 24(1), 45-68.

Baker & Sinkular (1999) Baker, W. E., & Sinkula, J. M. (1999). The synergistic effect of market orientation and learning orientation on organizational performance. *Journal of the academy of marketing science*, 27(4), 411-427.

Baker, W. E., & Sinkula, J. M. (2002). Market orientation, learning orientation and product innovation: delving into the organization's black box. *Journal of market-focused management*, 5(1), 5-23.

Balkin, D. B., Markman, G. D., & Gomez-Mejia, L. R. (2000). Is CEO pay in high-technology firms related to innovation? *Academy of management journal*, 43(6), 1118-1129.

Bananuka, J., Bakalikwira, L., Nuwagaba, P., & Tumwebaze, Z. (2020). "Institutional pressures, environmental management practices, firm characteristics and environmental performance", *Accounting Research Journal*, 34(6), 637-665. https://doi.org/10.1108/ARJ-06-2020-0143

Bansal, P. (2002). The corporate challenges of sustainable development. *Academy of Management Executive*, 16(2): 122-131.

Bansal, P. (2005). Evolving sustainably: A longitudinal study of corporate sustainable development. *Strategic Management Journal*, 26(3), 197–218

Bansal, P., & DesJardine, M. R. (2014). Business sustainability: It is about time. *Strategic Organization*, 12(1), 70-78.

Bappuji, H. & Crossan, M. (2004), "From questions to answers: reviewing organizational learning research", *Management Learning*, Vol. 35 No. 4, pp. 397-417.

Barnard, C. (1938). *The functions of the executive*.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, 17(1), 99-120.

Baron, J. (2009). Exploring the factors associated with youths' educational outcomes: The role of locus of control and parental socio-economic background (No. 598). Centre for Economic Policy Research, Research School of Economics, Australian National University.

Barrett, P. (2007). Structural equation modelling: Adjudging model fit. Personality and Individual differences, 42(5), 815-824.

Bartlett, I., J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning and Performance Journal*, 19(1), 43-50.

Bateson, G. (1972). *Steps to an ecology of mind*. New York: Ballantine

Battistella, C., Cicero, L., & Preghenella, N. (2020). Sustainable organisational learning in sustainable companies. *The Learning Organization*, *28*(1), 15-31.https://doi.org/10.1108/TLO-05-2019-0074

Baumgartner, R. J., & Ebner, D. (2010). Corporate sustainability strategies: sustainability profiles and maturity levels. *Sustainable Development*, 18(2), 76-89.

Beaumont, J. F., & Rivest, L. P. (2009). Dealing with outliers in survey data. In *Handbook of statistics* (29), 247-279.

Becker, T. E., Atinc, G., Breaugh, J. A., Carlson, K. D., Edwards, J. R., & Spector, P. E. (2016). Statistical control in correlational studies: 10 essential recommendations for organizational researchers. *Journal of Organizational Behavior*, 37(2), 157-167.

Bentler, P. M. (2004). EQS6 structural equations program manual"

Berends, H., & Lammers, I. (2011), "Explaining discontinuity in organizational learning: a process analysis", *Organization Studies*, Vol. 31 No. 8, pp. 608-621.

Berson, Y., Oreg, S., & Dvir, T. (2008). CEO values, organizational culture and firm outcomes. Journal of Organizational Behavior: *The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 29(5), 615-633.

Besley, T., & Ghatak, M. (2007). Retailing public goods: The economics of corporate social responsibility. *Journal of public Economics*, 91(9), 1645-1663.

Bhattacharyya, A. (2016). Personal values and attitudes towards societal and environmental accountability: A study of MBA students. *Environmental Education Research*, 22(4), 590-610.

Bhattacherjee, A. (2012). *Social science research: Principles, methods, and practices.*

Biondi, E., Casavecchia, S., Pinzi, M., Allegrezza, M., & Baldoni, M. (2002). The syntaxonomy of the mesophilous woods of the Central and Northern Apennines (Italy). *Fitosociologia*, 39(2), 71-93.

Black, D. (2010). *The Behavior of Law: 3*. Emerald Group Publishing.

Blekesaune, M. (2019). Can 'Openness-to-change'and 'Conservation'Values Predict the Diffusion of the Internet into European Homes? *Comparative Sociology*, 18(5-6), 735-756.

Bollen, K. A., Guilkey, D. K., & Mroz, T. A. (1995). Binary outcomes and endogenous explanatory variables: tests and solutions with an application to the demand for contraceptive use in Tunisia. *Demography*, 32(1), 111-131.

Bontis, N., Crossan, M. and Hulland, J. (2002), "Managing an organisational learning system by aligning stocks and flows", *Journal of Management Studies*, Vol. 39 No. 4, pp. 437-69.

Borau, S., El Akremi, A., Elgaaied-Gambier, L., Hamdi-Kidar, L., & Ranchoux, C. (2015). Analyzing moderated mediation effects: Marketing applications. Recherche et Applications en Marketing (English Edition), 30(4), 88-128.

Borau, S., El Akremi, A., Elgaaied-Gambier, L., Hamdi-Kidar, L., & Ranchoux, C. (2015). Analysing moderated mediation effects: Marketing applications. *Recherche et Applications en Marketing* (English Edition), 30(4), 88-128.

Borwick, D. (2012). Building communities, not audiences. The future of the arts in the United States, Winston-Salem.

Bowen, W. (2002). An analytical review of environmental justice research: what do we really know? *Environmental management*, 29(1), 3-15.

Bowman, W. (2011). Financial capacity and sustainability of ordinary nonprofits. *Nonprofit management and leadership*, 22(1), 37-51.

Box, W.R., Odom, R.Y. & Dunn. M.G. (1991). Organizational values and value congruency and their impact on satisfaction, commitment, and cohesion: An empirical examination within the Public Sector. *Public Personnel Management* 20(1): 195–205.

Breakwell, G. M., & Tytherleigh, M. Y. (2010). University leaders and university performance in the United Kingdom: is it 'who' leads, or 'where' they lead that matters most? *Higher Education*, 60(5), 491-506.

Brief, A. P., Dukerich, J. M., Brown, P. R., & Brett, J. F. (1996). What's wrong with the Treadway Commission Report? Experimental analyses of the effects of personal values and codes of conduct on fraudulent financial reporting. *Journal of Business Ethics*, 15(2), 183-198.

Brown, B.J. (1987). Global sustainability: toward definition. *Environmental Management,* 11(6), 713–719.

Brown, D. (2000). Relating competencies to pay. In *The compensation handbook: A state-of-the-art guide to compensation strategy and design* (pp. 157–171). New York: McGraw-Hill.

Bryson, J. M., Crosby, B. C., & Stone, M. M. (2006). The design and implementation of Cross Sector collaborations: Propositions from the literature. *Public administration review,* 66, 44-55.

Buyinza, F. (2011). Performance and Survival of Ugandan Manufacturing firms in the context of the East African Community (No. 677-2016-46633).

Buyl, T., Boone, C., Hendriks, W., & Matthyssens, P. (2010). Top management team functional diversity and firm performance: The moderating role of CEO characteristics. *Journal of management studies*, 48(1), 151-177.

Cahill, D.J. (1996) Entrepreneurial orientation or pioneer advantage; *Academy of Management Review*, 21:603–5

Calantone, R.J., Cavusgil, S.T. and Zhao, Y. (2002), "Learning orientation, firm innovation capability and firm performance", *Industrial Marketing Management,* Vol. 31, pp. 515-24

Cangelosi, V. E., & Dill, W. R. (1965). Organizational learning: Observations toward a theory. *Administrative science quarterly*, 175-203.

Capaldo, G., Iandoli, L., Raffa, M., & Zollo, G. (2003). The evaluation of innovation capabilities in small software firms: A methodological approach. *Small Business Economics*, 21(4), 343-354.

Capon, N., Farley, J.U., Lehmann, D.R. & Hulbert, J. (1992) Profiles of product innovations among large US manufacturers. *Management Science* 38(2), 157–69.

Carayannis, E. G., & Provance, M. (2008). Measuring firm innovativeness: towards a composite innovation index built on firm innovative posture, propensity and performance attributes. *International Journal of Innovation and Regional Development*, 1(1), 90-107.

Carmona, S. (2022). Covid-19: Organizational Responses to Societal and Business Challenges. In Executive Education after the Pandemic, 147-155. Palgrave Macmillan, Cham.

Carpenter, J. N., & Lynch, A. W. (1999). Survivorship bias and attrition effects in measures of performance persistence. *Journal of financial economics*, 54(3), 337-374.

Carroll, A. & Buchholtz, A. (2014). *Business and Society: Ethics, Sustainability, and Stakeholder Management* 9th Revised edition. South-Western College Publishing

Carroll, D. A., & Stater, K. J. (2009). Revenue diversification in nonprofit organizations: Does it lead to financial stability? *Journal of Public Administration Research and Theory*, 19(4), 947–966

Carter, S. M., & Greer, C. R. (2013). Strategic leadership: Values, styles, and organizational performance. *Journal of Leadership & Organizational Studies*, 20(4), 375-393.

Cavusgil, S. T., Calantone, R. J., & Zhao, Y. (2003). Tacit knowledge transfer and firm innovation capability. *Journal of business & industrial marketing*, 18(1), 6-21

Cepeda, G., & Vera, D. (2007). Dynamic capabilities and operational capabilities: A knowledge management perspective. *Journal of business research*, 60(5), 426-437.

Chan, P., Cooper, R. Carmichael, S., Tzortzopoulos, P., McDermott, P. and Khalfam, M. M. A. (2004), Does Organizational Learning Creates a Learning Organization? Conceptual Challenges from a project perspective. In: Khosrowshahi, F (Ed.) "20th Annual ARCOM conference", 1-3 September 2004, Herriot Watt University. Association of Researchers in construction Management, vol.2, pp. 759-766.

Chang, S., Gong, Y., Way, S. A., & Jia, L. (2013). Flexibility-oriented HRM systems, absorptive capacity, and market responsiveness and firm innovativeness. *Journal of Management*, 39(7), 1924-1951.

Chapra, S., & Canale, R. P. (1998). Numerical Methods for Engineers: with Programing and Software Applications.

Chell, E. (2000) 'Towards Researching the "Opportunistic Entrepreneur": A Social Constructionist Approach and Research Agenda', *European Journal of Work and Organizational Psychology* 9(1): 63–80.

Chen, Y., Okudan, G. E., & Riley, D. R. (2010). Sustainable performance criteria for construction method selection in concrete buildings. *Automation in construction*, 19(2), 235-244.

Cheruiyot, N. (2018). Brand positioning of innovation labs in Kenya: Creating an effective branding strategy (Doctoral dissertation).

Chien, S. & Tsai, C. (2012). Dynamic capability, knowledge, learning, and firm performance. *Journal of Organizational Change Management,* 25(3), 434-444

Chikoto, G., & Neely, D. G. (2013). Building nonprofit financial capacity: The impact of revenue concentration and overhead costs nonprofit and voluntary sector quarterly.

Child, D. (1990). The essentials of factor analysis. Cassell Educational.

Chiva, R., Alegre, J., & Lapiedra, R. (2007). Measuring organisational learning capability among the workforce. *International Journal of Manpower,* 28(3/4), 224-242.

Chiva, R., Grandío, A., & Alegre, J. (2010). Adaptive and generative learning: Implications from complexity theories. *International Journal of Management Reviews,* 12(2), 114–129.

Chiva-Gómez, R. (2004). The facilitating factors for organizational learning in the ceramic sector. *Human Resource Development International*, 7(2), 233-249.

Choi, S., & Ng, A. (2011). Environmental and economic dimensions of sustainability and price effects on consumer responses. *Journal of business ethics*, 104(2), 269-282.

Chow, W.S., & Chen, Y. (2012). Corporate sustainable development: Testing a new scale based on the mainland Chinese context. *Journal of Business Ethics*, 105(4), 519–533.

Christensen, C. M. (1997). *The innovator's dilemma: When new technologies cause great firms to fail.* Boston, MA: Harvard Business School Press.

Christensen, C. M. (2006). The ongoing process of building a theory of disruption. *Journal of Product innovation management*, 23(1), 39-55.

Christiansen, J. (2000). *Building the innovative organization: Management systems that encourage innovation.* Springer.

Churchill, G. A (1999). *Marketing Research: Methodological Foundations,* 7th ed., Orlando: The Dryden Press.

Clark, S. C. (2001). Work cultures and work/family balance. *Journal of Vocational Behavior*, 58, 348–365.

Cohen, J., (1988). *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed. Erlbaum, Hillsdale, NJ.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, 35(1), 128-152.

Collins, J., & Hussey, R. (2009). Business Research. A Practical Guide for Under-and Post-Graduates.

Comfrey, A. L., & Lee, H. B. (1992). *A First Course in Factor Analysis*. Hillsdale, NJ: Lawrence Erlbaum Associates.

Connor, P. E., Becker, B. W., Kakuyama, T., & Moore, L. F. (1993). A cross-national comparative study of managerial values: United States, Canada, and Japan. *Advances in international comparative management*, 8, 3-29

Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business and Psychology*, 25(3), 325-334.

Coomer, J.C. (1979). The nature of the quest for a sustainable Society. In J.C. Coomer (ed.). *Quest for a Sustainable Society*, New York: Pergamon Press.

Cooper, D. R., Schindler, P. S., & Sun, J. (2006). *Business research methods*, 9, 1-744, New York: Mcgraw-hill.

Cooper, D., & Schindler, P. (2003) *Business Research Methods*, 12th Edition,

Cope, J. (2003). Entrepreneurial learning and critical reflection: Discontinuous events as triggers for 'higher-level 'learning. *Management learning*, 34(4), 429-450.

Coviello, N. E., & Jones, M. V. (2004). Methodological issues in international entrepreneurship research. *Journal of Business Venturing*, 19(4), 485-508.

Creswell, J.W. (2009), *Research Design: Qualitative and Quantitative Approaches*, Sage, London

Cronbach, L. J. (2004). My Current Thoughts on Coefficient Alpha and Successor Procedures. CSE Report 643. *Center for Research on Evaluation Standards and Student Testing CRESST*.

Crossan, MM, Lane, HW., and White, RE (1999). An organizational learning framework: from intuition to institution. *Academy of Management Review*, 24, 522–537.

Cuganesan, S. (2006). Reporting organisational performance in managing human resources: Intellectual capital or stakeholder perspectives? *Journal of Human Resource Costing & Accounting*, 10(3), 164-188.

Cyert, R. M., & March, J. G. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice-Hall.

Dalecki, M. G., Whitehead, J. C., & Blomquist, G. C. (1993). Sample non-response bias and aggregate benefits in contingent valuation: an examination of early, late and non-respondents. *Journal of Environmental Management*, 38(2), 133-143.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal*, 34(3), 555-590.

Damanpour, F. (1992). Organizational size and innovation. *Organization studies*, 13(3), 375-402.

Damanpour, F., & Schneider, M. (2006). Phases of the adoption of innovation in organizations: effects of environment, organization and top managers 1. *British journal of Management*, 17(3), 215-236.

Dameri, R. P., & Ricciardi, F. (2015). Smart city intellectual capital: an emerging view of territorial systems innovation management. *Journal of Intellectual Capital*, 16(4), 860-887.

Darcy, C., Hill, J., McCabe, T. J., & McGovern, P. (2014). A consideration of organisational sustainability in the SME context: A resource-based view and composite model. *European Journal of Training and Development*, 38(5), 398-414.

Datta, S., Iskandar-Datta, M., & Raman, K. (2003). Value creation in corporate asset sales: The role of managerial performance and lender monitoring. *Journal of Banking & Finance*, 27(2), 351-375.

Davidov, E., Meuleman, B., Billiet, J., & Schmidt, P. (2008). Values and support for immigration: A cross-country comparison. *European Sociological Review*, 24(5), 583-599.

Dell'Era, C., & Verganti, R. (2009). Design driven laboratories: organization and strategy of laboratories specialized in the development of radical design driven innovations. *R&D Management*, 39(1), 1-20.

Deng, P. S., & Tsacle, E. G. (2003). A market-based computational approach to collaborative organizational learning. *The Journal of the Operational Research Society*, 54(9): 924-935.

Denrell, J., & Powell, T. C. (2016). *Dynamic capability as a theory of competitive advantage: contributions and scope conditions*.

Dillman, D. A. (2007). *Mail and Internet Surveys — the Tailored Design Method*. New York: Wiley.

Dimitrov, D. M., & Rumrill Jr, P. D. (2003). Pretest-posttest designs and measurement of change. *Work*, 20(2), 159-165.

DiPiazza Jr, S. A., & Eccles, R. G. (2002). *Building public trust: The future of corporate reporting.* John Wiley & Sons.

Dirani, K. M. (2009). Measuring the learning organization culture, organizational commitment and job satisfaction in the Lebanese banking sector. *Human Resource Development International,* 12(2), 189-208.

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review,* 20(1), 65-91

Drucker, P. F. (1999). Knowledge-worker productivity: The biggest challenge. *California management review*, 41(2), 79-94.

Dudovskiy, J. (2018). Exploratory Research - Research-Methodology. [online] Research-Methodology. Available at: https://research-methodology.net/research-methodology/research-design/exploratoryresearch

Dunphy, D. (2003). Corporate sustainability: Challenge to managerial orthodoxies. *Journal of Management and Organization*, 9(1), 2.

Durmuş-Özdemir, E., & Abdukhoshimov, K. (2018). Exploring the mediating role of innovation in the effect of the knowledge management process on performance. *Technology Analysis & Strategic Management*, 30(5), 596-608.

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. Bus*iness strategy and the environment,* 11(2), 130-141.

Easterby-Smith, M., & Lyles, M. A. (Eds.). (2011). *Handbook of organizational learning and knowledge management* (No. 2nd ed). Chichester: Wiley.

Easterby-Smith, M., Thorpe, R., & Jackson, P.R. (2015). *Management and business research,* 5th Edition, Sage publication, London

Ecuru, J., Lating, P. O., & Trojer, L. (2014). Innovation characteristics of formal manufacturing firms in Uganda. *African Journal of Science, Technology, Innovation and Development,* 6(5), 415-423.

Edward, H. & Hall, M.R. (1990). *Understanding Cultural Differences.* Yarmouth, ME: Inter- cultural Press, 1990

Ehrenfeld, J. (2004). Industrial ecology: a new field or only a metaphor? *Journal of cleaner production,* 12(8-10), 825-831.

Eichhorn, B.R. (2014). *Common Method Variance Techniques*; Cleveland State University, Cleveland

Eisenbeiss, S. A., Van Knippenberg, D., & Fahrbach, C. M. (2015). Doing well by doing good? Analyzing the relationship between CEO ethical leadership and firm performance. *Journal of Business Ethics,* 128(3), 635-651.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: what are they? *Strategic management journal*, 21(10-11), 1105-1121.

Elizur, D., & Koslowsky, M. (2000). Values and organizational commitment. *International Journal of Manpower* 22(7): 593–9.

Elkington, J. (1997). *Cannibals with forks: the triple bottom line of twenty-first century business.* Capstone.

Engeström, Y. (1999). Activity theory and individual and social transformation. *Perspectives on activity theory*, 19(38), 19-30.

Epinosa, A., & Porter, T. (2011). Sustainability, complexity and learning: Insights from complex systems approaches. *Learn Organ*, 18(1), 54–72.

Epstein, M.J., (2008). Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental, and Economic Impacts. Zeitschrift für Papyrologie und Epigraphik. Greenleaf Publishing, Sheffield

Eriksson, P., & Kovalainen, A. (2015). *Qualitative Methods in Business Research: A Practical Guide to Social Research*. Sage.

Faber, N., Jorna, R.J, van Engelen J. (2005). The sustainability of 'sustainability'. — A study into the conceptual foundations of the notion of "sustainability". *Journal of Environmental Assessment Policy and Management*, 7(1), 1–33.

Falck, O., & Heblich, S. (2007). Corporate social responsibility: Doing well by doing good. *Business Horizons*, 50(3), 247-254.

Fichman, R. G., Keil, M., & Tiwana, A. (2005). Beyond valuation: "Options thinking" in IT project management. *California Management Review*, 47(2), 74-96.

Field, A. (2009). *Discovering Statistics Using SPSS* (3rd Ed.). London: SAGE Publications Ltd.

Field, A. (2010). *Discovering Statistics Using SPSS* (3rd ed). London, Sage

Finger, M., & Brand, S. B. (1999). The concept of the learning organization applied to the transformation of the public sector: Conceptual contributions for theory development. Organizational learning and the learning organization: *Developments in theory and practice,* 130-156.

Fiol, C. M., & Lyles, M. A. (1985). Organizational learning. *Academy of management review,* 10(4), 803-813.

Foley, K. (2005). *Meta-management: A stakeholder/quality management approach to whole-of- enterprise management.* Sydney: SAI Global.

Follett, P.M. (1941). *Dynamic administration*. New York, 129.

Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics.

Fowler, S. J., & Hope, C. (2007). Incorporating sustainable business practices into company strategy. *Business strategy and the Environment*, 16(1), 26-38.

Freeman, R.E. (1984). *Stakeholder management: framework and philosophy*. Pitman, Mansfield, MA.

Friedman, M. (1970). *The social responsibility of business is to increase its profits.* The New York Times Magazine, (September 13, 1970).

Fritzsche, D., & Oz, E. (2007). Personal values' influence on the ethical dimension of decision making. *Journal of Business Ethics*, 75(4), 335-343.

Fujii, H., Iwata, K., Kaneko, S., & Managi, S. (2013). Corporate environmental and economic performance of Japanese manufacturing firms: Empirical study for sustainable development. *Business Strategy and the Environment*, 22(3), 187–201.

Fukukawa, K., Shafer, W. E., & Lee, G. M. (2007). Values and attitudes toward social and environmental accountability: a study of MBA students. *Journal of Business Ethics*, 71(4), 381-394.

Funk, K (2003). Sustainability and performance. *MIT Sloan Management Review*, 44(2), 65–70.

Garland, R. (1991). The mid-point on a rating scale: Is it desirable. *Marketing bulletin*, 2(1), 66-70.

Garson, G. (2008). Reliability analysis. Statnotes: topic in multivariate analysis. [May 162011]. Retrieved from http://www.chass.ncsu.edu/garson/pa765/statnote.htm

Garvin, D. A. (2000*). Learning in action: A guide to putting the learning organization to work.* Boston: Harvard Business School Press.

Garvin, D.A. (1993). Building a learning organisation'. *Harvard Business Review*, July/August, pp. 78-91

Gatignon, H., & Xuereb, J. M. (1997). Strategic orientation of the firm and new product performance. *Journal of marketing research*, 34(1), 77-90.

Gaver, M. S., & Mentzer. J.T. (1999). "Logistic Research Methods: Employing Structural Equation Modelling to Test for Construct Validity." *Journal of Business Logistics* 20 (1): 33-57.

Gentle-Genitty, C., Haiping, C., Karikari, I., & Barnett, C. (2014). Social Work Theory and Application to Practice: The Students' Perspectives. Journal Of Higher Education Theory & Practice, 14(1), 36-47.

Ghoshal, S., & Bartlett, C.A. (1998). *The Individualised Corporation: A Fundamentally New Approach to Management*. Heinemann, London

Ghozali, I. (2005). Aplikasi Analisis Multivariate dengan Program SPSS. Semarang: BP Universitas Diponegoro. Semarang.

Globocnik, D., Rauter, R., & Baumgartner, R.J. (2019) Synergy or Conflict? The relationship among organisational culture, sustainability-related innovation performance, and economic innovation performance; *International Journal of Innovation Management*, 2050004.

Gloet, M. (2006). Knowledge management and the links to HRM: Developing leadership and management capabilities to support sustainability. *Management Research News,* 29(7), 402-413.

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The qualitative report*, 8(4), 597-606.

Gold, M. S., & Bentler, P. M. (2000). Treatments of missing data: A Monte Carlo comparison of RBHDI, iterative stochastic regression imputation, and expectation-maximization. *Structural Equation Modeling*, 7, 319–355.

Gölgeci, I., & Ponomarov, S. Y. (2015). How does firm innovativeness enable supply chain resilience? The moderating role of supply uncertainty and interdependence. *Technology Analysis & Strategic Management*, 27(3), 267-282.

Goodpaster, K. E. (1991). Business ethics and stakeholder analysis. *Business ethics quarterly,* 53-73.

Grebitus, C., Steiner, B., & Veeman, M. (2013). Personal values and decision making: Evidence from environmental footprint labeling in Canada. *American Journal of Agricultural Economics*, 95(2), 397–403.

Green, S. B. (1991). How many subjects does it take to do a regression analysis. *Multivariate behavioral research,* 26(3), 499-510.

Grieves, J. (2008). Why we should abandon the idea of the learning organization. *The Learning Organization,* 15(6), 463-473.

Griffin, A. (1997). PDMA research on new product development practices: Updating trends and benchmarking best practices. Journal of Product Innovation Management: *An International Publication of The Product Development & Management Association*, 14(6), 429-458.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of qualitative research*, 2(163-194), 105.

Gyekye, K. (1995). *An essay on African philosophical thought: The Akan conceptual scheme.* Temple University Press.

Hair J.F, Black W.C, Babin B.J, Anderson R.E, & Tatham R.L, (2006). *Multivariate Data Analysis,* 6th Edn. Upper Saddle River, New Jersey: Pearson.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis.* Englewood Cliffs, NJ: Prentice Hall.

Halawi, L. A., McCarthy, R. V., & Aronson, J. E. (2006). Knowledge management and the competitive strategy of the firm. *The Learning Organization*, 13(4): 384-397.

Hall, J. K., Daneke, G. A., & Lenox, M. J. (2010). Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of business venturing*, 25(5), 439-448.

Hall, J., & Vredenburg, H. (2003). The challenge of innovating for sustainable development. *MIT Sloan Management Review*, 45(1), 61.

Hambrick, D. C. (1994). 'Top management groups: a conceptual integration and reconsideration of the "team" label'. *Research in Organizational Behavior*, 16, 171–213.

Hambrick, D. C. (1995). 'Fragmentation and the other problems CEOs have with their top management teams'. *California Management Review*, 37, 110–27.

Hambrick, D. C. (2007) *Upper echelons theory*: An update.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, 9(2), 193-206.

Hamilton, B. H., & Nickerson, J. A. (2003). Correcting for endogeneity in strategic management research. *Strategic organization*, 1(1), 51-78.

Han, S. H., Yoon, D. Y., Suh, B., Li, B., & Chae, C. (2019). Organizational support on knowledge sharing: a moderated mediation model of job characteristics and organizational citizenship behavior. *Journal of Knowledge Management*, *23*(4), 687-704.

Harman, H. H. (1960). *Modern factor analysis*

Hayes, A. F. (2018). Partial, conditional, and moderated mediation: Quantification, inference, and interpretation. *Communication Monographs*, 85(1), 4-40.

Hayes, A.F. (2013). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*, The Guilford Press, New York, NY

Hayes, A.F. (2015) An Index and Test of Linear Moderated Mediation, Multivariate Behavioral Research, 50(1), 1-22,

Helfat, C. E., & Peteraf, M. A. (2009). *Understanding dynamic capabilities: progress along a developmental path.*

Hemingway, C. A., & Maclagan, P. W. (2004). Managers' personal values as drivers of corporate social responsibility. *Journal of Business Ethics*, 50(1), 33-44.

Henard, D.H. & Szymanski, D.M. (2001). Why some new products are more successful than others? *Journal of Marketing Research*, 38(3), 362–375.

Hernandez, M., & Watkins, K. E. (2003). Translation, validation and adaptation of the Spanish version of the modified dimensions of the learning organization questionnaire". *Human Resource Development International*, 6(2): 187-197.

Hernaus, T., Škerlavaj, M., & Dimovski, V. (2008). Relationship between organisational learning and organisational performance: The case of Croatia. *Transformations in business & economics*, 7(2), 32-48.

Hilmi, M. F., Ramayah, T., Mustapha, Y., & Pawanchik, S. (2010). Product and process innovativeness: Evidence from Malaysian SMEs. European Journal of Social Science, 16(4), 556-565.

Hitlin, S., & Piliavin, J.A. (2004). Values: Reviving a dormant concept. *Annual Review of Sociology* 3: 359-393.

Hoffmann, W. H., & Meusburger, L. (2018). How CEO Values and TMT Diversity Jointly Influence the Corporate Strategy Making Process. *Schmalenbach Business Review*, 70(2), 149-187.

Hofstede, G. (1980). *Culture's Consequences: International Differences in Work-related Values*. Beverley Hills, CA: Sage.

Hofstede, G. (2001). *Culture's Consequences, Comparing Values, Behaviors, Institutions, and Organizations across Nations*. Thousand Oaks, CA: Sage Publications.

Holt, J. (1996). *An investigation of the relationship between organisational value systems and human resource management systems.* PhD thesis, Australian Graduate School of Management, University of New South Wales.

Hong, P., Jagani, S., Kim, J., & Youn, S. H. (2019). Managing sustainability orientation: An empirical investigation of manufacturing firms. International *Journal of Production Economics*, 211, 71-81.

Hooper, D., Coughlan, J., Mullen, M. (2008). Structural Equation Modelling: Guidelines for Determining Model Fit. *Electronic Journal of Business Research Methods*, 6(1), 53-60.

Horak, S., Arya, B., & Ismail, K. M. (2018). Organizational sustainability determinants in different cultural settings: A conceptual framework. *Business Strategy and the Environment*, 27(4), 528-546.

Hsiao, H. C., & Chang, J. C. (2011). The role of organizational learning in transformational leadership and organizational innovation. *Asia Pacific Education Review*, 12(4), 621.

Hsiao, H. C., Chang, J. C., & Tu, Y. L. (2009). The Influence of the Transformational Leadership and Organizational Learning on Organizational Innovation for Electrical and Electronic Cluster of Vocational High School Teachers: a Taiwanese Perspective. Proceedings of 2009 International Conference on Social Science and Humanities, pp. 146–150. Singapore, 9–11

Hsu, C. C., & Pereira, A. (2008). Internationalization and performance: The moderating effects of organizational learning. *Omega*, 36(2), 188-205.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. Structural equation modeling: *a multidisciplinary journal*, 6(1), 1-55.

Hubbard, R. and Armstrong, J.S. (1994), "Replications and extensions in marketing: rarely published but quite contrary", *International Journal of Research in Marketing*, Vol. 11, June, pp. 233-48.

Hubbard, R. and Vetter, D.E. (1996), "An empirical comparison of published replications research in economics, finance, management and marketing", *Journal of Business Research,* Vol. 35 No. 2, pp. 153-64.

Huber, G. P. (1991), "Organizational Learning: The Contributing Process and the Literatures", *Organization Science*, Vol. 2, No. 1, pp. 88-115.

Hung, R. Y. Y., Lien, B. Y. H., Yang, B., Wu, C. M., & Kuo, Y. M. (2011) Impact of TQM and organizational learning on innovation performance in the high-tech industry. *International business review*, 20(2), 213-225.

Hurley, R. F., & Hult, G. T. M. (1998) Innovation, market orientation, and organizational learning: an integration and empirical examination. *Journal of marketing*, 62(3), 42-54.

Idinga, G. E. (2015). The Moderating Effect of Program Awareness on the Relationship Between Planned Behaviour and Students Intentions to Enrol in Postgraduate Studies in Tanzania. *Moi University PhD Thesis*.

Ireland, R. D., Hitt, M. A., & Sirmon, D. G. (2003). A model of strategic entrepreneurship: The

Isaksson, R., & Steimle, U. (2009). What does GRI-reporting tell us about corporate sustainability? *The TQM Journal*, 21(2), 168-181.

Jaakson, K., Aljaste, H. M., & Uusi-Kakkuri, P. (2019). Dimensions of organisational innovativeness and company financial performance in the biotechnology sector. *International Journal of Manpower*, 40(6), 1110-1130

Jaccard, J. & Jacoby, J. (2010). *Theory Construction and Model-Building Skills.* (David A. Kenny, Ed.) (Second). New York, London: THE GUILFORD PRESS.

Jackson, G., & Apostolakou, A. (2010). Corporate social responsibility in Western Europe: an institutional mirror or substitute? *Journal of business ethics*, 94(3), 371-394.

Jacobs, B.W., Singhal, V.R., Subramanian, R., (2010). An empirical investigation of environmental performance and the market value of the firm. *Journal of Operations Management* 28 (5), 430–441.

Jain, A. K., & Moreno, A. (2015). Organizational learning, knowledge management practices and firm's performance: an empirical study of a heavy engineering firm in India. *The Learning Organization*, 22(1), 14-39.

James, L. R., & Brett, J. M. (1984). Mediators, moderators, and tests for mediation. *Journal of applied psychology*, 69(2), 307.

Jashapara, A. (2003). Cognition, culture and competition: an empirical test of the learning organization. *The Learning Organization*, 10(1), 31-50.

Javalgi, R. R. G., Griffith, D. A., & White, D. S. (2003). An empirical examination of factors influencing the internationalization of service firms. *Journal of services marketing*, 17 (2).

Javalgi, R. R. G., Griffith, D. A., & White, D.S. (2003). An empirical examination of factors influencing the internationalization of service firms. *Journal of Services Marketing,* 17(2), 185-201.

Jensen, P.E. (2005), "A contextual theory of learning and the learning organization", *Knowledge and Process Management*, Vol. 12 No. 1, pp. 53-64.

Jerez-Gomez, P., Céspedes-Lorente, J., & Valle-Cabrera, R. (2005). Organizational learning capability: a proposal of measurement. *Journal of business research,* 58(6), 715-725.

Jiao, L., Harrison, G., Dyball, M. C., & Chen, J. (2017). CEO values, stakeholder culture, and stakeholder-based performance. *Asia Pacific Journal of Management,* 34(4), 875-899.

Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of business research,* 64(4), 408-417.

Johnson, P., & Duberly, J. (2000). *Understanding management research: An introduction to epistemology*. Sage.

Johnson, J., Meyer, M., Berkowitz, J., Ethington, C., & Miller, V. (1997), "Testing two contrasting structural models of innovativeness in a contractual network", *Human Communication Research*, Vol. 24 No. 2, pp. 320-348.

Jose, P. E. (2013). *Doing statistical mediation and moderation*. Guilford Press.

Jyothibabu, C., Farooq, A., & Pradhan, B. B. (2010). An integrated scale for measuring an organizational learning system. *The Learning Organization*, 17(4): 303-327.

Kaldschmidt, S. (2011). The values of sustainability: The influence of leaders' personal values on sustainability strategies. na.

Kampala City Council Authority (2018) Strategic Environmental Assessment Report

Kandybin, A. (2009). Which innovation efforts will pay? *MIT Sloan Management Review,* 51(1), 53.

Kaplan, B., & Maxwell, J. A. (2005). Qualitative research methods for evaluating computer information systems. In *Evaluating the organizational impact of healthcare information systems* (pp. 30-55). Springer, New York, NY.

Katiyar, R., Meena, P. L., Barua, M. K., Tibrewala, R., & Kumar, G. (2018). Impact of sustainability and manufacturing practices on supply chain performance: Findings from an emerging economy. *International Journal of Production Economics*, 197, 303-316.

Kawalya, C. (2018). *Happiness at the Workplace*: PhD thesis, Makerere University, Kampala, Uganda.

Kennedy, S., & Bocken, N. (2020*). Innovating business models for sustainability: An essential practice for responsible managers. The Research Handbook of Responsible Management.* Cheltenham: Edward Elgar.

Kenny, D. A. (2015). Measuring model fit.

Kerr, J., & Slocum Jr, J. W. (2005). Managing corporate culture through reward systems. *Academy of Management Perspectives,* 19(4), 130-138.

Ketola, T. (2008). A holistic corporate responsibility model: Integrating values, discourses and actions. *Journal of Business Ethics*, 80(3), 419-435.

Khandekar, A., & Sharma, A. (2006). Organizational learning and performance: Understanding Indian scenario in present global context. *Education+ Training,* 48(8/9), 682-692.

Kibet, T. E. (2017). Environmental corporate social responsibility, consumer orientation and corporate sustainability of producer firms in Kenya (Doctoral dissertation, Moi University).

Kiewiet, D. J., & Vos, J. F. (2007). Organisational sustainability: A case for formulating a tailor-made definition. *Journal of Environmental Assessment Policy and Management*, 9(01), 1-18.

Kim, D.H. (1993). The link between individual and organizational learning. *Sloan Manage Rev* 1993 (Fall); 37–50.

Klepper, S., & Simons, K. L. (2000). The making of an oligopoly: firm survival and technological change in the evolution of the US tire industry. *Journal of Political economy*, 108(4), 728-760.

Kline, R.B. (2005), Principles and Practice of Structural Equation Modeling (2nd Edition ed.). New York: The Guilford Press.

Kowuttiphong, P., & Fongsuwan, W. (2019). Structural equation model of variables influencing Thai ceramics entrepreneur organisational sustainability. *International Journal of Entrepreneurial Venturing*, 11(1), 1-23.

Krishnaveni, R., & Deepa, R. (2013). Controlling common method variance while measuring the impact of emotional intelligence on well-being. *Vikalpa*, 38(1), 41-48.

Kubo, I., & Saka, A. (2002). An inquiry into the motivations of knowledge workers in the Japanese financial industry. *Journal of Knowledge Management,* 6(3), 262-271.

Kwak, N., & Radler, B. (2002). A comparison between mail and web surveys: Response pattern, respondent profile, and data quality. *Journal of official statistics,* 18(2), 257.

Laforet, S. (2008). Size, strategic, and market orientation affects on innovation. *Journal of business Research,* 61(7), 753-764.

Laforet, S. (2011). A framework of organisational innovation and outcomes in SMEs. *International Journal of Entrepreneurial Behavior & Research,* 17(4), 380-408.

Lam, A. (1998). *Tacit knowledge, organisational learning and innovation: a societal perspective* (Vol. 98, p. 22). DRUID.

Lasserre, P. (2003). *Global strategic management,* 1st edition, Palgrave Macmillan Ltd, Hampshire

Lavanya, B., & Anbalagan, M. (2012). Corporate Environmental Responsibility with special reference to Toyota Motor Corporation. *Journal of Business and Management,* 4(4): 08-15

Law, K. M., & Gunasekaran, A. (2012). Sustainability development in high-tech manufacturing firms in Hong Kong: Motivators and readiness. *International Journal of Production Economics*, 137(1), 116-125.

Lawson, B., & Samson, D. (2001). Developing innovation capability in organisations: a dynamic capabilities approach. *International journal of innovation management*, 5(03), 377-400.

Leavitt, C. C. (2011). *A Comparative Analysis of Three Unique Theories of Organizational Learning*. Online Submission.

Lee, C. K., Tan, B., & Chiu, J. Z. (2008). The impact of organisational culture and learning on innovation performance. *International Journal of Innovation and Learning*, 5(4), 413-428.

Lee, R. P., & Chen, Q. (2009). The immediate impact of new product introductions on stock price: the role of firm resources and size. *Journal of Product Innovation* Management, 26(1), 97-107.

Lefebvre, E., & Lefebvre, L. A. (1992). Firm innovativeness and CEO characteristics in small manufacturing firms. *Journal of Engineering and Technology Management*, 9(3-4), 243-277.

Leung, K., & Bond, M. H. (2004). Social axioms: A model of social beliefs in multi-cultural perspective. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 36, pp. 119-197). San Diego, CA: Academic Press. http://dx.doi.org/10.1016/S0065- 2601(04)36003-X

Levinsohn, D. (2013). Disembedded and beheaded? A critical review of the emerging field of sustainability entrepreneurship. *International Journal of Entrepreneurship and Small Business* 19(2):190–211

Levinson, M. (2017). *What Is Manufacturing? Why Does the Definition Matter?*

Levinthal, D. A., & March, J. G. (1993). The myopia of learning. *Strategic management journal*, 14(S2), 95-112.

Levitt, B., & March (1996) "Organizational learning" *Organisational learning*, 516-540.

Lewis-Beck, M., Bryman, A. E., & Liao, T. F. (2003). The Sage encyclopedia of social science research methods. Sage Publications.

Li, C. H. (2016). From adaptive to generative learning in small and medium enterprises-a network perspective. *Journal of Global Entrepreneurship Research,* 6(1), 11.

Liden, R., Fu, P., Liu, J., & Song, L. (2016). The influence of CEO values and leadership on middle manager exchange behaviors: A longitudinal multilevel examination. *Nankai Business Review International,* 7(1), 2-20.

Likert, R. (1932). *A technique for the measurement of attitudes.* Archives of psychology.

Ling, Y., Simsek, Z., Lubatkin, M. H., & Veiga, J. F. (2008). The impact of transformational CEOs on the performance of small- to medium-sized firms: Does organizational context matter? *Journal of Applied Psychology*, 93(4), 923–934

Little, R. J. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American statistical Association*, 83(404), 1198-1202.

López, P.S., Manuel Montes Peón, J., & José Vazquez Ordás, C. (2005). Organizational learning as a determining factor in business performance. *The learning organization,* 12(3), 227-245.

Lord, R. G., & Brown, D. J. (2001). Leadership, values, and subordinate self-concepts. *The Leadership Quarterly,* 12(2), 133-152.

Lukas, B. A., Hult, G. T. M., & Ferrel, O. C. (1996), "A theoretical perspective of the antecedents and consequences of organizational learning in marketing channels", *Journal of Business Research,* Vol. 36, No. 3, pp. 233-244.

Lundvall, B. Å. (Ed.). (2010). *National systems of innovation: Toward a theory of innovation and interactive learning* (Vol. 2). Anthem press.

Lundvall, B. Å., & Nielsen, P. (2007). Knowledge management and innovation performance. *International Journal of Manpower*, 28(3/4), 207-223.

Lyon, T. P., & Maxwell, J. W. (2008). Corporate social responsibility and the environment: A theoretical perspective. *Review of environmental economics and policy,* 2(2), 240-260.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. Psychological methods, 1(2), 130.

MacKinnon, D. (2012). Introduction to statistical mediation analysis. New York: Routledge.

Mader, C., Scott, G., Razak, D. A., Cebrián, G., Grace, M., & Humphris, D. (2013). Organisational learning towards sustainability in higher education. *Sustainability Accounting, Management and Policy Journal.*

Mafabi, S., Munene, J., & Ntayi, J. (2012). Knowledge management and organisational resilience: Organisational innovation as a mediator in Uganda parastatals. *Journal of Strategy and Management*, 5(1), 57-80.

Mahat, M., Bradbeer, C., Byers, T., & Imms, W. (2018). Innovative Learning Environments and Teacher Change: Defining key concepts-Technical Report 3/2018. In LEaRN. University of Melbourne, LEaRN.

Mahmoud, M. A., & Yusif, B. (2012). Market orientation, learning orientation, and the performance of nonprofit organisations (NPOs*). International Journal of Productivity and Performance Management,* 61(6), 624-652

Mainardes, E.W, Alves, H., & Raposo, M. (2012). A model for stakeholder classification and stakeholder relationships. *Management decision*, 50(10), 1861-1879.

March, J. G. and Simon, H. A. (1958). Organizations, Wiley, New York.

Marcus, A., & Fremeth, A. (2009). Green management matters regardless. *The Academy of Management Perspectives*, 23(3) 17-26. http://dx.doi.org/10.5465/AMP.2009.43479261

Marshall, A. (1961). *Principles of Economics*, ed. C. W. Guillebaud, 2 vols, London, M

Marsick, V. J. (2009). Toward a unifying framework to support informal learning theory, research and practice. *Journal of workplace learning*, 21(4), 265-275.

Marsick, V. J., & Watkins, K. E. (2003). Demonstrating the value of an organization's learning culture: the dimensions of the learning organization questionnaire. *Advances in developing human resources*, 5(2), 132-151.

Martin, W. E., & Bridgmon, K. D. (2012). Quantitative and statistical research methods: From hypothesis to results (Vol. 42). John Wiley & Sons.

Massaro, M., Dumay, J., Garlatti, A., & Dal Mas, F. (2018). Practitioners' views on intellectual capital and sustainability: From a performance-based to a worth-based perspective. *Journal of Intellectual Capital*, 19(2), 367-386.

Mata, F. J., Fuerst, W. L., & Barney, J. B. (1995). Information technology and sustained competitive advantage: A resource-based analysis. *MIS quarterly*, 487-505.

Mattel, M.S. & Jacoby, J. (1972). Is there an optimal number of alternatives for Likert-Scale items? Effects of testing time and scale properties. *Journal of Applied Psychology*, 56, 506-509.

McCullough, B. D., & Wilson, B. (1999). On the accuracy of statistical procedures in Microsoft Excel 97. *Computational Statistics & Data Analysis*, 31(1), 27-37.

McElroy, M. W. (2003). *The new knowledge management: Complexity, learning, and sustainable innovation*. Routledge.

McKenzie, J., Wright, S., Ball, D.F. and Baron, P.J. (2002). The publications of marketing faculty – who are we really talking to? *European Journal of Marketing*, Vol. 36 Nos 11/12, pp. 1196-208.

McNabb, D. E. (2007). Knowledge management in the public sector: A blueprint for innovation in government. ME Sharpe.

McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. *Academy of management review*, 26(1), 117-127.

Meyer, C. (1998). *Relentless growth: how Silicon Valley innovation strategies can work in your business*. Simon and Schuster.

Meyer, M., Ohana, M., & Stinglhamber, F. (2018). The impact of supervisor interpersonal justice on supervisor-directed citizenship behaviors in social enterprises: a moderated mediation model. *The International Journal of Human Resource Management*, 29(20), 2927-2948.

Milne, M. J., & Gray, R. (2013). W(h)ither ecology? The triple bottom line, the global reporting initiative, and corporate sustainability reporting. *Journal of business ethics*, 118(1), 13-29.

Minichilli, A., Corbetta, G., & MacMillan, I. C. (2010). Top management teams in family-controlled companies: 'familiness', 'faultlines', and their impact on financial performance. *Journal of Management studies*, 47(2), 205-222.

Ministry of Finance Planning and Economic Development (Government of Uganda) (2012), Background to the Budget FY 2012/13.

Ministry of Gender, Labour and Social Development (Government of Uganda) (2017) Regulation of labour report,

Miragaia, D., Brito, M., & Ferreira, J. (2016). The role of stakeholders in the efficiency of nonprofit sports clubs. *Nonprofit management and leadership*, 27(1), 113-134.

Miron, E., Erez, M., & Naveh, E. (2004). Do personal characteristics and cultural values that promote innovation, quality, and efficiency compete or complement each other? *Journal of organizational behavior*, 25(2), 175-199.

Mitleton-Kelly, E. (2011). A complexity theory approach to sustainability: A longitudinal study in two London NHS hospitals. *The Learning Organization*, 18(1), 45-53.

Mitleton-Kelly, E. (2011). A complexity theory approach to sustainability: A longitudinal study in two London NHS hospitals. *The Learning Organization*. 18 (1), 45-53.

Mohr, L. A., & Webb, D. J. (2005). The effects of corporate social responsibility and price on consumer responses. *Journal of consumer affairs*, 39(1), 121-147.

Moldavanova, A. (2014). Sustainability, aesthetics, and future generations: Towards a dimensional model of the arts' impact on sustainability. Transitions to sustainability: *Theoretical debates for a changing planet*, 172-193.

Moldavanova, A., & Goerdel, H. T. (2018). Understanding the puzzle of organizational sustainability: toward a conceptual framework of organizational social connectedness and sustainability. *Public Management Review*, 20(1), 55-81.

Mugerwa, K. (2015), "Second national development plan (NDPII) 2015/16–2019/20", available at: http:// npa.go.ug/wp-content/uploads/NDPII-Final.pdf (accessed 15 June 2020).

Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology*, 89, 852– 863.

Munene, J. C., Schwartz, S. H., & Kibanja, G. M. (2005). Escaping from behavioural poverty in Uganda: The role of culture and social capital. Fountain Pub Ltd.

Murphy, M.G. & Davey, K.M (2002) Ambiguity, ambivalence and indifference in organisational values, *human resource management journal*, (12),1.

Murray, P. (2003). Organisational learning, competencies, and firm performance: empirical observations. *The learning organization*, 10(5), 305-316.

Nabatanzi, A. (2014). *Competitiveness of International New Ventures in Uganda*, Phd thesis, Wits Business School, University of Witwatersrand, Johannesburg South Africa

Nag, R., Hambrick, D. C., & Chen, M. J. (2007). What is strategic management, really? Inductive derivation of a consensus definition of the field. *Strategic management journal*, 28(9), 935-955.

Nakku, V. B., Nabaweesi, J. K & Namagembe. S. (2013a). The Influence of Environmental Uncertainty on Supply Chain Performance; case study of the supply chain of SME manufacturing firms in Uganda. *International Research Journal of Commerce and Behavioural Science* 2(10):31-38

Nakku, V. B., Nabaweesi, J. K & Namagembe. S. (2013b). Information sharing: A Strategy for Enhancing supply chain information quality. *International Research Journal of Commerce and Behavioural Science* 2(10):15-22.

Namagembe, S., Sridharan, R., & Ryan, S. (2016). Green supply chain management practice adoption in Ugandan SME manufacturing firms. *World Journal of Science, Technology and Sustainable Development.*

Namakonzi, R., & Inanga, E. (2014). Environmental management accounting and environmental management in manufacturing industries in Uganda. *African Journal of Economic and Sustainable Development*, 3(4), 288-329.

National Environmental Management Authority (2019) World Environment Day, 5th June Celebration Newsletter, Vol. 22, No. 1

National environmental management authority annual corporate report (2018) "for 2017/18", available at:https://nema.go.ug/sites/all/themes/nema/docs/NEMA% 20 Corporate%20Report%20FY2017-18%20(1).pdf (accessed 15 June 2020).

Nawaz, W., & Koc, M. (2018). Development of a systematic framework for sustainability management of organizations. *Journal of Cleaner Production*, 171, 1255-1274.

Neuman, L. (2007). *Basics of Social Research: Qualitative and Quantitative Approaches*, Pearson, Boston, MA

Nevis, E., A. J. DiBella and J. M. Gould (1995). 'Understanding organization learning systems', *Sloan Management Review*, 36, pp. 73–85.

Ng, E. S., & Burke, R. J. (2010). Predictor of business students' attitudes toward sustainable business practices. *Journal of Business Ethics*, 95(4), 603-615.

Nonaka, I. (1994). A dynamic theory of organizational knowledge creation. *Organization science*, 5(1), 14-37.

Nonaka, I., Toyama, R. and Nagata, A. (2000). A firm as a knowledge creating entity: a new perspective on the theory of the firm", *Industrial and Corporate Change*, Vol. 9 No. 1, pp. 1-20.

Noor, N. M., Al Bakri Abdullah, M. M., Yahaya, A. S., & Ramli, N. A. (2015). Comparison of linear interpolation method and mean method to replace the missing values in environmental data set. *In Materials Science Forum*, 803, 278-281.

Norman, W., & MacDonald, C. (2004). Getting to the bottom of "triple bottom line". *Business ethics quarterly*, 14(2), 243-262.

Nunnally, J. C. 1978: Psychometric Theory, 2nd edn. McGraw-Hill, New York

Nunnally, J., & Bernstein, I. (1994). In: *Psychometric Theory*, 3rd Edition. McGraw-Hill, New York.

Nuwagaba, D., Yab, J., Ogollah, K., & Wainaina, G. (2018). Top management team international orientation and internationalization of universities. *Makerere Business Journal*, 14(1/2), 69-87.

Nybakk, E., & Jenssen, J. I. (2012). Innovation strategy, working climate, and financial performance in traditional manufacturing firms: An empirical analysis. *International Journal of innovation management*, 16(02), 1250008.

O'Dwyer, B., & Unerman, J. (2010). Enhancing the role of accountability in promoting the rights of beneficiaries of development NGOs. *Accounting and business research*, 40(5), 451-471.

Onwuejeogwu, M. A. (1995). Development in Africa: common cultural values central for effective managerial and administrative training programmes. In a regional seminar on Cultural Dimensions and Appropriate and Effective Management in Africa, at Makerere University, Kampala.

Opoku, A., & Fortune, C. (2011). Organizational learning and sustainability in the construction industry. *The Built and Human Environment Review*, 4(1), 98-107.

O'Reilly III, C. A., Chatman, J., & Caldwell, D. F. (1991). People and organizational culture: A profile comparison approach to assessing person-organization fit. *Academy of management journal*, 34(3), 487-516.

Organ, D., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology,* 48, 775–802

Organization for Economic Cooperation and Development (2005). *Oslo Manual: Guidelines for collecting and interpreting innovation data*, 3rd edn. Paris: OECD and Eurostat

Osborne, S. P., Radnor, Z., Vidal, I., & Kinder, T. (2014). *A sustainable business model for public service organizations?*

Padaki, V. (2000). Coming to grips with organisational values. *Development in Practice*, 10(3-4), 420-435.

Page, J., Tarp, F., Rand, J., Shimeles, A., Newman, C., & Söderbom, M. (2016). *Manufacturing transformation: comparative studies of industrial development in Africa and emerging Asia* (p. 336). Oxford University Press.

Pallant, J. (2005). SPSS survival manual: a step-by-step guide to data analysis using SPSS version 12. Chicago: Open University.

Panayides, P. M. (2007). The impact of organizational learning on relationship orientation, logistics service effectiveness and performance. *Industrial marketing management*, 36(1), 68-80.

Papagiannakis, G., & Lioukas, S. (2012). Values, attitudes and perceptions of managers as predictors of corporate environmental responsiveness. *Journal of environmental management*, 100, 41-51.

Park, H., Russell, C., Lee, J. (2007). National culture and environmental sustainability: a cross- national analysis. *Journal of Economics and Finance* 31(1): 104–121

Paulraj, A. (2011). Understanding the relationships between internal resources and capabilities, sustainable supply management and organizational sustainability. *Journal of Supply Chain Management*, 47(1), 19-37.

Pedersen, E. R. G., Gwozdz, W., & Hvass, K. K. (2018). Exploring the relationship between business model innovation, corporate sustainability, and organisational values within the fashion industry. *Journal of Business Ethics*, 149(2), 267-284.

Persaud, D. D. (2014). Enhancing learning, innovation, adaptation, and sustainability in health care organizations: the ELIAS performance management framework. *The health care manager*, 33(3), 183-204.

Peterson, R. S., Smith, D. B., & Martorana, P. V. (2006). Choosing between a rock and a hard place when data are scarce and the questions important: Reply to Hollenbeck, DeRue, and Mannor (2006), *Journal of Applied Psychology*, 91, 6–8.

Peterson, R. S., Smith, D. B., Martorana, P. V., & Owens, P. D. (2003). The impact of chief executive officer personality on top management team dynamics: One mechanism by which leadership affects organizational performance. *Journal of Applied Psychology*, 88, 795– 808

Pirages, D. C. (1977). *Sustainable society: implications for limited growth*. [16 papers].

Pisano, G. P. (1997). *The development factory: unlocking the potential of process innovation.* Harvard Business Press.

Pituch, K. A., & Stevens, J. P. (2015). Applied multivariate statistics for the social sciences: Analyses with SAS and IBM's SPSS. Routledge.

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual review of psychology*, 63, 539-569.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *The Journal of Applied Psychology*, 88(5), 879–903.

Porter, M. E. (1991). Towards a dynamic theory of strategy. *Strategic management journal*, 12(S2), 95-117.

Porter, M. E., & Kramer, M. R. (2006). The link between competitive advantage and corporate social responsibility. *Harvard business review*, 84(12), 78-92.

Porter, M. E., & Van der Linde, C. (1995). Toward a new conception of the environment-competitiveness relationship. *Journal of economic perspectives*, 9(4), 97-118.

Pourdehnad, J., & Smith, P. A. (2012). Sustainability, organizational learning, and lessons learned from aviation. *The Learning Organization*, 19(1), 77-86.

Pourdehnad, J., & Smith, P. A. (2012). Sustainability, organizational learning, and lessons learned from aviation. The Learning Organization, 19 (1), 77-86

Powell, W. W., & Owen-Smith, J. (2002). The new world of knowledge production in the life sciences. The future of the city of intellect: *The changing American university*, 107-130.

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior research methods, instruments, & computers*, 36(4), 717-731.

Preacher, K. J., Curran, P. J., & Bauer, D. J. (2006). Computational tools for probing interactions in multiple linear regression, multilevel modeling, and latent curve analysis. *Journal of educational and behavioral statistics*, 31(4), 437-448.

Preacher, K. J., Rucker, D. D., & Hayes, A. F. (2007). Addressing moderated mediation hypotheses: Theory, methods, and prescriptions. *Multivariate behavioral research*, 42(1), 185-227.

Quartey, S. H., & Wells, S. (2020). Sustainability-oriented learning: evidence from Eyre Peninsula's fishing industry in Australia. Environment, Development and Sustainability, 22(3), 2477-2496.

Quirk, T. J., Quirk, M., & Horton, H. F. (2014). *Excel 2013 for biological and life sciences statistics: A guide to solving practical problems.* Springer.

Riivari, E., & Lämsä, A. M. (2014). Does it pay to be ethical? Examining the relationship between organisations' ethical culture and innovativeness. *Journal of Business Ethics*, 124(1), 1-17.

Rogers, E. M. (1995). *Diffusion of innovations* (4th edition). New York: The Free Press

Rokeach, M. (1973). *The Nature of Human Values*. Free Press.

Rooks, G., Szirmai, A., & Sserwanga, A. (2009). The interplay of human and social capital in entrepreneurship in developing countries: The case of Uganda, Econstor

Rosete, D. (2006). The impact of organisational values and performance management congruency on satisfaction and commitment. *Asia Pacific Journal of Human Resources.* Sage Publications, London

Rousseau, D.M. 1990. Assessing organisational cultures: The case for multiple methods. In *Organisational climate and culture*, ed. B. Schneider, 153–88. San Francisco: Jossey-Bass.

Rowley, T. J. (1997). Moving beyond dyadic ties: A network theory of stakeholder influences. *Academy of management Review*, 22(4), 887-910.

Rubin, A., & Babbie, E. (2005). *Research methods for social work* (ed.). Belmont, CA, USA: Brooks/Cole.

Ruiz-Jiménez, J. M., & del Mar Fuentes-Fuentes, M. (2013). Knowledge combination, innovation, organizational performance in technology firms. Industrial Management & Data Systems.

Sadler-Smith, E., Spicer, David, P., and Chaston, I. (2001), Learning Orientations and Growth in Smaller Firms, *Long Range Planning*, 34(2), pp.139-158.

Sahu, V. R., & Agarwal, U. (2016). Study of career maturity in urban and rural adolescents. *Indian Journal of Health & Wellbeing*, 7(12).

Salim, N., Ab Rahman, M. N., & Wahab, D. A. (2018). A systematic literature review of internal capabilities for enhancing eco-innovation performance of manufacturing firms. *Journal of cleaner production*.

Salkind, N. J. (Ed.). (2010). Encyclopedia of research design (Vol. 1). Sage.

Sanchez de Pablo Gonzalez del Campo, J. D., & Škerlavaj, M. (2011). The organisational learning process as facilitator of innovativeness. *International Journal of Innovation and Learning*, 9(4), 401-421.

Santos, D. F. L., Basso, L. F. C., Kimura, H., & Kayo, E. K. (2014). Innovation efforts and performances of Brazilian firms. *Journal of Business Research*, 67(4), 527-535.

Santos-Vijande, M. L., López-Sánchez, J. Á., & Trespalacios, J. A. (2012). How organizational learning affects a firm's flexibility, competitive strategy, and performance. *Journal of Business Research*, 65(8), 1079-1089.

Saunders, M., Lewis, P. & Thornhill, A. (2012). *Research Methods for Business Students* 6th edition, Pearson Education Limited

Saunila, M., Pekkola, S., & Ukko, J. (2014). The relationship between innovation capability and performance: The moderating effect of measurement. *International Journal of Productivity and Performance Management*, 63, 234–249.

Saunila, M., Ukko, J., & Rantanen, H. (2012). Innovation capability and its measurement in Finnish SMEs. In *Practice-Based Innovation: Insights, Applications and Policy Implications* (pp. 417-435). Springer, Berlin, Heidelberg.

Savitz, A., & Weber, W. (2006). *The triple bottom line: How today's best-run companies are achieving economic*. Josseybass: Social and Environmental Success.

Scandura, T. A., & Williams, E. A. (2000). Research methodology in management: Current practices, trends, and implications for future research. *Academy of Management journal*, 43(6), 1248-1264.

Scheffer, J. (2002). Dealing with missing data. I.I.M.S. Quad A, Massey University, Res. Lett. Inf. Math. Sci. 3, 153-160, Available online at http://www.massey.ac.nz/~wwiims/research/letters/

Schein, E. H. (1992). *How can organizations learn faster? the problem of entering the Green Room.*

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of educational research*, 99(6), 323-338.

Schreiber, J.B. (2006). Modeling and Confirmatory Factor Analysis Results. *The Journal of Educational Research*, 99(6)323-338

Schrettle, S. (2013). *Managing manufacturing process innovation? New manufacturing technology adoption as a dynamic capability*. University of St. Gallen.

Schrettle, S., Hinz, A., Scherrer-Rathje, M., & Friedli, T. (2014). Turning sustainability into action: Explaining firms' sustainability efforts and their impact on firm performance. *International Journal of Production Economics*, 147, 73-84.

Schultz, P. W. (2001). The structure of environmental concern: Concern for self, other people, and the biosphere. *Journal of environmental psychology*, 21(4), 327-339.

Schwartz, S. H. (2005). Robustness and fruitfulness of a theory of universals in individual human values. In A. Tamayo & J. B. Porto (Eds.), idem pp. 56-95.

Schwartz, S.H. (1992). *Universals in the Structure and Content of Values: Theoretical Advances in Experimental Social Psychology*, Orlando, Academic Press.

Schwartz, S.H. (1994) "Are There Universal Aspects in the Structure and Contents of Human Values?" *Journal of Social Issues*, 50: 19–45.

Schwartz, S.H. (2012). An Overview of the Schwartz Theory of Basic Values. *Online Readings in Psychology and Culture*, 2(1). https://doi.org/10.9707/2307-0919.1116

Scott, S. G., & Bruce, R. A. (1994). Determinants of innovative behavior: A path model of individual innovation in the workplace. *Academy of management journal*, 37(3), 580-607.

Scott, W. R. (1995). *Institutions and organizations.* Thousand Oaks, CA: Sage.

Sekaran, U. (2000). *Research for Business: A Skill-Building Approach*. John Wiley.

Senge, P. (1990). *Peter Senge and the learning organization*. Rcuperado de.

Senge, P. M. (1992). Mental models. *Planning review*, 20(2), 4-44.

Senge, P. M., Carstedt, G., & Porter, P. G. (2001): Innovating Our Way to the Next Industrial Revolution. *MIT Sloan Management Review, winter, 24-38.*

Serem, D.K, Boit, J.M & Wanyama, M.N (2013). *Understanding research; A simplified form*, Utafiti Foundation, Kenya.

Sheth, J. N., Sethia, N. K., & Srinivas, S. (2011). Mindful consumption: a customer-centric approach to sustainability. *Journal of the academy of marketing science*, 39(1), 21-39.

Siebenhuner, B., & Arnold, M. (2007), Organizational learning to manage sustainable Development. *Business strategy and the Environment* 16, pp. 339-353

Simiyu, G., Bonuke, R., & Komen, J. (2020). Social media and students' behavioral intentions to enroll in postgraduate studies in Kenya: a moderated mediation model of brand personality and attitude. *Journal of Marketing for Higher Education*, 30(1), 66-86.

Simon, J. L. (1969). *Basic research methods in social science.*

Simsek, Z., Veiga, J. F., Lubatkin, M. H. and Dino, R. N. (2005). 'Modelling the multilevel determinants of top management team behavioral integration'. *Academy of Management Journal*, 48, 69–84.

Sisaye, S. (2011). Ecological systems approaches to sustainability and organizational development: Emerging trends in environmental and social accounting reporting systems. *Leadership & Organization Development Journal*, 32(4), 379-398.

Slater, S. F., & Narver, J. C. (1994). Does competitive environment moderate the market orientation-performance relationship? *Journal of marketing*, 58(1), 46-55.

Smith, P. A. (2012). The importance of organizational learning for organizational sustainability. *The Learning Organization*, 19(1), 4-10.

Smith, P. A., & Sharicz, C. (2011). The shift needed for sustainability. *The learning organization*, 18(1), 73-86.

Sobh, R., & Perry, C. (2006). Research design and data analysis in realism research. *European Journal of marketing*, 40(11/12)

Sørensen, J. B., & Stuart, T. E. (2000). Aging, obsolescence, and organizational innovation. *Administrative science quarterly*, 45(1), 81-112.

Soriano, D. R., Peris-Ortiz, M., Mainardes, E. W., Alves, H., & Raposo, M. (2011). Stakeholder theory: issues to resolve. *Management decision.*

Spicer, D. P., & Sadler-Smith, E. (2006). Organizational learning in smaller manufacturing firms. *International Small Business Journal*, 24(2), 133-158.

Stazyk, E. C., Moldavanova, A. & Frederickson, H. G. (2014). "Sustainability, Intergenerational Social Equity, and the Socially Responsible Organization." Administration & Society Advance online publication. 10.1177/0095399713519094

Stead, W. E., & Stead, J. G. (2004). *Sustainable strategic management*. New York: M.E. Sharp

Steiger, J. H. (2007). Understanding the limitations of global fit assessment in structural equation modeling. *Personality and Individual differences*, 42(5), 893-898.

Stephen, D. (2015). *Data Screening using SPSS for beginner: Outliers, Missing Values and Normality: Institute of Borneo Studies Workshop Series,* University Malaysia Sarawak

Stern, P. C., Kalof, L., Dietz, T., & Guagnano, G. A. (1995). Values, beliefs, and proenvironmental action: Attitude formation toward emergent attitude objects 1. *Journal of applied social psychology*, 25(18), 1611-1636.

Steurer, R., Langer, M. E., Konrad, A., & Martinuzzi, A. (2005). Corporations, stakeholders and sustainable development I: a theoretical exploration of business–society relations. *Journal of business ethics*, 61(3), 263-281.

Stone, S. I., & Rose, R. A. (2011). Social work research and endogeneity bias. *Journal of the Society for Social Work and Research*, 2(2), 54-75.

Stride C.B., Gardner S., Catley. N. & Thomas, F. (2015). 'Mplus code for the mediation, moderation, and moderated mediation model templates from Andrew Hayes' PROCESS analysis examples' , http://www.figureitout.org.uk

Sulait, T. (2010). *Relational capital and firm performance: A case of manufacturing tea firms in Uganda.* Makerere University.

Tabachnick, B. G. (2013). BG Tabachnick, LS Fidell using multivariate statistics.

Tabachnick, B. G., & Fidell, L. S. (1996). SPSS for Windows workbook to accompany large sample examples of using multivariate statistics. HarperCollins College Publishers.

Tabachnick, B., & Fidell L. (2007). *Using multivariate statistics* (5th ed.). New York: Harper and Row Publishers.

Tang, J., Tang, Z., & Cowden, B. J. (2017). Exploring the Relationship between Entrepreneurial Orientation, CEO Dual Values, and SME Performance in State–Owned vs. Non-state–Owned Enterprises in China. *Entrepreneurship Theory and Practice*, 41(6), 883-908.

Tapp, A. (2004), "The changing face of marketing academia", *European Journal of Marketing*, Vol. 38 Nos 5/6, pp. 492-9.

Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research policy*, 15(6), 285-305.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management; *Strategic Management Journal*, 18(7), 509–533

Teece, D. J., Pisano, G., & Shuen, A. (2007). *Management,* 18(7), 509–533.

Templeton, G. F. (2011). A two-step approach for transforming continuous variables to normal: implications and recommendations for IS research. *Communications of the Association for Information Systems*, 28(1), 4.

Tharenou, P., Donohue, R., and Cooper, B. (2007) *Management Research Methods;* Cambridge University Press, New York

Timpone, R. J. (2003). Concerns with endogeneity in statistical analysis: Modelling the interdependence between economic ties and conflict. Economic interdependence and international conflict: New perspectives on an enduring debate, 289-309.

Tippins, M.J. & Sohi, R.S. (2003). IT competency and firm performance: is organizational learning a missing link? *Strategic Management Journal*, Vol. 24, pp. 745-61.

Tjahjadi, B., & Soewarno, N. (2018). Mediating roles of innovation capability and customer performance in seniority management–financial performance relationship: experience of SOEs in Indonesia. KnE Social Sciences.

Trompenaars, F. (1993). *Riding the Waves of Cultural Differences: Understanding Cultural Differences in Business*. London: Nicholas Brearley.

Tsai, C.T., Huang, K.L., & Kao, C.F. (2001) The relationships among organizational factors, creativity of organizational members and innovation capability: *Journal of Management,* Vol. 18, pg 527–66.

Tsang, E. W. K. (1997) 'Organizational Learning and the Learning Organization: A Dichotomy between Descriptive and Prescriptive Research', *Human Relations* 50(1): 73–89.

UBOS (2010/11). Census of Business Establishments; Government of Uganda

UBOS, (2018). Manpower survey Uganda.

Uganda Manufacturers Association (2019) Business Directory; Kampala

Uganda MSME Policy (2015) Final draft the Republic of Uganda, Uganda Micro, Small and Medium Enterprise (MSME) policy Sustainable MSMEs for Wealth Creation and Socio-Economic

UN Global Compact (2013) Global corporate sustainability report, 5(1), 1-28

UN Global Compact. (2017). United Nations global compact. A call to action for sustainable business (Report, UN Global Compact library 5481). https://d306pr3pise04h.cloudfront.net/docs/publications%2FUNGC-Value-Proposition.pdf. Accessed 1 Feb 2021.

UNCTAD (2021). The role of exports in manufacturing pollution in Sub–Saharan Africa and South Asia: Towards a better trade-environment governance.

Unerman, J., & O'Dwyer, B. (2010). NGO accountability and sustainability issues in the changing global environment. *Public Management Review*, 12(4), 475-486.

Unick, G. J., & Stone, S. (2010). State of modern measurement approaches in social work research literature. *Social Work Research*, 34(2), 94-101.

UNIDO (2020) Report on world manufacturing production, statistics for quarter I.

Urbach, N., & Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. *Journal of Information technology theory and application*, 11(2), 5-40.

Urban, G.L. and Hauser, J.R. (1993). *Design and Marketing of New Products*, 2nd ed., Prentice-Hall, Englewood Cliffs, NJ

Uzkurt, C., Kumar, R., Kimzan, H. S., & Sert, H. (2012). The impact of environmental uncertainty dimensions on organisational innovativeness: An empirical study on SMEs. *International Journal of Innovation Management*, 16(02), 1250015

Vachon, S., Klassen, R.D., (2008). Environmental management and manufacturing performance: the role of collaboration in the supply chain. *International Journal of Production Economics* 111 (2), 299–315.

Van Dijk, D., & Kluger, A. N. (2004). Feedback sign effect on motivation: Is it moderated by regulatory focus? Applied Psychology: An International Review, 53, 113-135

Van Mierlo, B., & Beers, P. J. (2020). Understanding and governing learning in sustainability transitions: A review. *Environmental Innovation and Societal Transitions*, *34*, 255-269.

Vanclay, F. (2004). The triple bottom line and impact assessment: How do TBL, EIA, SIA, SEA and EMS relate to each other? *Journal of Environmental Assessment Policy and Management*, 6(3), 265–288.

Vardeman, S. B., & Morris, M. D. (2003). Statistics and ethics: some advice for young statisticians. *The American Statistician*, 57(1), 21-26.

Vera, D., & Crossan, M. (2005). Improvisation and innovative performance in teams. *Organization Science*, 16(3), 203-224.

Vihari, N. S., & Rao, M. K. (2017). Business model innovation and organisational mindfulness as determinants of corporate sustainability: an empirical study. International Journal of Business Innovation and Research, 13(2), 238-254.

Vihari, N. S., Rao, M. K., & Doliya, P. (2018). Organisational Learning as an Innovative Determinant of Organisational Sustainability: An Evidence Based Approach. *International Journal of Innovation Management*, 23(03), 1950019.

Vogel, D. (2005). *The Market for Virtue: The Potential and Limits of Corporate Social Responsibility*, The Brookings Institution, N.W., Washington D.C

Wagner, M. (2007). On the relationship between environmental management, environmental innovation and patenting: Evidence from German manufacturing firms. *Research Policy*, 36(10), 1587-1602.

Waldman, D. A., De Luque, M. S., Washburn, N., House, R. J., Adetoun, B., Barrasa, A., ... & Dorfman, P. (2006). Cultural and leadership predictors of corporate social responsibility values of top management: A GLOBE study of 15 countries. *Journal of International Business Studies*, 37(6), 823-837.

Wanberg, C. R., & Banas, J. T. (2000). Predictors and outcomes of openness to changes in a reorganizing workplace. *Journal of applied psychology*, 85(1), 132.

Wang, C. L., & Ahmed, P. K. (2004). The development and validation of the organisational innovativeness construct using confirmatory factor analysis. *European journal of innovation management*, 7(4), 303-313.

Wasiluk, K. (2013), "Beyond eco-efficiency: understanding CS through the IC practice lens", *Journal of Intellectual Capital*, Vol. 14 No. 1, pp. 102-26.

Watkins, K. E., & Marsick, V. J. (1993). *Sculpting the learning organization: Lessons in the art and science of systemic change.* Jossey-Bass Inc., 350 Sansome Street, San Francisco, CA 94104-1310.

Watzlawick, P., Weakland, J. & Fisch, R. (1974). *Change - Principles of Problem Formation and Problem Resolution* New York: W.W. Norton and Co.

WCED, S. W. S. (1987). World commission on environment and development. *Our common future*, 17, 1-91.

Weerawardena, J., Robert, M.E., & Mort, G. S. (2010). Sustainability of nonprofit organizations: An empirical investigation. *Journal of World Business*, 45(4), 346-356.

Weick, C. W., & Jain, R. K. (2014). Rethinking industrial research, development and innovation in the 21st century. *Technology in Society*, 39, 110-116.

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic management journal*, 5(2), 171-180.

Wikström, P. A. (2010). Sustainability and organizational activities–three approaches. *Sustainable Development*, 18(2), 99-107.

Willmott, H. (1993). Strength is ignorance; slavery is freedom: managing culture in modern organizations. *Journal of management studies*, 30(4), 515-552.

Wilson, A., & Holton, V. (2003). Changing Manager Mindsets-Report of the Working Group on the Development of Professional Skills for the Practice of Corporate Social Responsibility. Department of Trade and Industry/The Corporate Responsibility Group, London.

Winkler, M. K., & Fyffe, S. D. (2016). *Strategies for cultivating an organizational learning culture.* Washington, DC: Urban Institute, 9.

World Bank (2012). The World Bank Annual Report, Volume 1. Main Report. World Bank Annual Report; Washington, DC. © World Bank. https://openknowledge.worldbank.org/handle/10986/11844 License: CC BY 3.0 IGO."

Wright, G. B., Cullinan, C. P., & Bline, D. M. (1997). The Relationship Between an Individual's Values and Perceptions of Moral Intensity. *Behavioral Research in Accounting*, 9 (Supplement), 26-40.

Wu, L. Z., Kwan, H. K., Yim, F. H. K., Chiu, R. K., & He, X. (2015). CEO ethical leadership and corporate social responsibility: A moderated mediation model. *Journal of Business Ethics*, 130(4), 819-831.

Wu, Z., & Pagell, M. (2011). Balancing priorities: Decision-making in sustainable supply chain management. *Journal of operations management*, 29(6), 577-590.

Yamane, T. (1967), *Statistics. An Introductory Analysis*, 2nd ed., Harper & Row, New York, NY.

Yang, B., Watkins, K. E., & Marsick, V. J. (2004). The construct of the learning organization: dimensions, measurement, and validation. *Human Resource Development Quarterly,* 15(1): 31-55.

Yang, B., Watkins, K., & Marsick, V. (2003). Identifying valid and reliable measures for dimensions of a learning culture. *Advances in Developing Human Resources*, 5(2): 152-162.

Young, S.I. (2009), "The relationship between organizational fitness and business performance: specific evidence for SMEs", PhD thesis, Auckland University of Technology, Auckland.

Yu, W. & Ramanathan, R. (2016), "Environmental management practices and environmental performance", *Industrial Management and Data Systems*, 116 (6), 1201 -1222.

Zailani, S., Jeyaraman, K., Vengadasan, G., & Premkumar, R. (2012). Sustainable supply chain management (SSCM) in Malaysia: A survey. *International Journal of Production Economics*, 140(1), 330-340.

Zehir, C., Köle, M., & Yıldız, H. (2015). The mediating role of innovation capability on market orientation and export performance: An implementation on SMEs in Turkey. *Procedia-Social and Behavioral Sciences*, 207, 700-708.

Zgrzywa-Ziemak, A. (2015). The impact of organisational learning on organisational performance. *Journal of Management and Business Administration*. Central Europe, 23(4), 98-112.

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research*, 37(2), 197-206.

Zikmund, W. (2000). *Business Research Methods*, 6th edition, Harcourt, Fort Worth

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods* (8th ed.). Mason, HO: Cengage Learning.

Zott, C. (2003). Dynamic capabilities and the emergence of intra-industry differential firm performance: Insights from a simulation study. *Strategic Management Journal*, 24(2), 97–112.

APPENDICES

Appendix 1: Structured Survey Questionnaire

Dear Participant,
You have been selected to participate in this survey, which is part of my PhD research work. This survey seeks to establish the level of sustainability performance among medium and large manufacturing firms in Uganda and the factors influencing this performance, with specific focus on learning, firm innovativeness and CEO/MD values. Given your managerial experience, we request you to spare part of your valuable time to respond to the statements provided in this questionnaire. All the information provided will be treated with utmost confidentiality and used specifically for academic purposes.

SECTION I: BACKGROUND INFORMATION

This section seeks to generate information about you and your firm to enable the researcher to broadly categorize results. No specific individual or firm identity will be revealed. Results will be aggregated and reported at firm level.

A: Respondent Personal Information

1. Age group

25-30 years		31-35 years		36-40 years		41-45 years		46-50 years		Above 50 years	

2. Highest Academic Qualification Attained

Diploma		Bachelor's Degree		Postgraduate Diploma		Masters		PhD	

3. Managerial Level

Senior Management		Middle Management		Lower Management		Supervisor	

4. Department of work

Human Resource		Operations/ Production		Finance/ Accountant		Research & Devt		Public Relations/ Communications		Marketing		Procurement & Logistics	

5. Managerial Tenure in the current firm

Less than 1 year		1-3 years		4-6 years		7-9 years		10 and above	

B: Firm Characteristics

1 Region

Central		Eastern	

2. Business Type

Food Processing		Which product (s) specifically? ……		Non-Food Processing		Which product (s) specifically? ……	

3. Firm ownership

State Owned		Privately Owned		Partnership		Family Owned		Sole Proprietorship	

4. Origin of the firm

International/Foreign firm		Domestic/Local firm	

5. Number of years in existence

Less than 5 years		5-10 years		11-15 years		16 years and above	

6. Current number of permanent employees in your firm

Below 50		50-100		Above 100	

SECTION II: FIRM SUSTAINABILITY PERFORMANCE

This section seeks to examine the extent to which your firm balances shareholder economic interests together with other stakeholder social and environmental interests. Using a scale of 1-7, please indicate (tick) your level of agreement or disagreement with the statements provided hereafter: **1= Very Strongly Disagree 2=Strongly Disagree 3= Disagree 4=Moderately Agree 5=Completely Agree 6=Strongly Agree 7= Very Strongly Agree**

In the last five years,								
Economic sustainability performance								
ECO1	Our firm has been generating revenue from the sale of waste products	1	2	3	4	5	6	7
ECO2	Our firm has reduced the cost of inputs for the same level of output	1	2	3	4	5	6	7
ECO3	Our firm has reduced the cost of waste management for the same level of output	1	2	3	4	5	6	7
ECO4	Our firm's market share has increased relative to our competitors	1	2	3	4	5	6	7
ECO5	Our firm's total sales have steadily improved	1	2	3	4	5	6	7
ECO6	Our firm's net-earnings have increased	1	2	3	4	5	6	7
Social sustainability performance								
SOC7	Our firm has improved employees' safety	1	2	3	4	5	6	7
SOC8	Our firm has funded a number of local community initiatives	1	2	3	4	5	6	7
SOC9	Our firm has protected the rights of the local community	1	2	3	4	5	6	7
SOC10	Our firm is mindful of all stakeholders' interests in investment decisions	1	2	3	4	5	6	7
SOC11	Our firm has trained managers and employees in sustainability management practices	1	2	3	4	5	6	7
SOC12	Our firm has complied with most of the government regulations	1	2	3	4	5	6	7
Environmental sustainability performance								
ENV13	Our firm has considerably reduced on energy consumption	1	2	3	4	5	6	7
ENV14	Our firm has greatly reduced emissions from operations	1	2	3	4	5	6	7
ENV15	Our firm has reduced its impact on natural habitats	1	2	3	4	5	6	7
ENV16	Our firm has reduced environmental impacts of its products	1	2	3	4	5	6	7
ENV17	Our firm has reduced the risk of environmental accidents	1	2	3	4	5	6	7
ENV18	Our firm has reduced the use of non-renewable energies	1	2	3	4	5	6	7
ENV19	Our firm has reduced the use of traditional polluting fuels	1	2	3	4	5	6	7
ENV20	Our firm has been undertaking voluntary measures to restore the environment	1	2	3	4	5	6	7
ENV21	Our firm has been conducting periodic environmental impact audits	1	2	3	4	5	6	7
ENV22	Our firm differentiated products based on their environmental impact	1	2	3	4	5	6	7
ENV23	Our firm has been recognizing staff who contribute to environmental improvements	1	2	3	4	5	6	7

SECTION III: ORGANISATIONAL LEARNING

This section seeks to examine how learning takes place within your firm. Using a scale of 1-7, please indicate (tick) your level of agreement or disagreement with the statements provided hereafter: **1= Very Strongly Disagree 2=Strongly Disagree 3= Disagree 4=Moderately Agree 5=Completely Agree 6=Strongly Agree 7= Very Strongly Agree**

Knowledge Acquisition								
KA1	Our firm conducts research through collaborating training institutions	1	2	3	4	5	6	7
KA2	Our firm gains knowledge through working with external consultancies	1	2	3	4	5	6	7
KA3	Some of our employees bring in new knowledge from their professional associations	1	2	3	4	5	6	7
KA4	Our employees learn through attending trade fairs and exhibitions	1	2	3	4	5	6	7
KA5	Our firm has a consolidated and resourceful Research and Development policy	1	2	3	4	5	6	7
KA6	New ideas on work performance are experimented continuously in our firm	1	2	3	4	5	6	7
KA7	Employees obtain new knowledge through teamwork	1	2	3	4	5	6	7
Knowledge Distribution								
KD8	We conduct meetings regularly where employees share new experiences	1	2	3	4	5	6	7
KD9	Our firm has mechanisms that facilitate the sharing of best practices among units	1	2	3	4	5	6	7
KD10	We have employees who work with several units and act as links between them	1	2	3	4	5	6	7
KD11	We have staff who are responsible for collecting, assembling and distributing ideas	1	2	3	4	5	6	7
KD12	We use newsletters to disseminate information	1	2	3	4	5	6	7
KD13	We constantly exchange information with our stakeholders	1	2	3	4	5	6	7
KD14	Knowledgeable staff share their ideas with other staff in teams	1	2	3	4	5	6	7
Knowledge Interpretation								
KI15	Our staff understand our aim of doing business and feel committed to its achievement	1	2	3	4	5	6	7
KI16	Employees share business experiences by talking to each other	1	2	3	4	5	6	7
KI17	Teamwork is a very common practice observed across work units in our firm	1	2	3	4	5	6	7
KI18	Job rotations enable staff to gain a common understanding of different work contexts	1	2	3	4	5	6	7
Knowledge Storage								
KS19	We have a system for keeping information	1	2	3	4	5	6	7
KS20	We have a system for retrieving information	1	2	3	4	5	6	7
KS21	Our staff can access information through some kind of internal network	1	2	3	4	5	6	7
KS22	We update our knowledge databases frequently	1	2	3	4	5	6	7
KS23	Codes are used in the storage of knowledge	1	2	3	4	5	6	7

SECTION IV: FIRM INNOVATIVENESS

This section seeks to examine innovations made in the firm's products, processes, and management systems in the last five years. Using a scale of 1-7, please indicate (tick) your level of agreement or disagreement with the statements provided hereafter: **1= Very Strongly Disagree 2=Strongly Disagree 3= Disagree 4=Moderately Agree 5=Completely Agree 6=Strongly Agree 7= Very Strongly Agree**

In the last five years,								
Product Innovativeness								
PT1	Our firm introduced a range of new products	1	2	3	4	5	6	7
PT2	Our firm has often been first to the market with new products	1	2	3	4	5	6	7
PT3	Customers have often considered our new products as very novel	1	2	3	4	5	6	7
PT4	Our firm has been successful in launching new products compared to competitors	1	2	3	4	5	6	7
PT5	Our new products have been often imitated by competitors	1	2	3	4	5	6	7
Process Innovativeness								
PC6	We constantly improve our business processes	1	2	3	4	5	6	7
PC7	Our firm changes production methods faster than competitors	1	2	3	4	5	6	7
PC8	We have developed a number of new management approaches	1	2	3	4	5	6	7
PC9	We use new problem-solving methods whenever conventional methods fail	1	2	3	4	5	6	7
PC10	Competitors often imitate our new production methods	1	2	3	4	5	6	7
Management System Innovativeness								
SY11	We made changes in the way work is divided among work units	1	2	3	4	5	6	7
SY12	We improved our leadership behaviour to boost staff motivation	1	2	3	4	5	6	7
SY13	Changes were made in the staff welfare scheme	1	2	3	4	5	6	7
SY14	We improved our financial management system	1	2	3	4	5	6	7
SY15	We improved our staff hiring approaches to ensure the supply of quality employees	1	2	3	4	5	6	7
SY16	We improved our performance management framework	1	2	3	4	5	6	7
SY17	We improved our customer service behaviour	1	2	3	4	5	6	7

SECTION V: CEO VALUES

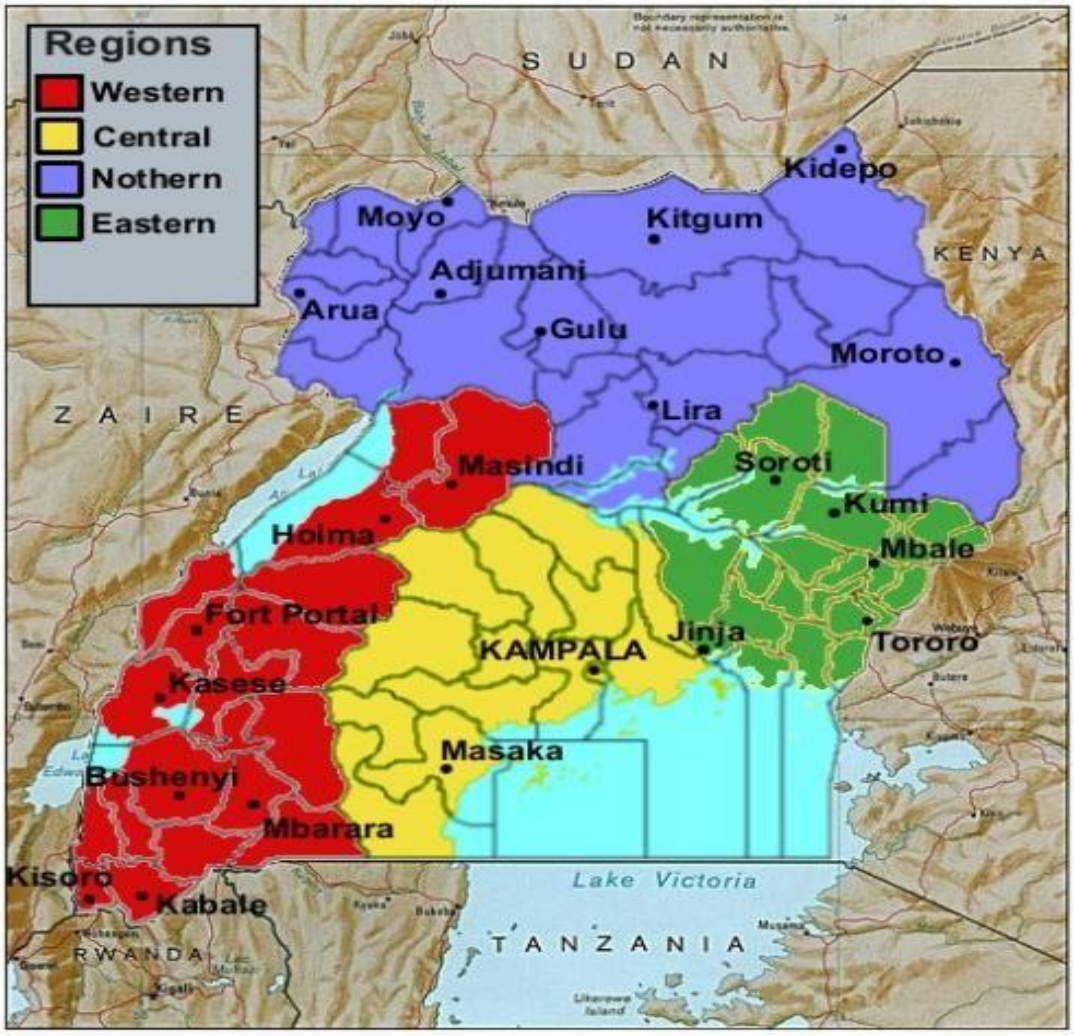
This section seeks to understand from your perception what the company's Chief Executive Officer/ Managing Director seem to hold important at work. Using a scale of 1-7, please indicate (tick) your level of agreement or disagreement with the statements provided hereafter: **1= Very Strongly Disagree 2=Strongly Disagree 3= Disagree 4=Moderately Agree 5=Completely Agree 6=Strongly Agree 7= Very Strongly Agree**

Openness To Change								
OTC1	Our CEO supports staff to have some degree of autonomy in their work	1	2	3	4	5	6	7
OTC2	Our CEO emphasises individual creativity at work	1	2	3	4	5	6	7

OTC3	Our CEO encourages staff to explore new ways of doing things	1	2	3	4	5	6	7
OTC4	Our CEO encourages staff to take up new work challenges	1	2	3	4	5	6	7
OTC5	Our CEO is very flexible in his/her work methods	1	2	3	4	5	6	7
OTC6	Our CEO welcomes new ideas from staff	1	2	3	4	5	6	7
Self-Transcendence								
ST11	Our CEO shows attention to the well-being of others	1	2	3	4	5	6	7
ST12	Our CEO treats others fairly	1	2	3	4	5	6	7
ST13	Our CEO is mindful about the impact of our business on the surrounding communities	1	2	3	4	5	6	7
ST14	Our CEO shows interest in building positive relations with external stakeholders	1	2	3	4	5	6	7
ST15	Our CEO is open to dialogue	1	2	3	4	5	6	7
ST16	Our CEO consults others before making decisions	1	2	3	4	5	6	7

…Thank You for Participating and Making this Study Successful…

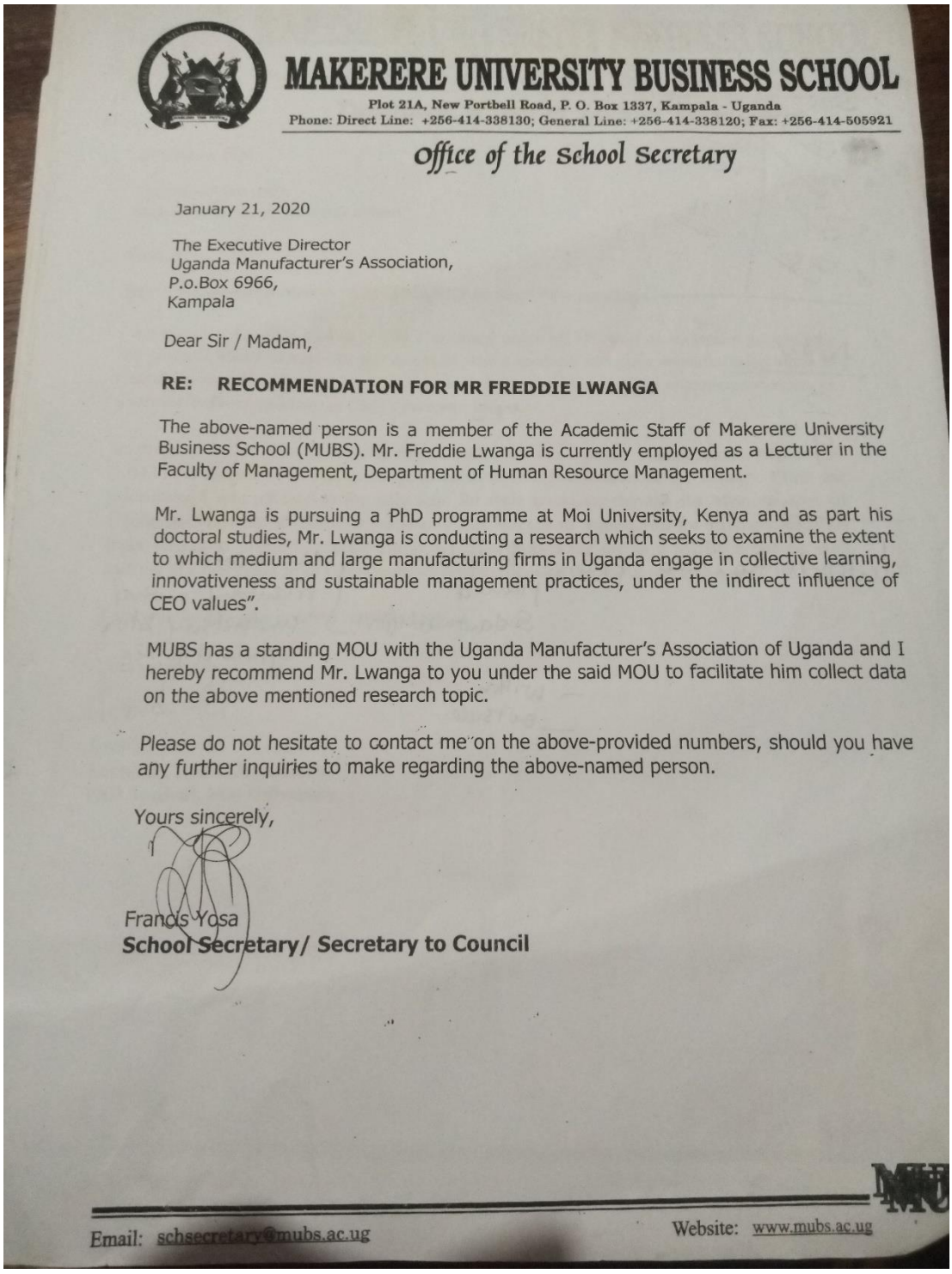
Appendix 2: Map showing the Central and Eastern Region of Uganda where the study was conducted



Appendix 3: List of Sampled Manufacturing Firms By Product Category

S/N	Manufacturing Activity	No. of Responding Firms	Percentage
1	Meat Products	7	3
2	Fish Products	6	2
3	Dairy Products	4	2
4	Coffee Processing	7	3
5	Grain Milling	11	4
6	Tea Processing	5	2
7	Bakery	12	5
8	Beverages	10	4
9	Tobacco	2	1
10	Textiles and Clothing	7	3
11	Leather Products	6	2
12	Saw milling	12	5
13	Printing & Publishing	9	4
14	Chemicals and Fertilizers	4	2
15	Plastics Products	7	3
16	Metallic Products	14	5
17	Furniture and Wood Works	16	6
18	Footwear	9	4
19	Pulp and Paper	11	4
20	Rubber Products	7	3
21	Oil and Lubricants	6	2
22	Pharmaceutical Products	12	5
23	Iron and Steel	8	3
24	Transport Equipment	5	2
25	Animal Feeds	19	7
26	Wines and Spirits	15	6
27	Soap and Detergents	9	4
28	Building Products	11	4
29	Paints	6	2
	Total	**257**	**100**

Appendix 4: Makerere University Business School Recommendation Letter



MAKERERE UNIVERSITY BUSINESS SCHOOL

Plot 21A, New Portbell Road, P. O. Box 1337, Kampala - Uganda
Phone: Direct Line: +256-414-338130; General Line: +256-414-338120; Fax: +256-414-505921

Office of the School Secretary

January 21, 2020

The Executive Director
Uganda Manufacturer's Association,
P.o.Box 6966,
Kampala

Dear Sir / Madam,

RE: RECOMMENDATION FOR MR FREDDIE LWANGA

The above-named person is a member of the Academic Staff of Makerere University Business School (MUBS). Mr. Freddie Lwanga is currently employed as a Lecturer in the Faculty of Management, Department of Human Resource Management.

Mr. Lwanga is pursuing a PhD programme at Moi University, Kenya and as part his doctoral studies, Mr. Lwanga is conducting a research which seeks to examine the extent to which medium and large manufacturing firms in Uganda engage in collective learning, innovativeness and sustainable management practices, under the indirect influence of CEO values".

MUBS has a standing MOU with the Uganda Manufacturer's Association of Uganda and I hereby recommend Mr. Lwanga to you under the said MOU to facilitate him collect data on the above mentioned research topic.

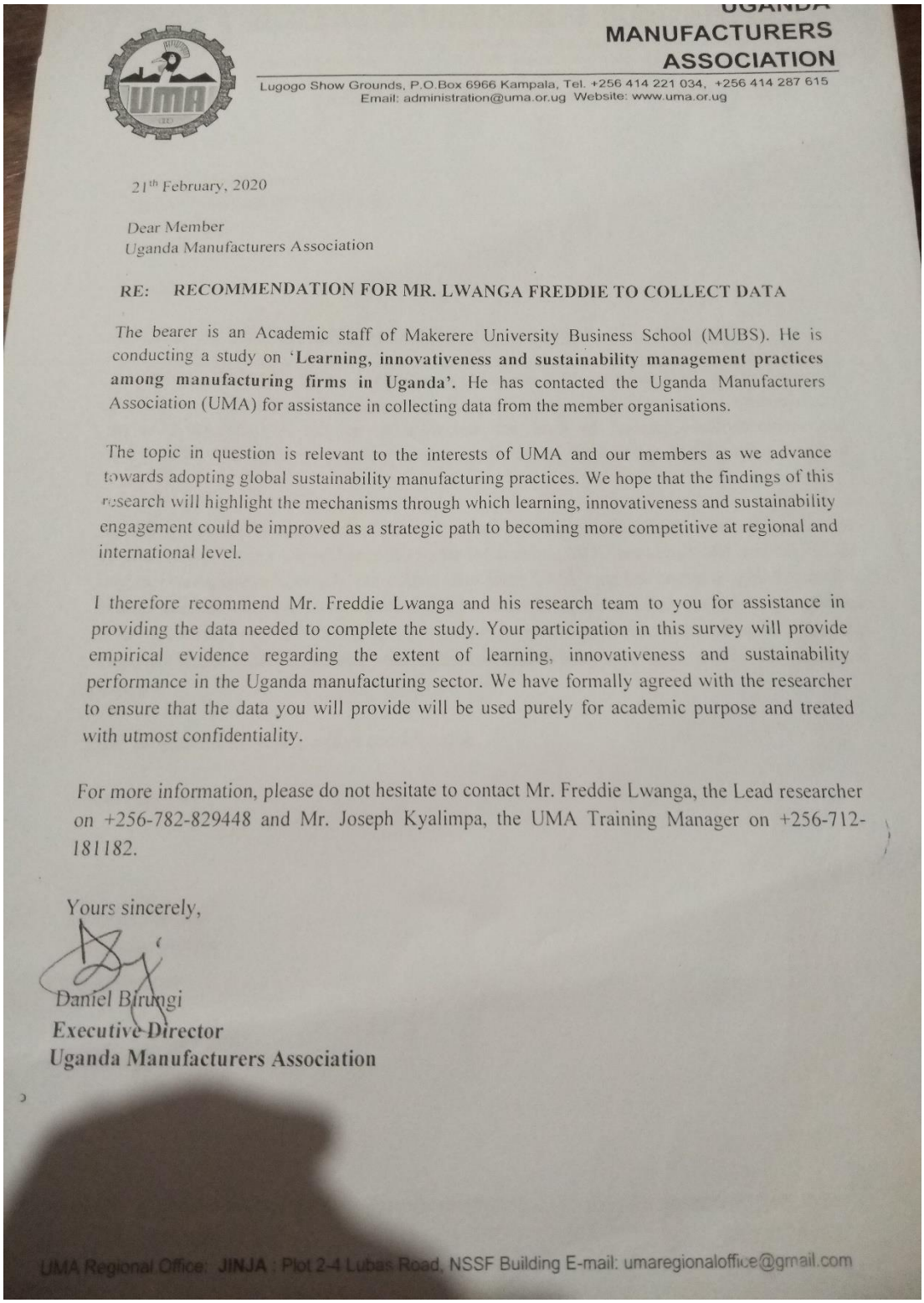
Please do not hesitate to contact me on the above-provided numbers, should you have any further inquiries to make regarding the above-named person.

Yours sincerely,

Francis Yosa
School Secretary/ Secretary to Council

Email: schsecretary@mubs.ac.ug Website: www.mubs.ac.ug

Appendix 5: Uganda Manufacturer's Association Recommendation Letter



UGANDA
MANUFACTURERS
ASSOCIATION

Lugogo Show Grounds, P.O.Box 6966 Kampala, Tel. +256 414 221 034, +256 414 287 615
Email: administration@uma.or.ug Website: www.uma.or.ug

21th February, 2020

Dear Member
Uganda Manufacturers Association

RE: RECOMMENDATION FOR MR. LWANGA FREDDIE TO COLLECT DATA

The bearer is an Academic staff of Makerere University Business School (MUBS). He is conducting a study on '**Learning, innovativeness and sustainability management practices among manufacturing firms in Uganda'.** He has contacted the Uganda Manufacturers Association (UMA) for assistance in collecting data from the member organisations.

The topic in question is relevant to the interests of UMA and our members as we advance towards adopting global sustainability manufacturing practices. We hope that the findings of this research will highlight the mechanisms through which learning, innovativeness and sustainability engagement could be improved as a strategic path to becoming more competitive at regional and international level.

I therefore recommend Mr. Freddie Lwanga and his research team to you for assistance in providing the data needed to complete the study. Your participation in this survey will provide empirical evidence regarding the extent of learning, innovativeness and sustainability performance in the Uganda manufacturing sector. We have formally agreed with the researcher to ensure that the data you will provide will be used purely for academic purpose and treated with utmost confidentiality.

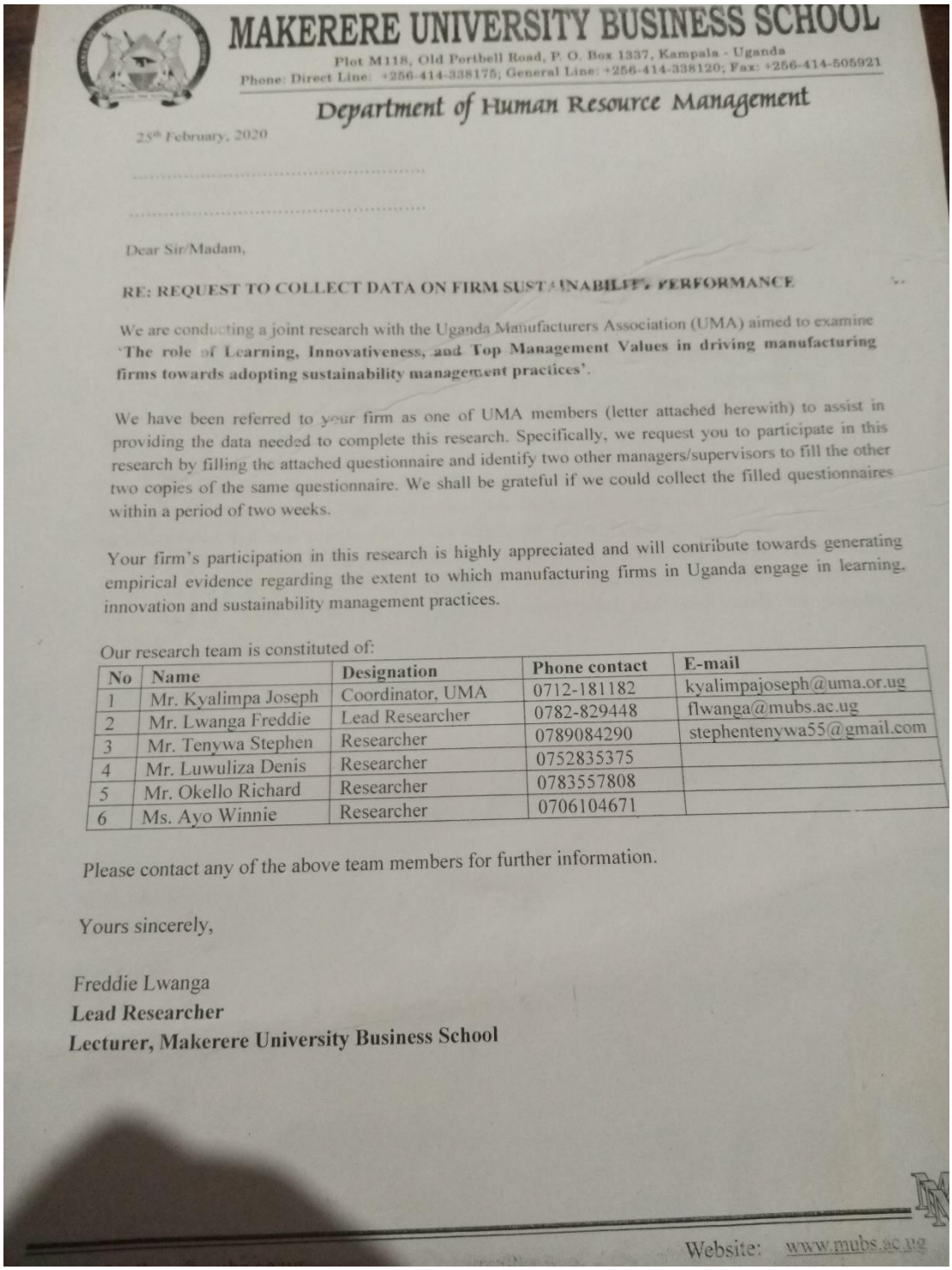
For more information, please do not hesitate to contact Mr. Freddie Lwanga, the Lead researcher on +256-782-829448 and Mr. Joseph Kyalimpa, the UMA Training Manager on +256-712-181182.

Yours sincerely,

Daniel Birungi
Executive Director
Uganda Manufacturers Association

UMA Regional Office: JINJA : Plot 2-4 Lubas Road, NSSF Building E-mail: umaregionaloffice@gmail.com

Appendix 6: Researcher's Data Collection Introduction Letter



MAKERERE UNIVERSITY BUSINESS SCHOOL
Plot M118, Old Portbell Road, P. O. Box 1337, Kampala - Uganda
Phone: Direct Line: +256-414-338175; General Line: +256-414-338120; Fax: +256-414-505921
Department of Human Resource Management

25th February, 2020

.....

.....

Dear Sir/Madam,

RE: REQUEST TO COLLECT DATA ON FIRM SUSTAINABILITY PERFORMANCE

We are conducting a joint research with the Uganda Manufacturers Association (UMA) aimed to examine **'The role of Learning, Innovativeness, and Top Management Values in driving manufacturing firms towards adopting sustainability management practices'.**

We have been referred to your firm as one of UMA members (letter attached herewith) to assist in providing the data needed to complete this research. Specifically, we request you to participate in this research by filling the attached questionnaire and identify two other managers/supervisors to fill the other two copies of the same questionnaire. We shall be grateful if we could collect the filled questionnaires within a period of two weeks.

Your firm's participation in this research is highly appreciated and will contribute towards generating empirical evidence regarding the extent to which manufacturing firms in Uganda engage in learning, innovation and sustainability management practices.

Our research team is constituted of:

No	Name	Designation	Phone contact	E-mail
1	Mr. Kyalimpa Joseph	Coordinator, UMA	0712-181182	kyalimpajoseph@uma.or.ug
2	Mr. Lwanga Freddie	Lead Researcher	0782-829448	flwanga@mubs.ac.ug
3	Mr. Tenywa Stephen	Researcher	0789084290	stephentenywa55@gmail.com
4	Mr. Luwuliza Denis	Researcher	0752835375	
5	Mr. Okello Richard	Researcher	0783557808	
6	Ms. Ayo Winnie	Researcher	0706104671	

Please contact any of the above team members for further information.

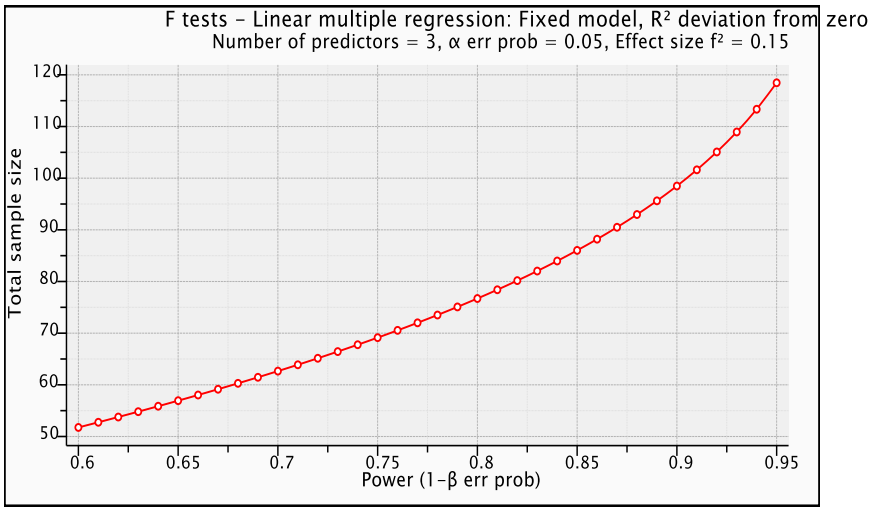
Yours sincerely,

Freddie Lwanga
Lead Researcher
Lecturer, Makerere University Business School

Appendix 7: Summary of Construct Validity and Reliability at Pilot Test

Constructs	Dimensions	No. of Items Extracted	KMO	Eigen value	% of Variance	Cum. %	Cronbach (α)
Firm Sustainability Performance	Economic	6	.76	4.496	26.705	65.503	.83
	Social	6		3.124	22.452		
	Environmental	11		2.205	16.346		
Organisational Learning	Knowledge Acquisition	7	.73	3.919	19.837	73.778	.86
	Knowledge Distribution	7		2.989	18.694		
	Knowledge Interpretation	4		2.237	18.592		
	Knowledge Storage	5		2.075	16.656		
Firm Innovativeness	Product Innovativeness	5	.69	3.498	29.115	76.305	.83
	Process Innovativeness	5		2.931	24.232		
	Management System Innovativeness	7		2.147	22.958		
CEO Values	Openness To Change	6	.66	3.638	27.204	51.143	.67
	Self-Transcendence	6		2.463	23.939		
	Total	**75**					-

Appendix 8: Statistical power analysis using G*Power (Version 3.1) method



Appendix 9: Missing value analysis using expectation maximization method

Univariate Statistics

	N	Mean	Std. Deviation	Missing		No. of Extremes[a]	
				Count	Percent	Low	High
ECO1	738	4.8516	1.43706	0	.0	31	0
ECO2	738	5.1531	1.37219	0	.0	43	0
ECO3	738	5.0176	1.27961	0	.0	32	0
ECO4	738	5.1477	1.28392	0	.0	28	0
ECO5	738	4.4797	1.57843	0	.0	33	0
ECO6	738	5.1640	1.43193	0	.0	54	0
SOC1	738	4.4295	1.35984	0	.0	29	0
SOC2	738	4.6152	1.43645	0	.0	29	0
SOC3	738	4.6911	1.29164	0	.0	43	0
SOC4	738	4.6192	1.35843	0	.0	24	0
SOC5	738	4.4797	1.40854	0	.0	24	0
SOC6	738	4.6369	1.35326	0	.0	16	0
ENV1	737	5.0739	1.24194	1	.1	27	0
ENV2	738	5.1653	1.32317	0	.0	34	0
ENV3	736	4.4980	1.60388	2	.3	38	0
ENV4	738	5.1929	1.44208	0	.0	57	0
ENV5	738	5.3360	1.28061	0	.0	30	0
ENV6	738	5.1734	1.35432	0	.0	37	0
ENV7	738	4.6179	1.35630	0	.0	16	0
ENV8	738	4.8089	1.29269	0	.0	35	0
ENV9	738	5.0217	1.22815	0	.0	26	0
ENV10	738	5.0732	1.27711	0	.0	36	0
ENV11	738	4.8713	1.33666	0	.0	42	0
KA1	738	5.1382	1.12689	0	.0	16	0
KA2	738	5.3564	1.18177	0	.0	21	0
KA3	738	5.1518	1.17239	0	.0	20	0
KA4	738	5.2100	1.26021	0	.0	30	0
KA5	738	4.4837	1.58620	0	.0	32	0
KA6	738	5.2520	1.39349	0	.0	51	0
KA7	738	4.9783	1.23476	0	.0	38	0
KD1	738	5.1247	1.43731	0	.0	42	0
KD2	738	5.5054	1.22529	0	.0	56	0
KD3	738	5.3591	1.30849	0	.0	32	0
KD4	738	5.4851	1.27620	0	.0	26	0
KD5	738	4.7005	1.21993	0	.0	28	0
KD6	738	5.1599	1.29351	0	.0	23	0
KD7	738	4.6883	1.26014	0	.0	36	0
KI1	738	4.5108	1.30982	0	.0	16	0
KI2	738	4.7656	1.29315	0	.0	33	0
KI3	738	4.8008	1.22376	0	.0	31	0
KI4	738	4.7195	1.27545	0	.0	35	0
KS1	738	4.3401	1.28957	0	.0	9	33
KS2	738	5.0528	1.21665	0	.0	22	0
KS3	738	4.9593	1.09568	0	.0	16	0
KS4	738	4.7832	1.12412	0	.0	24	0
KS5	738	4.9214	1.27785	0	.0	30	0
PT1	738	4.4905	1.33750	0	.0	23	0
PT2	738	4.6653	1.38235	0	.0	22	0
PT3	738	4.6680	1.34218	0	.0	20	0
PT4	738	4.7127	1.32970	0	.0	47	0
PT5	738	4.4959	1.39026	0	.0	21	0
PC1	738	4.5772	1.38322	0	.0	20	0
PC2	738	4.6369	1.36375	0	.0	19	0

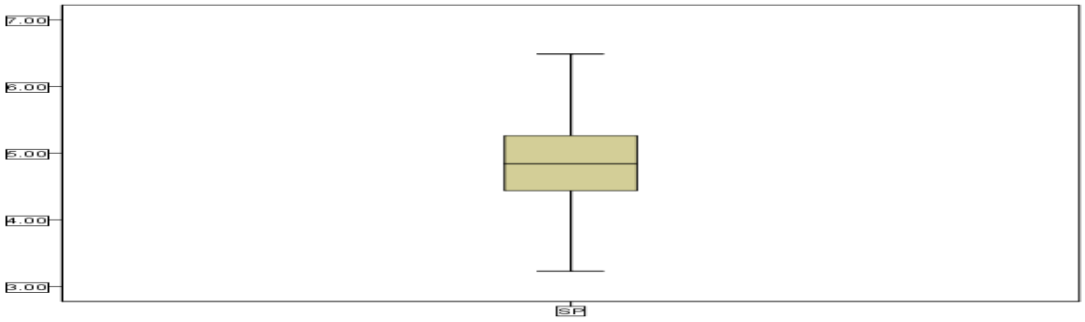
PC3	738	4.6423	1.32278	0	.0	13	0
PC4	738	5.0962	1.35050	0	.0	32	0
PC5	738	4.9390	1.43906	0	.0	44	0
SY1	738	5.1423	1.31687	0	.0	25	0
SY2	738	5.0962	1.21511	0	.0	23	0
SY3	738	4.8943	1.32595	0	.0	33	0
SY4	738	4.8740	1.29359	0	.0	36	0
SY5	738	4.6626	1.44411	0	.0	28	0
SY6	738	4.8293	1.29841	0	.0	36	0
SY7	738	4.7534	1.20555	0	.0	36	0
OTC1	737	4.8168	1.58811	1	.1	28	0
OTC2	738	3.7995	1.61082	0	.0	0	0
OTC3	738	3.7439	1.79650	0	.0	0	0
OTC4	738	4.7344	1.58946	0	.0	23	0
OTC5	738	4.7520	1.46401	0	.0	20	0
OTC6	737	4.8209	1.45977	1	.1	18	0
ST1	738	3.9824	1.58810	0	.0	0	0
ST2	737	3.0868	1.54042	1	.1	0	11
ST3	738	4.3713	1.54896	0	.0	33	0
ST4	738	2.8049	1.68153	0	.0	0	15
ST5	738	4.5379	1.52565	0	.0	22	0
ST6	738	4.9417	1.52523	0	.0	18	0

a. Number of cases outside the range (Mean - 2*SD, Mean + 2*SD).

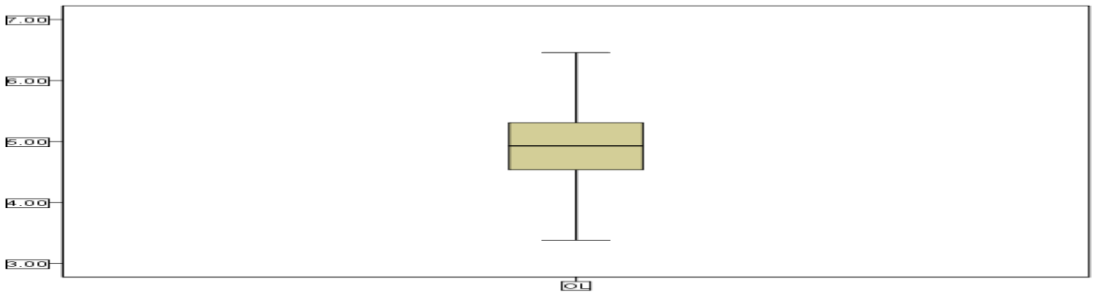
Little's MCAR test: Chi-Square=419.719 DF=429 Sig. =.617

Appendix 10: Stem and Leaf Uni-variate Outlier Analysis

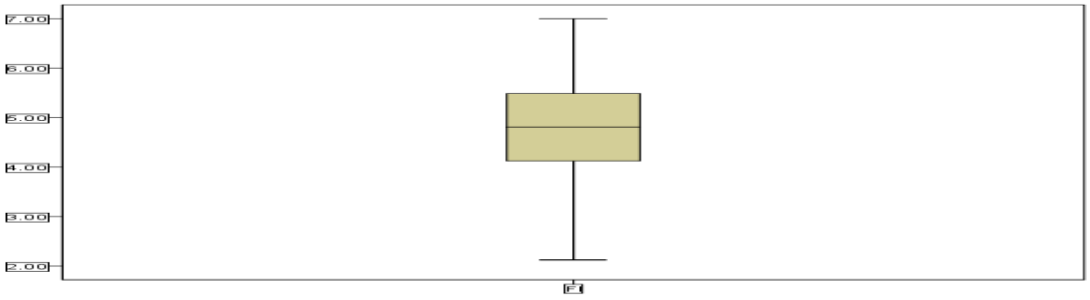
Sustainability Performance



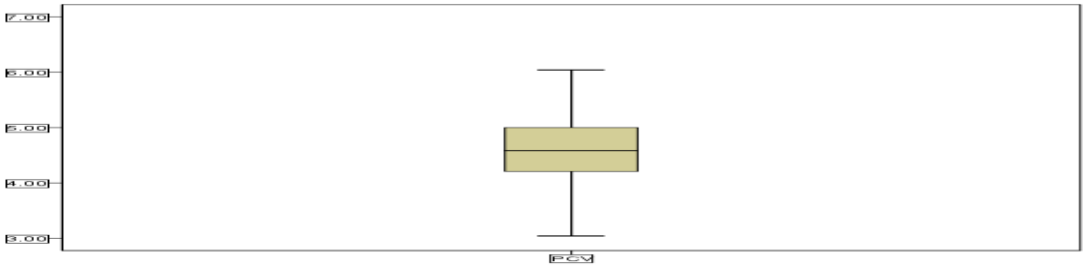
Organisational Learning



Firm Innovativeness



CEO Value- Openness-To-Change



Appendix 11: Harman's Single Factor test for Common Method Bias

Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.839	15.907	15.907	13.108	15.067	15.067
2	8.628	9.918	25.825			
3	4.163	4.785	30.610			
4	3.366	3.869	34.479			
5	3.048	3.503	37.982			
6	2.745	3.155	41.137			
7	2.455	2.822	43.959			
8	2.152	2.473	46.432			
9	1.940	2.230	48.663			
10	1.893	2.176	50.839			
11	1.673	1.923	52.762			
12	1.612	1.853	54.616			
13	1.504	1.729	56.345			
14	1.437	1.652	57.996			
15	1.393	1.601	59.597			
16	1.346	1.548	61.145			
17	1.303	1.498	62.643			
18	1.195	1.374	64.016			
19	1.129	1.298	65.314			
20	1.102	1.267	66.581			
21	1.084	1.246	67.827			
22	1.008	1.158	68.986			
23	.980	1.126	70.112			
24	.971	1.116	71.228			
25	.936	1.076	72.304			
26	.913	1.049	73.353			
27	.894	1.028	74.381			
28	.864	.993	75.374			
29	.838	.963	76.337			
30	.814	.936	77.273			
31	.795	.913	78.187			
32	.766	.880	79.067			
33	.744	.855	79.922			
34	.723	.831	80.753			
35	.705	.810	81.563			
36	.691	.794	82.357			
37	.661	.760	83.117			
38	.654	.752	83.869			
39	.626	.720	84.589			
40	.613	.704	85.293			
41	.606	.696	85.989			
42	.590	.678	86.668			
43	.572	.658	87.326			
44	.559	.643	87.968			
45	.550	.632	88.601			
46	.537	.617	89.218			
47	.503	.578	89.796			
48	.491	.564	90.360			
49	.473	.543	90.903			
50	.446	.512	91.416			
51	.437	.502	91.918			
52	.424	.487	92.406			
53	.414	.476	92.882			
54	.403	.463	93.345			
55	.389	.447	93.792			
56	.378	.435	94.227			
57	.362	.417	94.643			

58	.354	.407	95.051			
59	.336	.386	95.437			
60	.328	.377	95.813			
61	.307	.353	96.166			
62	.306	.352	96.518			
63	.294	.338	96.856			
64	.250	.287	97.144			
65	.242	.278	97.422			
66	.226	.260	97.682			
67	.210	.241	97.923			
68	.202	.232	98.155			
69	.190	.219	98.374			
70	.181	.208	98.583			
71	.147	.169	98.752			
72	.142	.163	98.915			
73	.119	.137	99.052			
74	.104	.120	99.172			
75	.093	.107	99.279			

Extraction Method: Principal Axis Factoring.

Appendix 12: Mahalanobis Distance multivariate outliers' analysis

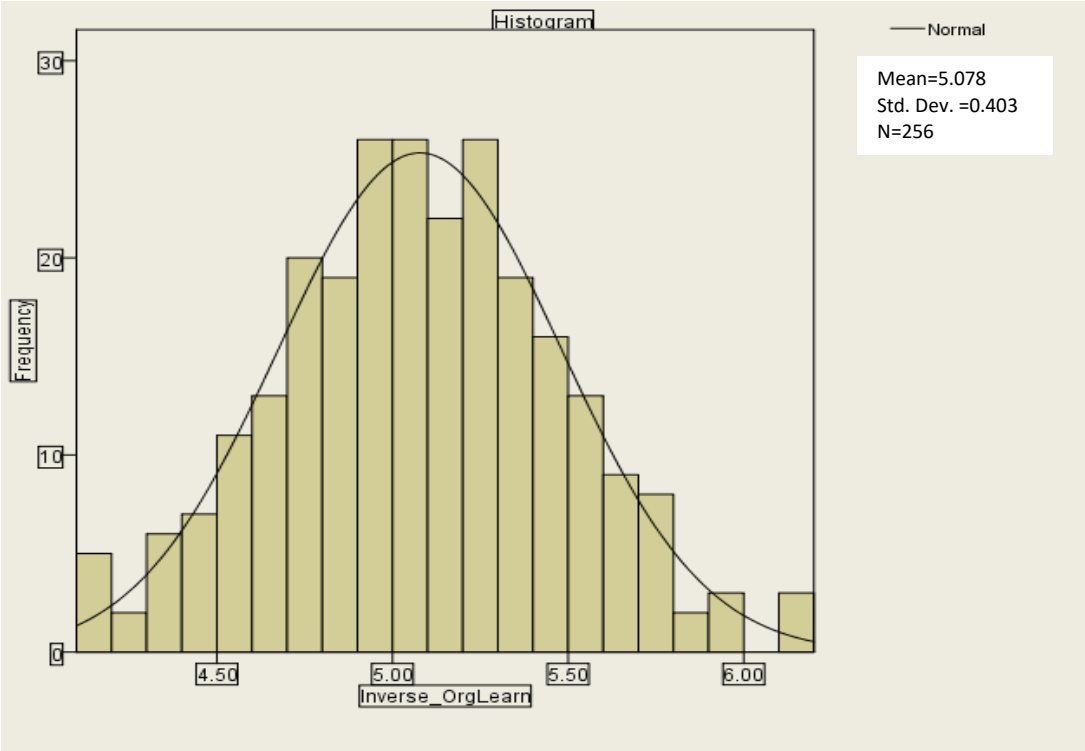
Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	3.7473	5.8545	4.9081	.35058	257
Std. Predicted Value	-3.311	2.700	.000	1.000	257
Standard Error of Predicted Value	.022	.103	.045	.014	257
Adjusted Predicted Value	3.7004	5.8437	4.9084	.35152	257
Residual	-1.22697	.99189	.00000	.33379	257
Std. Residual	-3.647	2.948	.000	.992	257
Stud. Residual	-3.701	3.025	.000	1.005	257
Deleted Residual	-1.26384	1.04453	-.00033	.34253	257
Stud. Deleted Residual	-3.799	3.076	-.002	1.012	257
Mahal. Distance	.147	22.986	3.984	3.168	257
Cook's Distance	.000	.097	.005	.013	257
Centered Leverage Value	.001	.090	.016	.012	257

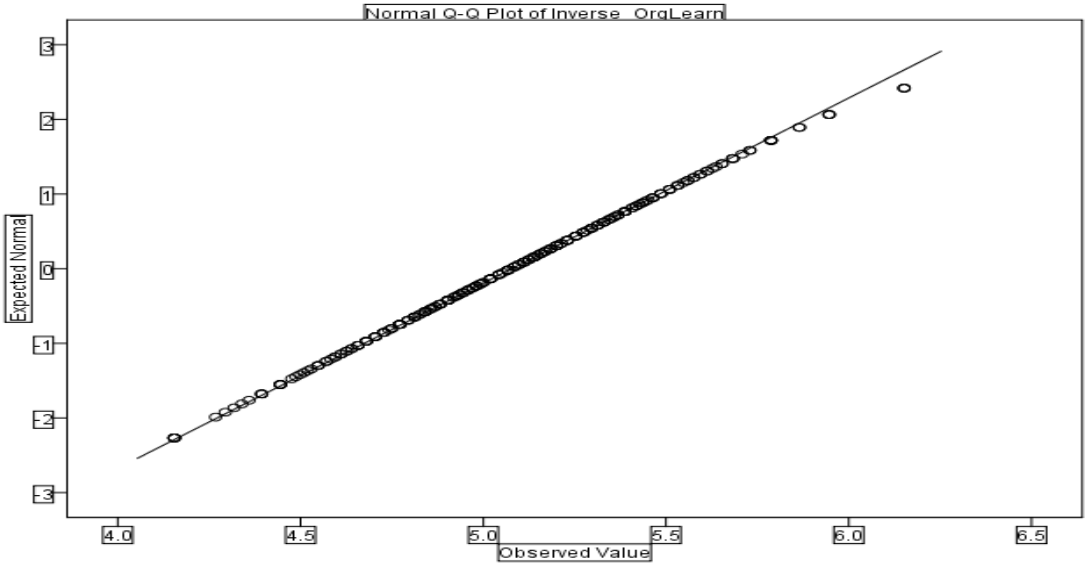
a. Dependent Variable: Sustainability Performance

Appendix 13A: Test of Univariate Normality

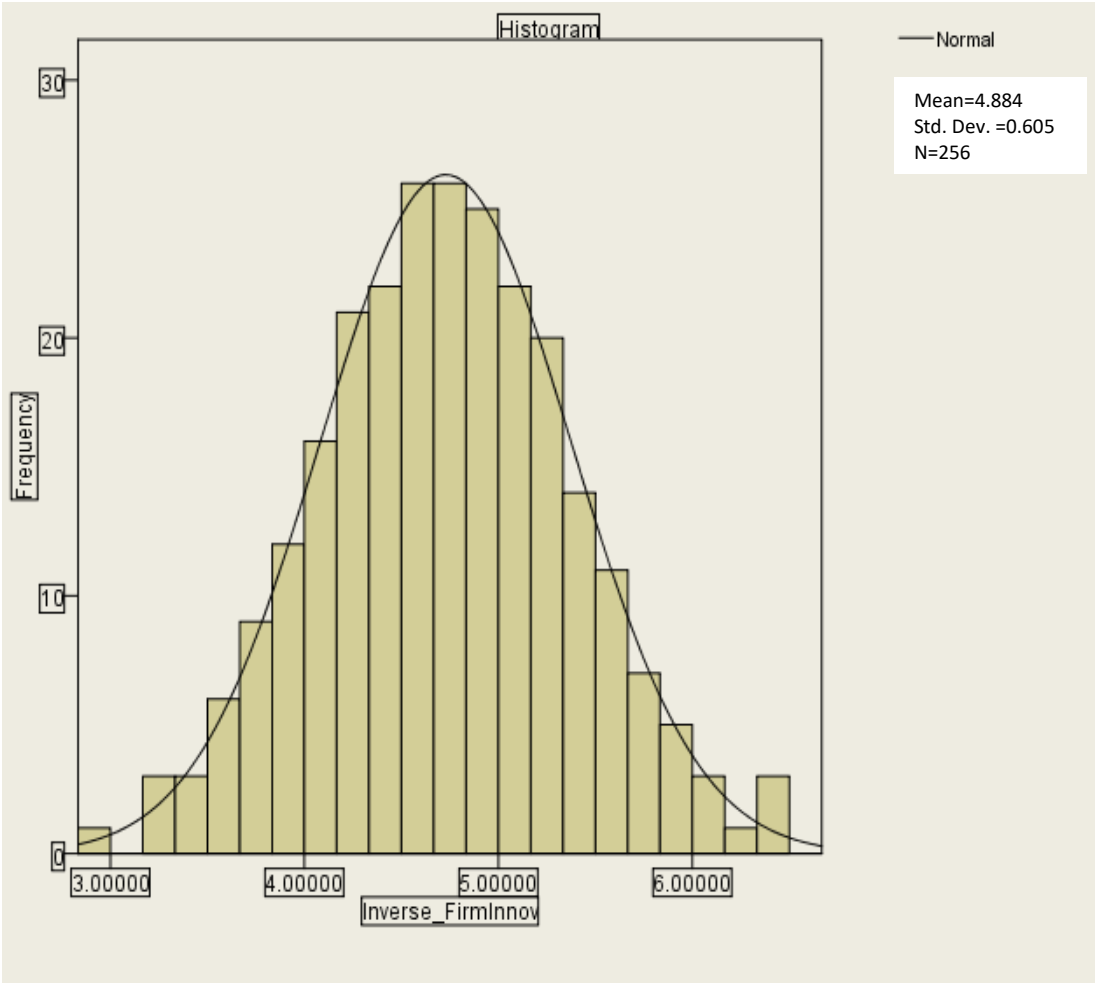
Histogram for Transformed Organisational Learning Variable



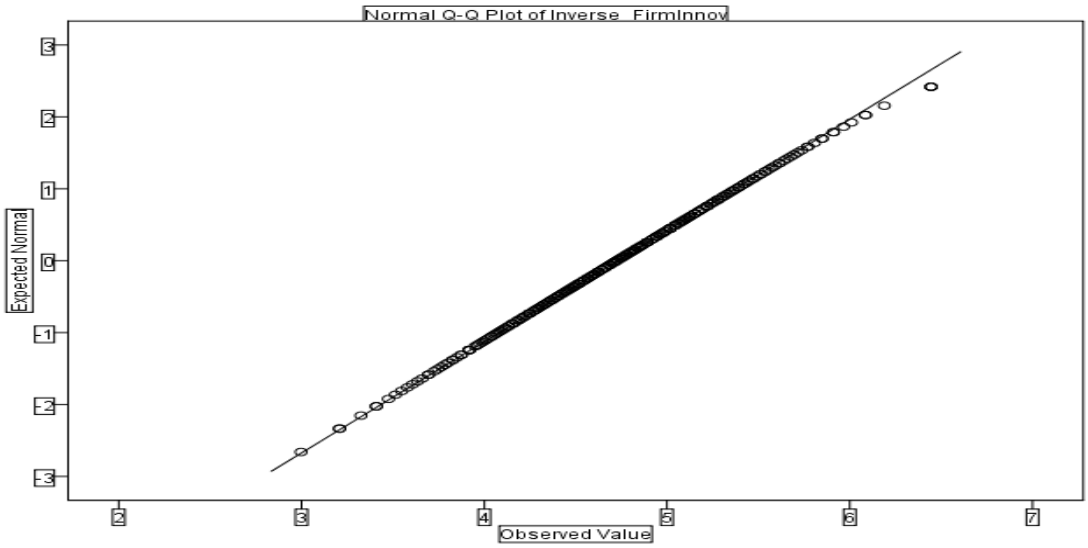
Normal Q-Q plot for Transformed Organisational Learning Variable



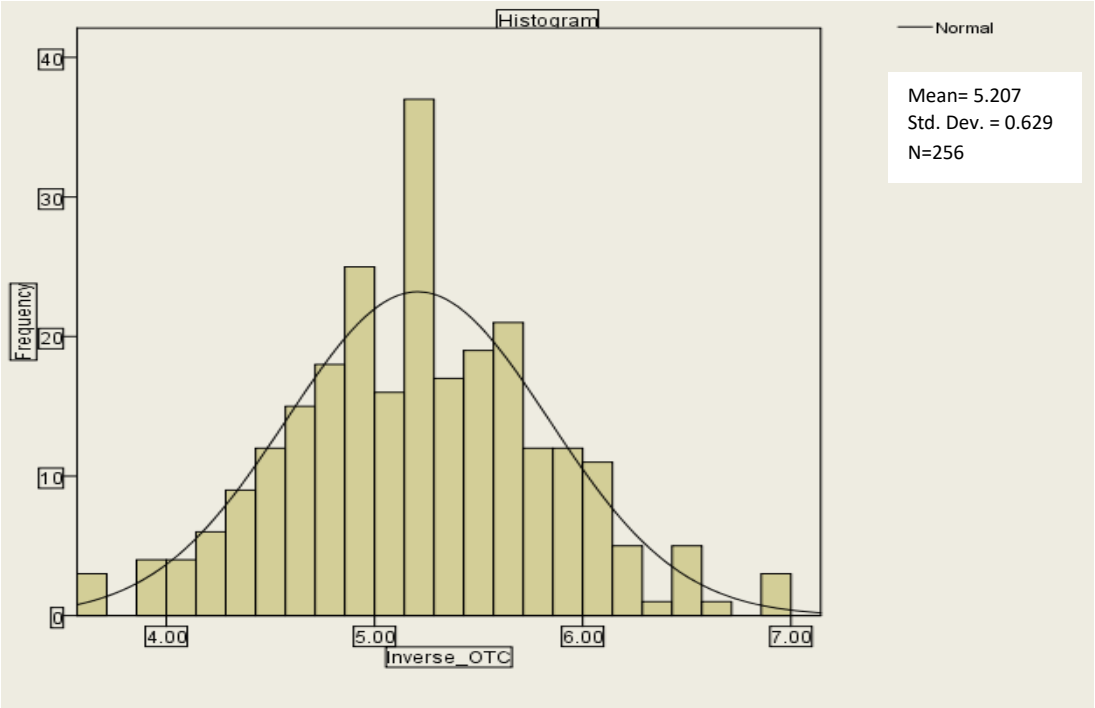
Histogram for Transformed Firm Innovativeness Variable



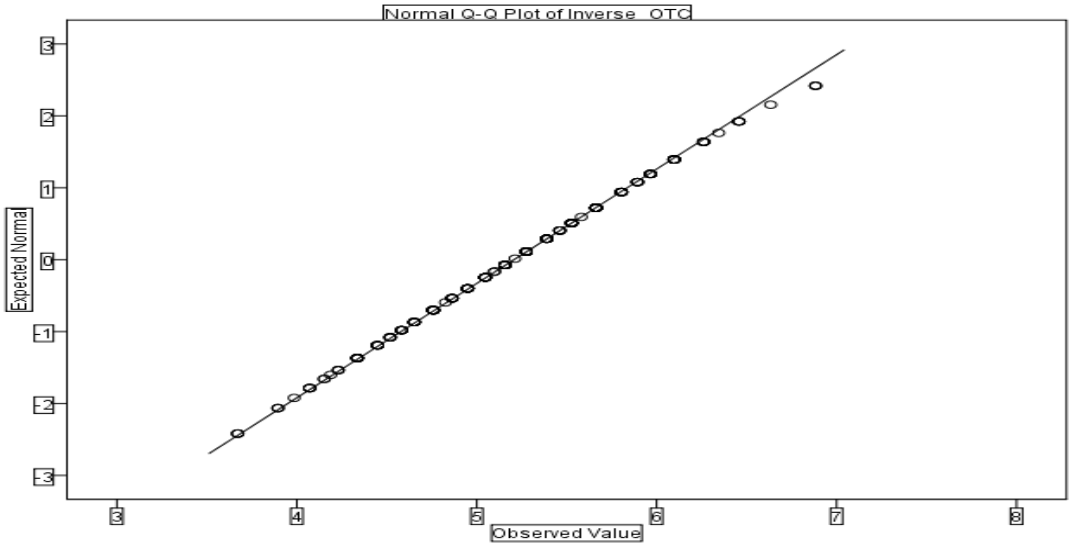
Normal Q-Q plot for Transformed Firm Innovativeness Variable



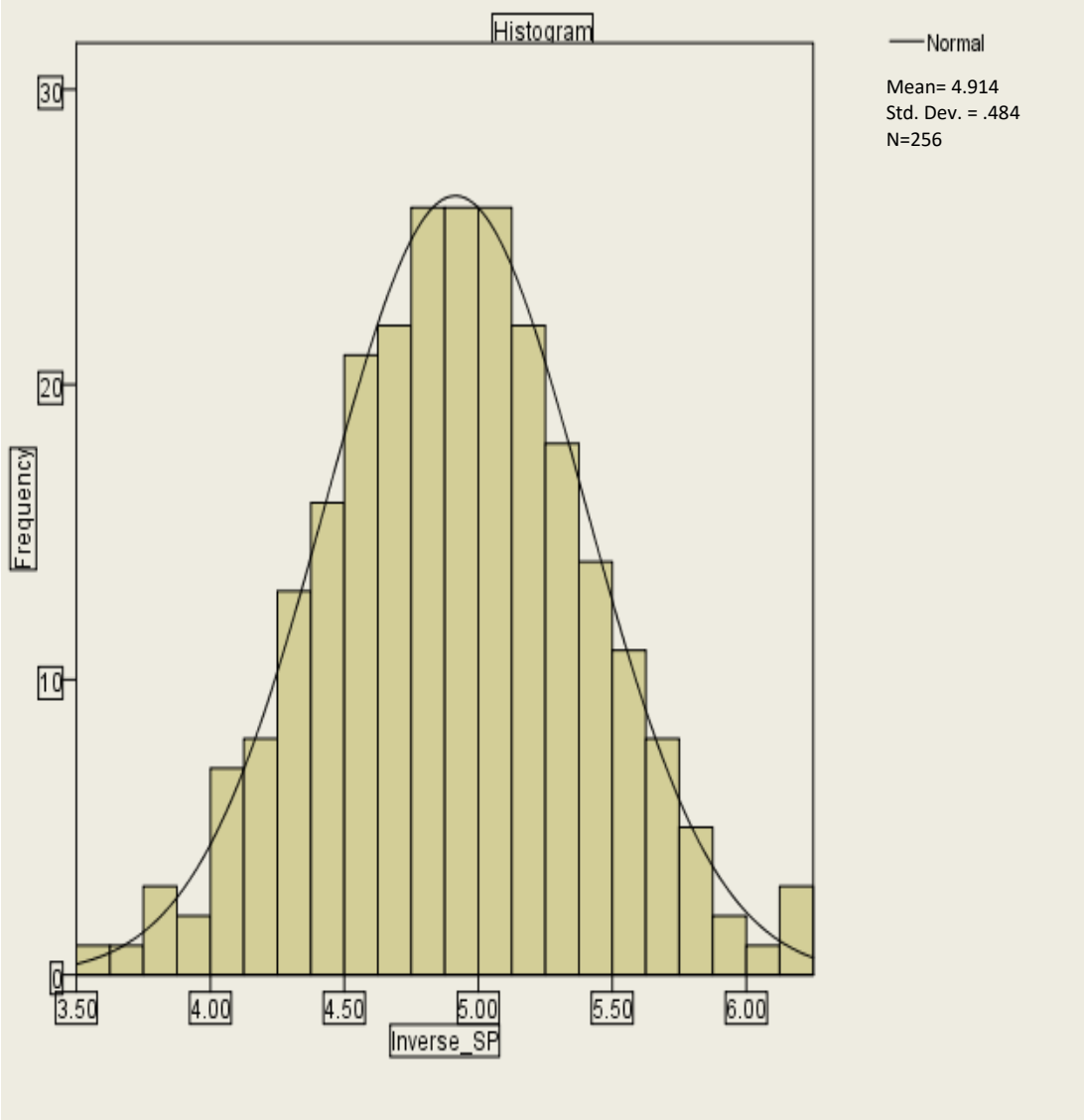
Histogram for Transformed CEO Value of Openness-To-Change Variable



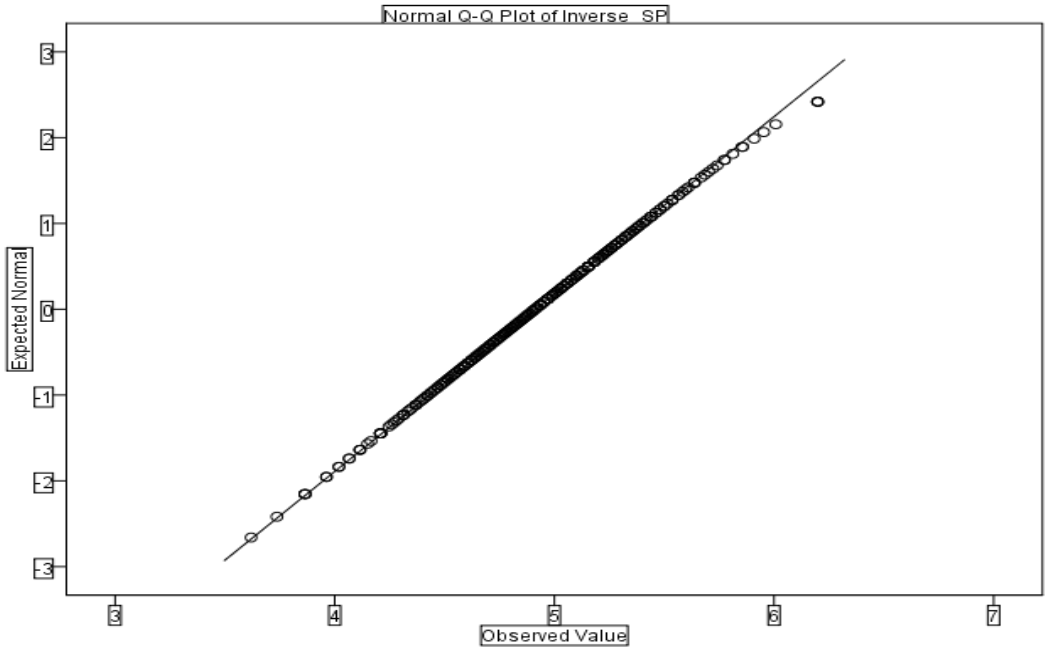
Normal Q-Q plot for Transformed CEO Value for Openness-To-Change Variable



Histogram for Transformed Sustainability Performance Variable



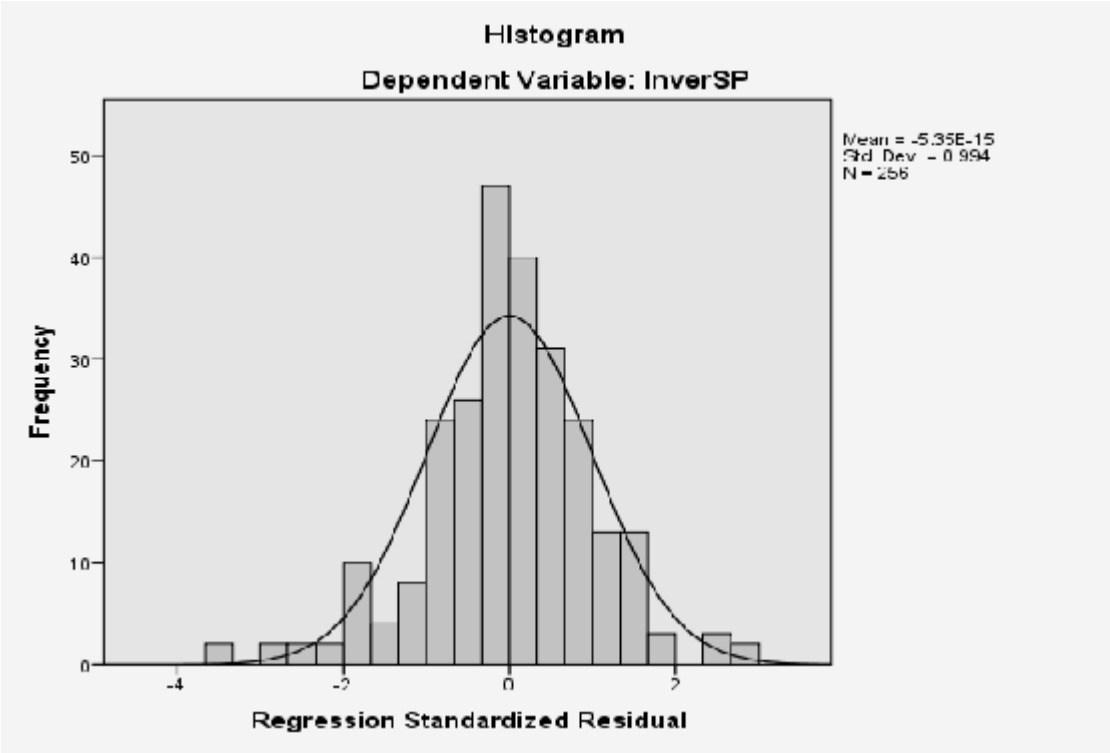
Normal Q-Q plot for Transformed Sustainability Performance Variable

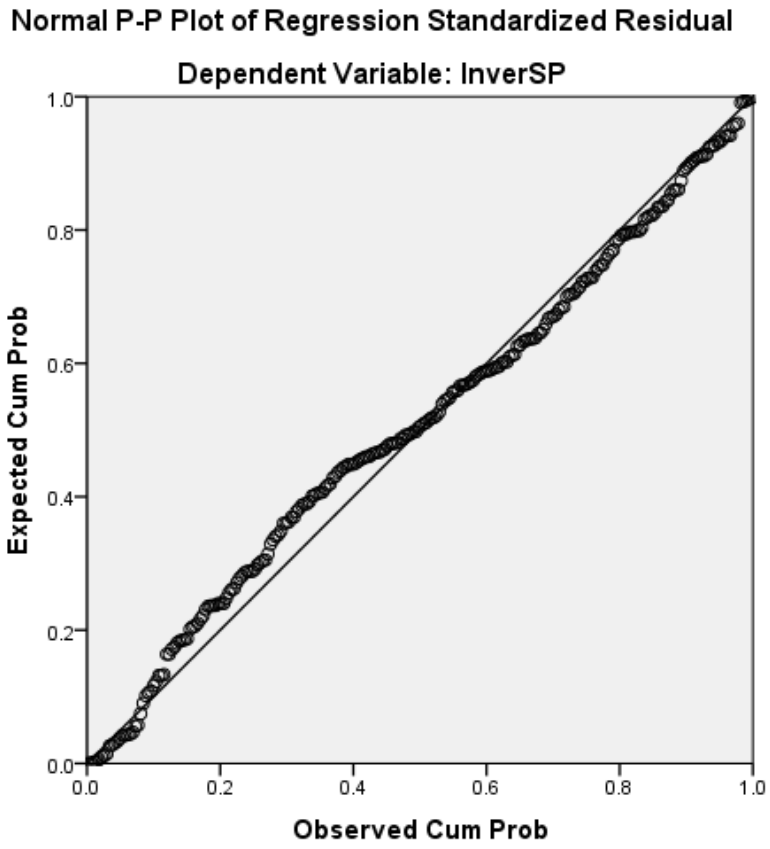


Appendix 13B: Test of Multivariate Normality

Histogram of the Dependent Variable against the Regression Standardized Residuals

Dependent Variable: Sustainability Performance





Appendix 13C: Skewness and Kurtosis Results

Unstandardized Descriptive Statistics

Transformed Variables	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Organisational Learning	256	4.15425	6.15142	5.0779014	.40322425	.076	.152	-.161	.303
Firm Innovativeness	256	2.99676	6.44464	4.8840740	.60464174	.060	.152	-.114	.303
CEO Value-OTC	256	3.67	6.88	5.2071	.62861	.064	.152	-.132	.303
Sustainability Performance	256	3.62	6.20	4.9144	.48357	.061	.152	-.114	.303
Valid N (listwise)	256								

Appendix 14: Test of Linearity

Appendix 14A: Correlation Matrix

Correlations

		1	2	3	4
Organistional learning (1)	Pearson Correlation	1	.419**	.374**	.506**
	Sig. (2-tailed)		.000	.000	.000
	N	256	256	256	256
Firm Innovativeness (2)	Pearson Correlation	.419**	1	.597**	.713**
	Sig. (2-tailed)	.000		.000	.000
	N	256	256	256	256
CEO openness value (3)	Pearson Correlation	.374**	.597**	1	.540**
	Sig. (2-tailed)	.000	.000		.000
	N	256	256	256	256
Sustainability Performance (4)	Pearson Correlation	.506**	.713**	.540**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	256	256	256	256

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

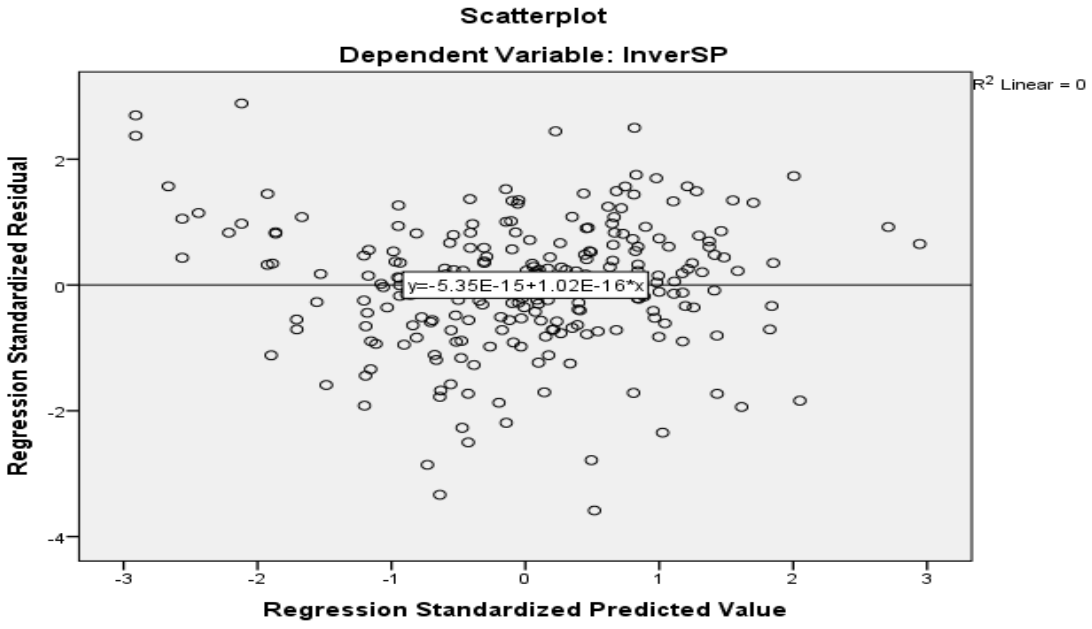
Appendix 14B: ANOVA model test result

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	34.099	3	11.366	112.192	.000[b]
	Residual	25.531	252	.101		
	Total	59.630	255			

a. Dependent Variable: Sustainability Performance
b. Predictors: (Constant), Organistional learning, firm innovativeness, CEO openness value

Appendix 14C: The Scatter Plot of Regression Standardized Residuals Dependent Variable: Sustainability Performance



Appendix 15: Test of Multicollinearity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	.877	.264		3.315	.001					
	Organisational Learning	.278	.055	.232	5.036	.000	.506	.302	.208	.801	1.249
	Firm Innovativeness	.429	.043	.537	10.088	.000	.713	.536	.416	.599	1.669
	CEO Openness Value	.102	.040	.132	2.532	.012	.540	.158	.104	.625	1.600

a. Dependent Variable: Sustainability Performance

Appendix 16: Durbin-Watson Test for independence of error terms

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.756[a]	.572	.567	.31830	.572	112.192	3	252	.000	1.883

a. Predictors: (Constant), Organisational Learning, Firm Innovativeness, CEO Openness Value

b. Dependent Variable: Sustainability Performance

Appendix 17A: Test Results of the Direct Effects on Sustainability Performance

Model Summary[e]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.109[a]	.012	-.008	.48548	.012	.600	5	250	.700	
2	.509[b]	.259	.241	.42121	.247	83.109	1	249	.000	
3	.753[c]	.567	.555	.32252	.308	176.696	1	248	.000	
4	.760[d]	.577	.564	.31939	.010	5.891	1	247	.016	1.880

a. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type
b. Predictors: (Constant), Size, Ownership, Age, Origin, Business type, Organisational learning
c. Predictors: (Constant), Size, Ownership, Age, Origin, Business type, Organisational learning, Firm Innovativeness
d. Predictors: (Constant), Size, Ownership, Age, Origin, Business type, Organisational learning, Firm Innovativeness, CEO Openness value
e. Dependent Variable: Sustainability performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.707	5	.141	.600	.700[b]
	Residual	58.923	250	.236		
	Total	59.630	255			
2	Regression	15.452	6	2.575	14.516	.000[c]
	Residual	44.177	249	.177		
	Total	59.630	255			
3	Regression	33.833	7	4.833	46.464	.000[d]
	Residual	25.797	248	.104		
	Total	59.630	255			
4	Regression	34.434	8	4.304	42.194	.000[e]
	Residual	25.196	247	.102		
	Total	59.630	255			

a. Dependent Variable: Sustainability performance
b. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type
c. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning
d. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning, Firm Innovativeness,
e. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning, Firm Innovativeness, CEO Openness value

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.723	.305		15.492	.000		
	Busines_type	-.044	.070	-.045	-.622	.534	.752	1.331
	Ownership	.046	.066	.047	.698	.486	.887	1.127
	Origin	.098	.067	.100	1.460	.146	.839	1.192
	Age	.012	.045	.016	.255	.799	.974	1.027
	Size	-.025	.075	-.024	-.332	.741	.728	1.373
2	(Constant)	1.677	.426		3.936	.000		
	Busines_type	.001	.061	.001	.016	.987	.747	1.339
	Ownership	.038	.058	.038	.660	.510	.887	1.128
	Origin	.044	.059	.045	.757	.450	.830	1.204
	Age	-.008	.039	-.012	-.215	.830	.971	1.030
	Size	.028	.065	.027	.424	.672	.723	1.384
	Organisational learning	.606	.066	.505	9.116	.000	.970	1.031
3	(Constant)	1.070	.329		3.249	.001		
	Busines_type	-.026	.047	-.026	-.544	.587	.745	1.342
	Ownership	-.001	.044	-.001	-.020	.984	.883	1.133
	Origin	.064	.045	.065	1.424	.156	.829	1.206
	Age	.000	.030	.000	.007	.994	.970	1.031
	Size	-.041	.050	-.041	-.823	.412	.715	1.399
	Organisational learning	.281	.056	.234	4.983	.000	.788	1.269
	Innovativeness	.494	.037	.618	13.293	.000	.807	1.239
4	(Constant)	.962	.329		2.922	.004		
	Busines_type	-.027	.046	-.028	-.584	.560	.745	1.342
	Ownership	.000	.044	.000	-.009	.992	.883	1.133
	Origin	.060	.044	.061	1.342	.181	.828	1.208
	Age	-.006	.030	-.008	-.198	.843	.963	1.038
	Size	-.040	.050	-.040	-.811	.418	.715	1.399
	Organisational learning	.260	.057	.217	4.601	.000	.770	1.299
	Innovativeness	.439	.043	.549	10.141	.000	.584	1.713
	CEO Openness value	.098	.040	.128	2.427	.016	.618	1.618

a. Dependent Variable: Sustainability performance
b. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type
c. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning
d. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning, Firm Innovativeness,
e. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning, Firm Innovativeness, CEO Openness value

Appendix 17B: Test Results of the Direct Effects on Firm Innovativeness

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.086[a]	.007	-.013	.60899	.007	.370	5	250	.869	
2	.440[b]	.193	.174	.55014	.186	57.343	1	249	.000	
3	.645[c]	.416	.400	.46886	.223	94.809	1	248	.000	1.501

a. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type
b. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning
c. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning, CEO Openness value
d. Dependent Variable: Firm innovativeness

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.687	5	.137	.370	.869[b]
	Residual	92.716	250	.371		
	Total	93.403	255			
2	Regression	18.042	6	3.007	9.935	.000[c]
	Residual	75.361	249	.303		
	Total	93.403	255			
3	Regression	38.884	7	5.555	25.268	.000[d]
	Residual	54.519	248	.220		
	Total	93.403	255			

a. Dependent Variable: Firm innovativeness
b. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type
c. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning
d. Predictors: (Constant), Size, Ownership, Age, Origin, Business_type, Organisational learning, CEO Openness value

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.534	.382		11.855	.000		
	Business type	.005	.088	.004	.058	.954	.752	1.331
	Ownership	.088	.083	.071	1.055	.293	.887	1.127
	Origin	.019	.084	.015	.222	.824	.839	1.192
	Age	.004	.057	.005	.073	.942	.974	1.027
	Size	.083	.094	.065	.880	.380	.728	1.373
2	(Constant)	1.229	.557		2.208	.028		
	Business type	.054	.080	.044	.671	.503	.747	1.339
	Ownership	.079	.075	.063	1.048	.296	.887	1.128
	Origin	-.039	.076	-.032	-.517	.606	.830	1.204
	Age	-.018	.051	-.020	-.343	.732	.971	1.030
	Size	.140	.085	.110	1.639	.103	.723	1.384
	Organisational learning	.657	.087	.438	7.572	.000	.970	1.031
3	(Constant)	.348	.483		.721	.472		
	Business type	.031	.068	.025	.450	.653	.746	1.341
	Ownership	.060	.064	.048	.927	.355	.886	1.129
	Origin	-.050	.065	-.041	-.761	.448	.830	1.205
	Age	-.043	.044	-.049	-.992	.322	.967	1.034
	Size	.106	.073	.083	1.456	.147	.721	1.387
	Organisational learning	.370	.080	.247	4.649	.000	.837	1.195
	CEO Openness value	.492	.051	.511	9.737	.000	.854	1.171

a. Dependent Variable: Firm innovativeness

Appendix 18: Mediation Effect of Firm Innovativeness in the Relationship Between Organisational Learning and Sustainability Performance

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.0
*****************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************************
Model: 4
    Y: Sustainability Performance
    X: Organisational learning
    M: Firm innovativeness

Covariates:
 Business type, Ownership, Origin, Age, Size

Sample
Size:  256

**************************************************************************


OUTCOME VARIABLE:
Firm Innovativeness

Model Summary
```

R	R-sq	MSE	F(HC4)	df1	df2	p
.440	0.193	0.303	9.269	6	249	0.000

Model

	coeff	se(HC4)	t	p	LLCI	ULCI
constant	1.229	0.563	2.184	0.03	0.121	2.34
Org	0.657	0.095	6.904	0	0.47	0.84
Bus_type	0.054	0.082	0.656	0.51	-0.11	0.22
Ownership	0.079	0.072	1.094	0.28	-0.06	0.22
Origin	-0.04	0.08	-0.49	0.62	-0.2	0.12
Age	-0.02	0.052	-0.34	0.73	-0.12	0.08
Size	0.14	0.093	1.511	0.13	-0.04	0.32

```
OUTCOME VARIABLE:
Sustainability Performance
```

Model Summary

R	R-sq	MSE	F(HC4)	df1	df2	p
.753	0.567	0.104	30.71	7.000	248.000	0.000

Model

	coeff	se(HC4)	t	p	LLCI	ULCI
constant	1.07	0.38	2.815	0.005	0.322	1.819
Org	.281	0.065	4.326	0.000	0.153	0.409
Innov	.494	0.044	11.139	0.000	0.407	0.581
Bus_type	-0.026	0.05	-0.51	0.610	-0.124	0.073
Ownership	-0.001	0.045	-0.02	0.984	-0.089	0.087
Origin	0.064	0.046	1.384	0.168	-0.027	0.155
Age	0.00	0.031	0.007	0.994	-0.062	0.062
Size	-0.041	0.055	-0.759	0.449	-0.149	0.066

********** TOTAL EFFECT MODEL **********
OUTCOME VARIABLE:
Sustainability Performance

Model Summary

R	R-sq	MSE	F(HC4)	df1	df2	p
0.509	0.259	0.177	14.361	6.000	249.000	0.000

Model

	coeff	se(HC4)	t	p	LLCI	ULCI
constant	1.677	0.449	3.739	0.000	0.794	2.561
Org	0.606	0.067	8.973	0.000	0.473	0.739
Bus_type	0.001	0.065	0.015	0.988	-0.127	0.129
Ownership	0.038	0.053	0.722	0.471	-0.066	0.142
Origin	0.044	0.061	0.722	0.471	-0.077	0.165
Age	-0.008	0.04	-0.212	0.832	-0.087	0.070
Size	0.028	0.072	0.387	0.699	-0.113	0.169

********** TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y ********

Total effect of X on Y

Effect	se(HC4)	t	p	LLCI	ULCI	c_cs
0.606	0.067	8.973	0.000	0.473	0.739	0.505

Direct effect of X on Y

Effect	se(HC4)	t	p	LLCI	ULCI	c'_cs
0.281	0.065	4.326	0.000	0.153	0.409	0.234

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Innov	0.324	0.047	0.236	0.417

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Innov	0.271	0.036	0.199	0.339

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS *******
OUTCOME VARIABLE:
Firm Innovativeness

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	1.229	1.233	0.554	0.136	2.342
Org	0.657	0.656	0.093	0.468	0.834
Bus_type	0.054	0.053	0.081	-0.105	0.212
Ownership	0.079	0.08	0.071	-0.061	0.22
Origin	-0.039	-0.039	0.079	-0.194	0.118
Age	-0.018	-0.018	0.051	-0.118	0.081
Size	0.14	0.141	0.091	-0.038	0.322

OUTCOME VARIABLE:
Sustainability performance

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	1.07	1.072	0.369	0.371	1.785
Org	0.281	0.281	0.063	0.156	0.406
Innov	0.494	0.495	0.044	0.407	0.58
Bus_type	-0.026	-0.027	0.05	-0.126	0.071
Ownership	-0.001	-0.001	0.045	-0.09	0.085
Origin	0.064	0.063	0.047	-0.029	0.155
Age	0.000	0.000	0.032	-0.062	0.061
Size	-0.041	-0.043	0.055	-0.149	0.064

********************** ANALYSIS NOTES AND ERRORS ******************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  5000

NOTE: A heteroscedasticity consistent standard error and covariance matrix estimator was used.

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

Appendix 19: Estimates for the Moderating Effect of CEO Value of Openness-To-Change on the Relationship Between Organisational Learning and Firm Innovativeness

```
Run MATRIX procedure:

********** PROCESS Procedure for SPSS Version 4.0 *************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation       available       in       Hayes       (2022).
www.guilford.com/p/hayes3

**************************************************************************
*****
Model  : 1
    Y  : Firm innovativeness
    X  : Organisational learning
    W  : CEO Value of Openness to change

Covariates:
Business type, ownership, Origin, age, size
Sample
Size:  256

**************************************************************************
OUTCOME VARIABLE:
 Firm innovativeness

Model Summary
```

R	R-sq	MSE	F	df1	df2	p
0.6466	0.4181	0.2201	22.1816	8.000	247.000	0.000

Model

	coeff	se	t	p	LLCI	ULCI
constant	4.7884	0.2955	16.203	0.0000	4.2063	5.3704
Org.	0.3706	0.0796	4.6538	0.0000	0.2138	0.5275
CEO-OTC	0.493	0.0506	9.7478	0.0000	0.3934	0.5926
Int_1	-0.082	0.0948	-0.867	0.3868	-0.2688	0.1045
Bus.type	0.0366	0.0685	0.5343	0.5936	-0.0984	0.1716
Ownership	0.0557	0.0644	0.8656	0.3875	-0.0711	0.1825
Origin	-0.046	0.0653	-0.708	0.4798	-0.1748	0.0824
Age	-0.043	0.0438	-0.985	0.3257	-0.1293	0.0431
Size	0.1074	0.0729	1.4724	0.1422	-0.0363	0.2510

```
Product terms key:
Int_1      :    Organisational learning x CEO Value of Openness to
change

Test(s) of highest order unconditional interaction(s):
```

	R2-chng	F	df1	df2	p
X*W	0.0018	0.7517	1.000	247.000	0.3868

```
----------
Focal predict: Organisational learning (X)
Mod var: CEO Value of Openness to change (W)
Data for visualizing the conditional effect of the focal predictor:
```

Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
                                X               W               Y
BEGIN DATA.                -0.4032         -0.6286         4.4112
                            0.0000         -0.6286         4.5815
                            0.4032         -0.6286         4.7518
                           -0.4032          0.0000          4.742
                            0.0000          0.0000         4.8914
                            0.4032          0.0000         5.0409
                           -0.4032          0.6286         5.0727
                            0.0000          0.6286         5.2013
                            0.4032          0.6286         5.3299


END DATA.
GRAPH/SCATTERPLOT= X WITH Y BY W.

******************ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

NOTE: The following variables were mean centered prior to analysis:
          W and X

WARNING: Variables names longer than eight characters can produce
incorrect output
when some variables in the data file have the same first eight
characters. Shorter
variable names are recommended. By using this output, you are
accepting all risk
and consequences of interpreting or reporting results that may be
incorrect.

------ END MATRIX -----
```

Appendix 20: Estimates for the Moderating Effect of CEO Value of Openness-To-Change on the Relationship Between Firm innovativeness and Sustainability Performance

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.0 ************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************************
Model  : 1
    Y  : Sustainability Performance
    X  : Firm Innovativeness
    W  : CEO Value of Openness to change

Covariates:
Bus_type Ownership Origin   Age      Size

Sample
Size:  256

**************************************************************************
OUTCOME VARIABLE:
Sustainability Performance

Model Summary
   R       R-sq       MSE      F(HC4)      df1        df2          p
 .746     0.5570     0.107     31.909     8.000     247.000      0.000

Model
              coeff      se(HC4)       t         p      LLCI      ULCI
constant       4.983      0.209     23.856    0.000     4.571     5.394
Innov          0.489      0.045     10.768    0.000     0.400     0.579
OTC            0.139      0.043      3.239    0.001     0.055     0.224
Int_1          0.127      0.050      2.516    0.013     0.028     0.226
Bus_type      -0.068      0.049     -1.375    0.170    -0.166     0.029
Ownership      0.003      0.048      0.055    0.956    -0.093     0.098
Origin         0.068      0.047      1.457    0.146    -0.024     0.160
Age            0.001      0.033      0.019    0.985    -0.064     0.065
Size          -0.080      0.053     -1.494    0.136    -0.185     0.025

Product terms key:
Int_1    :        X    *  W

Test(s) of highest order unconditional interaction(s):
               R2-chng       F(HC4)       df1      df2          p
    X*W          0.015        6.329       1.000   247.000     0.013

----------
Focal predict: Innov(X)
Mod var:OTC (W)
```

Conditional effects of the focal predictor at values of the moderator(s):

OTC	Effect	se(HC4)	t	p	LLCI	ULCI
-.629	0.41	0.056	7.306	0.000	0.299	0.520
.000	0.489	0.045	10.768	0.000	0.400	0.579
.629	0.569	0.055	10.397	0.000	0.461	0.677

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
                                X               W               Y
      BEGIN DATA            -0.605          -0.629           4.550
                             0.000          -0.629           4.798
                             0.605          -0.629           5.046
                            -0.605           0.000           4.589
                             0.000           0.000           4.886
                             0.605           0.000           5.182
                            -0.605           0.629           4.629
                             0.000           0.629           4.973
                             0.605           0.629           5.318
END DATA.
GRAPH/SCATTERPLOT=
 X WITH     Y  BY       W
```

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS *******

OUTCOME VARIABLE:
Sustainability Performance

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	4.983	4.980	0.209	4.572	5.389
Innov	0.489	0.490	0.046	0.402	0.580
OTC	0.139	0.141	0.043	0.058	0.225
Int_1	0.127	0.123	0.048	0.025	0.213
Bus_type	-0.068	-0.069	0.049	-0.166	0.026
OwnershiP	0.003	0.005	0.048	-0.087	0.098
Origin	0.068	0.070	0.046	-0.020	0.161
Age	0.001	0.000	0.033	-0.066	0.063
Size	-0.080	-0.081	0.053	-0.182	0.021

********************** ANALYSIS NOTES AND ERRORS ******************

Level of confidence for all confidence intervals in output: 95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals: 5000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: A heteroscedasticity consistent standard error and covariance matrix estimator was used.

NOTE: The following variables were mean centered prior to analysis:
          CEO Value of Openness to change, firm innovativeness

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

Appendix 21: Estimates for the Moderating Effect of CEO Value of Openness-To-Change on the Relationship Between Organisational Learning and Sustainability Performance

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.0 ************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************************
Model: 1
    Y: Sustainability performance
    X: Organisational learning
    W: CEO Value of Openness to change

Covariates:
 Bus_type, Ownership, Origin, age, size

Sample
Size:  256

**************************************************************************
OUTCOME VARIABLE:
Sustainability performance

Model Summary
   R       R-sq       MSE         F         df1        df2         p
 0.6458    0.4171    0.1407    22.0921     8.000     247.000     0.000

Model
               coeff      se        t         p        LLCI       ULCI
constant       4.899     0.236    20.731     0.000     4.434      5.365
Org            0.421     0.064     6.613     0.000     0.296      0.547
OTC            0.312     0.040     7.714     0.000     0.232      0.392
Int_1          0.195     0.076     2.567     0.011     0.045      0.344
Bustype       -0.028     0.055    -0.508     0.612    -0.136      0.080
Ownership      0.035     0.052     0.673     0.502    -0.067      0.136
Origin         0.030     0.052     0.575     0.566    -0.073      0.133
age           -0.026     0.035    -0.733     0.464    -0.095      0.043
size           0.003     0.058     0.053     0.958    -0.112      0.118

Product terms key:
 Int_1    :        Organisational learning x CEO_OTC

Test(s) of highest order unconditional interaction(s):
          R2-chng     F          df1        df2          p
X*W       0.0156      6.5911     1.000      247.000      0.0108
----------
Focal predict: Organisational learning (X)
Mod var: CEO_OTC (W)
```

Conditional effects of the focal predictor at values of the moderator(s):

InverOTC	Effect	se	t	p	LLCI	ULCI
-.6286	0.2989	0.0798	3.7438	0.0002	0.1416	0.4561
0.000	0.4212	0.0637	6.6132	0.0000	0.2957	0.5466
0.6286	0.5435	0.0792	6.8592	0.0000	0.3874	0.6996

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
                              X               W               Y
BEGIN DATA                 -.4032         -0.6286          4.5794
                            0.000         -0.6286          4.6999
                           0.4032         -0.6286          4.8204
                          -0.4032          0.0000          4.7261
                           0.0000          0.0000           4.896
                           0.4032          0.0000          5.0658
                          -0.4032          0.6286          4.8729
                           0.0000          0.6286          5.0921
                           0.4032          0.6286          5.3112

END DATA.
GRAPH/SCATTERPLOT=
 X WITH Y  BY W
```

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output: 95.0000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: The following variables were mean centered prior to analysis:
CEO Value of Openness to change, Organisational learning

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

Appendix 22: Estimates for the Moderated-Mediation effect (Model 15)

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.0 ************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************************
*****
Model  : 15
    Y  : Sustainability Performance
    X  : Organisational Learning
    M  : Firm Innovativeness
    W  : CEO Value of Openness To Change

Covariates:
 Bustype, Ownership,Origin,age,size

Sample
Size:  256

**************************************************************************
OUTCOME VARIABLE:
Firm Innovativeness

Model Summary
   R       R-sq       MSE      F(HC4)      df1         df2          P
 .440     0.193     0.303      9.269      6.000     249.000      0.000

Model
                coeff    se(HC4)      t        p       LLCI      ULCI
constant       -0.318     0.394    -0.808    0.420    -1.094     0.457
Org. Learning   0.657     0.095     6.904    0.000     0.470     0.844
Bustype         0.054     0.082     0.656    0.512    -0.107     0.215
Ownership       0.079     0.072     1.094    0.275    -0.063     0.221
Origin         -0.039      0.08    -0.493    0.622    -0.197     0.118
age            -0.018     0.052    -0.341    0.734    -0.119     0.084
size            0.14      0.093     1.511    0.132    -0.042     0.322

**************************************************************************
OUTCOME VARIABLE:
Sustainability Performance

Model Summary
   R       R-sq       MSE      F(HC4)      df1         df2          p
 0.775     0.601     0.097     28.528     10.000     245.000      0.000

Model
         coeff    se(HC4)          t          p       LLCI       ULCI
constant 4.950       .202     24.460       .000      4.551      5.349
Org Learng.257       .062      4.138       .000       .135       .379
Innov     .443       .051      8.641       .000       .342       .544
CEO-OTC   .098       .045      2.166       .031       .009       .186
```

```
Int_1     .183       .106      1.720       .087      -.026       .392
Int_2     .048       .072       .664       .507      -.094       .190
Bustype  -.049       .048     -1.018       .310      -.143       .046
Ownership .010       .044       .221       .825      -.077       .097
Origin    .048       .045      1.069       .286      -.041       .137
age      -.006       .030      -.205       .838      -.066       .054
size     -.048       .050      -.960       .338      -.147       .051

Product terms key:
 Int_1    :        Org Learning x        CEO-OTC
 Int_2    :        Innov        x        CEO-OTC

Test(s) of highest order unconditional interaction(s):
       R2-chng     F(HC4)        df1         df2          p
X*W       .008      2.959      1.000    245.000       .087
M*W       .001       .441      1.000    245.000       .507
----------
    Focal predict: Org Learning (X)
          Mod var: CEO-OTC (W)

Conditional effects of the focal predictor at values of the
moderator(s):
CEO-OTC  Effect   se(HC4)        t          p        LLCI       ULCI
-.629      .142      .086       1.653       .100     -.027       .311
 .000      .257      .062       4.138       .000      .135       .379
 .629      .372      .096       3.869       .000      .182       .561

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce
plot.

DATA LIST FREE/
         X          W         Y
BEGIN DATA.
      -.403      -.629      4.768
       .000      -.629      4.825
       .403      -.629      4.882
      -.403       .000      4.783
       .000       .000      4.886
       .403       .000      4.990
      -.403       .629      4.798
       .000       .629      4.948
       .403       .629      5.097
END DATA.
GRAPH/SCATTERPLOT=
 Org Learning WITH     Sus.Performance BY CEO Value_OTC ---------
    Focal predict: Firm Innovativeness (M)
          Mod var: CEO Value_OTC (W)

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce
plot.

DATA LIST FREE/
         M          W         Y
BEGIN DATA.
      -.605      -.629      4.575
       .000      -.629      4.825
       .605      -.629      5.075
      -.605       .000      4.618
       .000       .000      4.886
```

```
       .605       .000      5.154
      -.605       .629      4.661
       .000       .629      4.948
       .605       .629      5.234
END DATA.
GRAPH/SCATTERPLOT=
Firm Innovativeness WITH Sus. Performance BY CEO Value_OTC.

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y ************

Conditional direct effect(s) of X on Y:
CEO_OTC     Effect    se(HC4)      t         p       LLCI   ULCI
-.629       .142       .086      1.653      .100    -.027   .311
 .000       .257       .062      4.138      .000     .135   .379
 .629       .372       .096      3.869       .000    .182   .561

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
Org Learning   ->    Firm Innovativeness    ->    Sus. Performance

        OTC     Effect     BootSE   BootLLCI   BootULCI
      -.629       .271       .048       .177       .365
       .000       .291       .045       .202       .381
       .629       .311       .058       .202       .427

      Index of moderated mediation:
              Index     BootSE   BootLLCI   BootULCI
    OTC       .032       .045      -.051       .126
---
Moderator value(s) defining Johnson-Neyman significance region(s):
      Value    % below    % above
      -.544     20.703     79.297

Conditional effect of focal predictor at values of the moderator:
        OTC     Effect    se(HC4)      t      p       LLCI       ULCI
     -1.536      -.024       .168   -.141    .888    -.354       .307
     -1.376       .006       .152    .037    .971    -.294       .305
     -1.215       .035       .137    .255    .799    -.234       .304
     -1.055       .064       .122    .528    .598    -.176       .304
      -.894       .094       .107    .871    .385    -.118       .305
      -.733       .123       .094   1.307    .192    -.062       .308
      -.573       .152       .082   1.859    .064    -.009       .313
      -.544       .157       .080   1.970    .050     .000       .315
      -.412       .182       .072   2.527    .012     .040       .323
      -.252       .211       .065   3.256    .001     .083       .338
      -.091       .240       .062   3.891    .000     .119       .362
       .070       .269       .063   4.257    .000     .145       .394
       .230       .299       .069   4.320    .000     .163       .435
       .391       .328       .078   4.186    .000     .174       .482
       .551       .357       .090   3.976    .000     .180       .534
       .712       .387       .103   3.756    .000     .184       .590
       .873       .416       .117   3.554    .000     .185       .647
      1.033       .445       .132   3.378    .001     .186       .705
      1.194       .475       .147   3.226    .001     .185       .764
      1.354       .504       .163   3.096    .002     .183       .825
      1.515       .533       .179   2.985    .003     .181       .885
      1.675       .563       .195   2.889    .004     .179       .946

Data for visualizing the conditional effect of the focal predictor:
```

```
Paste text below into a SPSS syntax window and execute to produce
plot.


************************ ANALYSIS NOTES AND ERRORS *******************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence
intervals:
  5000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: A heteroscedasticity consistent standard error and covariance
matrix estimator was used.

NOTE: The following variables were mean centered prior to analysis:
          OTC Org Innov

------ END MATRIX -----
```

Appendix 23: Estimates for the Moderated-Mediation effect (Model 14)

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.0 ************

          Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022).
www.guilford.com/p/hayes3

**************************************************************************
Model  : 14
    Y  : Sustainability performance
    X  : Organisational learning
    M  : Firm Innovativeness
    W  : CEO Value of OTC

Sample
Size:  256

**************************************************************************
OUTCOME VARIABLE:
 Firm Innovativeness

Model Summary
R       R-sq        MSE     F(HC4)        df1        df2          p
.419      .175       .303     45.922      1.000    254.000       .000

Model
             coeff      se(HC4)     t         p       LLCI       ULCI
constant    -3.192       .481     -6.642     .000     -4.139     2.246
Org_learning.629        .093      6.777     .000       .446       .811

**************************************************************************

OUTCOME VARIABLE:
Sustainability performance
Model Summary
      R       R-sq     MSE     F(HC4)        df1        df2     p
      .767   .588     .098     69.712      4.000    251.000   .000

Model
         coeff    se(HC4)          t          p       LLCI       ULCI
constant 3.468       .325     10.682       .000       2.829     4.107
Orglearn  .279       .064      4.372       .000       .153       .405
Innovatv  .424       .052      8.203       .000       .322       .526
CEO_OTC   .113       .044      2.566       .011       .026       .200
Int_1     .127       .053      2.367       .019       .021       .232

Product terms key:
 Int_1    :        Innovatv x        CEO_OTC

Test(s) of highest order unconditional interaction(s):
       R2-chng     F(HC4)        df1        df2          p
M*W       .016      5.604      1.000    251.000       .019
----------
    Focal predict: Innovatv (M)
          Mod var: CEO_OTC  (W)
```

Conditional effects of the focal predictor at values of the moderator(s):

CEO_OTC	Effect	se(HC4)	t	p	LLCI	ULCI
-.629	.345	.062	5.514	.000	.221	.468
.000	.424	.052	8.203	.000	.322	.526
.629	.504	.061	8.279	.000	.384	.623

There are no statistical significance transition points within the observed range of the moderator found using the Johnson-Neyman method.

Conditional effect of focal predictor at values of the moderator:

CEO_OTC	Effect	se(HC4)	t	p	LLCI	ULCI
-1.536	.230	.098	2.336	.020	.036	.423
-1.383	.249	.091	2.722	.007	.069	.429
-1.230	.268	.085	3.163	.002	.101	.435
-1.078	.288	.079	3.664	.000	.133	.442
-.925	.307	.073	4.232	.000	.164	.450
-.772	.326	.067	4.866	.000	.194	.459
-.619	.346	.062	5.561	.000	.223	.468
-.466	.365	.058	6.291	.000	.251	.479
-.313	.385	.055	7.016	.000	.277	.492
-.160	.404	.053	7.671	.000	.300	.508
-.007	.423	.052	8.184	.000	.321	.525
.146	.443	.052	8.501	.000	.340	.545
.299	.462	.054	8.607	.000	.356	.568
.452	.481	.056	8.530	.000	.370	.592
.605	.501	.060	8.320	.000	.382	.619
.758	.520	.065	8.032	.000	.392	.648
.911	.539	.070	7.708	.000	.402	.677
1.064	.559	.076	7.378	.000	.410	.708
1.217	.578	.082	7.059	.000	.417	.739
1.370	.597	.088	6.759	.000	.423	.771
1.523	.617	.095	6.483	.000	.429	.804
1.675	.636	.102	6.231	.000	.435	.837

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
         M         W          Y
BEGIN DATA.
      -.605      -.629      4.606
       .000      -.629      4.815
       .605      -.629      5.023
      -.605       .000      4.629
       .000       .000      4.886
       .605       .000      5.142
      -.605       .629      4.652
       .000       .629      4.957
       .605       .629      5.262
END DATA.
GRAPH/SCATTERPLOT=
 M WITH     Y  BY       W .
```

****************** DIRECT AND INDIRECT EFFECTS OF X ON Y ************

Direct effect of X on Y

Effect	se(HC4)	t	p	LLCI	ULCI

```
       .279       .064      4.372       .000       .153       .405

Conditional indirect effects of X on Y:

INDIRECT EFFECT:
 Org_learning    ->   Firm innovativeness    ->    Sus_performance

      CEO_OTC     Effect     BootSE   BootLLCI   BootULCI
      -.629       .217       .039       .144       .298
       .000       .267       .042       .187       .353
       .629       .317       .054       .213       .424

      Index of moderated mediation:
              Index     BootSE   BootLLCI   BootULCI
CEO_OTC       .080       .034       .015       .146
---

*********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS *******

OUTCOME VARIABLE:
Firm Innovativeness

              Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     -3.192     -3.186       .475     -4.135     -2.250
Orglearn       .629       .628       .092       .448       .811

----------

OUTCOME VARIABLE:
 Sus_performance

              Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant      3.468      3.452       .313      2.829      4.067
Orglearn       .279       .283       .062       .161       .404
Innovatv       .424       .426       .050       .327       .523
CEO_OTC        .113       .114       .044       .027       .197
Int_1          .127       .124       .048       .024       .218

********************** ANALYSIS NOTES AND ERRORS ******************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence
intervals:
  5000

W values in conditional tables are the mean and +/- SD from the mean.

NOTE: A heteroscedasticity consistent standard error and covariance
matrix estimator was used.

NOTE: The following variables were mean centered prior to analysis:
          ICEO_OTC, Firm Innovativeness

                        ------ END MATRIX -----
```