An Investigation of the Relationship between Organisational Culture and Sustainability Performance in Higher Education Institutions in Ilorin, Nigeria.

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Declaration

This work has not already been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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ABSTRACT

Increasingly, higher education institutions (HEIs) around the world are embracing the responsibility of educating the next generation about sustainability principles. HEIs in developed nations are making great efforts by committing vast resources and recording outstanding success in this regard, but those in developing countries like Nigeria are not faring so well yet.

The aim of this study is to investigate the role of organisational culture in influencing sustainability performance in three HEIs in Ilorin, Nigeria. The study uses a mixed method approach to investigate this relationship. A sample of 100 stakeholders is drawn from each institution and a structured questionnaire is used to collect stakeholders' perceptions about organisational culture and sustainability performance. The relationship between organisational culture and sustainability performance is analysed through regression analysis. A content analysis is undertaken of both the vision and mission statements from each institution to explain the quantitative results. Findings from quantitative analysis show a positive relationship between organisational culture and sustainability performance in each institution. In contrast, findings of qualitative analysis do not reflect that sustainability practice is an organisational value of each institution. Further research to investigate the level of stakeholders' understanding of best practice of sustainability is suggested in order to resolve the divergence in findings.The main contribution of the study is that it provides empirical knowledge about the relationship between organisational culture and sustainability performance in higher education. Moreover, it ascertains the right balance of organisational culture traits required to support sustainability performance.

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List of Acronyms and Abbreviations

AASHE: Association for the Advancement of Sustainability in Higher Education

ARISE: Assessing Responsibility In Sustainable Education

ASCON: Administrative Staff College of Nigeria

AUCC: Association of Universities and Colleges of Canada

CDHO: Dutch Committee on Sustainable Higher Education

CoP: Communication of Progress

CSR: Corporate Social Responsibility

DA: Development Plan

DESD: Decade of Education for Sustainable Development

EFQM: European Foundation for Quality Management

EMS: Environment Management System

ESD: Education for Sustainable Development

GRI: Global Reporting Initiative

GHG: Green House Gas

HASS: Humanities, Arts and Social Sciences

HEA: Higher Education Academy

HEFCE: Higher Education Funding Council for England

HEI: Higher Education Institution

IAU: International Association of Universities

ISO: International Organisation for Standardisation

LSE: London School of Economics

NGO: Non Governmental Organisation

NUC: National Universities Commission

PBL: Problem Based Learning

POLE: Public Organisation Learning Environment

QAA: Quality Assurance Agency for Higher Education

R&D: Research and Development

SA: Sustainability Assessment

SAQ: Sustainability Assessment Questionnaire

SD: Sustainable Development

SME: Small and Medium Enterprises

TQM: Total Quality Management

UK: United Kingdom

ULSF: University Leaders for a Sustainable Future

UN: United Nations

UNESCO: United Nations Educational, Scientific and Cultural Organisation

UNGC: United Nations Global Compact

UNU: United Nations University

USA: United States of America

CHAPTER 1

Introduction

1.1 Introduction

The importance of good practice in organisations for sustainability continues to draw much attention among academics, industry professionals and other stakeholders (Babiak & Trendafilova, 2011). Increasingly, HEIs around the world are embracing the responsibility of educating the next generation about sustainability principles. HEIs in developed nations are making great efforts by committing vast resources and recording outstanding success in this regard (Davies, 2008; Sheffield Hallam University, 2008), but those in developing countries like Nigeria are not faring so well yet (UNEP, 2004-2008).

There is established recognition of the relationship between organisational culture and different management constructs, namely: leadership (Schein, 2004), effectiveness (Denison, 1995), innovation (Bucshgens et al., 2013), and performance (Zakari et al., 2013) among others. The relationship between organisational culture and sustainability has been studied by authors such as Linnenluecke & Griffiths (2010) who studied corporate sustainability and organisational culture. Further, Eccles et al. (2012a) analysed the impact of a corporate culture of sustainability on corporate behaviour and performance. Most research focuses on the role organisational culture has within corporate organisations other than education; hence, this research examines its role in higher education.

A mixed method approach using both quantitative and qualitative data was chosen to study the relationship between organisational culture and sustainability performance. This study used Cronbach's correlation to test the reliability of the data collection instrument, Pearson's correlation to test the validity of the selected sustainability constructs, and regression analysis to test the hypothesised relationships between organisational culture (independent variable) and sustainability performance (dependent variable). Meanwhile, content analysis-a qualitative method is used to examine value placed on sustainability practice in three Nigerian HEIs.

This chapter provides a brief background and rationale for the study and introduces the research question, aims and significance of this research. The structure of this thesis is also provided in this chapter.

1.2 Background to the Study

Organisational culture has been defined in many ways, and some of these definitions are explored in greater detail in the literature review chapter. However, a popular definition of this concept is as follows:

> *'Organizational culture is the pattern of basic assumptions that a group has invented, or discovered in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems'* (Schein, 2004 p. 3).

According to Schein (2004), the behaviour of an organisation is guided and constrained by the prevailing organisational culture. Therefore, the sustainability behaviour of an HEI is guided and constrained by the prevailing culture towards integrating sustainability best practice into management, research and operations.

Sustainability also has many definitions, and a few of these are examined in the literature review chapter. Sustainability is crucial to the sustained success of an organisation, and plausible future states of sustainability will depend on interactions between society, individuals and the organisation (Gray, 2010). This means a concerted effort is required to achieve the goal of sustainability and is underscored by Giovannoni & Fabietti (2014 p. 22) who maintained that sustainability could not be achieved in isolation. Hence, there needs to be a concerted multi-level effort of financial, environmental and social aspects. Practising good social responsibility can be crucial to the fortunes of an organisation because it ensures support from stakeholders, enhances credibility and reputation, and generates favourable attitudes among publics (Waters & Ott, 2014).

Exploring the relationship between organisational culture and HEI sustainability performance would entail a broad investigation of the dynamics of institutional values, policies, processes and operations. In this study, performance is interpreted as efforts towards the implementation of best practice of sustainability. Thus, this study investigates how organisational culture influences sustainability performance (i.e. implementation of best practices of sustainability) of HEIs in Ilorin. Findings provide empirical knowledge and understanding about how to implement best practice and inculcate an organisational culture that supports sustainability in Ilorin HEIs. Good practice of sustainability in HEIs ultimately leads to good practice in society (Tanaka

& Tabucanon, 2014); therefore, this study attempts to enable institutions in Ilorin to fulfil their sustainability leadership role in society. This study adapted the Denison organisational culture survey to perform a systematic analysis of the organisational culture-sustainability performance of Ilorin HEIs (Denison, 1990).

Most extant literature emphasises the triple bottom line (TBL) to be comprised of social, economic and environmental perspectives as the main three pillars of sustainability respectively (UNESCO, 2014; Hamiti & Wydler, 2014; Eccles et al., 2011; Maon et al., 2010; Mullerat, 2013). This research used these perspectives; the context of use for each construct is explained below:

- **Environmental perspective:** explains sustainability as maintaining both essential environmental functions and ability of the natural capital stock (ecosystems, ecosystem processes and minerals) to provide these functions (Ekins, 2011). Morelli (2011 p. 5) defined it as ‘a condition of balance, resilience, and interconnectedness that allows human society to satisfy its needs while neither exceeding the capacity of its supporting ecosystems to continue to regenerate the services necessary to meet those needs nor by our actions diminishing biological diversity’.
- **Economic perspective:** explains sustainability by recognising the importance of limited environmental resources in long-term decision-making (Pezzey & Toman, 2002). Shriberg (2002 p. 14) described this as ‘an economic state where the demands placed upon the environment by people and commerce can be met without reducing the capacity of the environment to provide for future generations’. This perspective on sustainability focuses on the four types of

capital: natural, human, social and organisational, and financial (Maricic et al., 2014).

- **Social perspective:** explains sustainability as upholding democratic and equal treatments that ensure good quality of life within and outside an organisation, promoting health and actively supporting creation and preservation of skills as well as capabilities of future generations (Longoni & Cagliano, 2015). Busse et al. (2012 p. 1152) posited that 'social sustainability occurs when the formal and informal processes; systems; structures; and relationships actively support the capacity of current and future generations to create healthy and liveable communities'.

1.3 Research Gaps

There are a few gaps in the literature on organisational culture and sustainability, namely:

1. Although studies on organisational culture (Olughor, 2014) and sustainability performance of HEIs (Godemann et al., 2011) have generated interest and debate among scholars, few studies explore the relationship between the two constructs, especially in the context of HEIs (Millan et al., 2014; Jofreh et al., 2014).
2. Since few studies investigate the linkages between organisational culture and sustainability performance, Baumgartner (2012) held that the relationship between organisational culture, sustainability management and sustainability performance has little theoretical underpinning and understanding.

Regarding theory, Yilmaz & Ergun (2008 p. 302) used the Denison model of organisational culture to analyse the effects of imbalances in cultural traits and the impacts on effectiveness. This study analyses these effects and their impact on sustainability practice in three HEIs in Ilorin. Furthermore, it ascertains the right balance in cultural traits required to improve sustainability performance in the institutions.

3. According to Palmer et al. (2012), few empirical studies have examined the similarities and differences between organisations when implementing sustainability practices, and there is limited research on organisational culture factors that enable or inhibit implementation of sustainability in an organisation. Furthermore, Eccles et al. (2011) stressed that a better understanding of mechanisms for integrating environmental and social issues into management models of organisations needs to be developed. The authors explained that even when conditions are favourable for integrating social and environmental issues, the extent and speed of integration could vary across organisations. This study provides empirical evidence on organisational culture influencing the integration of sustainability into three unique Ilorin HEIs.

1.4 Research Problem

The research problem is solving the challenge of embedding sustainability into the organisational culture of Nigerian HEIs.

1.5 Research Aim and Objectives

1.5.1 Aim

This research aims to investigate the relationship between organisational culture and sustainability performance in three HEIs in Ilorin. This means examining the influence of culture traits on sustainability performance constructs.

1.5.2 Objectives

The objectives of this research are the following:

1. To conduct a thorough review of the literature on organisational culture and sustainability performance in HEIs.
2. To investigate stakeholders' perception of organisational culture and sustainability performance in each institution.
3. To statistically analyse the relationship between stakeholders' perception of organisational culture and sustainability performance of each institution.
4. To conduct a content analysis of the vision and mission statements of HEIs in order to examine the extent to which sustainability practice is reflected as an organisational value of the case-study institutions.

1.6 Research Questions

Based on the research problem, the following research questions are raised:

1. What are the perceptions of stakeholders about organisational culture and sustainability performance in each institution?

2. How does each organisational cultural trait relate to each sustainability performance indicator in each institution?
3. To what extent do mission and vision statements reflect that sustainability practice is as an organisational value of each institution?

1.7 Data Collection and Analysis

The researcher used primary and secondary data for this study. Primary data was collected by administering structured questionnaires that investigated the influence of organisational culture on sustainability performance. Secondary data was collected from vision and mission statements from each institution's websites and other publications. The data collected from the questionnaire survey was analysed by using correlation and regression analyses in order to analyse the linkages between culture and performance variables.

Regression analysis investigates the relationships between variables where a researcher seeks to determine the causal effect of one variable upon another. The researcher collected data on each variable and used regression to analyse the quantitative effect that a causal variable has upon the variable under influence. Also, the researcher carried out a test of significance to ascertain the degree to which the estimated relationship resembles the true relationship. Correlation estimates the degree to which two variables relate to each other. When two random variables are ordered, correlation measures the extent of correspondence between them.

The data collected from vision and mission statements were analysed by content analysis in order to identify themes or patterns of phrases that relate to sustainability.

1.8 Significance of the Research

The significance of this study is mainly in theory and practice:

1. Firstly, this study validates the applicability of Denison's theory of organisational structure for explaining the relationship between organisational culture and sustainability performance, and the applicability of the theory in a Nigerian context.
2. Secondly, this study provides empirical knowledge about the relationship between organisational culture and sustainability performance in higher education, and about this relationship in a Nigerian context.
3. Thirdly, this study provides empirical evidence on organisational culture-sustainability performance linkages (Ahmad, 2012; Ehtesham et al., 2011; Baumgartner, 2012) in HEIs, analyses the effects of imbalances in cultural traits (Yilmaz & Ergun, 2008) on sustainability practice in three HEIs in Ilorin, and ascertains the right balance in cultural traits required to facilitate sustainability performance in the institutions.
4. Finally, this study provides theoretical and practical implications to assist management of Nigerian HEIs in drafting effective sustainability strategy and policy.

1.9 Informing Theory

The theory underpinning this study is the Denison's theory of organisational culture which posits that organisational culture can be measured with four cultural traits – mission, adaptability, consistency, and involvement – and that these traits are positively related to perceptions of performance.

1.10 Research Structure

The structure of this research is shown below:

Chapter 1 outlines the background of the study, the research gaps, the research problem and rationale, the research questions, the research aims and objectives, the significance of the research, the informing models, and the research structure.

Chapter 2 reviews extant literature on sustainability practice and organisational culture by discussing several topics and exploring factors that affect and contribute to best practice. Some of the topics examined include world views on sustainability, the evolution of sustainability in higher education, higher education and sustainable development (SD), sustainability in Nigerian HEIs, the importance of higher education in building a sustainable society, higher education for sustainable consumption, and sustainability assessment in higher education. Furthermore, other topics examined include an overview of organisational culture, culture and its influence on sustainability, organisational culture, leadership and performance, transformational leadership in Nigerian HEIs, and the Denison model of organisational culture.

Chapter 3 presents the conceptual framework of the study and explains the theoretical constructs and indices, and the hypothesised relationships between organisational culture (the independent variable) and sustainability performance (the dependent variable) in Ilorin HEIs. Sub-cultures and other institutional factors that can influence the organisational culture-sustainability performance link are also discussed. The rationale for using the Denison model to investigate the relationship between organisational culture and sustainability performance is also provided.

Chapter 4 provides a summary of the research problem, objectives, questions, and hypotheses. The chapter explains the research methodology applied in this study by discussing the research paradigm, the research approach, the research design, the research strategy, the sampling technique, the sample size, the methods for data collection and analysis, validity and reliability, limitations, and ethical consideration.

Chapter 5 presents the findings from the analysis of the results taken from the questionnaire on sustainability performance of the three institutions. It analyses the responses of those asked about how they rate the sustainability performance of their institution based on four constructs of sustainability (environmental management system – EMS, social responsibility and stakeholder participation in sustainability processes, integration of sustainability into curriculum, research and operations, and sustainability assessment and disclosure). It compares these findings with the literature on sustainability performance in Nigerian HEIs.

Chapter 6 explains the questionnaire design and pilot testing and presents the results of hypothesis testing. The chapter shows the results of the test and highlights the reliability (Cronbach's correlation) and validity (Pearson correlation) of the data collection instrument, the sample description and demography. It presents the findings from hypothesis testing and regression analyses (SPSS) of data from each case-study institution. The chapter also provides an overview of findings from quantitative analyses and an examination of the role of each organisational culture trait in the sustainability performance of the institutions.

Chapter 7 presents a content analysis of the vision and mission statement and presents excerpts from websites and publications of the institutions. It also explains the

rationale for examining vision and mission statements, the reliability and validity of the data collection method.

Chapter 8 presents the conclusion and recommendation of the study.

CHAPTER 2

Review of Literature on Sustainability Practice and Organisational Culture

2.1 Introduction

This chapter provides an overview of the key concepts of sustainability, organisational culture and related literature that focus specifically on conceptualisation and measurement of these concepts in a higher education context. Procedures for initiating, implementing, and measuring practice of environmental and social sustainability in higher education are examined, and a model for analysing organisational culture is discussed.

Section A provides an overview of sustainability in higher education and the role of HEIs in promoting good practice of sustainability in the larger society and how university social responsibility (USR) can assist HEIs to fulfil their mission and also contribute to sustainable development.

Section B discusses an overview of organisational culture in higher education and explains the context in which the chosen model of analysis is used. Thus, this chapter has five aims:

1) To introduce the general concept of environmental sustainability, social sustainability, economic sustainability, and organisational culture.

2) To analyse current literature on environmental sustainability, social sustainability, economic sustainability and organisational culture in higher education.
3) To analyse current literature on organisational culture and sustainability performance in Nigerian higher education.
4) To highlight key insights gained from this review that is relevant to the purpose of this research.

Section A

2.2 Sustainability: An Overview of Practice

2.2.1 What is Sustainability?

The United Nations (UN) World Commission report on environment and development (better known as the Brundtland Report) of 1987 marks the inception of sustainability (also known as *sustainable development*) as a policy concept. The report (p. 15) defines sustainability as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs', (Kuhlman & Farrington, 2010 p. 3438; Boer, 2013 p. 122). This leads us to the three main perspectives of sustainability, namely environmental, economic, and social sustainability (also known as the triple bottom line). The UN report explains environmental protection, social development and economic development as mutually dependent components of sustainability (Bond et al., 2001). These three components are often referred to as the 3Ps (people, planet and profit) by many authors, and the context in which each is used has been explained in Chapter 1.

2.2.2 Worldviews of Sustainability

Trying to make sense of sustainability has triggered several debates among academics and professionals who argue about the different philosophical angles of viewing this multidisciplinary concept. Wals & Jickling (2002) argued that both the value base and knowledge base of sustainability are questionable and unstable and may detract from or enhance its value depending on understanding. According to Stubbs & Cocklin (2007), three worldviews dominate sustainability discourse:

2.2.2.1 Neoclassical worldview

This is the prevailing idea at the moment and adopts the anthropocentric ethic 'that humankind is the only principal source of value or meaning in the world' (Sexton, 2000 p. 38). It encourages higher consumption of goods and services and promotes an unlimited capacity for economic growth (Sexton et al., 2008; America, 2014; Lawn 2010). Its proponents believe that technology can deal with any ensuing ecological issues by providing human-made capital as a replacement for natural capital. However, Stubbs & Cocklin (2008) held that social and environmental priorities must not only supplement but also transform the neoclassical model for organisations to be sustainable.

2.2.2.2 Ecocentrism worldview

This idea promotes the inherent worth of the ecosystems rather than the instrumental value which is dependent on human value judgements (Sexton et al., 2008). Its proponents believe that the environment is finite and cannot support infinite growth. This worldview recognises the equal right of the non-human ecosystem to life and

well-being (Sexton, 2000; Gladwin et al., 1995), thus rejects the anthropocentric premise and embraces post-humanism which dwells on the broader picture of shifting the focus of attention from humanity to the ecosystem as a whole (Kopnina, 2013).

2.2.2.3 Ecological modernisers worldview

The proponents of this idea challenge the ecocentric argument that the environment loses during economic prosperity (Stubbs & Cocklin, 2008). However, ecological modernisers do believe that a finite world cannot support indefinite growth but do not promote an end to growth. They promote the idea wherein economic prosperity is dependent upon ecological well-being and vice versa (Stubbs & Cocklin, 2007). This means they support economic prosperity so long as human welfare and ecological integrity are maintained. Although ecological modernisers believe that new technologies, along with the success of capitalism have produced many of today's environmental challenges, they argue that economic growth and sustainability can both be realised concurrently by using new technologies to create environment-friendly methods of consumption. To achieve this, it is imperative that synergy is developed between stakeholders from both capitalism and sustainability (Memon & Kirk, 2011).

The position of both sustainability and ecological modernisation is that economic growth should occur without causing an increased use of resources and environmental degradation. This will help resolve economic sustainability challenges and in so doing, will also resolve social sustainability challenges (Lynch-wood & Williamson, 2010).

The researcher advocates the ecological moderniser perspective and believes HEIs should embrace sustainability practice and still actively pursue their organisational

goals without compromising the social, environmental and economic integrity of their institution.

2.2.3 Sustainability Theories

This section considers a few select theories of sustainability:

2.2.3.1 Natural capitalism

This focuses on the protection of all of the ecosystems of the world, their structure and processes that support the well-being of humankind and other species. It covers vital life-support functions such as global climate regulation, waste assimilation capacity, fossil fuels and renewable energy, and biological and mineral raw materials. Its proponents argue against rapid consumption of fossil fuels and express concern about the ability of the natural systems to regenerate themselves especially when considering the threat posed by new chemicals against which nature has no defence (Costanza et al., 2012). Supporting economists have argued that for sustainability to succeed, waste emission should not exceed the absorption capacity of the ecosystem. They also state that the extraction of non-renewable resources should not surpass the rate at which renewable alternatives are found, and extraction of renewable resources should not surpass regeneration rates (Farley, 2012).

Davies (2013) described three dimensions of natural capital as tradable capital which is not particularly valued and is expendable (fruits and vegetables), constant capital which is important but can be substituted (trees and vegetation), and critical capital which is vital to life and irreplaceable (rare species and the atmosphere).

2.2.3.2 Strong vs weak sustainability

Generally, strong sustainability indicates a physical principle that is based on thermodynamics laws and biological growth processes. Weak sustainability indicates an economic value principle based on neoclassical theory. The total stock of natural capital must remain constant over time for a system to be described as having strong sustainability, while social welfare of society must be non-decreasing for sustainability to be described as weak (Hediger, 2004).

Strong sustainability values natural capital above human-made capital and does not allow for the substitution of natural capital by human-made capital. Conversely, weak sustainability is regarded as premised on a belief that human-made capital is more valuable than natural capital and supports the above substitution. Supporters of human-made capital argue that technological innovation will be able to solve environmental issues like pollution. This has often led to increased environmental challenges, especially in developing countries such as Nigeria where the operations of multinational corporations have damaged environments often beyond repair. However, environmentalists are campaigning heavily against weak sustainability tendencies. There is now a determination in developed countries towards the key features of strong sustainability, such as ‘constant environmental quality’ and ‘valuing the intrinsic rights of organisms’. It is hoped that this drive will spread to developing countries over time (Davies, 2013).

2.2.3.3 Stakeholder theory and sustainability in higher education

The functions of Ilorin HEIs should be re-evaluated to emphasise the socio-cultural and economic life of their community. Their mission should be stretched further than

teaching and research to comprise community service that would require creating partnerships with host communities and other stakeholders. Therefore, Ilorin HEIs need to incorporate their mission and vision into management practices and develop strategies to meet the needs of respective stakeholders (Mainardes et al., 2010). According to Boyle et al. (2011), HEIs are being beseeched by communities to provide knowledge, resources, and support in tackling difficult and persistent social challenges amid scarce public resources. The AUCC (2013 p. 7) corroborated this and emphasised that 'the legitimacy of higher education to society is increasingly evaluated by the level and quality of the HEI commitment to its community of stakeholders'.

The stakeholder theory has roots in strategic planning, the resource dependence theory, organisational behaviour, and other management theories. One root is found in Dill's (1975) strategic planning approach to management in which the three key difficulties facing strategic ability are identified. These are the managements' need to value the environment, to act in response to it and to manage relations with persons or groups that could influence the process of strategic decision-making (ibid.). Another root lies in the resource dependence theory, which explains the strong connection between an organisation and the environment. This theory states that an organisation requires the participation of some individuals in its environment in order to utilise resources controlled by them. Likewise, some individuals require the participation of an organisation in order to utilise resources controlled by the organisation (Sciarelli & Tani, 2013).

Mitroff & Linstone (1993) cited by Wilburn & Wilburn (2011 p. 8) described stakeholders as 'any individual, group, organisation, institution that can affect and as

well as be affected by an individual's, organisation's, or institution's policy'. Therefore, a stakeholder is any individual or group that can affect/is affected or can influence/is influenced by achievement of the objectives of an organisation or by decisions of the organisation (Jorge et al., 2012; Freeman, 1984 cited by Fadare, 2013). Furthermore, the 'stakeholder theory is built upon the normative that businesses should serve a variety of interests rather than just those of shareholders and in so doing businesses will achieve superior performance', (Barter, 2011 p. 2). The stakeholder theory also maintains that an organisation's fundamental obligation is to make sure it survives and succeeds by not just profiting but also attending to the desires of its various stakeholders (Lozano, 2012).

A study of the relevance of stakeholders to HEIs is crucial. However, no study was found to have analysed this relationship in terms of how stakeholders' culture influences sustainability performance in HEIs. Benneworth & Jongbloed (2009) studied the degree of salience of stakeholders of humanities, arts, and social sciences (HASS) to universities and argued that responsiveness of universities to HASS stakeholders develops in response to the surrounding relationship networks. A pluralist HEI management can be shaped, by applying the stakeholder theory, to allow participation of interested individuals or groups in the institution's decision-making process (Quezada, 2012). As for Ilorin HEIs, the researcher holds that ensuring stakeholder participation in sustainability management and incorporating contributions of stakeholders from outside the HEI into processes of decision-making can cultivate an organisational culture that facilitates sustainability.

Furthermore, stakeholder identification and prioritisation facilitate effective stakeholder management, as demonstrated by Chapleo & Simms (2010) in their study

of the University of Portsmouth. However, the AUCC (2013) contended that HEIs still face challenges in stakeholder identification, ascertaining the needs of each stakeholder group, and prioritisation of the relationship with each group. These concepts are discussed further in the following section.

2.2.3.3.1 Identification and prioritisation of HEI stakeholders

Organisations generally focus more on the interests of stakeholders that control resources directly influencing their survival, than on the interests of other stakeholders that do not (Tetrevova & Sabolova, 2010). Therefore, HEIs should promote stakeholder prioritisation and strategy development to deal with different stakeholder groups (ibid.). This argument suggests that all stakeholders are not equal and are managed differently, and Barter (2011) remarked that there are inequalities across different stakeholder groups and across members within each stakeholder group.

In any organisation, stakeholder groups may include governmental organisations, NGOs, customers, suppliers, trade unions, employees, management, potential investors, investors, local communities and similar groups. Other authors have argued that in an organisation, every participating individual or group with legitimate interests expect benefits, and each interest and benefit does not have precedence over another (Donaldson & Preston, 1995). This argument implores organisations to give equal attention to all stakeholders because, in doing so, they can outperform other organisations that do not (Hatch, 2013). Another argument questioned why only stakeholders who are seen as powerful and whose claims are viewed as urgent and legitimate are taken into consideration by firm managers (Dentoni & Peterson, 2011). Proponents of this argument believe that the entire network of stakeholders who

surround a firm, ought to be taken into consideration because the direction of influence between an organisation and its stakeholders is determined by this network (ibid.).

The stakeholders of a sustainability project can be identified by their attitude, power and interest – with each attribute having a bearing on the influence that each stakeholder group has on the outcome of the project (Bal et al., 2013). The author recognises the importance of all stakeholders but maintains that prioritisation should be given based on sustainability-associated matters and important stakeholder features such as the ability to provide legitimacy and integrity and impart knowledge and influence. The following diagram explains the stakeholder engagement process for sustainability.

Figure 2.1: Project stakeholder engagement process for sustainability
Source – Bal et al. (2013 p. 703)

According to Bal et al. (2013), identification and prioritisation of stakeholders are meant to promote stakeholder engagement during the design of the organisation's sustainability project. Thus, this study agrees that stakeholder engagement can become an instrument to help HEIs re-evaluate their interests in order to support sustainability. However, authors like Collins et al. (2005) argued that stakeholder engagement might prove inadequate if it is exaggerated or implemented solely to legitimise 'business as usual'.

Sciarelli & Tani (2013) suggested that the process of stakeholder management should be in two phases: stakeholder analysis and stakeholder synthesis. In the analysis phase,

organisation-specific stakeholders should be defined and identified by managers to assess them and their stake. In the synthesis phase, the assessment from the initial phase should be used by managers to define a strategic path based on ethical and economic principles.

The stakeholder theory advocates that organisations ought to cater for issues other than stakeholder wealth. Therefore, the socio-economic view of social responsibility encompasses an organisation's responsibility to its owners, employees, constituents in its location, and society as a whole (Sciarelli &Tani, 2013; Bal et al., 2013; Tetrevova & Sabolova, 2010). This was an especially bitter pill for business organisations and Friedman (2009) famously joked in 1962 that managers' acceptance of a social responsibility that excludes making profits for shareholders, could shake the foundations of the free society. Other authors like Frederick (1986) cited by Hess (2014 p. 3) and (Perrini, 2006) reasoned that social responsibility should be used as an ethical anchor to systematically assess the impact of organisations' activities on all stakeholders while exploring the critical interdependencies of the stakeholders and their organisations.

2.2.3.3.2 Stakeholder salience

Salience is a three-dimensional construct premised on the power of the stakeholder – its legitimate status to request and the importance of its stake – and is a concept used to analyse stakeholders in an organisation (Mitchell et al., 2011; Ozturoglu & Turker, 2013; Assad & Goddard, 2010; Reynolds et al., 2006). Relevant stakeholders are those that wield strong influence on the organisation, possess societal legitimacy, respond to critical matters (Sciarelli & Tani, 2013), and those that present an opportunity or

threat to an organisation (Tetrevova & Sabalova, 2010). Authors such as Williamson (1984) disagreed and argued that the success of an organisation is closely tied to the stake of all its stakeholders. He maintained that the management of organisations should ensure that all stakeholders benefit from decision-making processes.

2.2.3.3.3 Critique of the stakeholder theory

There have been calls for the development of a new theory to replace the now obsolete stakeholder theory in order to achieve sustainability. The stakeholder theory has been criticised as underdeveloped and requiring considerable improvement. Lankoski et al. (2011) proposed the prospect theory (which conceptualises how judgements on stakeholder value are formed in response to an organisation's action) as a replacement. Some critics maintain that sustainability does not distinguish between humans and the environment (considering the inclusion of natural environment as a stakeholder in stakeholder theory) (Barter, 2011), yet the stakeholder theory separates humanity from the environment and is more predisposed than necessary to the interests of organisations (ibid.).

In contrast, Lozano (2012) said that although some authors are increasingly using the stakeholder theory to address environmental management issues, the theory struggles to recognise and differentiate stakeholders (for example primary and secondary). In addition, it also fails to meet the expectations of the stakeholders and forecast their response to the actions of a firm. Furthermore, the author reasons that the theory does not effectively explain how to engage the stakeholders and internal resources of an organisation. It does not provide a successful understanding of the relationships

between different stakeholders when viewed through a time dimension (although it does when viewed through social, environmental and economic dimensions).

Another author cited critics who say the theory weakens the power and influence of certain stakeholders and weakens the fiduciary duties that managers owe stockholders (Weiss, 2014). Mitchell et al. (1997) held that the stakeholder theory must effectively manage power, urgency and legitimacy among stakeholders. It should also protect legitimate stakeholders and their legal interests by identifying stakeholder groups that wield power and may want to enforce their will on the organisation. The researcher agrees with Mitchell et al. and insists that the legal interests of all legitimate stakeholders of Ilorin HEIs must be protected in order to realise the essence of sustainability. The researcher recognises the value of the stakeholder theory, and as Lozano (2012) argued, the stakeholder theory offers a more holistic perspective to leaders of organisations which help them to understand their organisation's relationship with the environmental and social systems.

2.2.3.3.4 Stakeholder theory and environmental performance

The three-dimensional framework for determining corporate environmental performance as proposed by Ullman (1985), comprises of stakeholder power, strategic posture and economic performance. However, there is an argument that decisions to integrate better environmental activities into corporate strategic plans are influenced by three main significant factors: top management's conviction on environmental issues, industry sensitivity characterised by the increased regulatory sanctions, and the level of ownership dispersion (Elijido-Ten, 2007). This argument recognises the importance of stakeholder influence but holds that there is no significant relationship

between an organisation's economic performance (current and past) and its environmental performance, thus, excluding the economic performance of an organisation as a major influence (Elijido-Ten, 2007). Another argument put forward by Husillos & Alvarez-Gil (2008), disagrees with Ullman (1985) and claims that studying resource availability, strategic posture and salience of principal stakeholders of an organisation cannot satisfactorily predict the environmental performance of SMEs. Although this assertion was based on SMEs and may not be generalisable to all organisations, it nevertheless challenges the argument of researchers that hold these factors as very significant.

2.2.4 Evolution of Sustainability in Higher Education

Organisations are increasingly concerned about the impact of their behaviours on the environment and livelihood of communities and are now exploring ways to integrate sustainability practices into their activities. According to Elmualim et al. (2012), this has led organisations to shift from the view that sustainability has no direct relevance in core strategies to a view of actively incorporating sustainability principles into core corporate strategies. Through initiatives like the higher education sustainability initiative (HESI), HEIs are increasingly expected to play a crucial role in driving society towards sustainability, through research and education, as awareness and action on sustainable development grows (UNESCO, 2015). To achieve this, the researcher believes HEIs need to adequately equip graduates to become responsible leaders who will duly put environmental, social, and economic factors into consideration in organisational decision-making.

Economic development in the twenty-first century has relied heavily on knowledge. Universities around the world provide graduates with the skills and knowledge needed to develop into responsible global citizens and transform their communities and society (Ogbogu, 2013). These universities achieve these by engaging in sustainability activities like offering collaborative research opportunities, development of specialised courses on sustainability, and adopting eco-friendly practices on campus (Ferrer-Balas et al., 2008).

In the developed world, the HEIs involvement in society's transition towards sustainability is demonstrated by university leaders signing different declarations and charters that aim to incorporate sustainability into the organisation of institutions, e.g. education, research, service and operations (Boer, 2013). HEIs have started to provide students with spaces to critically analyse significant twenty-first century issues such as creating solutions through research, encouraging pro-environmental behaviours, and addressing environmental, social and economic problems. In doing this, HEIs have contributed positively to the nurturing of future citizens, business people and leaders (Dunkley, 2013).

To this end, Akintayo (2008) cited the Nigerian National Policy on Education 2002, which set the objectives for Nigerian universities to include:

- Achievement of an objective understanding of both national and international environments.
- Achievement of both intellectual and physical abilities to empower an individual to become useful for society.

- Develop the intellectual capacity of an individual to appreciate and understand their environment.
- Achieve, develop and inculcate proper-value philosophy for the endurance of an individual and society.

Despite the inherent gains in instilling sustainability practices into HEIs, Ragan et al. (2012) cited critics who argued that any environmental or social initiative would be deemed a waste of resource if it does not simultaneously create profit for the institution. Furthermore, Eccles et al. (2012) cited critics who maintain that shareholder wealth (if institutions are privately owned) could be destroyed by the integration of environmental and social policies. However, the researcher agrees with Eccles (2012) that a good practice of sustainability can benefit HEIs. Such practices would create competitive advantage in terms of providing massive savings in material and resource cost, attracting funding and investment from government and non-government bodies, and boosting an institution's ability to attract the most talented faculty and students.

This study discusses the concept 'Education for Sustainable Development' (ESD) (Kopnina & Meijers, 2012; Santone, 2004; Shephard, 2010) which covers how higher education can contribute to and benefit from societal sustainability practice. Emphasis is placed on investigating how organisational culture affects sustainability practice in higher education.

2.2.5 Higher Education and Sustainable Development

The OECD (2006-07) report cited Cortese (2003) who said HEIs play a critical role in preparing society's future leaders by imparting values, skills, knowledge and

awareness of sustainable development, and bear a moral responsibility of bringing to reality the vision of a sustainable future. The report also said that presidents from over 350 universities spread across forty nations, demonstrated commitment to the achievement of sustainability goals by signing the Talloires Declaration. The Declaration is an international agreement for action. It seeks to enhance outreach in colleges and universities, reorient research activities, reverse environmental damage, and implement sustainable practices in their respective institutions.

However, Gibson (1991) criticised SD as likely to foster delusions, be attractive to hypocrites and too vague. Also, other critics observed that SD is offered as a panacea to the ecological crisis in developing countries even when development in the form of commercialisation and economic growth is being accused of causing the crisis (Garrard, 2007). Furthermore, critics hold that SD is being used by business entities and corporations as a façade to conceal ecologically harmful practices (Drexhage & Murphy, 2010). Willy (2008) cited Rauch (2004) who considered SD as a tool for regulation which people can espouse as a model but will never completely realise. Robinson (2004) examined the arguments of critics who believe that it is impossible to achieve SD and posited that the field of sustainability requires new tools in order to transcend limitations and convince sceptics. On their part, Sneddon et al. (2005) maintained that sustainability is realisable if stakeholders encourage discussion on sustainability and the politics surrounding it, accept various practices and interpretations connected with an evolving concept of development and accept a variety of perspectives on and approaches to sustainability.

2.2.6 Education for Sustainable Development

ESD gained popularity in the Brundtland Report of 1987 titled *Our Common Future* (Jickling & Wals, 2008; Drexhage & Murphy, 2010; Robinson, 2004). The crucial role education should play in the global drive for good practice of SD was highlighted in the 1992 Rio Summit of the UN. The global action plan for the twenty-first century (Agenda 21) of this summit underlined this by stating that education is crucial for the enhancement of people's capacity to tackle development and environmental matters and overall promotion of sustainable development (Khelghat-Doost et al., 2011). Furthermore, the UN general assembly in its 57th meeting in December 2002, declared the decade 2005 to 2014 the UN 'Decade of Education for Sustainable Development' (DESD). During this decade, the UN planned to integrate practices, values, and principles of sustainable development into all aspects of education and learning. The Bonn Declaration of 2009 emphasised this further by stating that ESD is based on practices, principles and values required for an effective response to present and future challenges. The declaration also stated that ESD includes all people, supports quality education, and it sets a new direction for learning and education for all (UNESCO, 2009).

Stakeholders hoped that this endeavour would promote behavioural changes that would produce a just society for present and future generations, economic viability, and preserve environmental integrity. However, the researcher contends that HEIs in Ilorin have not benefitted optimally due to an organisational culture that needs improvement. Also, Raheem et al. (2006) enthused that ESD can be achieved by implementing an educational system that is based on proper planning and sufficient investment in sustainability initiatives. The researcher believes that integrating ESD

into organisational culture would help to improve the sustainability performance of HEIs in Ilorin.

Conversely, according to McGregor (2013), critics have argued that an ideology which could indoctrinate certain ideas and values is discernible in the ESD approach of UNESCO. The critics argue the approach could be a cultural and ethical error and inconsistent with the values of sustainability. Nazir et al. (2009) opined that scholars have analysed the underlying ideology of UNESCO and found that the ideology:

- Views education as an instrument for predetermined goals rather than as an emancipatory process.
- Views sustained economic development as a precursor to all human development.
- Views the environment as a pool of resource to be managed rather than as a living entity of intrinsic value.

Ceulemans et al. (2010) observed that ESD could be described as an epistemological change in culture, educational practice and thinking, and must be viewed as much more than an addition to existing curricula and structures. The authors argued the need for a specific focus of integrating SD into higher education curricula to complement efforts in operations, research, and community relations. They stressed that the integration of SD into management and economics curricula is imperative because today's management students will become tomorrow's managers. Godemann et al. (2011) echoed this and contend that there still is not a clear method on how to embed sustainability in HEIs curricula. The authors remarked that there remains an anxiety that sustainability education is not embedded in management education despite the

increase in popularity of this concept. This is because integrating ESD into educational policy and asking HEI teaching staff to restructure their work to reflect contributions to SD can be very challenging (Jickling & Walls, 2008).

Shephard (2010) criticised the efforts of some HEIs and held that in respect to cultural, political and social matters, higher education has limited capacity to provide social, civic and moral transformation of character. The author also held that some institutions have wrongly exaggerated what they can offer students and communities. Willy (2008) agreed with Shepherd and contended that generally, HEIs could not be used to solve societal problems because of the disparity between the definition of education and the instrumental vision of ESD.

2.2.7 ESD and Higher Education Institutions

HEIs are responsible for educating society's future leaders and professionals and play a crucial role within the concept of ESD (Quality Assurance Agency (QAA) & HEA, 2014). The researcher, therefore, believes that it is essential that HEIs champion ESD efforts. This would be through research, training and development programmes, and collaboration with other institutions. In doing this, it ensures that an environmentally balanced, ethically sound, and globally compliant culture is implemented and exists that supports sustainability. This is because HEIs as centres of idea development and innovation are most suitable for cultivating sustainability ideas and should be models to the society by creating awareness of how to integrate sustainability into daily living (AbdRazak et al., 2011).

Research, teaching and learning practices in most universities around the world remain considerably disciplined, and this constitutes a barrier to the implementation

of sustainability as a holistic concept (Khelghat-Doost et al., 2011). Fortunately, many institutions are making vital changes like promoting interdisciplinarity to facilitate a smoother implementation but driving conventional HEIs towards sustainability remains a formidable challenge (ibid.). Peters (2013) stated that there is an increasing call for universities to update procedures and strategies to attain resilience necessary to adapt to a changing world and shape a more sustainable future. According to the author, the existing traditional methods of teaching, research and operations are inadequate and will not address the long-term needs of a sustainable future. Therefore creativity, innovation and new thinking are required to prepare universities for the challenges of fostering sustainability (ibid.).

The researcher holds that HEIs, especially universities, should use assets, facilities, and other resources like a cohort of students with varied academic interests, and a pool of disciplinary experts to promote sustainability in their local communities. This will create opportunities for students, faculty and the larger community to learn from one another, target research that provides guidance for community problem-solving and offer technical assistance to community-based organisations. According to Palmer (2013), the ESD vision is to ensure that everybody has access to quality education that will teach behaviour and values necessary for the attainment of societal transformation and a sustainable future. To this end, GUNi, IAU & AAU (2011) stated that adequate investment to support ESD is needed in order to produce the experts required to resolve sustainability challenges facing industries and society in general.

Nonetheless, the value of ESD is not without criticisms and notable among these is from Finlayson et al. (2007). He concluded that very little has been achieved by HEIs regarding ESD given that the work, thinking, ethos, vision, and orientation of HEIs

are pervaded by sustainability matters. Shephard (2010) explained the shortfall by maintaining that unless graduates put the skills and knowledge of sustainability gained from ESD to sustained use, their education would be a failure.

2.2.8 Integration of Sustainability into Curriculum, Research and Operations

The Association for the Advancement of Sustainability in Higher Education (AASHE, 2010) stated that HEIs have a major role in ensuring that society is able to meet present needs without hindering the ability of future generations to meet their own needs. The AASHE report and the 2014 report of the Higher Education Academy (HEA)/QAA strongly advocate infusion of sustainability into higher education curricula to foster understanding, knowledge and skills in sustainable development. Research by Etse & Ingley (2016) found that curricula in polytechnics in Ghana have a low sustainability content with implications on the overall quality of teaching and learning experiences. The researcher asked to what extent sustainability has been integrated into curriculum, research and operations of the institutions under study.

2.2.9 The Importance of Higher Education in Building a Sustainable Society

The role of education as a facilitator of sustainable practices has become more important in both national and international spheres (Sedlacek, 2011). The Stockholm Declaration of 1972 heralded the beginning of initiatives for integrating aspects of sustainability into higher education, and the Talloires Declaration (an open statement of commitment to support sustainability efforts in institutions of higher learning) was signed in 1990 by twenty different university administrators (Wright, 2002).

Furthermore, a global commitment to teaching sustainability principles was indicated in 2001 when about 280 universities in over forty countries signed the declaration (ibid.). However, critics hold that higher education must transform itself before it can genuinely contribute to sustainability (Tilbury, 2012), and the researcher believes that transformation in Ilorin HEIs can be attained if institutions embrace better organisational culture.

Brody & Ryu (2006) opined that a common theme in the discussion on sustainability in higher education is the responsibility of HEIs to develop curricula and teach students sustainability principles that promote the achievement of a sustainable society. The researcher holds that while the definition of principles of sustainability and higher education has been established, knowledge about how present initiatives have fared in Nigerian HEIs and methods for successfully incorporating sustainability into Nigerian university curricula is inadequate. However, most research on sustainability in HEI curricula has been criticised for being advocacy-oriented and descriptive (Brody & Ryu, 2006). A lack of rigorous research design was identified as a problem plaguing the majority of studies on sustainability, and this covers details on data collection and analyses, adherence to research ethics and reliability, and the validity of the findings (Fien, 2002).

For this research, the researcher employed appropriate quantitative and qualitative data collection and analysis methods in order to overcome this problem (discussed in the research methodology chapter). Other methods, like using quasi-experimental pre- and post-test designs as empirical-analytical approaches to provide more knowledge on sustainability and higher education, have been recommended (Brody & Ryu, 2006).

2.2.10 Higher Education for Sustainable Consumption

Higher education for sustainable consumption encourages students to take responsible actions and decisions now and in the future by providing them with skills, information and knowledge about the social impacts of daily choices on the environment and other environmental issues (Biltagy, 2013). HEIs ought to demonstrate sustainable practices right from the student's first day on campus and incorporate them into the curriculum, campus culture and campus services (Stewart, 2010). This will encourage students to support change towards more sustainable consumption behaviour and help them to determine the right balance between their rights as consumers and their responsibilities as citizens (Gombert-Courvoisier et al., 2014).

Engagement and cooperation with stakeholders such as management, academic and non-academic staff, students and the community is necessary if sustainable consumption is to be achieved (Biltagy, 2013). To this end, HEIs have been advised to identify the barriers to environmentally friendly behaviours by adopting a community approach based on the classroom as the social context. This enables them to design strategies for modifying behaviour in small groups first and then strategies for large groups like a community, by extension (Alvarez-Suarez et al., 2013).

2.2.11 University Environmental Management System (EMS) Implementation

According to Perotto et al. (2007), an EMS is an instrument used by an organisation to manage its impact on the environment. It aims to manage the environmental aspects of an organisation's services, products and activities in order to improve environmental performance. This study investigates the relationship between organisational culture and sustainability performance in Ilorin institutions. It supports

the expanded explanation of EMS as prescribed resources, processes, procedures and practices used to develop, implement, achieve, review and maintain a sustainable environment in an institution (Alshuwaikhat & Abubakar, 2008).

According to Sekhon (2014), one of the main challenges to society recently is environmental protection. He argues that all players in society have a collective responsibility to control pollution and preserve natural resources. The author described EMS as a continuous cycle of planning, reviewing and improving systems for environmental management. Since the 1990s, these systems have been successfully developed and implemented, especially in US and Western Europe institutions (Rauen et al., 2015). This success was driven not only by increasing environmental awareness campaigns but by other elements such as legal compliance, student recruitment and the realisation that significant cost savings can be achieved (EAUC, 2004). Rauen et al. (2015) affirmed that, as it is the most practical and direct method of achieving popular participation, environmental education is essential in achieving sustainable development. The researcher aims to find out if the organisational culture of Ilorin institutions supports the environmental management system.

EMS saddles HEIs with the responsibility of implementing environmental regulations and practices to guarantee consistent and systematic management of environmental issues in order to facilitate reduction of environmental impacts and increase efficiency of operations (Jones et al., 2012). A successful HEI EMS manages various environmental concerns, integrates university protection programmes, and improves sustainability on campus (Barnes & Jerman, 2002). The researcher believes that implementation of HEI EMS requires community participation and affects all

institution stakeholders directly or indirectly so as to attain waste reduction, increased recycling and continual environmental improvement. Institutions with adequate support are able to integrate their environmental, health and safety management systems and quality management systems through implementation of EMS. They are also able to develop and review their practice and operations simultaneously in more socially and environmentally responsible ways (Jain & Pant, 2010; Piper, 2002).

A harmonised standard for identification, prioritisation, and management of environmental impacts and aspects of an institution is provided by EMS in order to ensure appropriate assigning of responsibility for maintenance of high environmental standards throughout the campus (Alshuwaikhat & Abubakar, 2008). Furthermore, EMS promotes environmental friendliness by defining specific environmental indicators that can be tracked and regularly assessed (ibid.). The authors explained that sustainability in institutions can be promoted through EMS in the following ways:

2.2.11.1 Green campus

According to Finlay & Massey (2010 p. 152), HEI practices should be an example to sustainability movements by being humane to present and future generations, economically viable, socially just and ecologically sound. This is more so given the role of HEIs in educating the next generation of leaders and their cultural, economic and social capital.

Having continuing economic, social and ecological security in HEIs is an indicator of sustainability (Zhang et al., 2011); therefore, it is imperative that Ilorin HEIs also embrace the green campus concept to promote eco-friendly practices, buildings and transportation facilities. Energy-efficient buildings and transport facilities can reduce

energy consumption overall and improve community well-being through improved lighting and reduced congestion and emission (Finlay & Massey, 2010).

The London School of Economics (LSE) demonstrates exemplary 'greenness' and is ranked in the top ten for carbon management and ranked 1st for renewable energy among the Russell Group universities. According to the LSE Environmental Sustainability Report (2012-13), the institution has achieved carbon reduction by using a well-defined sustainability policy which involves efficient collaboration and engagement of all the stakeholders of the institution. Also, an international congress of building technology in Helsinki, Finland, stressed the importance of indoor air quality control and energy efficiency of buildings (CLIMA 2007). The congress proposed that energy savings up to 30-70% can be achieved by adjusting lighting and cooling/heating systems and suggested that conservation and efficiency of energy can be attained by using a well-defined sustainability policy that promotes energy efficiency and renewable energy generation.

Campus greening is not without critics. Among them are HEI academic staff that were trained in disciplines preceding the interdisciplinary environment-biased programmes. Its critics view the initiative as an unnecessary addition to an already congested curriculum and resent the changes in teaching, learning and general institutional processes that this demands (Garrard, 2007).

2.2.11.2 Environmental management and improvement

This system integrates organisational resources, procedures and structure for management of the environment in terms of management and assessment of an organisation's impacts on the environment and the improvement of performance on

environment matters (Perotto et al., 2007; Simkins & Nolan, 2004). An important value of this system is in the clarification of each individual's responsibility for environmental improvement and improving environmental awareness of university workers and managers (Melnyk & Sroufe, 2003). Implementation of this system involves an iterative process in which regular environment audits assess improvement in environmental sustainability practices. Hence, the system can improve the environmental performance of an organisation by adequate environmental documentation and correction of basic faults in the existing EMS (Ridgway, 2005).

According to Alshuwaikhat & Abubakar (2008), the system promotes a sustainable HEI campus through encouraging:

- A fair learning environment that gives equal opportunities in teaching, research and participation in campus sustainability and development, and improves the general well-being of the present and future university community.
- A prospering HEI economy through efficient environmental management, use of renewable raw materials and energy and resource conservation.
- A healthy campus environment through reduced emissions and generation of effluent and waste, eliminating toxic substances and curtailing the negative impacts of campus operations and activities on human health.

2.2.12 Environmental Awareness and Implementing Sustainability Principles

Environmental awareness does not feature prominently in the education programmes of primary, secondary and HEIs of Nigeria even though its presence in the education

curriculum demonstrates a commitment to environmental protection, increases public environmental awareness, and helps to engender environmental responsibility in students (Adegbile, 2012). Environment education literature has cited problem-based learning (PBL) as an effective approach to teaching sustainability at university level. It enables students to understand and apply information by the providing essential contextual features that traditional classroom environments do not (Brody & Ryu, 2006).

PBL also prepares students for professional lives by equipping them with knowledge and skills to solve real-world and interdisciplinary sustainability problems (Thomas, 2009; Burns, 2011). Students' capacity to address the complex interaction of human decisions and the biophysical environment is built when they work in actual sustainability scenarios like simulated negotiation, site and community designs and green building (Aziz et al., 2013; Yasin & Rahman, 2011). In addition, awareness about the principles of sustainability in an institution can increase staff productivity and convince leaders about the potentials benefits of planning for and implementing sustainability initiatives (Adegbile, 2012). However, Miller (2011) held that implementing sustainability principles cannot guarantee the desired change in behaviour towards sustainability because there is no evidence that environmental attitudes are accurate predictors of behaviour.

2.2.13 Social Responsibility and Stakeholder Participation in Sustainability Processes

HEIs now have a mission that transcends teaching and research to include service and partnership with stakeholders and surrounding communities (Stanislavska et al., 2014). In this research, the researcher also sought answers on the commitment of each

institution to promoting social responsibility in order to achieve sustainable development and become more competitive (Dahan & Senol, 2012; Alzyoud & Bani-Hani, 2015). According to Adebayo (2014), Nigerian HEIs need better collaboration with stakeholders to enhance sustainable development. Also, Kuzu et al. (2013) held that HEIs need to develop sustainable relations with stakeholders for them to attain the objectives set in their vision and mission statements. This research finds out to what extent stakeholder participation in sustainability processes is promoted in the selected institutions.

2.2.14 University Social Responsibility

According to Vasilescu et al. (2010), USR can be explained as the interaction between a university and society in order to promote sustainable human development. This is achieved through responsible management of environmental, labour, cognitive and educational impacts of the institution, which is documented and supported as an organisational policy by the university community.

Essentially, USR is an ethical approach that can be used to promote sustainability by developing a sense of civic citizenship and social responsibility in HEI management staff, academic and non-academic staff, students and communities (Sawasdikosol, 2009). USR can be viewed as a rewarding and purposeful communication between an institution and its stakeholders that facilitates the achievement of the objectives of all stakeholders and supports the fulfilment of the mission of the institution (Tetrevova & Sabolova, 2010). Higher education fosters human, social and economic development, and HEIs should ensure that these values define their social responsibility (Thomson, 2008).

The interest of HEIs in Nigeria would be well served if they invest more in USR in order to contribute more to the society that sustains their existence and operations (Iginedion & Ovbiagele, 2012). The mission of higher education should be to contribute to sustainability and improvement of society; however, higher education curriculum in developing countries is dominated by ethically doubtful and socially irresponsible understandings of development concepts (Chaudhry, 2014; Matten & Moon, 2004). Also, universities have been criticised for not instilling environmental and social sustainability awareness in students and overly focusing on economics and decision-making (Matten & Moon, 2008).

Developments like competition in higher education industry, privatisation of education institutions and globalisation have prompted many HEIs around the world to adopt USR as a strategic approach to build competitive advantage and organisational reputation in order to compete and survive in the evolving industry. Many HEIs in the developed world already have USR as a mission, and institutions in the developing world are quickly incorporating USR strategies into their competitive organisational strategy and have expanded education as a concept from classroom to HEI operations (Dahan & Senol, 2012). However, USR has been criticised for not doing enough to encourage transdisciplinarity, which is a tool used by HEIs to overcome alleged negative impacts of higher education (Vallaeys, 2014).

The researcher believes that HEIs have a direct and immediate impact on the society because of their daily operations, and their actions and behaviour reflect directly back to society through their alumni. Corporate social responsibility (CSR) can be described as ‘sustainable development of society, preserving environmental and cultural resources for future generations’ (Dahan & Senol, 2012 p. 95). HEIs can use

CSR to explore how to operate within profoundly new circumstances, and to understand how the broader society around their location is impacted by their activities (Brown & Cloke, 2009).

The satisfaction of all the stakeholders of an HEI must be considered during the adoption of social responsibility, with equal emphasis on social, environmental and economic perspectives should be certain (Costa & Menichini, 2013). In a landmark journal, Frakental (2001) argued that voluntary social responsibility could only gain practical value and significance if its goals are for social and ecological sustainability, and all stakeholders of the organisation are engaged. However, Hohnen (2007 p. 18) cautioned that the implementation of CSR does not have a 'one-size-fits-all' technique. The author stressed that all organisations have unique circumstances and characteristics that influence the framework of their operations and how they define their social responsibilities. Thus, the level of social responsibility awareness and efforts geared towards its implementation will vary in each organisation. This is also true for HEIs in Ilorin, and this study emphasises the development of institution-specific USR programmes that fit the unique features of each institution.

However, notwithstanding all its plaudits, social responsibility has drawn stinging criticisms from many authors who believe it is a 'smokescreen' which allows organisations to conceal unwholesome practice and repel government regulation. Critics describe it as an exercise of public relations that is intended to give an impression of improving operational practices (Marsden, 2006), and others hold that by being voluntary, social responsibility is an inferior substitute to state regulation and law (Broomhill, 2007).

2.2.15 Assessing Sustainability

Measurement of sustainability and assessment of sustainability are different processes but go hand-in-hand (Poveda & Lipsett, 2011). According to the authors, measurement entails identifying variables associated with SD and collecting and analysing data by using scientifically suitable methods. At the same time, assessment entails comparing performance against a criterion or criteria and is undertaken with the active participation of stakeholders during evaluation and decision-making stages.

Singh et al. (2012 p. 191) proposed a two-step approach to measure SD:

- Using SD indicators to *measure* 'progress made in a number of selected individual fields'.
- Using a combination of these individual fields with regard to their interlinking to *assess* general improvement in SD drive.

Assessment tools are analytical techniques that can be used to compare different policy/project alternatives and can be grouped into three categories according to their assumptions and valuation perspective: indicator-based, biophysical and monetary (Gasparatos & Scolobig, 2012).

2.2.15.1 Sustainability assessment in higher education

A sustainable higher education institution can be explained as one that promotes the reduction of harmful effects of their activities and use of resources on the environment in ways that enable local communities and society maintain sustainable lifestyles (Velazquez et al., 2006; Alshuwaikhat & Abubakar, 2007).

It is important that HEIs learn from each other so as to have a clearer vision of what a sustainable institution is and to make sure they are on the right track to achieving sustainability (Shriberg, 2002). Around the world, HEIs are recognised as strategic institutions that propose solutions for future sustainability and contribute to environmental friendliness. As a result, sustainable higher education (SHE) has become a concern for HEI decision-makers around the world, and HEIs in developed countries are leading calls for reconciling the human society and the natural world (Saadatian et al., 2011).

Cross-institutional assessment tools have been used in campuses of advanced countries and have been successful because they allow the sharing of common goals and experiences; however, results from the campuses vary due to differing circumstances in each (Yarime & Tanaka, 2012). The researcher advocates the development of campus-specific sustainability implementation tools to integrate and assess sustainability performance in Ilorin institutions according to the resources available to each and the prevailing circumstances in each. The researcher believes that identifying the right mix of organisational culture traits to enhance sustainability performance in each institution is pivotal for successful implementation of sustainability practice in Ilorin HEIs.

Implementing a tool for effective sustainability assessment and disclosure helps an institution to assess its performance and communicate its efforts more systematically and effectively to its stakeholders (Lozano et al., 2013). However, Yarime & Tanaka (2012) maintained that the pace of progress in this area has been very slow because sustainability issues are not paid adequate attention to in conventional university evaluation systems. The authors lamented the loss of potential mutual benefits

inherent in initiating integrated approaches to sustainability through collaboration between universities and their surrounding communities. This view is shared by Monteith & Sabbatini (1997) who observed that although stakeholders support the sustainability drive of their institutions at the beginning, they thereafter disagree on methods for approaching and implementing sustainability projects.

2.2.15.2 Attribute of ideal assessment tools

Assessment tools are increasingly used to guide HEI activities, and they can become a beacon for the attainment of a sustainable institution if adapted appropriately (Yarime & Tanaka, 2012). Shriberg (2002) opined that analysts must first develop criteria for cross-sectional assessment in order to measure sustainability in higher education and enumerated the following attributes of ideal cross-institutional sustainability assessments:

- Stress comprehensibility: a broad range of stakeholders must be able to comprehend sustainability assessment tools. Also, clear and verifiable reporting mechanisms must be developed by analysts. Comprehensibility should not be given up for accuracy given their value as cross-campus communication tools in both process and outcome, and there must be a translation of complicated methodology into understandable outcome (Wackernagel & Rees, 1996).
- Measure processes and motivations: sustainability measurement tools must critically probe decision-making by enquiring into incentives, rewards, mission and other process-oriented outcomes since ‘sustainability is a process not a destination’ (Bandy II, 1998) cited in Shriberg (2002 p. 256).

- Move beyond eco-efficiency: assessment tools ought to measure true sustainability and not just eco-efficiency (O'Connor, 1995). Sustainability indices measure total greenhouse gas emissions against a zero target, while eco-efficiency indices measure energy conservation (Shriberg, 2002).
- Are calculable and comparable: the ability to calculate sustainability development affects the suitability of a tool. Assessment tools could be either quantitative or qualitative, and both quantitative and qualitative data would need to be collected and analysed by methods that allow comparison across campuses (Shriberg, 2002).
- Identify important issues: parsimony presents a problem in many HEIs, especially where such institutions demonstrate potential to embrace sustainability. Therefore, a tool should be able to identify such issues with broad influence and effects but prioritise sustainability-related issues (Shriberg, 2002).

The researcher agrees with Shriberg's criteria for an effective sustainability assessment tool and believes institution-specific assessment tools would be more suited to HEIs in Ilorin due to differences in resources and capacity.

2.2.15.3 Sustainability assessment tools

Several tools for measuring sustainability have been designed and implemented by many universities in America, Canada and Europe, but these have mostly been cross-institutional assessment tools. This research proposes the use of institution-specific assessment tools specifically designed to measure sustainability in an individual institution and take into consideration unique circumstances and features of the

institution. This view is supported by Yarime & Tanaka (2012), who said that sustainability indicators could not be applied in all types of HEIs. Hence, it is essential that tools that make allowance for functional differentiation are developed. This literature review examines some of the most popular cross-institutional sustainability assessment tools and discusses the merits and demerits of each. A bespoke institution-specific sustainability implementation tool for Ilorin institutions should be developed to perform cross-institutional assessment because each HEI is deemed unique in terms of its economic, social and natural capital balance-sheet (Shriberg, 2002).

2.2.15.4 Review of some HEI sustainability assessment tools

A few popular sustainability assessment tools used in higher education are discussed below:

2.2.15.4.1 Auditing instrument for sustainability in higher education (AISHE)

The AISHE is a higher education sustainability assessment tool first developed in 2001 by Niko Roorda and the Dutch committee on sustainable higher education (CDHO) to assess study programmes of higher education and also grant certificates. Hobeon reviewed the AISHE framework in 2012 and introduced the newer AISHE 2012 framework (Boer & Brouler, 2012). There were two main aims for the review. First was to adjust the framework to suit the present educational context, thus, making it accessible and up-to-date. Second was to reduce its tendency to be prescriptive – not prescribing how sustainability should be integrated into an organisation's study programme (ibid.). The AISHE underwent the addition of issues, the complete removal of issues and a change in required level or descriptions of issues. However,

the framework's purpose and function of assessing sustainability in higher education study programmes remained the same (Boer, 2013).

Additional and diverse aspects of sustainability like environmental management and institutional governance can be assessed by raising the level of emphasis. Consequently, Hobeon developed a new ISO 26000 based framework called Assessing Responsibility In Sustainable Education (ARISE) for assessing social responsibility in HEIs upon request from institutions. Furthermore, Boer (2013) reasoned that a crucial element of assessing the overall performance of an organisation and its capacity to maintain effective operations is by assessing the performance of the organisation in the society in which it operates and its environmental impact.

Although AISHE is a very interactive tool that involves both individuals/groups affected by decisions and decision-makers in performance measurement, it is designed to be used by small groups and only assesses sustainability in terms of performance of individual departments. Furthermore, since AISHE has a limited scope, can only assess one academic department at a time and has outcomes that completely depend on subjective experiences of participants, its use as a means for comparing sustainability across departments or campuses is limited and would require large human resource and length of time (Cole, 2003). Another shortcoming of AISHE is that it gives more attention to issues about academic activities instead of all issues like governance, finance, research, operations, and relies only on subjective experiences (Saadatian et al., 2011).

2.2.15.4.2 ULSF's SAQ

The sustainability assessment questionnaire (SAQ) of the Association of University Leaders for a Sustainable Future (ULSF) is a mainly qualitative tool recommended as an exercise to be performed by representatives (10 to 15 in number) from campuses that have critical needs. The exercise is led by a ULSF staff, and the SAQ goal is to provide the representatives with a broad understanding of sustainability in higher education and an image of their institution's path to sustainability (Shriberg, 2002).

A major strength is its emphasis on sustainability (not eco-efficiency) and how to integrate it into HEIs by investing in social responsibility and sustainable consumption (Shriberg, 2002). This tool enables HEIs to manage economic, social and environmental aspects of sustainability according to their unique circumstances but does not allow cross-institutional comparison (Gough & Scott, 2007). The SAQ has recorded huge success as a progress-reporting and discussion-generating tool for scholars and practitioners of campus sustainability and provides definitions that adequately describe the context of use of the term sustainability at its beginning (Shriberg, 2002). Furthermore, the SAQ's assistance in determining common objectives for improvement, facilitating dialogue, and capacity and community building may be its greatest strength (ibid.).

Nevertheless, the tool misses many sustainability indicators and is basic in structure, design and scope (Cole, 2003). Another probable challenge is that big institutions may be unable to answer many of the questions exhaustively, for example, providing a list of research efforts and courses that relate to sustainability (Corcoran & Wals, 2004). However, the researcher does not agree that the ULSF cover letter which says: 'Since

the questions are primarily qualitative and impressionistic, we cannot use the responses to rate or compare institutions' (ULSF, 1999) reveals the flaw of the SAQ.

The researcher holds that although institutions in developed countries may benefit from cross-institutional comparison due to relatively uniform circumstances, institutions in Nigeria are dissimilar in terms of levels of development, available resources and general circumstances. Therefore, the SAQ's approach to campus sustainability assessment should not be viewed as a weakness but viewed as strength when assessing sustainability in certain conditions.

2.2.15.4.3 Social impact assessment

Stakeholders are increasingly demanding for sustainability assessment systems that assist them in gauging the performance of socially responsible activities among organisations (Hess, 2014). This method provides a systematic assessment of the daily life of communities whose environments are impacted by a planned project, programme, or policy and offers decision-makers and the public easy-to-understand quantitative and qualitative indicators of social impact. This assessment is mandatory for large development projects and it is imperative that stakeholders are optimally engaged during the process. A weakness of this tool is that it does not promote common agreement on how to measure social impacts of proposed activities and which indicators to use because the case and context specificity are applied during assessment (Burdge, 2004). Due to the scrutiny social impact assessment is subjected to, Burdge & Finley (1995) advised that assessments should be rigorous and based on a marginal level of quantification at least.

2.2.16 Sustainability Disclosures

Deegan & Rankin (1996) explained these as disclosures about how an organisation interacts with its social and physical environment, and covers aspects such as product safety, energy, the natural environment, community involvement and human resources. Organisational disclosure on environment and social matters is a voluntary activity but has not been extensively studied in developing countries. According to Lozano (2010), disclosures serve two main functions:

1. To examine the present state of an organisation's social, environmental and economic undertakings; and

2. To provide stakeholders with information about an organisation's sustainability efforts and progress.

Ceulemans et al. (2015) found that sustainability reporting improves communication with stakeholders and increases awareness about sustainability in HEIs. The authors stated that internal motivations were the predominant drive for sustainability reporting among HEIs and also listed a few hindrances such as the lack of institutionalisation of sustainability reporting in HEIs, lack of inclusion of material impacts in reports, and absence of stakeholder engagement process. Furthermore, Dagiliene & Mykolaitiene (2015) posit that many HEIs do not consider sustainability reporting as very important because they view this as voluntary and would rather concentrate on areas that they deem more essential. The researcher intends to find out from the management of the institutions under study if there are agreement and organisational backing towards sustainability assessment and disclosure.

The importance of providing disclosures to stakeholders and society at large is buttressed in situations when senior management of organisations are invited by members of their community to explain the impacts of their organisations on the environment (Wilmshurst & Frost, 2000). Studies show that the practice of providing social disclosures is low in developing countries when compared to developed countries where this practice is seen as an industry standard (Uwuigbe & Egbide, 2012).

During analysis of the social responsibility of providing environmental disclosures in Nigeria, Uwuigbe & Egbide (2012) stated that enforceable regulatory principles on sustainability as an organisational practice is relatively new in Nigeria as there are no obligatory environmental audit and reporting requirements for organisations. The authors found a positive relationship between firm size and environmental disclosure of Nigerian audit firms and this is consistent with the findings of similar studies done by researchers such as Mackinlay (1997) and Markowitz (1952). These situations call for the development of a sustainability assessment and integration model for Nigerian HEIs that could serve as an example to other Nigerian industries. Also, the researcher posits that the relationship between sustainability performance and variables like size, age, and ownership of Nigerian institution needs to be explored.

2.2.17 Sustainability Integration Strategies

There are a number of strategies for integrating sustainability into the strategy of an organisation.

1. **Introverted:** also referred to as the risk mitigation strategy, which protects an organisation from risks by targeting compliance, legal and other external

standards regarding social and environmental commitments (Baumgartner & Ebner, 2010; Baumgartner 2012). This strategy entails just following legal rules and requirements of sustainability (Giesen & Zuschke, 2011) and operates the lowest level of sustainability maturity (Keeys, 2012).

2. **Extroverted:** also referred to as legitimating strategy, which targets social standards like a licence to operate and other external relationships (Baumgartner & Ebner, 2010; Baumgartner 2012). According to Giesen & Zuschke (2011), the avoidance of loss is the main goal of an extrovert strategy, and this strategy emphasises leadership on organisational sustainability issues, observance of regulations and voluntary frameworks and stakeholder reporting (Keeys, 2012). It can further be divided into two:
    a. *Conventional extroverted strategy:* this strategy increases an organisation's credibility and differentiates it from competitors because it provides society with details of the organisation's sustainability commitment.
    b. *Transformative extroverted strategy:* this strategy goes farther than the conventional strategy in providing society-targeted benefits. Society is more sensitive about these benefits and responds more to a perceived provision or absence of these. An organisation that uses this strategy is perceived as a sustainability driver, thus obtains higher credibility.

3. **Conservative:** also referred to as efficiency strategy, which targets cleaner production and eco-efficiency standards (Baumgartner & Ebner, 2010; Baumgartner 2012). This strategy deals with social and ecological matters as

cost-effectively as possible by focusing on increasing efficiency and productivity (Giesen & Zuschke, 2011). This strategy places a priority on well-defined processes and internal cost-efficiency, which reflects the investment in ecological sustainability, employee health and safety and technology without the dominance of societal issues (Keeys, 2012).

4. **Visionary:** also referred to as holistic sustainability strategy, which encompasses the overall organisational operations like offering customers and stakeholders unique advantages, and competitive advantages obtained from innovation and differentiation (Baumgartner & Ebner, 2010; Baumgartner 2012). This strategy aims to improve both social and ecological effort and competitive ability by increasing effectiveness and efficiency and completely harnessing the potential of differentiation (Giesen & Zuschke, 2011). This strategy, out of all the four, best integrates sustainability into the crux of organisational processes and is exclusively inspired by viewing sustainability as a strategic organisational resource or by profitability (Keeys, 2012). It comprises two parts:
    a. *Conventional visionary strategy:* this strategy is not as crucial as the systemic visionary strategy. Here, issues like corporate citizenship, absence of controversial activities, purchase and other processes do not have a direct impact on an organisation's image and therefore cannot affect an organisation's position as a sustainability leader in the market.
    b. *Systemic visionary strategy:* this strategy highlights the sustainability commitment of an organisation. Here, it is imperative that the

organisation returns a good result in all aspects of sustainability to impress stakeholders and the market.

However, Stuart (2013 p. 796) explained that when viewed through the lens of the sustainability megatrend, the four sustainability integration strategies can be renamed: ‘losers, defenders, dreamers and winners in that order’. The author suggests that organisations that espouse sustainability leadership, promote a vision of sustainability and fully implant this vision into all its processes, are described as winners.

The four strategies have also been explained in the context of the UK banking industry by Moufty (2012) in the same order:

1. *Defensive strategy:* sustainability matters are ignored, and there may even be an effort to oppose or delay new environmental law.
2. *Preventive strategy:* entails further methodical management of social and environmental risk.
3. *Offensive strategy:* entails strategic management of social and environmental risk and adding of some degree of social and environmental worth.
4. *Sustainable strategy:* entails recognition of sustainability-related issues as motivation for new product and services development. This strategy integrates the triple bottom line method into the main organisational strategy and is not limited to risk avoidance.

In the 1990s, organisations believed that abiding by the core competencies would facilitate the achievement of sustainable competitive advantage in technological innovation. Today, modern sustainability integration strategies are commonly used; however, large successful organisations used to observe introvert and proprietary

modes of innovation as standard. Proceeding years witnessed a shift in the way these organisations engaged in innovation to a (much more) extrovert and open paradigm mode of innovation which reveals significant changes in technological innovation and the external conditions for conducting it (Christensen, 2006).

The researcher suggests that the use of the systemic visionary strategy (sustainable strategy) could enable Ilorin HEIs to develop a model that would facilitate engagement of stakeholders in order to improve the social and ecological sustainability performance and encourage the viewing of sustainability as a strategic organisational resource.

2.2.18 Transformation Towards Sustainability

Transformability is defined as 'the capacity to create untried beginnings from which to evolve a fundamentally new way of living when existing ecological, economic, and social conditions make the current system untenable', (Westley et al., 2011). According to Olsson et al. (2014), strategies that view nature and humankind as a single entity in which a healthy planet is the goal of social and economic development should underpin attempts to create sustainability transformations. Also, a number of interlinked transitions have been identified as necessary for attaining sustainability transformation (Gell-Mann, 2010): (1) ideological, (2) informational, (3) institutional, (4) social, (5) economic, (6) technological, and (8) demographic. These transitions require innovation. Although innovation is crucial to attaining sustainability transformation, it can also drive developments that inadvertently oppose sustainability as witnessed in technological innovation (Westley et al., 2011).

The researcher suggests that a transition in organisational culture of Ilorin HEIs should precede a transition in innovative capacities in order to achieve an effective transformation. The prevailing culture in an organisation influences the behaviour of the organisation (Ebrahimpour et al., 2011). Thus, efforts must be made to ensure that the organisational culture in Ilorin HEIs is not antithetical to their aspiration for sustainability transformation. In a study of transformation towards sustainability in Chlamers University, Sweden, Holmberg et al. (2012) did not perform an analysis of the organisational culture in the university before implementing transformation strategies; however, the authors concluded that the strategies seemed to provide good results even though it was difficult to assess benefit of the strategies. The researcher believes that performing an analysis of organisational culture of an institution would provide better understanding of its circumstances and different stakeholder views. This argument is backed up by (Cockerill & Carp, 2009) who said behavioural transformation among HEI stakeholders is critical to the success of sustainability transformation agenda of an institution, and that there is no direct, one-size-fits-all method for attaining transformation (ibid.).

Drivers, like sustainability funding and employment opportunities, positive pressure from peer institutions, interdisciplinary research groups, sustainability champions among staff, and visionary leadership helps to achieve sustainability transformation in HEIs (Ferrer-Balas et al., 2008). The structure and culture of an institution may frustrate transformation towards sustainability because of inherent barriers such as a reluctance to produce better research and graduates unless prodded by society, a lack of desire to change due to apparent success of old systems of doing things, poor

incentive structure available to faculty and a bottom-up organisational structure that bequeaths enormous powers to individual faculty members (ibid.).

The researcher maintains that developing a sustainability implementation tool that combines sustainability integration and assessment functions will provide better means of managing transformation towards sustainability.

2.2.19 Sustainability Maturity

Maturity indicates the combined effect of capabilities on certain aspects of organisations Clarke et al. (2013) while maturity models can be used by organisations to transform complicated ideas into capabilities and to increase knowledge about prospective development (Silvius & Schipper, 2010). According to Glover & Peters (2013), sustainability maturity models show institutions the processes that are essential for the development of sustainability. The authors expounded that to initiate and mobilise change in ESD within an institution; management can use sustainability maturity model to organise elements such as research and monitoring, partnerships, institutional management, teaching and learning.

Maturity models have been criticised as unnecessary and replaceable by improvement-based actions (Mettler, 2009), as lacking empirical foundation, and as being guidelines that make reality seem easy (Roglinger et al., 2012). On this backdrop, Marshall & Mitchell (2002) cautioned that maturity models should avoid shifting objectives from process improvement (the true mission) to achievement of greater maturity level (the artificial mission).

According to Grayson & Ainsbury (2014), the stage of sustainability maturity of an organisation centres on a combination of results, organisational policy, strategy, business purpose and mind-set. Baumgartner & Ebner (2010) described maturity levels of social, ecological and economic sustainability and classed organisations as beginning, elementary, satisfying, and outstanding depending on achievement.

Section B

2.3 Organisational Culture: An Overview

The culture of an organisation can be described as the characterisation of its shared rituals, myths, ideologies, norms, beliefs and systems that can become a valuable source of effectiveness, efficiency and motivation for people (Zakari et al., 2013). Different authors have provided many definitions of organisational culture, and a popular one defines the concept as ‘a set of values, symbols and rituals shared by the members of a specific firm, which describes the way things are done in an organisation in order to solve both internal management problems and those related to customers, suppliers and environment’ (Claver et al., 2001 p. 248). A similar definition is offered Osibanjo & Adeniji (2013) who said organisational culture is the collective beliefs, values and assumptions upheld as the right approach for managing the challenges and opportunities of an organisation. Kokina & Ostrovska (2013) explained that the culture of an organisation could be seen as basic principles that enable the organisation to deal with challenges of adapting to internal integration of new methods and to the external environment.

Organisational culture affects the values, motivation and behaviour of employees (Ehtesham et al., 2011). They can provide valuable competitive advantage for

organisations by unifying organisational capacity and shaping organisational procedures and can also portray the general image of an organisation's identity (ibid.). This is proved by the findings of several authors who found that organisational culture has a strong relationship with organisational performance (Alnasseri et al., 2013; Zakari et al., 2013; Zhang et al., 2011; Olughor 2014; Ahmad 2012; Abu-Jarad, 2010; Momot & Litvinenko, 2012; Amah et al., 2013; Efanga & Ifejiagwa, 2014), and a strong relationship with employee performance (Uddin et al., 2013; Owoyemi & Ekoaba, 2014). Organisational culture shapes employee behaviour, which itself shows the level of commitment of employees to organisational goals like the development and implementation of an action plan on sustainability (Sola et al., 2012).

Ahmad (2012) enthused that organisational culture has a direct and active role in performance management, and (Aftab et al., 2012) held that the performance level of any organisation increases where there is a strong, well-defined, and well-managed organisational culture. Most authors used financial ratios, market share, customer satisfaction, and employee productivity, among others, to measure organisational performance (Singh et al., 2012; Richard et al., 2009). This study advocates the inclusion of sustainability practice as a measure of organisational performance in all organisations and HEIs.

According to Losane (2013), there are three types of organisational culture: culture of innovation, culture of service and culture of quality. Furthermore, acceptance of innovation as a value and stimulation of innovation behaviour can be aided by organisational culture. The author, however, cautioned that these cultures could only be instilled in HEIs that have adequate support from management and other higher education stakeholders. Organisational culture should change to adapt to innovative

changes in an organisation's operations (Osibanjo & Adeniji, 2013) because it is a major factor affecting innovation capability which itself affects the ability of an organisation to create or sustain competitive advantage (Yesil & Kaya, 2012).

2.3.1 Organisational Culture Theories

2.3.1.1 Hofstede Model

Hofstede (2011) discussed the Hofstede Model of six dimensions of national culture:

1. Indulgence/restraint
2. Long/short-term orientation
3. Masculinity/femininity
4. Individualism/collectivism
5. Uncertainty avoidance
6. Power distance

This model compares culture dimensions in different countries by giving each a score, and the dimensions are statistically distinct and may occur in all possible combinations.

In the indulgence/restraint dimension, a society is classified to be either based on whether it permits enjoyment of natural and basic human desires associated with fun and happiness or restricts such enjoyment through stringent social norms. A society is classified as having a long-term or short-term orientation based on the social perception of life-matters such as work, religion, morality, politics and government, sexuality and gender, education, and economy. A society is described as masculine or feminine based on having either a predominantly 'assertive' attitude or a

predominantly ‘modest’ attitude. The extent to which people in a society tend to belong to a group determines whether a society is described as individualist or collectivist. The degree to which a society influences its members to feel either comfortable or uncomfortable in different, unexpected, unfamiliar, or new situations determines if the society has a strong or weak uncertainty avoidance culture. The degree to which less powerful members of society accept and expect inequality of power determines whether the society has a small power distance or large power distance (Hofstede, 2011; Hofstede, 1980).

2.3.1.2 Competing Values Framework

According to Cameron & Quinn (2006), the Competing Values Framework was developed to assess the effectiveness of an organisation based on a set of indicators. Two main dimensions emerged from analyses. The first dimension distinguishes effectiveness based on an emphasis on dynamism, discretion and flexibility from effectiveness based on the emphasis on control, order and stability. The other dimension distinguishes effectiveness based on the emphasis on unity, integration and internal orientation from effectiveness based on an emphasis on rivalry, differentiation and external orientation. Furthermore, these two dimensions jointly form four quadrants (Adhocracy, Clan, Market and Hierarchy cultures) that represent a unique set of indicators of organisational effectiveness. The indicators are based on people’s perception of organisational performance and what is appropriate, right, and good practice. The quadrants are explained below:

- *Adhocracy culture:* involves temporary situations in organisations which are terminated when tasks are completed and reloaded quickly when new tasks

arise. This culture fosters creativity, flexibility, innovative suggestions, and adaptability to internal and external changes as ways to assure organisational competitiveness (Rodrigues & Caetano, 2013; Yu & Wu, 2009; Cameron & Quinn, 2006).

- *Clan culture:* emphasises employee involvement and empowerment and is characterised by teamwork, atmosphere of collectivity, common goals, and shared values. This culture fosters staff cohesion and commitment and is facilitated by a tradition of loyalty, trust and openness (Rodrigues & Caetano, 2013; Yu & Wu, 2009; Cameron & Quinn, 2006).
- *Market culture:* focuses more on dealings with the environment outside of an organisation and less on the environment inside. The motivation is profitability and productivity from creating a competitive edge. This culture is characterised by a result-driven and target-oriented atmosphere, and leaders are demanding, hard-driving and external/market-focused (Rodrigues & Caetano, 2013; Yu & Wu, 2009; Cameron & Quinn, 2006).
- *Hierarchy culture:* features a relatively stable environment in which people and processes are controlled, service and product uniformity are maintained, and functions and tasks are coordinated and integrated. This culture is internal-focused and values: accountability and control systems; standardised procedures and rules; and clearly defined decision-making authority as crucial for success (Rodrigues & Caetano, 2013; Yu & Wu, 2009; Cameron & Quinn, 2006).

2.3.2 Denison Model of Organisational Culture

Organisational culture can be defined as 'the underlying values, beliefs and principles that serve as the foundation for an organisation's management system as well as the set of management practices and behaviours that both exemplify and reinforce those basic principles' (Denison, 1990 p. 2). In 2005, Dr Daniel R. Denison developed a model for analysing the characteristics of high-performance organisational culture. The model is shown below:

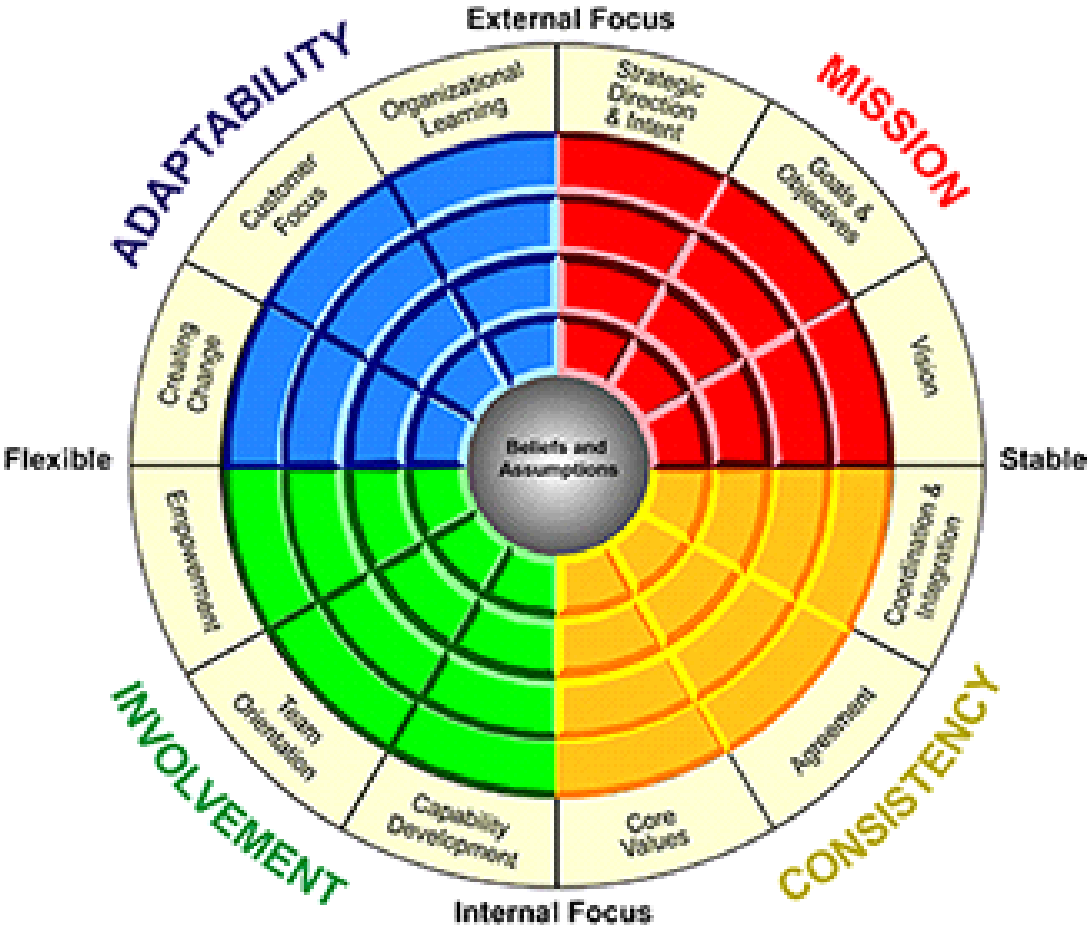

Figure 2.2: Denison Model of Organisational Culture
Source: Denison (2015)

The following sections discusses each of its four traits and twelve indices of the Denison model of organisational culture:

2.3.2.1 Mission

This trait describes an organisation's goals and objectives, vision of the future state and strategic direction in order to provide team members with a clear direction in their work (Trew et al., 2012). Mission defines the fundamental purpose of an organisation by describing why the organisation exists, identifying its major goals and explaining how it achieves its vision (Modebelu & Anebi, 2012)**.** Mission explains the purpose of an organisation, and an explanation of how it basically differs from values and vision of an organisation is provided by (Mirvis, Googins & Kinnicutt, 2010):

- Values are the 'How:' how we act to achieve our vision.
- Mission is the 'Why:' the organisation's answer to why we exist (purpose).
- Vision is the 'What:' the picture of the future we seek to create.

However, according to Mirvis, Googins & Kinnicutt (2010), organisations' intention of redefining their purpose and driving transformation by using values, mission and vision has been criticised, especially in sustainability circles. The authors said that risks exist when sustainability is used principally for the following:

- Driving values, mission and vision from top to down without full employee engagement, and without closing the gap between preaching and practice.
- Resolving to have superficial change instead of fundamental change.
- Public relations and image burnishing instead of business transformation.

Furthermore, the objective that an organisation was founded to accomplish is its crucial driver and determines its mission and vision. For instance, Ogunruku (2012) held that HEIs should embed in their core value a driver for the achievement of set

objectives. This driver can be articulated in mission and vision statements that motivate institutions to achieve set objectives such as generation, dissemination and application of knowledge in teaching, research, and community service.

A mission statement was explained as ‘a set of goals that help the organisation reach its aims, and that express its strategic objectives’ (Ozdem, 2011 p. 1889). It assists individuals who support, attend, or contemplate attending, teach or work at an institution to understand the goals and objectives the institution is trying to accomplish (Barr, 2000). This means that mission statements focus organisational resources, defines the role, purpose and nature of organisations, and steers strategic planning (Keeling, 2013). The institutional mission statement is the basis of any strategic plan because it outlines why an institution exists and what it is expected to achieve through its operations (Hinton, 2012).

In Nigeria, government and private owners of HEIs usually determine the statement of purpose and existence of an institution and a comprehensive explanation of current services, unique culture, curricular history and the founding of an institution are detailed in HEI mission statements. This view is supported by Keeling (2013 p. 30) who suggested that mission statements of educational organisations reveal the goals of their sponsor, describes the existing state of affairs and relates how the organisations meet the desires of their stakeholders. The researcher contends that a mission statement can also explain an institution’s sustainability stance and reflect this in the quality of graduates it produces. Also, a mission statement serves as a guide to strategic planning by communicating an organisation’s strategic direction to stakeholders (Bartkus et al., 2004). However, using a comprehensive mission

statement as a base to develop a strategic plan presents two main challenges (Hinton, 2012):

- Firstly, excessive wording may cause difficulty in identifying and isolating elements of the statement that identifies the core of organisational activities.
- Secondly, there may be too many statements about institutional culture and values in most comprehensive mission statements.

Since these limitations are real, the mission of an organisation has been limited in more recent planning practice to a simple format that says, 'This is what we are here to do' (Hinton, 2012 p. 10). Notwithstanding this, mission statements have proved to be very useful in communication for two major reasons (Keeling, 2013):

- Firstly, people are brought together to discuss and explain responsibilities and roles during preparation of a mission statement.
- Secondly, the intent of community service is communicated by mission statements through a comprehensive outline of the needs of community members, capacity, resources and skills required to meet those needs, and a beneficial outcome.

Also, HEIs can use mission and vision statements to communicate desired cultures and attitudes they want stakeholders to imbibe into their work practice (Darbi, 2012). The author also said that the mission statement could impact and become a guide for stakeholder behaviour and attitude if it is communicated clearly, shared by stakeholders, and strengthened by a reward system. Thus, the researcher believes that

a culture of sustainability can be nurtured when employees are more committed to the objectives and values stated in the mission statement of their organisation. According to Osibanjo & Adeniji (2013), employee commitment is boosted when the productivity of their organisation increases, and this can be achieved through implementing effective sustainability initiatives that ensure that all stakeholders benefit from optimal use of resources and potential.

A number of authors (Sufi & Lyons, 2003; Goett, 1997; Mullane, 2002) respectively have criticised the use of mission statements as:

1. Creating misunderstanding because people frequently mistake vision statements for mission statements.
2. Having too many statements that sound general and non-actionable.
3. Having questionable preparation and implementation processes.

However, a mission statement is a key indicator of organisational performance (David et al., 2014) and would be invaluable in propagating an organisational culture that supports sustainability and assessing sustainability performance in Kwara state HEIs.

2.3.2.1.1 Strategic direction and intent

In their milestone journal, Hamel & Prahalad (1989) described strategic intent as ‘an obsession with winning at all levels of the organisation’.

Strategic planning for sustainability in higher education is a process of decision-making on how to harness available resources to make the most of opportunities amid increasing challenges (Modelu & Anebi, 2012). Additionally, policymaking is closely tied to organisational agenda (Hartlapp et al., 2010) and can have an immense impact

on decisions surrounding sustainability. The National Policy on Education provides guidelines for administration of Nigerian HEIs (Ogbogu, 2013) while each HEI's management decides the policies and processes that their institution follows. These processes, which include defining the vision, mission, and values of the institution; relationship with other institutions; patterns of hierarchies and authority; resource allocation; and decision-making can affect the culture of an organisation and performance of key projects like sustainable development.

Strategic planning is different from strategy formation and strategic thinking in that it takes place around the others and not within them (Mintzberg & Quinn, 1996). The authors said strategic planning directs planning activities and assesses advancement on strategic goals. In contrast, strategy formation and strategic thinking are inherently creative actions that involve a synthesis of ideas and not just analysis.

According to (Ness et al., 2007 p. 499), the following question aptly captures the need for strategic planning during sustainability assessment:

> *'How can today's operational systems for monitoring and reporting on environmental and social conditions be integrated or extended to provide more useful guidance for efforts to navigate a transition toward sustainability?'*

The following discussion on strategic planning attempts to answer these questions:

COMPONENTS OF A STRATEGIC PLAN

Strategic planning is a tool used by organisations for making long-term plans based on goals, opportunities and risks, and implementing these plans in order to increase organisational efficiency (Ozdem, 2011). This concept begins with the identification of an organisation's present state by considering external factors and continues with the drafting of strategies that will help steer the organisation into the future, putting the strategies into action, and lastly assessing performance (ibid.). The researcher believes that Ilorin HEIs must use strategic planning for building a strong organisational culture and assessing sustainability performance.

Hinton (2012) explained that there are multiple components in contemporary strategic plans, and each component serves a specific purpose. Technically, a mission statement may not be a component of a strategic plan; however, it forms the basis upon which other components are formed. Other components that make up a strategic plan include values statement, institutional goals, and a vision statement and all these provide valuable direction in a planning process. The values statement explains how the institution intends to achieve its goals. The institutional goals present a method for assessing progress towards the vision. The vision statement is based on an analysis of the institution's environment and expresses the aspiration of the institution (Hinton, 2012).

Foundation	• Mission Statement
Supporting Components	• Values • Institutional Goals • Vision
Strategic Plan	• Goals and Objectives

	• Implementation Plan

Table 2.1: Components of a Strategic Plan
Source: Hinton (2012 p.9)

However, Mintzberg (1994) highlighted a number of pitfalls in planning. The pitfalls raised include:

1. Public organisations are divided over whether to plan to permit individual freedom or whether planning decreases individual autonomy.
2. There is intrinsic opposition to planning in organisations like education and health care institutions where independence and autonomy have strong cultural value.
3. Process of planning can create anxiety and create resistance to change.

APPLICATIONS OF SUSTAINABILITY ASSESSMENT (SA) TOOLS IN STRATEGIC PLANNING

The findings of research on identifying and classifying factors that can encourage or hinder adoption of SA tools when preparing local strategic plans provided a different view to the lifecycle of a strategic plan. According to Khandokar et al. (2009), this lifecycle can be classified into three phases: production/preparation, implementation and monitoring, and review. On completing the process of plan preparation, the project goes into the plan implementation phase. The plan implementation phase is one in which sustainability assessment is conducted before an application for planning permission is submitted in order to ascertain if the project will have any major effect on the built environment. The last phase involves regular monitoring of the performance of the strategic plan vis-à-vis the implementation plan.

A figure describing these phases is given below:

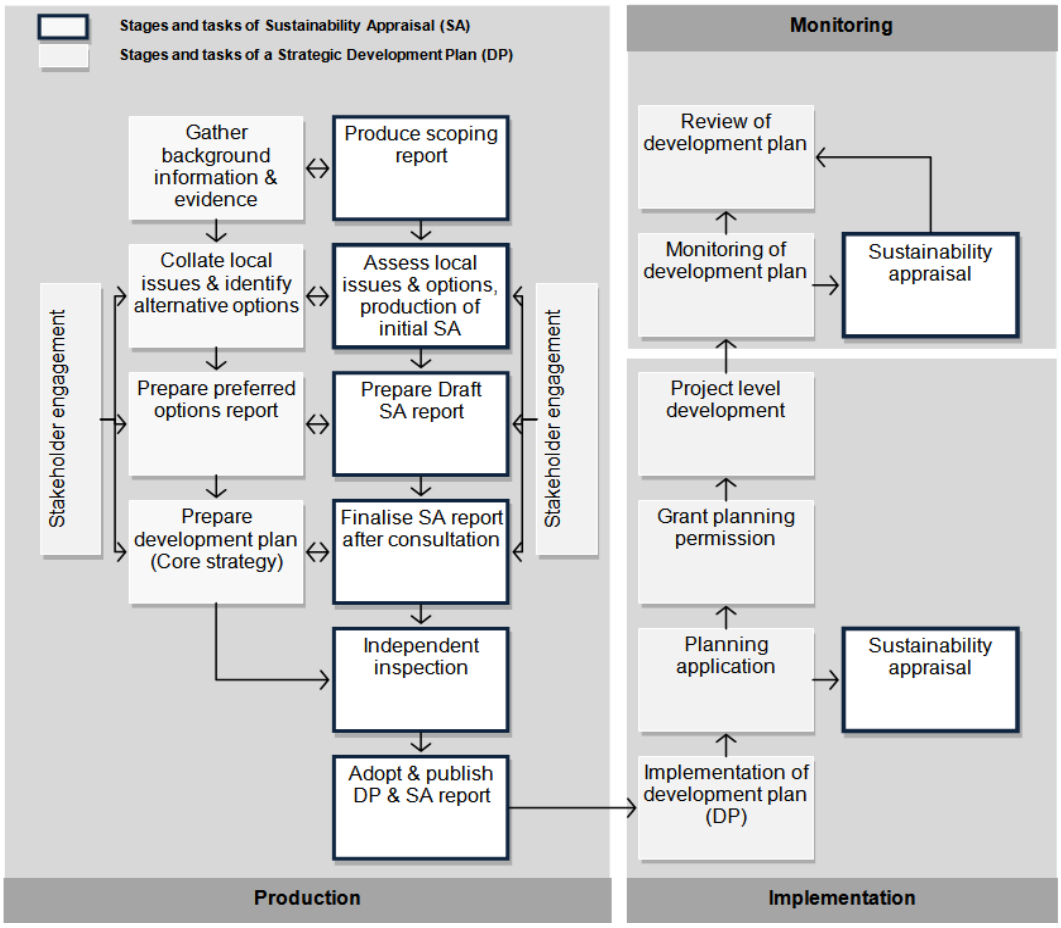

Figure 2.3: Life Cycle of a Strategic Plan
Source: Khandokar et al., (2009 p. 23)

The figure below shows tasks involving information flow within sustainability assessment:

Figure 2.4: The tasks involving information flow within sustainability assessment
Source: Khandokar et al. (2009 p. 24)

BARRIERS TO ADOPTION OF SUSTAINABILITY ASSESSMENT (SA) TOOLS IN STRATEGIC DECISION MAKING

Sustainability assessment tools used in strategic decision-making have drawn criticism from several authors. For instance, strategic environmental assessment (SEA) has been criticised for lacking theoretical base (Emmelin, 2006), and there is need for more research into what factors contribute to the impact of sustainability impact assessment (SIA) on decision-making (Runhaar & Driessen, 2007). Also, Waas et al. (2014) posit that although sustainability indicators (SI) frequently do not influence decision-making, bottom-up strategies like community involvement can enable indicators to enhance advancement towards sustainability.

Extant literature identifies three main categories of barriers to the adoption of SA tools:

1. *Barriers associated with resources:* inadequate funding is a major barrier to adoption of SA tools and is more prevalent in the private sector where the decision to allocate funds for SA tools is weighed against prospective immediate financial gains accruable to the organisation from adoption of SA tools (Khandokar et al., 2009; Moobela et al., 2007). Studies show that even in cases where potential benefits are fully understood, decision to fund the adoption of new methods in most organisations often require both internal and external persuasion.

Furthermore, inadequate time to train users of SA tools to become proficient users and acquire new knowledge was identified as another barrier. Users tended to prefer techniques that used readily available data that do not require pre-processing (ibid.).

2. *Barriers associated with people:* sustainability assessment requires expertise and knowledge about how sustainability functions since this can be intellectually challenging. Khandokar et al. (2009) and Moobela et al. (2007) suggested that the following key skills are required in administering sustainability assessment:

    - Technical competence in the use of SA tools, which are often designed based on complex theories
    - The ability to manage large volumes of information
    - The ability to forecast the dynamic spatio-temporal interactions of the local urban systems
    - Competence in qualitative and quantitative analyses
    - The ability to identify and assess significant local issues

    Also, inadequate knowledge and understanding of the elements of strategic sustainability and lack of skilled personnel within the organisation to carry out sustainability assessment are barriers associated with personnel. Other barriers identified by Khandokar et al. (2009), Moobela et al. (2007) and Ochieng et al. (2013) include:

- Lack of interest shown by an organisation may put off external consultants from using the tools
- Poor communication between policymakers and potential tool users
- Communication gap between organisation and consultant may also hamper effective implementation of SA tools
- Lack of organisational commitment and resistance to change

Barriers associated with technology: inadequate information management systems in existing SA tools hinder effective collaboration among stakeholders and public participation in the planning process (Khandokar et al., 2009; Moobela et al., 2007). Modern SA tools need to be designed to meet the demanding and iterative nature of SA. The authors suggested following as key criteria by which modern tools can be made:

- Innovative interactive calibration and validation of the underlying models
- Effective management of shared repositories of information
- User-friendly visualisation of the decision parameters
- Advanced impact assessment
- Systematic risk and uncertainty modelling
- Integrated assessment of sustainability

Technology is also faced with questions about transferability, robustness and cultural appropriateness and should not be expected to solve all sustainability challenges (Zelenika & Pearce, 2011).

SUSTAINABILITY AS AN ORGANISATIONAL STRATEGY

HEIs that have successfully incorporated different forms of sustainability into planning, operations and academics are termed 'Green Campuses' (Osmond et al., 2013; HEA, 2013; Radford, 2012) and the researcher holds that attainment of this level of sustainability requires an effective organisational strategy. Strategy can be defined as a 'major plan of action for achieving the long-term objectives of the entire organisation' (Owens, 2013 p. 3), and successful institutions emphasise long-term campus-wide plans as more important than short-term gains. The vision and mission of an institution needs to reflect a desire to attain a green campus before strategic planning for sustainability can succeed (LSE, 2012-13).

LSE is an example of an HEI that is committed to attaining the status of a fully sustainable academic institution. Its director Professor Craig Calhoun emphasised that sustainability is taken very seriously by the institution, and it forms a major part of the institution's ethics code and strategic plan (ibid.). The institution has successfully integrated sustainability into education and research, income and investment, emissions and discharges, procurement, construction and refurbishment, energy and carbon, waste and resources among others, and is a recipient of several awards including the People and Planet Green League Recognition (ibid.).

2.3.2.1.2 Vision

THE INSTITUTIONAL VISION STATEMENT

Changes within an HEI may call for a re-assessment of its mission, vision and values and such events underpin the process of strategic planning (Calder, 2006). One of the most significant elements of a strategic plan is the institutional vision statement which clearly describes what an institution is determined to become in a specified time span

(Hinton, 2012). This means the statement describes an organisation's desired future state and not its present state. Also, an institution's future strategic position and particular aspects of that position as they relate to the mission statement is defined by the vision statement (Darbi, 2012).

Very often, this vision may spring from a leader in the institution and may be revised or reviewed by institutional stakeholders – usually by the committee for strategic planning (Hinton, 2012). Furthermore, the process of strategic planning for sustainability in HEIs can be guided by the vision statement so that stakeholders in each institution can adopt the same vision of the future. It is critical that people tasked with implementing strategic plans work together in the same direction in order to align resources, goals, vision, and mission (ibid.). Thus, everyone involved in forming the sustainability vision and mission of an institution must also demonstrate a resolved commitment to strategic planning (Calder, 2006).

The researcher believes that an institution's vision statement should reflect stakeholders' vision of sustainability because the institution's best interest is served when an opportunity is provided for stakeholders to 'own' the vision by some form of early input during drafting or revision of the statement. The researcher also believes that having a long-term vision of sustainability that protects the future of an institution can be a source of inspiration and an example to society. Vision, as a subset of mission, explains the model state that an institution aspires to attain as part of the purpose for the existence of the institution (Modebelu & Anebi, 2012). The researcher maintains that an institution's sustainability vision can provide strategic direction on how to improve current sustainability practice (Mirvis, Googins & Kinnicutt, 2010).

HEI stakeholders often argue that an analysis of the gaps in education provided by institutions must be performed before a vision statement is drafted. However, Hinton (2012) regards this as only partially correct and argued that drafting a vision statement should precede analysis in order to make analysis more effective. Relating this to organisational culture and sustainability in Ilorin HEIs, the researcher agrees with Hinton; researching after the vision statement is drafted, allows a researcher to investigate the predominant themes in the statement and how these are translated into the organisational culture which ultimately influences sustainability performance.

2.3.2.1.3 Goals and objectives

STRATEGIC GOALS AND OBJECTIVES

A goal can be explained as a target reached or a specific achievement, while an objective provides general direction but hardly contains completion details (Hinton, 2012). The Yale University sustainability strategic plan contains an ambitious set of goals to advance sustainability on their campus. The opening line of this plan says:

> *'At Yale, we believe that sustainability depends on the entire university community … We have a responsibility to ensure that sustainable practices are at the heart of our university' (Yale, 2013-2016).*

The researcher believes that the sustainability plan development process of an institution would benefit from the setting of strategic goals and objectives which offer direction during plan development, plan implementation and assessment of plan success.

THE IMPLEMENTATION PLAN

According to Hinton (2012), an implementation plan turns goals and objectives into a working plan and can often be changed, amended, or revised in response to environmental factors. Even though the goals and objectives of a strategic plan provide focus and guidance on how to achieve sustainability, the researcher agrees with the author that an implementation plan bears the burden of getting the job done. Identifying and utilising resources required for achieving set goals or objectives is critical in planning for sustainability (Johnson et al., 2004). Thus, the researcher encourages Ilorin HEIs to develop a sustainability implementation model that harnesses their available resources for the effective implementation of sustainability plans.

Furthermore, a sustainability implementation plan ought to be documented, clear and directing, and that the ability of an institution to turn strategic thoughts into operational action will determine the implementation of its strategic plan for sustainability (Hinton, 2012). Therefore, the researcher suggests that appointment of a qualified and competent person to oversee sustainability plan implementation should be undertaken, an expected completion date for the action should be set, and a method of assessing the completion of implementation should be agreed on.

In order to motivate stakeholders to enthusiastically provide resources to facilitate achievement of its sustainability vision, an institution needs to communicate the vision both inside and outside its campus (Calder, 2006). The researcher believes that if an institution's sustainability mission and vision are clearly articulated, stakeholders will be adequately informed on what the institution believes in, what it stands for, and crucially how it plans to achieve its goal.

2.3.2.2 Consistency

This characterises achievement of the common goals of an institution through core values that provide coordination and integration of teams, agreement of team members on critical issues and a clear set of performance expectations (Trew et al., 2012). A strong culture of consistency requires excellent communication, coordination, and integration from top management to frontline staff to improve organisational performance (Mozaffari et al., 2012; You et al., 2010; Roldan & Bray, 2009).

2.3.2.2.1 Core values

INSTITUTIONAL VALUES

According to Calder (2011 p. 20), 'an institution's values are a basis for any strategic planning process and assist in the way an institution conducts its educational business'. This means that the actions of an institution and its intentions based on those actions are influenced by powerful statements about the institution's values, mission and strategic direction. The values of an institution are now written in a values statement (but no longer in a mission statement), and these make clear what an institution stands for and how its activities will be conducted (ibid.). Ilorin HEIs should be encouraged to develop assessment measures and programmes to sustain and support values as crucial components of a sustainability project. A typical values statement should state the characteristics that an institution believes are significant in the way they perform their activities and operations (Hinton, 2012).

Unlike mission and vision, the values of an institution cannot be compared to any other attribute because values are unique to each institution (ibid.). Essentially, values are standards that institutions can use to compare their ideals, actions, and state of

being to those of others, while measuring how far or how near they are from an objective (Gorman, 2000). The values of an institution indicate a preference for a particular course of action and are relatively stable over time and derive from the institution's beliefs (Keeling, 2013).

2.3.2.2.2. Coordination and integration

SUSTAINABILITY INTEGRATION ASSESSMENT

Authors like Shriberg (2002) hold that cross-institutional sustainability should be used to improve sustainability practice in underperforming institutions. This entails comparing institutions with each other and to a vision of a sustainable institution. However, the researcher believes that comparing campuses with each other and to a standardised vision of a sustainable institution may suit campuses in developed countries but may not be as useful in campuses in developing countries like Nigeria. This could be because of the gap in expertise, research, and development between Nigerian institutions. The gap, coupled with an uneven distribution of other resources may render the practice of cross-institutional sustainability or a 'developed-country-model' of sustainable campus unsuitable in the Nigerian context [see Building Human Capital for Sustainable Development]. On this backdrop, the researcher urges Ilorin HEIs to review good international practice of sustainability implementation and develop a model that is suitable to their respective institutions. The researcher, however, agrees with Shriberg that sustainability education should go beyond the classroom and ensure that faculty, students, and other stakeholders support sustainable services, research, and operations. Furthermore, the researcher agrees that social and ecological issues, as well as active learning about an institution's activities and operations, should be included in curricula on sustainability.

Policymakers find it challenging to act because the baseline measurement of sustainability integration into curricula has not been done in many countries (Ceulemans et al., 2010). According to Desha et al., (2009), valuable information for drawing measurable and time-specific objectives to support renewal of curriculum can be obtained through monitoring and evaluation of sustainability integration process. Gradual integration of sustainability content into the existing curriculum in order to attain full curriculum transition can be achieved by tasking senior staff within the department with assessment and advisory functions (Desha et al., 2009).

SUSTAINABILITY INTEGRATION STRATEGIES

a) *Top-down vs bottom-up:* when HEI management or a higher education authority enforces the integration of sustainability into the curriculum the approach is called a top-down approach, but if the initiative is from HEI lecturers to management it is called a bottom-up approach (Ceulemans et al., 2010). A top-down approach could be used to integrate sustainability into the mission and vision statement of the institution; however, very often a top-down approach is met with resistance by teaching staff and has led to the recommendation of a bottom-up approach by some authors (ibid.). A bottom-up approach, also referred to as a participatory approach, satisfies many information and management tool needs of stakeholders and increases stakeholder confidence in sustainability strategies (Chamaret et al., 2007).

b) *Vertical vs horizontal approach:* when a curriculum includes the teaching of sustainability concepts by using one or more specialised sustainability courses, the approach is called vertical integration (Ceulemans et al., 2010). However,

when sustainability concepts are sewn into regular courses, the approach is called horizontal integration (ibid.). Both approaches have their merits and demerits and can be combined, but some scholars have argued in favour of the latter-saying its suits students aiming to utilise sustainability in their future endeavours (ibid.). In the context of sustainability, horizontal policy integration is generally seen as balancing environmental, social and economic interests such that synergies (or win-win-win) opportunities between them are maximised and negative effects or trade-offs minimised (Berger & Steurer, 2009).

POTENTIAL BARRIERS

A number of barriers can hinder the goal of transforming universities into sustainable institutions and these barriers can be internal (due to structure and culture of a university) or external (Ferrer-Balas et al., 2008). According to the authors, the following are examples of barriers**:**

- Societal pressure
- Lack of desire to change
- Incentive structure
- Freedom of individual faculty members
- Inadequate technology and technical expertise

ORGANISATIONAL ADAPTATION FRAMEWORK

According to Owens (2013), there are two main ways of explaining organisational adaptation:

a. **Strategic choice approach:** underlines organisational change as the result of managerial decisions and actions but also recognises the influence of the environment (Owens, 2013). This approach hypothesises that an organisation's leadership is active and chooses a course of action over another without any external push or pull. Based on the time of developing strategic competence, organisations can be classified as reactor, defender, analyser, or prospector (ibid.).

Prospector organisations implement strategies quickly, but the other three do not. Thus, institutions that have adopted a green campus strategy can be described as prospectors since only a few institutions have done so. Managers should support programmes on environmental change in order to ensure organisational adaptation and adequate emphasis on community service and academic goals (ibid.).

b. **Life cycle approach:** this approach explains that organisational evolution follows defined stages and the key process emphasised here is organisational change (Owens, 2013). There are four stages in the process:

1. Elaboration of structure: the organisation expands to meet new constituency demands and begets renewed adaptability.	*2. Formalisation and control:* conservatism prevails as procedures and policies prevail.

3. Collectivity: internal processes and emergent sense of mission are stressed.	*4. Creativity and entrepreneurship:* involves organisations collecting resources and forming a niche.

Table 2.2: Stages of the Life Cycle Approach
Source: Owens (2013)

A major aim of organisational adaptation is that organisational growth, community service and public relations are emphasised by the management of institutions that are growing. Also, growing institutions should demonstrate organisational effectiveness and support new educational outputs like new research, learning methods and sustainability (ibid.).

2.3.2.2.3 Agreement

In order to ensure the success of a sustainability initiative, it is important to ask if leaders of organisations have the requisite skill to reconcile different opinions on critical issues and achieve agreement (Mobley et al., 2005). The leadership and followership of an organisation would possess the necessary skill set for achieving agreement amid varied opinions if the core values embedded in their organisation's culture are strong (Ehtesham et al., 2011; Ahmad, 2012; Zakari, 2013). The researcher submits that agreement entails getting multiple perspectives on an issue by engaging in dialogue. Denison et al. (2008) explained that this involves working towards win-win solutions, incorporating diverse points of view into decisions, and promoting constructive discussion of conflicting ideas in order to reconcile differences when they

occur. Thus, some conflict of opinions may arise even within organisations with good intentions if agreement is lower than core values and coordination (Zakari et al., 2013).

2.3.2.3 Involvement

This entails capability development of individuals in order to meet organisational goals, team orientation when working towards common goals, and empowerment of team members to manage their work (Trew et al., 2012). Involvement measures an organisation's capability to inculcate commitment and sense of ownership in workers (You et al., 2012), and workers at all levels should be able to make contributions to decisions affecting their work because this has an impact on attainment of organisational goals (Roldan & Bray, 2009).

2.3.2.3.1 Capacity development

Many valuable contributions to the development and implementation of sustainability in higher education have been made by partnerships among HEIs (GUNi, IAU & AAU, 2011). According to Pradhan & Mariam (2014), the following ESD contributions can be provided by institutions:

a. Practical training on sustainability to policymakers (leadership programmes).
b. Encouraging and supporting universities to develop and implement their own transformative strategies for low carbon, resource-efficient and green campuses (greening universities initiative).

c. Building stakeholder capacity (development of sourcebooks, training courses and curriculum review).

The Global Universities Partnership on Environment and Sustainability (GUPES) and its partners are examples of organisations that have made such contributions towards ESD programmes.

Frantz et al. (2014) identified inadequate research capacity as one of the difficulties beleaguering HEIs in developing countries. They suggested that this difficulty can be mitigated if institutions network, collaborate and forge partnerships with skilled organisations. This position is underscored by the UNESCO (2010) report which said that in order to appreciate the importance of education to development in Africa, the efficiency and quality of capacity development programmes (such as public awareness, community development, training and education initiatives) needs to be strengthened and boosted to reorient education towards sustainable development.

2.3.2.3.2 Team orientation

SOCIAL LEARNING AND THE ROLE OF ACADEMIC STAFF IN ORGANISATIONAL CHANGE

According to Wals (2007 p. 39), social learning can be defined as ‘learning that takes place when divergent interests, norms, values and constructions of reality meet in an environment that is conducive to learning’. People become more competent individually and collectively by learning with and from one another through learning systems that are based on social learning. Organisations are actively getting people involved in change processes by increasingly using social learning (ibid.). Barth & Rieckmann (2012 p. 5) cited Keen et al. (2005) who defined social learning as ‘the

collective action and reflection that occurs among different individuals and groups as they work to improve the management of human and environmental interrelations'.

The researcher proposes that the capacities and willingness of academic staff of Ilorin HEIs to support learning processes can largely determine if learning processes will facilitate transformative changes towards sustainability. As previously discussed, ESD in Nigerian HEIs requires innovative teaching and learning methods and being perceived as a lifelong learning activity. This means the institutions would need to assess the capacities of their academic staff because they would be invaluable during the development of the curriculum and would be charged with introducing students to sustainability concepts. Furthermore, academic staff can gain a valuable understanding of the best way to implement ESD and improve their teaching and learning skills through the facility of lifelong learning processes (Yang et al., 2015; Smidt & Sursock, 2011). An example of this learning process is the regular 'educating the educators' programme being run by some institutions around the world (Levine, 2006).

A culture of teamwork is needed in order to close the gap between administrative and academic cultures of an institution (Ruben, 2007) to achieve the sustainability plans. This is because administrative and support personnel, student relationship professionals, and faculty members usually have different responsibilities, roles and training. Each group commonly develops its own unique culture, which emphasises the achievement and values of its members and ignores those of other groups (ibid.). Consequently, a lack of teamwork culture could culminate in the absence of mutual respect and understanding among staff from faculty level to departmental level, undermine the institution's reputation among stakeholders, reduce the effectiveness

of programmes and services, waste scarce resources, and undermine effective collaboration.

2.3.2.3.3 Empowerment

BUILDING HUMAN CAPITAL FOR SUSTAINABLE DEVELOPMENT

The Director-General of the Administrative Staff College of Nigeria (ASCON), Ajibade Peters, delivered a paper titled 'Building Human Capital for Sustainable Development: The Role of the University' at the University of Ibadan Registry discourse on the 26th of September, 2013. Peters (2013) opined that human capital includes abilities and capacities gained by society, group or an individual that allows them to perform their responsibilities to attain a predetermined goal. The author described human capital as crucial to development even more so than physical or natural capital. He cited Harbison (1973) who said humans build political, economic and social organisations, hence human resource constitutes the most important capital of any nation ahead of material or physical resources (Peters, 2013). The main point here is that a nation needs to develop capacity, skills and knowledge of its citizens for it to achieve economic development. Since humans are the most important asset of any organisation, human capacity development must be emphasised by all organisations and especially HEIs as they are responsible for educating future leaders about sustainability.

The most enduring strategy for a sustainability plan is building the capacity of people in terms of motivation, attitude, mind frame, competencies, knowledge, and skills to enable them to protect and preserve the environment (ibid.). It is important that ESD culture is being cultivated through a multidisciplinary approach which can be a major

method for building a critical mass of requisite human capital in Ilorin institutions. Furthermore, Peters (2013 p. 11) quoted Melnychuk et al. (2003) who said, 'Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issue'. The researcher agrees with the author that developing human resource through education can promote conditions suitable for economic and social development with minimal or zero impact on the environment.

EMPLOYEE ENGAGEMENT AND MOTIVATION FOR SUSTAINABILITY

Motivation can be explained in terms of the readiness of an employee to make efforts towards attaining organisational goals, and a manager can generate and maintain motivation in employees by encouraging employee participation in decision and policymaking (Dobre, 2013). Sustainability policies should be developed and aimed at establishing sustainable frameworks for integrating sustainability into core organisational strategies of Ilorin HEIs. These can stimulate good sustainability practices like communicating a commitment to the sustainability agenda within the institutions. Sustainability policies in these institutions should also cover employee well-being, waste disposal and recycling, water consumption and energy consumption (Elmualim et al., 2012).

Achieving a common task is the most obvious group need in an institution (Nosike & Oguzor, 2011), and this is explained by the 'functional approach' hypothesised by Dr John Adair. The approach explains the interaction between people and the work they do and holds that cohesion of team efforts and unanimity of purpose is more valuable here than the skills and qualifications of individual staff members (Adair, 1973). Sustainability, in all its forms, requires a collective effort to achieve success. This

success is achievable if interdependent systems with operations in similar areas are grouped into departments that will be headed by officers that would ensure a seamless relationship among them all (Nosike & Oguzor, 2011). This is called the integration model, and it preserves the individuality of each system while they work together for a common goal (ibid.). The integration model can help to bring employees in each system of an HEI together into one unit to be headed by a higher institution's manager. This model eliminates overlapping of activities and functions and also facilitates coordination.

The researcher believes that the majority of Ilorin HEI stakeholders should demonstrate more initiative or take responsibility in promoting a culture of sustainability and that management that can promote a culture of employee engagement and maintain employee motivation is imperative for engendering good practice of sustainability.

2.3.2.4 Adaptability

This trait measures an organisation's ability to build knowledge and capacity, encourage organisational learning and innovation, encourage customer focus, anticipate customer need, create change and anticipate future changes (Trew et al., 2012). According to (Mozaffari et al., 2012 & You et al., 2010), a culture that enables an organisation to adapt to desired changes and appropriately respond to external signals of opportunities or threats promotes effectiveness.

2.3.2.4.1 Creating change

ORGANISATIONAL LEVEL

According to Godemann et al. (2011), a consciousness of a need to learn is an essential prerequisite for organisational learning. An environment where experimentation and exploration can occur should be provided, and the experience and expectation of stakeholders such as student bodies and teaching and non-teaching staff should be taken into consideration when planning learning strategies (Godemann et al., 2011). The authors' findings showed that creating the right climate for organisational change by seeking the right balance of top-down and bottom-up approaches is the key challenge in strategic implementation of sustainability into business schools. The findings also demonstrated that an institution's organisational structure greatly influences organisational change in HEIs, and noted that integration of sustainability into teaching, research and operations is enhanced by a structural change process that may involve the formation of task forces, committees or working groups.

COMMUNITY LEVEL

Elder (2008), as cited by (Yarime & Tanaka, 2012), said that despite immense opportunities for shared rewards, there is hardly any close collaboration on the initiation of collective methods for sustainability between universities and local communities. Even though universities have been called upon to make not only unidirectional contributions to society but also create education and research opportunities based on problems of the real world, there still remains a barrier between 'town and gown' (ibid.). The researcher holds that colleges – because of their strong connections with local communities – should sensitise communities on sustainable development. At the same time, universities with large research centres should support

efforts using research findings to tackle difficult issues concerning environmental protection, community health and economic issues.

TEACHING AND RESEARCH LEVEL

Sustainability can be seen as an opening to a different understanding of ethos, particularly policy, organisational change, pedagogy and curriculum, and not just a further issue to be integrated into an already congested curriculum (Sterling et al., 2013). Development of methodologies for appropriately assessing and evaluating new activities that go beyond mere efficient environmental management of university infrastructure is crucial. This is particularly so while interest in sustainability is growing rapidly at HEIs across the globe (Yarime & Tanaka, 2012).

Incorporating education, research and outreach (the three key roles of modern universities) through social trialling supported by collaboration with diverse stakeholders is among new initiatives emerging at some advanced HEIs recently (ibid.). The researcher agrees with the author that this ambitious effort which transcends organisational barriers and disciplinary boundaries (in order to encourage HEIs to pilot endeavours aimed at achieving sustainability) requires appropriate evaluation using integrated assessment tools. To achieve this in Ilorin HEIs, it is necessary to assess whether organisational culture supports sustainability so as to identify barriers to sustainability performance and to develop methods for integrating good practice into the institutions.

RESISTANCE TO CHANGE

In order to improve the overall sustainability performance of HEIs in Nigeria, far-reaching changes would need to be made. According to Yusuf & Alabi (2012), a

system perspective of approaching change is used by institutions that achieve innovation and improvement. Therefore, the researcher believes that a systemic change of curriculum, research, operations and services is necessary in order to achieve sustainability in Ilorin institutions. However, implementing change can be problematic due to the response of affected individuals and Randall (2008) suggested that in theory, each person might accept the enforced change but in practice, they find application uncomfortable. This tells a lot about how individuals react to organisational change; however, the occurrence of resistance to change is always to be expected.

Furthermore, Abdulraheem (2013) suggested that as the actual purpose for existing is to preserve behavioural patterns and stable relationships, it is difficult to alter existing and established organisational culture. This means that if the management of an institution tries to introduce strategies that could change the culture of the institution, there will be stiff opposition to a such move. This is because some individuals in the institution have little trust in management motives and perceive the call for change as a threat particularly if the change is imposed from the top with little or no consultation (ibid.).

However, Buchanan & Badham (1999) posited that an organisation could benefit from resistance to change. The argument put forward here is that resistance features in everyday societal life as it does in organisational life, and it can help to curtail perpetual and futile excesses of organisations especially when they already have existing commitments to projects or other organisations. In a circumstance like this resistance is not only normal but can be a desirable tool (ibid.).

An institution's management may try to convince workers by telling them about the improvement they will experience as a result of a proposed change, but resistance could still hamper this effort. However, opponents of change could be won over with time, and they eventually become proponents and agents of the very change they resisted initially (Colony, 1998). The researcher agrees that resistance to change can be reduced if workers participate in the decision-making process leading up to the proposed change because this will provide them with an opportunity to analyse arguments and ask questions about possible benefits or costs (Heller et al., 2004).

DEALING WITH RESISTANCE

HEI management should view having to deal with resistance to change as evidence that real change is taking place. Popular methods used by most management to deal with resistance to change include training and information communication (Abdulraheem, 2013). However, dealing with responses to change, such as anxiety over the potential loss of power, influence or status, and fear of risk-taking can be very difficult because it involves emotions (ibid.). The researcher believes that HEI management in Nigeria can deal with resistance to sustainability initiatives by developing a culture that transparently addresses conflicts and issues so as to reassure affected individuals (Ceulemans et al., 2015). The researcher acknowledges that different organisations use different methods for handling resistance but maintains that developing a culture wherein the incentives and benefits of adopting change towards a good practice of sustainability are communicated effectively can convince HEI stakeholders to welcome change.

Furthermore, when stakeholders are allowed to contribute during a change process and when there is a belief that the proposed change will protect values, norms and

vision, augurs well for sustainability performance (ibid.). Therefore, in order to adequately manage organisational change for sustainability in Ilorin HEIs, change must be viewed as a process that requires commitment, encouragement and a cooperative environment, and not just as an event (Abdulraheem, 2013).

2.3.2.4.2 Customer focus

This entails a focus on the customers of Ilorin HEIs, which includes students, local community, other service or product users and the society at large. This index is explained from two main angles; stakeholder involvement and education for sustainability:

PUBLIC PARTICIPATION AND SOCIAL RESPONSIBILITY

This strategy advocates the attainment of sustainability and USR for advancing environmental equity and justice for all regardless of gender and race, and the need to care for the disabled and people of special needs (Alshuwaikhat & Abubakar, 2007). Participation of all university stakeholders and partnership with non-governmental, governmental and private organisations is required in order to be able to deliver the following:

a. *Social justice:* universities should promote the importance of health and safety concerns, human and civil rights, genuine security, equality, peace and justice, and human dignity as part of sustainability (QAA & HEA, 2014). This can be achieved by advancing the concept of a society in which individuals and groups are treated fairly and provided with a just share of societal benefits, and justice reigns in all aspects and not just a mere administration of law (Alshuwaikhat & Abubakar, 2008).

b. *Community services:* providing awareness services and community projects are other social responsibilities that HEI campuses can use to promote sustainability. Alshuwaikhat & Abubakar (2008) argued that the method an institution uses to carry out its everyday activities is important because it helps to inculcate desired behaviours and values of environmentally responsible living in its community. UNESCO (2008) emphasised that an understanding of the environmental importance of the campus and letting the campus play the role of the nucleus of its community should be promoted via cooperation between universities and local communities. The researcher holds that having a proper understanding of these can help Ilorin HEIs and their stakeholders to understand practical methods for providing less costly, more efficient, and healthier learning environments.

c. *Public participation and partnership:* this entails HEIs forging partnerships with non-governmental, governmental and private sector organisations in promoting sustainability in campuses. NGOs can liaise with universities to organise conferences and workshops on sustainability. At the same time, government agencies and the private sector can partner (at local, national, or international levels) with HEIs in research and development (AAU, 2013). Having a culture that encourages the participation of all stakeholders during the decision-making process on policies, planning and implementation of sustainability practices in Ilorin institutions can enable quick integration of sustainability into the organisational culture of the institutions. Also, Boulanger & Brechet (2005) and Emilsson & Hjelm (2002) argued that it is vital that HEI communities are given a strong voice during decision-making

on actions that affect them to encourage integration and cooperation of all stakeholders for environmental sustainability.

SUSTAINABILITY TEACHING AND RESEARCH

Universities and other HEIs have social responsibilities of educating students and the society about sustainability because they are distinctive places serving multiple missions that include education, research and public services (Kwami et al., 2013). To this end, in the UK, the HEFCE (2009) announced that they support programmes that utilise student resources for constructive environmental programmes on campus, and work with student bodies to encourage change in behaviour within the student population. The researcher also encourages Nigerian higher education authorities like the National Universities Commission (NUC) and the ministries of education to forge partnerships with student bodies such as the National Association of Nigerian Students (NANS). Furthermore, to invest in programmes that will educate Nigerian students about the gains of practising sustainability both on campus and in other spheres of life. Alshuwaikhat & Abubakar (2008) opined that sustainability education could be implemented by integrating sustainability into the following:

a. *Research and development (R&D):* the researcher believes Nigerian universities can develop more effective ways of dealing with environmental and social problems in order to promote sustainability. Universities in advanced nations continue to make ground-breaking contributions to the sustainable development of their nations and the world in general by providing ways to address global problems like diseases, poverty and climate change. Alshuwaikhat & Abubakar (2008) encouraged the promotion of developments like carbon capture and storage that could reduce emissions during coal-fired

electricity generation, as well as the development of renewable energy that incorporates solar and wind energy and other renewable forms to produce electricity. Other developments that should be focused on include supporting social development initiatives like education and public health services, helping to provide basic human needs like food and shelter, resource conservation and development of 'cleaner' kinds of products (Kwami et al., 2013).

An integrated approach to achieving campus sustainability can assist universities in establishing a strong image of USR, increasing awareness of environmental impacts of operations among all students, staff and faculty, and increase operations efficiency by eliminating waste from learning, research and other processes (Savely et al., 2007).

b. *Sustainability in courses and curriculum:* decision-makers, entrepreneurs, future leaders, and a number of professionals that influence, lead, manage, work in, teach and develop society's institutions are educated and prepared by universities. Thus, universities present a valuable means through which the values of sustainability can be communicated to a broad audience, and it befits universities to promote sustainability by using the concept as a tool for teaching and impressing on all stakeholders that sustainability matters (Lazano & Young, 2013). This can be attained by incorporating sustainability into undergraduate and graduate courses and the curriculum of disciplines relating to management, science and technology, humanities, and the built environment (Alshuwaikhat & Abubakar, 2008; Kwami et al., 2013).

Furthermore, Lourdel (2005) asserted that sustainable development education should go beyond mobilising different fields and move into creating new disciplines and provoking discourse about sustainability. The author maintains that collaborative consultation and negotiation, and complexities and stakes connected to sustainability on a real case should be emphasised when teaching sustainability. Also, the importance of sustainability issues like liveable settlements, health and safety, global warming, resource conservation, good governance, gender equality, economic empowerment, environmental preservation as well as other social and economic issues should be introduced into HEI curriculum (ibid.). An example that can help HEI stakeholders to take the initiative for promoting sustainability elsewhere can be shown when applying sustainable practices on campus (Karlin, Davis & Mathew, 2013).

c. *Workshops, seminars and conferences:* workshops, seminars and conferences could foster an understanding of and responsibility for the sustainability of the environment, create a platform for academia, industry and international organisations to discuss and study environmental issues and their relationships to other socio-economic issues, and encourage research. Decision-makers and experts come together in seminars and conferences, and people within and outside university campuses can gain knowledge about the issues mentioned above and contribute to solving those (Alshuwaikhat & Abubakar, 2008).

2.3.2.4.3 Organisational learning

According to Stephens & Graham (2010), HEIs can play crucial roles in society transformation processes that depend on educating new generations of leaders and

citizens because of their distinct organisational cultures that promote and value learning. However, before an HEI can lead the transformation process, it will need to embark on a learning process that will inculcate a new culture of sustainable development into its stakeholders. This learning process will inspire an organisational change of methods or processes, and evidence from extant literature demonstrates that human factors play an important role in a change process (Hoover & Harder, 2014). Hussein et al. (2014 p. 1) defined organisation learning 'as a process or capacity within organisation which enables it to acquire, access and revise organisational memory thus providing directions for organisational action'. A learning organisation is a model organisation in which working practices, routines and structures undergo continuous improvement and adaptation (Antonoaie & Antonoaie, 2014). The most popular definition is provided by Senge (1990 p. 1) who defined a learning organisation as 'a place where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free and where people are continually learning how to learn together'.

An HEI can become a learning organisation and achieve organisational learning if it employs appropriate data analyses and feedback in strategic decision-making, and if institutional values and individual and team workers embrace continuous learning. Studies prove that learning organisations improve organisational learning culture and that a significant correlation exists between learning organisations and organisational cultures (Hsu, 2014). Building organisational adaptability and capacity for learning, and a platform for effective sharing of knowledge is vital to facilitate organisational learning. Being social architects and coordinators of learning processes HEI leaders are responsible for facilitating organisational learning in institutions (Antonoaie &

Antonoaie, 2014). An HEI can achieve a sustainable competitive advantage if its management not only adopts a talent retention strategy but also translate knowledge into an organisational change in the knowledge retention process (Atiku et al., 2014). Rowley (1998), in an iconic journal, held that while HEIs may possess a culture of learning, creating a learning organisation depends on implanting learning in the institution's management processes. According to the author, the institution needs to create and disseminate knowledge that initiates development, and this can be achieved by spreading the attention of learning from classrooms and laboratories to the broader institution.

An effective learning environment is necessary to facilitate individual learning which itself leads to group and organisational learning. Although individual learning is the primary means used by organisations for gaining new knowledge, in order to be considered as organisational learning, individual-level knowledge needs to be entrenched in organisation-level structures, routines, processes or other knowledge repositories (Mayer et al., 2013). Availability of an effective learning environment that can facilitate individual, group and organisational learning determines the degree and rate of organisational learning (Pokharel & Hult, 2010). According to the authors, 'a public organisational learning environment (POLE) should demonstrate organisational readiness to learn, group/team supportiveness of learning, and individual willingness to learn'. These three qualities are backed up by seven dimensions which together ascertain the existence or non-existence of an effective learning environment: strategic leadership, connecting the organisation to its environment, empowering people, creating systems, collaboration and team learning, inquiry and dialogue and continuous learning. Therefore, in order to rise to the

challenge of stimulating transformational learning at individual, organisational and societal levels HEIs should ensure that organisational learning becomes prominent in their leadership development programmes (Veisi, 2010).

CORE COMPETENCIES AND ETHICAL/MORAL ORIENTATION

Third world HEIs including Nigerian institutions, are faced by enormous challenges presented by a world transiting along the border of environmental, legal, political, economic, social, technological, and cultural changes. Leading HEIs in the developed world have embraced change and set in motion programmes to harness resources and keep abreast of a continuously changing world (Davies, 2008; Sheffield Hallam University, 2008). However, the researcher contends that Nigerian HEIs have been slow to adjust to the realities of modern higher education sustainability management due to a myriad of reasons and this has hampered their ability to emulate the performance demonstrated by their advanced world counterparts. Societal development, in general, is closely linked to educational development, as witnessed in the developed world (Tanaka & Tabucanon, 2014). Thus, it is high time Nigerian HEIs addressed sustainability challenges and help build a progressive society. Educational development in HEIs can be achieved through strategic leadership, and the significance of strategic leadership for organisational success is emphasised by organisational learning in particular and by organisational theories in general (Pokharel & Hult, 2010). Unfortunately, the leadership of many Nigerian HEIs do not show adequate strategic leadership because leaders have lost the vision that led to the establishment of their institutions, and this has resulted in mismanagement and abuse of office and protocol (Akintayo, 2008). It is, therefore, imperative that HEI leadership

acquire core competencies in innovative management tools that will enhance the strategic management of sustainability.

INNOVATIVE MANAGEMENT TOOLS

According to UNESCO (2010), the promotion of a culture of evaluation and monitoring is required in order to reorient education to incorporate sustainability development. Specific competencies in sustainability assessment are required to attain a culture that promotes monitoring and evaluation. The researcher believes Nigerian HEIs can acquire these competencies by using institution-specific tools built from combining aspects of established sustainability and CSR management tools. The established tools that can be used for this purpose are the Global Reporting Initiative (GRI), UN Global Compact and the European Foundation for Quality Management (EFQM) Excellence Model.

Section C

2.4 Organisational Culture and Sustainability

Sustainability is fast becoming indispensable in today's business world – this is true for all industries. More organisational leaders are embracing this concept, especially during change management and when balancing environmental, social and financial opportunities, obligations, and risks (Eccles et al., 2012). However, Bertels et al. (2010) stated that most leaders of organisations do not properly understand how to integrate sustainability into daily processes and decisions. The researcher opines that this can also be said about leaders of Nigerian HEIs and strongly believes the situation stems from an inadequate understanding of the linkages between organisational culture traits and sustainability. To adequately understand how organisational culture

affects sustainability performance, it is imperative that leaders of Nigerian HEIs understand the meaning of these terms and what a culture of sustainability entails.

According to Bertels et al. (2010), an organisational culture that supports sustainability is one in which members of an organisation share common beliefs and assumptions about the importance of balancing environmental accountability, social equity and economic efficiency. Also, Eccles et al. (2012) found that organisations with excellent practice of sustainability, typically, are more likely to form a separate board committee for sustainability and to assign responsibility for sustainability to the board of directors. Therefore, the leadership of organisations play a vital role in leading cultural change and inculcating an organisational culture that supports sustainability into the behaviour of their organisation and its staff. Leadership can facilitate the process of culture change by providing an organisational structure and facility to support the right behaviour (Healthcare Improvement Scotland, 2013). According to Taylor (2009), a corresponding effort to change the culture within an organisation is essential so as to achieve a fast and successful change in individual leadership behaviour.

Several authors have suggested that adopting a sustainability-oriented organisational culture is the pathway for adopting organisational sustainability, and others have called for research to provide an understanding of the intricacies of the relationship between organisational culture and sustainability (Linnenluecke & Griffiths, 2010). Furthermore, other scholars like Baumgartner (2012) maintain that the relationship between organisational culture, sustainability management and sustainability performance has little theoretical underpinning and understanding, and also called for more studies in this regard. Others have called for studies that explore the linkages

between organisational culture traits and performance in HEIs (Millan et al., 2014; Jofreh et al., 2014, Eccles et al., 2011). There is also a need for studies that examine the similarities and differences between organisations when implementing sustainability practices (Palmer et al., 2012).

The extent to which HEIs embed sustainability into organisational culture can be explained by using traits and indices of Denison's model. As explained in the preceding section, Denison's model can enable researchers to reveal underlying beliefs and assumptions in recognisable and measurable ways that impact sustainability performance. In sustainability performing HEIs, there is a defined, meaningful long-term direction about where the institution is headed in terms of sustainability practice (mission). Stakeholders understand the strategies (such as EMS, sustainability integration into operations, sustainability assessment and disclosure) identified by their institution and think that they will work. There are short-term goals that help to link daily activities of stakeholders to the sustainability strategy and the vision of the organisation. This means that stakeholders understand how their roles fit in the overall strategy. Stakeholders share a common desired future state for their institution, understand the sustainability vision, and are motivated and excited by these (Denison, 2015).

Sustainability performing institutions are able to translate the demands of the external environment into action (adaptability). Here, stakeholders can understand the external environment increasingly expects HEIs to practice sustainability and respond to such changes and trends by continuously seeking new and improved methods to perform their roles. Such institutions understand the needs of their students and local communities, have employees that are committed to providing these needs and regard

the provision of exceptional education as a priority. Furthermore, such institutions place importance on learning in the workplace, create environments where innovation can thrive, share knowledge across all departments and units (Denison, 2015).

Sustainability performing institutions build human capital and create a shared sense of ownership and responsibility throughout the institution (involvement). They achieve this by ensuring that stakeholders feel involved and informed in the sustainability strategy and ensuring that stakeholders can have a positive impact on the institution's sustainability drive. Such institutions encourage teamwork among stakeholders and encourage stakeholders to value collaboration and to feel a shared responsibility for institutional sustainability goals. Furthermore, in such institutions, stakeholders believe that their institution is investing in them to improve their skills and capacity. This provides adequate skills for their institution to compete now and in years to come (Denison, 2015).

Lastly, sustainability performing institutions define systems and values that underline their culture (consistency). Stakeholders share a set of sustainability values that create a sense of identity and management of the institution promotes these values in daily operations. Stakeholders are able to agree on crucial sustainability matters and resolve disagreements constructively. Stakeholders from varying aspects of the institution share a mutual understanding about their sustainability drive that enables them to work effectively across borders, and stakeholders do not shirk their duties and support activities that help to achieve the overall sustainability goal of their institution (Denison, 2015).

2.4.1 Culture and its Influence on Sustainability

Culture can be defined as 'the collective programming of the mind that distinguishes the members of one group or category of people from others' (Hofstede, 2011 p. 3) and organisational culture is inherent in conscious and visible practices like how people observe events in their organisational environment (ibid.). The question 'What kind of culture supports the sustainability strategy, and how is that culture developed?' was asked by Taylor (2009 p. 1) who explained that culture quickens change through its effect on mass-thinking and behaviour and implored organisational leaders to cultivate cultures that promote their organisation's goals. In order to build a culture of sustainability in an organisation, it is necessary to attempt to change individual leadership behaviour and the culture within which they operate (Taylor, 2009). This change of culture can be achieved by a systematic review of organisational systems, symbols and behaviour in order to change messages being sent to stakeholders (ibid.). This study examined if the leadership of Ilorin HEIs demonstrate sufficient willingness to embrace a culture of sustainability.

National cultural values have been found to strongly influence organisational practices in terms of environmental and social concerns as well as orientation towards innovation and performance (Zait et al., 2013). Also, CSR is enhanced by a performance-oriented organisational culture that comprises positive national economic and cultural framework and values that support proactive behaviour and ethics (ibid.). As CSR is closely linked to sustainability, it is probable that these statements will also be true for sustainability. It is also probable that the sustainability practice of Ilorin HEIs is strongly affected by the cultural values of their local community.

2.4.2 Sustainability in Nigerian HEIs

Daniel & Ibok (2013) researched solid waste disposal habits of students at the University of Uyo. In their findings, following an inspection of residences and environs around the university, the authors lamented the waste disposal habits of the students; the suggested that the situation is vastly contrary to the assumption that university students are enlightened and should campaign for environmental protection. Students of this university and other supposedly enlightened community members allegedly disposed of solid waste indiscriminately without any regard for the risks this pose to the health of the community. In similar research on the attitudes and waste disposal habits of students of Nwafor Orizu College of Education, Orajekwe (2011) condemned the indiscriminate dumping of wastes which made the environment of the institution unsightly and vulnerable to diseases. HEIs with hostel facilities ought to provide a good example of environmental cleanliness to townships and, due to their impressionable minds, a good example to students to embrace an attitude of healthy living (ibid.).

In addition, Ikudayisi et al. (2012) assessed solid waste management in Ikere College of Education in Nigeria and concluded that solid waste management in the institution is unsatisfactory and grossly inadequate. The author said collection and transportation of solid waste posed a difficult challenge due to ineffective services of the state waste collection board and inaccessibility of some collection points. A study by Amori et al. (2013) of waste generation and management practices in residential areas of Nigerian tertiary institutions (covering three institutions; University of Ibadan, Obafemi Awolowo University and the University of Lagos), discovered that population, socio-economic status and predominant commercial activities in an area determines quantity

and rate of generation of waste in the area. The authors found that non-biodegradable waste constituted the larger part of generated waste and implored the institutions to develop environment-friendly and sustainable waste management solutions.

Okolie & Ogunoh (2013) assessed environmental and functional indicators of building performance in Nigerian federal universities. They reasoned that skills needed for the evaluation of building performance and methods for satisfying stakeholders' call for higher building quality are lacking in building designers and facility managers. The inadequate and poor state of university buildings in Nigeria has grossly undermined teaching and learning and was decried by the authors, who also said the situation is made worse by an increase in student population in universities. The authors further stated that universities should emphasise the elimination of any foot-print on the environment by demonstrating sustainable materials procurement, commitment to innovation and sustainable building design.

According to Modebelu & Agommuoh (2014), environmental degradation and the increasingly debilitating effects of climate change constitute major challenges of sustainability and quality assurance facing higher education in developing countries. Also, in a study to examine knowledge and perceptions about environmental problems and management among students in Kano state, Abdullahi & Tuna (2014) found out that the average knowledge about environmental issues of the sampled students was very low. The students were unable to explain terms like biodiversity loss, greenhouse gases, ozone depletion, air quality and recycling even though they had come across these.

The researcher believes that the foregoing situations call for the design of a sustainability implementation tool to manage waste disposal and similar needs in Nigerian HEIs. Also, students, staff and community members of HEIs must be re-educated about environmental issues and effective waste disposal methods and be involved in the design of better systems to manage the environment. This will help to eliminate indifference and negative attitudes of HEI community members and provide them with adequate information about the health implications of improper waste disposal.

2.4.3 Social Responsibility Performance of Nigerian HEIs

The challenge of globalisation and increasing competition in the higher education is also true for Nigeria, thus, in order to attract public goodwill, build a firm reputation and gain a competitive advantage over competing institutions, Nigerian HEIs must recognise and embrace sustainability. Ilorin HEIs like other Nigerian institutions are tasked with three core responsibilities: produce high quality graduates to promote local and global development, to perform advanced research projects, and to participate in community service (Oloyede, 2009).

Nigerian HEIs are expected to create social and ethical awareness and provide guidance on comprehensive decision-making (Mishra, 2013) because, as Broomhill (2007) and Adedipe & Babalola (2014) said, institutions can gain strategic benefits from functioning ethically. In Nigeria, local communities hosting HEI campuses are gradually becoming aware of social responsibility owed to them and are demanding that HEIs contribute more to the development of their communities in the form of funding and expertise (Igbinedion & Ovbiagele, 2012). Therefore, Nigerian HEIs

must embrace strategic methods for effectively managing and measuring social responsibility in order to attain their sustainability goals (Gabriel & George, 2013).

Though Nigerian HEIs produce a skilled workforce and promote economic growth and regional development in their host communities, the impacts (both positive and negative) of their operations is always felt by these communities (Olaniyi et al., 2012). The researcher believes that in order to have an adequate understanding of the role of Nigerian HEIs in community development, there must be adequate understanding of the local policy frameworks, the communities where the HEIs are located, and the characteristics of individual institutions. Olaniyi et al. (2012) further argued that the functions and responsibilities of HEIs especially in terms of community and industry collaboration are still unclear even though community development contribution of higher education remains on the national development policy agenda.

Very little attention has been given to the problem of student hostel accommodation in Nigerian HEIs due to the paucity of literature on this subject, and this adversely affects the learning experience of students in such institutions (Ubong, 2007). Also, Oladipo et al. (2009) criticised the inadequate funds available to Nigerian universities for teaching, research and community services. The authors said office accommodations are a mirage, classrooms are dilapidated, laboratories lack essential apparatus and libraries are ill-equipped. Furthermore, on examining the academic satisfaction of students at Babcock University in relation to dimensions of service quality, Ezeokoli & Ayodele (2014) found that a significant relationship exists between the two constructs. The researcher holds that since students are deemed to be the customers of HEIs, their perception of service quality should become a key

concern for Nigerian HEI management and steps should be taken to integrate this into social sustainability plans of institutions.

Orajekwe (2011) studied the influence of age and gender on the waste disposal habits of students of Nwafor Orizu College of Education and opined that good habits, behaviour and knowledge are enhanced by maturity as respondents of various ages exhibited significant differences in waste disposal habits. Furthermore, Mori (2002) cited by Orajekwe (2011) implied that gender significantly influences the way society assigns responsibility to individuals. First (2005), cited by Orajekwe (2011), argued that women tended to dispose of domestic waste more properly than men and suggested that this may be due to a trend in most homes where female householders are raised to do more chores than male householders. However, this study did not collect or use data about the age and gender of respondents because the unit of analysis is the organisation and not individuals. Only data about the age, size and location of institutions is relevant in this study because these constitute intervening variables that can influence the link between organisational culture and sustainability performance in an institution.

2.4.4 Organisational Culture in Nigeria

In a study of the effects of organisational culture on the performance of quantity surveying firms in Nigeria, Olanipekun et al. (2013) found that competitiveness of the firms is influenced by innovation and social responsibility, and a performance-oriented culture influences that service quality. This indicates that Nigerian organisations tend to compete better when they embrace sustainability principles such

as innovation and social responsibility and that the quality of service tends to improve when organisations pay attention to performance indicators.

Furthermore, a study of organisational culture and financial reporting practices in Nigeria revealed that organisational culture significantly influences reporting practices in Nigeria (Inah et al., 2014). It was found that only organisations with an ethical culture are more likely to comply with reporting regulations and more likely to view reporting as a social obligation.

Social and cultural factors can also affect the linkage between organisational culture and organisational performance. A few of these factors are discussed in the Conceptual Framework chapter of this study. A study by Emerole et al. (2013) identified ethnic diversification, supervisor-subordinate age ratio, religious referencing, accommodation at workplaces and social support as cultural factors that influence organisational performance of Nigerian organisations. The authors recommended the integration of these socio-cultural factors into organisational culture to boost performance of organisations. Agwu (2013) found significant differences in the commitment of civil service employees of different length of service, age and sex, and recommended the involvement of employee representatives in organisational decision-making, improved communication channels between management and employees, emphasis on teamwork, training and development, and improving employee recognition and reward system.

A study of views of management staff on corporate performance of a mix of Nigerian firms showed that management of organisations generally agree that organisational culture affects performance in terms of style of management, marketing, production,

and finance (Oparanma, 2010). The author found that organisational culture shapes the sense of identity of workers and their interaction with other stakeholders; non-management staff were quicker to respond to changes in culture, and organisations with a strong culture increased productivity by defining clear objectives for its stakeholders.

The relationship between organisational culture and employee commitment in HEIs in Nigeria was examined by Aina et al. (2012). He advised the management of HEIs to involve employees in decision-making to promote commitment, improve communication processes to build trust, improve staff training and development programmes to enhance productivity, encourage teamwork and team building programmes, and to recognise and reward excellence and commitment. In a study of a Nigerian organisation, Agwu (2014) held that organisational culture influences employee commitment and productivity and found that a decentralised management culture helps to sustain quick decision-making and flexibility in operations. The author also emphasised team building, staff training and funding as ways to improve employee commitment to their organisation's goals.

According to Ohiorenoya (2013), management of HEIs should identify and understand the optimal mix of cultural types or traits that would give their institution a competitive advantage and facilitate effectiveness and innovation. The author said that the right balance of culture types is necessary because a trait may have varying strengths in varying contexts, and the ability to effectively combine all culture types will enhance performance. Ohiorenoya & Eboreime (2014) concluded that Nigerian HEIs should understand the cultural contexts in which they operate to understand the organisational culture types that are most strongly related to performance.

Osibanjo & Adeniji (2013) studied the impact of organisational culture on human resource practice in selected Nigerian HEIs. The authors maintained that familiarity with practices, beliefs and values of an institution helps employees to understand the institution's vision and management's expectations. The authors advised management to make sure of this during recruitment to ensure that prospective employees are a proper match with an institution's objectives. Furthermore, the authors found that there is a positive relationship between human capital development training programmes and organisational practices, values and beliefs. Institutions were urged to develop training programmes for employees that incorporates practices, values and beliefs that enhance the vision, mission and strategic direction of the institution.

2.4.5 Quality Assurance in Nigerian HEIs

Quality assurance has emerged as an all-inclusive education concept that comprises actions, processes and policies used in developing and maintaining the quality of education (Ndebele, 2014). The above demands that HEIs exhibit responsible behaviour in professional practices, accountability with public funds, and transparency about what has been achieved with available resources (Agih, 2013). In the context of higher education, quality assurance can be defined as 'the entire process of ensuring maximum effectiveness and efficiency of educational programmes and services in relation to their context, mission and stated objectives' (Onyesom & Ashibogwu, 2013 p. 307).

Many authors have criticised the disregard of quality assurance in Nigeria's education sector, especially in areas of sustainability. For example, Okanachi & Okpara (2014) analysed how quality assurance culture can produce academic integrity and

institutional sustainability and effectiveness in Nigerian higher education and put an end to dismal performances that fall short of internationally accepted minimum standards. Also, Ezeokoli & Ayodele (2014) enjoined Nigerian HEIs to improve stakeholder satisfaction by adopting quality culture as their philosophy while Agih (2013) charged institutions to adopt cultural dimensions of quality assurance such as social skills, organisational learning and staff motivation.

Adequate institutional capacity for evaluation and monitoring of actions, processes and policies must be available to improve quality assurance. Thus, management of Nigerian HEIs should effectively use evaluation and monitoring as quality control measures to improve sustainability in teaching, learning and operations (Ebuara, 2012). The researcher holds that the quality control measures for sustainability adopted by stakeholders of institutions will determine the sustainability performance of the institutions and could impact on national development. The researcher also agrees with Akubuilo & Okorie (2013) that sustainability in Nigerian higher education will remain an elusive endeavour without quality assurance and development. This is because, as Agih (2013) said, quality assurance facilitates the achievement of national development by applying sustainability principles within a country's higher education sector.

Another major factor hindering quality assurance in Nigerian HEIs is poor cultures of continuous quality improvement, teamwork and collaboration which are all ingredients of a total quality management (TQM) work culture (Nkang, 2013). Also, building a framework for TQM culture in Nigerian institutions is a major challenge owing to a myriad of problems, such as the indisposition of HEIs management to develop and implement a quality assurance system, corruption, budget constraints,

conflicting interests of administrators, inappropriate environment, resources and workforce (Nkang, 2013). Furthermore, the adoption of a modified version of the EFQM Excellence Model has been proposed to enhance quality management and sustainability in Nigerian HEIs (Ololube et al., 2013). The modified model is shown below:

Figure 2.5: EFQM Excellence Model
Source : Ololube et al. (2013 p. 126)

The researcher believes that Nigerian HEIs can attain higher ethical conduct and nurture better organisational culture if NGOs, international donor agencies, organised private sector, philanthropists, students and lecturers, university management, government, and other interest groups proactively re-engineer higher education (Obielumani, 2009).

2.4.6 Case-Study Institutions

The case-study institutions have been indiscriminately selected by a random number generator from three clusters of institution. Each cluster contains universities, a polytechnic and a college of education, respectively. The institutions under focus are:

1. **University of Ilorin:** the institution has the motto: 'Probitas Doctrina' (which translates into Probity and Scholarship). It was established in 1975 as 'one of the educational directives of the country's third National Development Plan'

with the aim of ‘providing more opportunities for Nigerians aspiring to acquire a university education and to generate high-level manpower vital for expanding the economy’ (institution’s website).

The mission of the institution is ‘To provide a world-class environment for learning, research and community service’, and its vision is ‘To be an international centre of excellence in learning, research, probity and service to humanity’ (University Annual Report, 2013/2014).

The governing council of the institution consists of a Pro-Chancellor, Vice-Chancellor, Deputy Vice-Chancellor (Academics), Deputy Vice-Chancellor (Management Services), Deputy Vice-Chancellor (Research, Technology and Innovation), and Registrar. There are fourteen Deans heading each faculty of the institution: Agriculture, Arts, Communications and Information Science, Clinical Science/Basic Medical Science, Education, Engineering and Technology, Environmental Science, Law, Management Science, Social Science, Pharmaceutical Science, Physical Science, Life Science and Veterinary Medicine (Annual Report, 2013/2014). Furthermore, the university has more than twenty centres tasked with specialised functions, and each is headed by a director (institution’s website).

The institution’s researchers have presented many research papers on sustainable development and environmental management. They have collaborated with other institutions and research organisations in finding sustainable solutions to development challenges facing African nations. Some

titles of such research include, The Role of Solar Energy in Climate Change Mitigation, Emergent Moringa: Roles in Health, Wellness, Sustainable Development, Environmental Protection and Global Food Security, and Challenges of Water Resources Development and Quality Management in North Central Nigeria (University Annual Report. 2013/2014).

2. **Kwara State Polytechnic:** the institution has the motto: 'Technology, Innovation and Service'. It was established in 1973 to 'provide for studies, training, research and development of techniques in arts and language, applied sciences, engineering, management and commerce, education and as well as in other spheres of learning' (institution's website).

   The mission of the institution is 'To teach, imPOINT and foster the highest level of intellectual development and provide services to humanity through the exploration of available scientific and research methods', and its vision is 'To be the foremost provider of technological and entrepreneurial skills' (institution's website).

   The governing council of the institution is headed by a Rector who is assisted by a Registrar and directors of its six institutes (Technology, Finance and Management Studies, Information and Communication Technology, Environmental Studies, General Studies, and Applied Science). Furthermore, there are two more directors that head two specialised centres of research and development: Centre for Continuing Education and Centre for Consultancy Services. The Centre for Consultancy Services delivers many training, technical and community services including environmental design services

and has executed many projects both within and outside campus (institution's Website).

The 24th convocation of the institution held on 7th November 2017 discussed 'The role of science and technology in achieving sustainable development goals and targets'. The speaker argued for the need for institutions, public and private sectors, governments and NGOs to contribute to achieving social, economic and ecological sustainability targets through policymaking and educating society about these concepts. The institution regularly calls for and publishes papers on sustainable development on the institution's Journal of Research and Development Studies (institution's website).

3. **College of Education:** the institution has the motto: 'Education for Excellence', It was established in 1974 as an institute of the Kwara State Polytechnic. The institution became an independent institution by a government edict and instituted its governing council in 1976.

   The philosophy of the institution is 'based on the integration of the individual into a sound and effective citizen' by emphasising 'production of highly motivated, conscientious, efficient and effective classroom teachers with intellectual and professional background adequate for their assignment, and to make them adaptable to any changing situation' (institution's website).

   The governing council of the institution is headed by a Provost who is assisted by two deputies (Deputy Provost for Academics and Administration respectively). The institution provides teacher training for early childhood

education, primary education, and junior and senior secondary education. It has six Deans who head its six schools (Art and Social Science, Education, Languages, Science, Vocational and Technical Education, and Basic and Remedial Studies). Also, the institution has four centres: KWACOED Consultancy Services Ltd., Continuing Education Centre, Computer and Information Technology Centre, and Centre for University Affiliated Programmes. KWACOED Consultancy Services operates community services in bee-keeping and other agriculture-related businesses and specialises in offering professional training and capacity development in information technology and computer repairs and maintenance (institution's Website).

The institution has more than thirty committees tasked with different functions. The committee is tasked with sustainability-related matters such as Capital Project Task, College Community Relations, Minor Works and Purchasing, Board of Survey, Budget, College Property Maintenance, College Environmental Sanitation, and Erosion Prevention.

CHAPTER 3

Conceptual Framework

3.1 Introduction

This chapter discusses the conceptual framework for analysing the relationship between organisational culture and sustainability performance of each institution. The conceptual framework is anchored on the institutional theory, which analyses social institutions.

3.2 Institutional Theory for Organisational Culture and Sustainability Performance Study

Institutions are defined as 'the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction' (North, 1990 p. 3). Therefore, firms and organisations, table manners, systems of weights and measures, law, money, and language are all types of institutions (Hogdson, 2006). This means that institutions set constraints on human behaviour, are under the control of humans – unlike other factors such as geography – and are influenced by incentives (Acemoglu & Robinson, 2010). Popular studies have examined the impact of institutions in poverty, inequality, growth, and economic development (North, 1990; Acemoglu & Robinson, 2010). Institutions can differ between societies because of differences in decision-making structures, democratic practice, and national cultures (Acemoglu & Robinson, 2010).

According to Zilber (2012), institution and culture can be viewed as terms that are used to explain very similar phenomena, and each relates to meanings by which communities, organisations or individuals construct or are constructed by. Some authors hold that modern institutional theories draw a lot 'from sociological theories of action and constraint but focused researchers directly on richly textured systems of

meaning operating within and between organisations' (Aten et al., 2012 p. 79). Other authors hold that organisational culture theory draws a lot from approaches and models in anthropology. In contrast, others believe that it draws on 'symbolic interactionism and saw culture as negotiated order conveyed and sustained through social interaction' (Aten et al., 2012 p. 79). Developments in both institutional theory and organisational theory studies show that each theory focuses on the role of stakeholders in bringing about change in organisations. According to (Alesina & Giuliano, 2014 p. 51), 'culture and institutions interact and evolve in a complementary way, with mutual feedback effects. Thus, the same institutions may function differently in different cultures, but culture may evolve in different ways depending on the type of institution'.

Institutional theory can be used to explain how culture influences organisations and can enable organisations to understand the need to embrace new developments in their wider cultural environments (Zilber, 2012). Hence, institutional theory can provide further understanding of the higher education environment, prevailing organisational culture in an HEI and societal expectation of sustainability practice. Good practice of organisational operations such as sustainability relies on the stability of the institution (North, 1991; Acemoglu & Robinson, 2010; Zilber, 2012). The stability of organisations depends on three aspects (Zilber, 2012): the existence of interactions among internal stakeholders in a recurring process, the existence of complementing systems of shared meanings or aspirations, existence of pressure from external stakeholders that trigger a process of change. This suggests that organisational order that can turn sustainability performance into reality is an ongoing process that needs continuous inputs from all stakeholders. Being 'systems of established and prevalent

social rules that structure social interactions' (Hodgson, 2006 p. 2), institutions can provide order in actions, expectations and thoughts in sustainability performance in HEIs by imposing consistency in stakeholder activities (Hodgson, 2006).

HEIs have different stakeholders or individuals that regularly interact to develop a shared understanding on issues that are relevant to the organisation's stability and desired change (North, 1991; Acemoglu & Robinson, 2010; Zilber, 2012). Both internal and external stakeholders such as students, academic and non-academic staff, host communities, governing bodies, professional bodies and other HEIs exert pressure on HEIs to change to new and improved ways of doing things.

Institutional theory explains that such pressure influences an organisation's strategies and decision-making as organisations 'seek to adopt legitimate practices or legitimise their practices in the view of other stakeholders, (Glover et al., 2014 p. 104). It also identifies three types of pressures that enable researchers to understand how the environment affects organisational culture. Coercive institutional pressures come from regulatory bodies that set rules, monitor, and sanction. Coercive pressures are vital for driving environmental management and therefore, sustainability (Glover et al., 2016; Zilber, 2012). Normative institutional pressures come from a social obligation to conform and are based on social norms and values that dictate what is expected of individuals or organisations. Normative pressures encourage organisations to be more environmentally responsible (Glover et al., 2016; Zilber, 2012). Mimetic institutional pressures come from organisations trying to emulate the activities of successful rivals so that they too can become successful (Glover et al., 2016; Zilber, 2012).

HEIs are organisations made up of individuals, and ‘organisations are a subset of the set of institutions and institutions are a subset of the set of social structures’, (Hodgson, 2007 p. 96). Therefore, institutional theory is used to provide a foundation for exploring HEI organisational culture and sustainability performance in this study. This is done by harnessing Denison’s organisational culture model to assess randomly selected individuals’ perception of organisational culture, and a set of sustainability performance constructs to assess their perception of sustainability performance. Institutional theory enables researchers to examine how factors such as culture influence organisational practices, and how organisational strategies and values affect adoption of environmental management practices and other green sustainable activities (Glover et al., 2014).

Institutional theory explains the political aspects of organisational culture by using two main agentic views; institutional entrepreneurship and social movements (Zilber, 2012). These, however, do not explain how influential stakeholders in an HEI can conceive let alone work towards a vision such as sustainability performance which may be outside of their normal practice. The author believes that this challenge can be resolved by promoting shared beliefs, practices and structures that promote sustainability and ensuring that they are built upon and sustained by a reform of HEI institutions because as Hodgson (2006 p. 2) posited, ‘institutions both constrain and enable behaviour’ of individuals. Institutions can change the sustainability aspirations of an HEI by moulding the behaviour and capacity of agents (Hodgson, 2006). Thus, there is a need to understand the determinants of organisational good practice of sustainability in order to design interventions that improve practice in HEIs (North, 1991; Acemoglu & Robinson, 2010).

The institutionalisation of shared meanings of good practice of sustainability among stakeholders is vital for a healthy organisational culture, and this provides an opportunity for researchers to explore the role and view of stakeholders in changing and maintaining institutions (Aten et al., 2012).

3.2 Conceptual Framework

The conceptual framework below is a map of the underpinning variables and concepts of this study.

Organisational culture of each institution was assessed by using an adapted Denison organisational culture survey. This survey comprises four main traits; mission, consistency, involvement and adaptability, and each trait comprises three indices. The rationale for choosing the Denison model is discussed later in the chapter.

Four constructs depict sustainability performance: EMS, social responsibility and stakeholder participation, sustainability integration, and sustainability assessment and disclosure. Justification for choosing these four is discussed later in the chapter. The influence of intervening variables ‘local culture, language and religion’ and ‘institution age, size and location’ on the culture-performance link will not be investigated in this study.

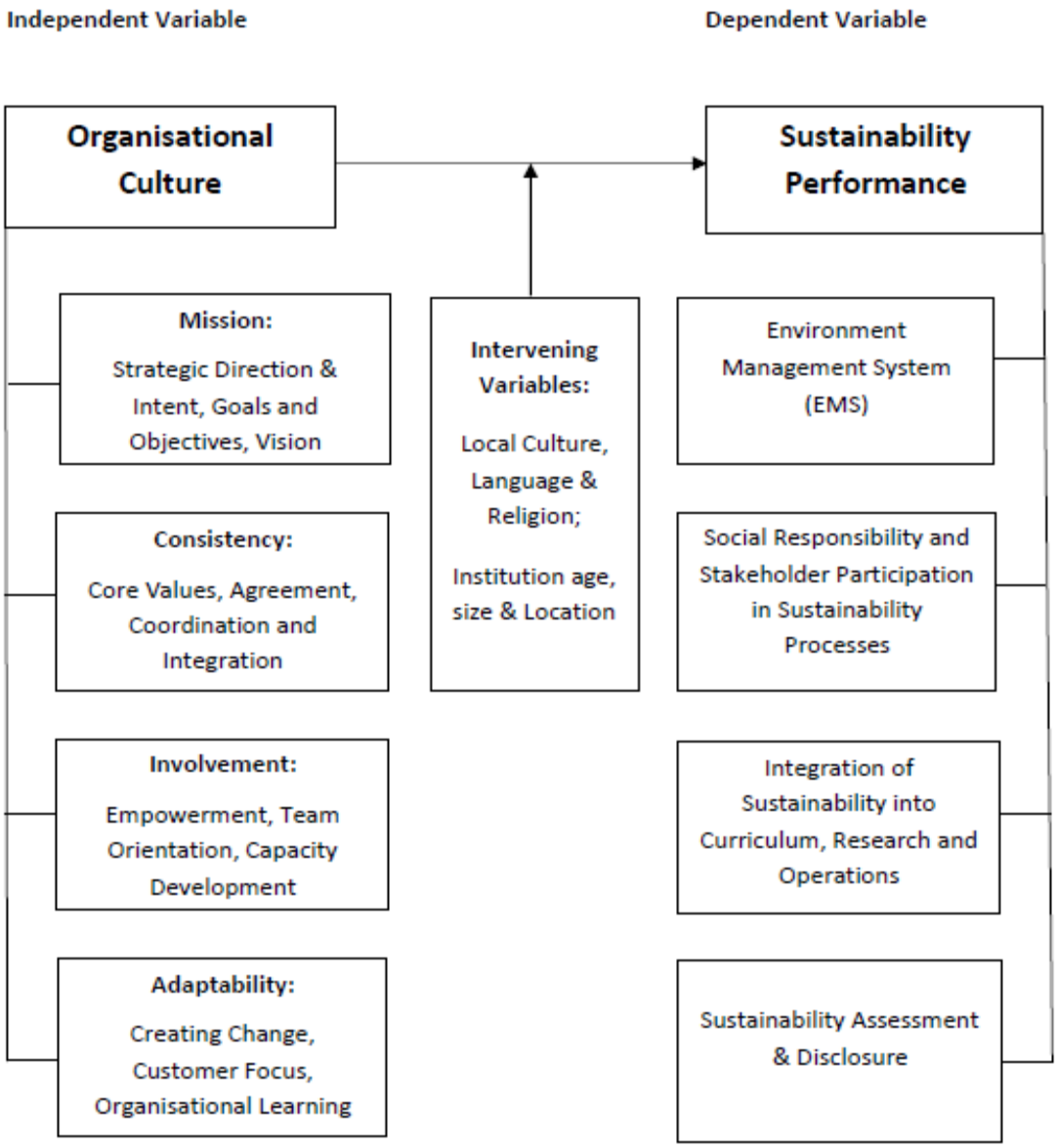

Figure 3.1: Conceptual framework of this study
Source: Developed by researcher.

3.3 Hypotheses

Five main hypotheses were tested to find out the relationship between the independent variable and dependent variable. The hypotheses are:

- **Hypothesis 1:** Mission is positively related to each of the four constructs of Sustainability performance.
- **Hypothesis 2:** Consistency is positively related to each of the four constructs of Sustainability performance.
- **Hypothesis 3:** Involvement is positively related to each of the four constructs of Sustainability performance.
- **Hypothesis 4:** Adaptability is positively related to each of the four constructs of Sustainability performance.
- **Hypothesis 5:** Organisational culture is positively related to sustainability performance.

3.4 Justification for the Chosen Sustainability Performance Constructs

The researcher elected to indicate sustainability performance by using four carefully selected constructs. The constructs were adapted from the work of Alshuwaikhat & Abubakar (2008) who based campus sustainability on three constructs: university environmental management system, public participation and social responsibility, and sustainability teaching and research. A thorough review of literature shows that each construct represents a major sustainability need in Nigerian HEIs, and together they

can form the foundation upon which Ilorin HEIs can build a successful sustainability assessment and integration model.

1. **Environment management system:** Nigerian HEIs have been urged to imbibe a culture of strategic research and action on environmental issues in order to effectively control the environment and conserve both renewable and non-renewable resources (Ayeni, 2010). For example, grave environmental challenges facing the University of Nigeria, Nsukka, were described by (Mayer et al., 2011) who asked that environment and other aspects of the ecology of the institution are given serious attention. Also, the GUNi, IAU and AAU (2011) joint survey report on SD in HEIs in sub-Saharan Africa submitted that a shortage of institutional framework and expertise had hampered efforts towards tackling environment and development problems. Furthermore, Babayemi & Dauda (2009) stated that poor environmental education and awareness, and ineffective solid waste management policy, technology and facility are examples of challenges that necessitate the adoption of EMS by Nigerian HEIs.

2. **Social responsibility and stakeholder participation in sustainability processes**: According to Gabriel & George (2013), Nigerian HEIs have only paid average attention to becoming socially responsible. On this backdrop, community and society development are scarcely traceable to research efforts of Nigerian HEIs. Most people are unaware of the institutions' relevance as regards contributions to social development (ibid. Unni, 2013). Many authors like Asemah et al. (2013) have examined social responsibility in Nigerian

universities and stress that the institutions must proactively deal with present and future impacts of their activities on society and make sure that interactions with stakeholders are done ethically. In order to attain sustainable development in terms of human capital development, Nigerian universities ought to be ethically and morally committed and responsible to society (Akinyemi & Abiddin, 2013). Furthermore, Nigerian HEIs have been urged to demonstrate greater social responsiveness to their host communities by eliminating undesirable impacts of their operations (Igbinedion & Ovbiagele, 2012) and to 'go beyond the university community' in community engagement on SD (GUNi, IAU and AAU, 2011).

Authors such as Mayer et al. (2011) prescribed that stakeholders should be involved in the development and review of the curriculum in order to promote sustainability in Nigerian HEIs. This view is supported by Emeh et al. (2011) who maintained that effective participation of stakeholders in the design and review of higher education curriculum must be advocated in Nigerian HEIs in order to attain sustainable development at local and national level. Also, in 2012, the Minister for Environment of Nigeria, Hadiza Ibrahim Mailafia, mentioned that stakeholder involvement and participation is essential for the country's path to sustainable development (FGN, 2012).

Sustainability process performance in Nigerian universities can be enhanced by designing and deploying systems that make sure that action plans, strategies and policies are implemented by using a set of integrated practices in order to meet the requirements of stakeholders (Ololube et al., 2013).

Lastly but significantly, UNESCO (2008 p. 46) acknowledge that 'everyone is a stakeholder' in ESD and should be involved in the sustainability cause.

3. **Integration of sustainability into curriculum, research and operations:** Even though the 1990s heralded the integration of sustainability into university programmes (Movahedi, 2014), education programmes in Nigerian HEIs still do not contain environmental awareness as a prominent feature (Adegbile, 2012). In studies of Nigerian higher education, many authors bemoaned the absence of sustainable development content in curriculum and advised institutions correct this so that they can effectively play their role in stimulating sustainable development (Orusha et al., 2012). Therefore, if Nigerian HEIs are to become front-runners of sustainability they need to ensure that sustainability principles are applied in all their systems, introduce sustainability into curricula, courses and all activities and empower students, staff and leadership to promote and apply new ideas (Lozano et al., 2011).

Similarly, in a study of HEIs in sub-Saharan Africa, it was found that very little has been done by most institutions in the region towards integrating issues on climate change into education programmes (Makungwa, 2010). Furthermore, Ogbuefi & Uchegu (2010) highlighted the absence of strategies for urban and environmental sustainability in urban and regional planning of University of Nigeria, Nsukka, as an example of the neglect of sustainability concerns in Nigerian HEIs. A full commitment to sustainable development that ensures the survival of future generations and the preservation of natural

resources can be achieved in Nigeria by developing higher education research on sustainability (Ayeni, 2010). In addition, sustainability of a healthy environment and continuous regeneration of society can also be achieved if Nigerian institutions encourage generation and application of knowledge about sustainability through teaching, research and operations.

4. **Sustainability assessment and disclosure:** After a thorough search of extant literature, the author could not find any study on sustainability assessment and disclosure in Nigerian HEIs. This suggests that very little has been done by researchers and professionals to promote sustainability practice in Nigerian HEIs. The closest to a study on sustainability assessment and disclosure in Nigerian HEIs that was found by the researcher is the Nigerian University Commission Needs Assessment Report of the Nigerian University System. This report deplored the state of facilities, quality of academic staff and human development efforts in the majority of the institutions under assessment and called for a complete overhaul of Nigerian higher education in order to meet the sustainable development targets of the institutions and the country by extension (Anya, 2013).

Nigeria still struggles to attain the UNESCO standard for sustainable development in higher education (Ololube et al., 2013). Sustainability efforts of Nigerian HEIs are grossly inadequate when compared with the rapid growth witnessed in the higher education sector (Vaughter et al., 2013); thus, it can be inferred that sustainability assessment and disclosure could not be an established practice in Nigerian HEIs. To this end, the author agrees with

(Abdulraheem et al., 2013) that tools for measuring and improving sustainability and a positive organisational culture change towards sustainability practice in Nigerian HEIs are necessary in order to implement a sustainability strategy.

3.5 Justification for Using the Denison Model

There are several instruments and approaches for exploring organisational culture; however, for the purpose of this research, the Denison model was used. The Denison model best supports the ontology and epistemology of this study. The ontology of this study is based on the premise that reality is real and apprehendable. In contrast, the epistemology is based on a philosophy that findings are true and objective (i.e. not subjective to perceptions of participants). Objectivity is achieved by generating hypotheses based on theory, collecting data to test hypotheses, and applying quantitative methods to analyse data. Many authors agree that the Denison model is most appropriate for explaining social and environmental performance of organisations. For instance, Mojibi et al. (2013 p. 3) explained that applying the cultural traits of the Denison model in management leads to greater organisational performance because they jointly promote the capacity of an organisation to integrate and coordinate internal resources and to adapt to its external environment. The author continued that the Denison model is most suited for analysing organisational culture because:

- It is used at all levels of an organisation
- Measuring can be done up to the lowest organisational level
- It evaluates the group’s behaviour, instead of evaluating personality

Rietmann (2013) emphasised the strengths of the Denison model as being:

- Well-established in practice and research
- Available in thirty-seven languages in electronic and paper-and-pencil versions
- Information about the survey, psychometric properties and link to performance are openly communicated
- User-friendly in terms of length and presentation of data
- Designed with the intention of intervention and to link culture to performance constructs
- Specifically designed to assess organisational culture

The Denison model assists researchers to identify imbalances and deficits when studying organisational culture (Pavllca et al., 2013). Yilmaz & Ergun (2008) used the Denison model of organisational culture to analyse the effects of imbalances in cultural traits and the impacts on effectiveness. The researcher intends to identify the right balance of cultural traits needed to enhance sustainability performance in each case-study institution. This view is strengthened by Salmani et al. (2014) who maintain that the Denison model stands out because it is contemporary when compared to other models of organisational culture, it uses a behavioural approach, and is very comprehensible with regard to the indices it uses to assess organisational culture. As assumptions and beliefs enable organisations to solve both interior and exterior challenges and form the basis of action and behaviour, Denison's model of organisational culture puts underlying assumptions and beliefs at the model's core (Kotrba et al., 2011).

The level of influence of the traits and indices of the Denison model vary across organisations; this means that a trait or index may be more influential than another in any given organisation (Mojibi et al., 2013). Furthermore, Banto & Chandan (2011 p. 58) found out that individual traits affect certain performance indicators more strongly than other traits.

Yilmaz & Ergun (2008) investigated the effects that an imbalanced combination of crucial culture traits have on the effectiveness of an organisation and advised that managers should aim to increase the scores of their organisation on all measures of a trait in order to improve a wide range of measures of effectiveness. This view is supported by Banto & Chandan (2011), who theorised that managers could improve organisational performance by focusing on improving the scores of their organisation on all four culture traits. Furthermore, when considering culture change, it is necessary to consider the combination of culture traits Kotrba et al. (2011). Higher performance can be achieved through performance management and, according to the Denison model of organisational culture, an organisation with a higher combined ratio of the four culture traits will have higher ratios of performance (Ehtesham et al., 2011). In their study, Salajeqe & Naderifar (2014) combined the traits into internal focus (involvement + consistency) and external focus (adaptability + mission). Findings did not show any significant difference between the two and concluded that the case-study organisation paid adequate attention to both.

Examples of PhD theses in which the Denison model was used as the underpinning model to investigate management practices are:

1. Nguyen, H. N. (2009) The Impact of Leadership Behaviours and Organisational Culture on Knowledge Management Practices in Small and Medium Enterprises. Griffith University.
2. Memon, S. B. (2015) Relationship between Organisational Culture and Knowledge Creation Process in Knowledge-Intensive Banks. Queen Margaret University.
3. Sadeghian, M. R. (2010) A Study of the Significance of Organisational Culture for the Successful Implementation and Operation of Total Quality Management (TQM): A Comparative Study between Iran and UK. University of Huddersfield.

Other researchers that have used Denison's model for analysing organisational performance include Davidson et al. (2007) who studied organisational culture and financial performance in a South African Investment bank. Additionally, Teymorzadeh et al. (2014) studied the relationship between organisational culture and staff empowerment. Lari et al. (2012) examined the relationship between organisational culture and social capital, and Pirayeh et al. (2011) studied the influence of organisational culture on the effectiveness of human resources.

Denison's model of organisational culture	**Other models of organisational culture**
It is implementable in all levels of an organisation	Usually, only implementable in higher levels of an organisation
Ensures easy and quick measurement and understanding of results	Requires much time for measurement and understanding of results
Achievements of different sections in an organisation can be measured independently	Few indistinctness in measurement of achievements of sections of an organisation
Business concepts are explained in business language	Often, non-business language is used to explain business concepts
It was generated and designed in practical and real business environment	Often generated and designed in academic settings
It is based on behaviour of organisation and its units	Based on personal and psychological values
Is quantitatively driven	Often qualitatively driven

Table 3.1: Comparison of Denison's model with other models of organisational culture

However, caution was suggested by Dartey-Baah & Amponsah-Tawiah (2011), who advised that applying imported theories of management across different cultures may not always culminate in perfect fit or perfect implementation of the theory in society. The authors explained that it is important to identify the limits of foreign management

and institutional theories, models or practice imported into Africa in order to find the most suitable method to adapt these into respective African management and institutional culture.

3.6 Sub-Cultures and Other Institutional Factors That Influence the Organisational Culture-Sustainability Performance Link

The researcher holds that an organisation's culture and structure develops as time passes and in response to certain factors. Based on the literature reviewed, the researcher suggests the following as factors that can have an influence on shaping an institution's culture of sustainability:

1. **Location**: The culture of an institution can be influenced by the geographical location and physical characteristics of the institution. For instance, the type of academic programmes and courses offered in an institution can be as a result of its location. Furthermore, the type of staff and students recruited can be influenced by the institution's location in a quiet rural area or a sprawling urban centre. Researchers like Reilly & Weirup (2010) called for studies to investigate the influence of location on the sustainability performance of organisations. However, location has been found to be influential in the activities of certain industries like extractive and tourism.

2. **Size:** Many studies have found a positive relationship between organisational size, environmental, social and financial disclosure (Michelon & Parbonetti, 2012). Abisuga & Oyekanmi (2014) found that professionals in the Nigerian sustainable building industry agreed that the size of organisations influenced

the use of sustainable building materials to some extent. Further studies could be done to investigate if Nigerian institutions with larger student population demonstrate better sustainability behaviour than institutions with less student population.

3. **Age of institution:** The age of participants has been shown to affect sustainability in much research (Bosshaq et al., 2012; Mwnagi & Daniel, 2012; Okorley & Nkrumah, 2012). However, there are insufficient studies on whether the age of institutions is an influence on the organisational culture. Thus, further studies could investigate if the age of Nigerian institution affects the extent to which it demonstrates sustainability behaviour and if older institutions tend to demonstrate more sustainability behaviour than younger ones and vice versa.

4. **Language:** In many organisations, language is used to identify members of a culture or sub-culture. Members can demonstrate that they accept their organisation's culture and are disposed to preserving it by learning their organisation's sustainability language both in writing and speaking. According to Sapir (1921), language can reflect culture and influence thinking; thus, further studies could investigate if stakeholders of Nigerian institutions use sustainability-related language, and if they do, how has this affected general sustainability behaviour of the institution.

5. **Religion:** Harmonious and equitable interactions are required to fulfil today's human needs while protecting and preserving the natural environment for

posterity. According to UNESCO (2010), in most societies, the traditional role of religion has been to develop cultural values which promote people-to-nature and people-to-people values. Furthermore, Westerman & Essen (2007) asserted that religious practices and beliefs inspire the work of a large number of organisations, movements and initiatives that support a sustainable environment. Hope & Jones (2014) said religious beliefs form theories on the relationship between human beings and the environment. Lastly, according to Hessel (2007), some of the immediate objectives of religious communities comprise becoming active campaigners for economic practices and public policies that shape a fair and sustainable community, giving emphasis to sustainable adequacy in day-to-day living, and teaching ethics of eco-justice.

6. **Local culture:** Studies have shown that national culture has more influence on staff than their organisation's culture (ICSA, 2009), but this study did not investigate if local culture has a similar influence on the sustainability attitude of HEI stakeholders. The four dimensions of culture by Hofstede (1980), have been used to investigate this relationship. Also, UNESCO (2012) affirms that organisations should integrate cultural specificities during the inception, assessment, and practice of sustainability to ensure that the local community is involved, and the desired result is obtained. UN (2014) held that a different understanding and relationship to the environment and nature are offered by cultural identities, local practices and knowledge.

Furthermore, the UCLG Culture Summit (2015) asserted that sustainability goes beyond the environment and ecology and includes locality and

empowerment of the local population. The researcher agrees with the summit that the only type of development that is likely to be sustainable is one that is sensitive to local context and rooted in culture. This is consistent with authors who said that development in communities would only become sustainable if residents from a diverse background can meet to familiarise themselves with the cultures of each other in various ways and situations (Duxbury & Jeannotte, 2011).

CHAPTER 4

Research Methodology

4.1 Introduction

This chapter explains the research methods used for this study. It also provides justification for each chosen method and how each method fits the research design of this study.

4.1.1 What is Research?

Several definitions have been put forward by different authors to capture the essence of the terminology 'research'. Some definitions include, '*research is a logical and systematic search for new and useful information on a particular topic'*, (Rajasekar et al., 2013 p. 1). In terms of problem-solving, it can be defined as 'the systematic method consisting of enunciating the problem, formulating a hypothesis, collecting the facts or data, analysing the facts and reaching certain conclusions either in the form of solutions towards the concerned problem or in certain generalisations for some theoretical formulation' (Kothari, 2004 pp. 1-2). Lastly, it can be defined as '*simply the process of arriving at a dependable solution to a problem through the planned and systematic collection, analysis and interpretation of data'* (Singh, 2006 p. 1).

4.1.2 What is Methodology?

It is important to understand the terms 'methodology' and 'method' in the context of research. The methodology used in conducting the study largely determines the

quality, relevance and reliability of research findings (Asiamah & Patel, 2009). Research methodology can be defined as *'a way to systematically solve the research problem'* while research method can be defined as the approach used by researchers to perform a research (Kothari, 2004 p. 7). Research method can also be defined as the procedure used by researchers to describe, explain and predict phenomena (Rajasekar et al., 2013).

4.2 Research Paradigm

This section discusses the research paradigm and elements in an organisational context. A paradigm is a worldview or basic system that guides a researcher (Sobh & Perry, 2006). A paradigm can also be explained as a way of thinking or a general perspective that reveals fundamental assumptions and beliefs about the nature of organisations (Gioia & Pitre, 1990). Different authors have analysed various paradigms in social research. Some of the paradigms discussed include positivism, post-positivism, realism, constructivism, critical theory and participatory (Sobh & Perry, 2006; Aliyu et al., 2014). These paradigms are supported by research philosophies such as ontology, epistemology, axiology and common methodologies.

In this study, the researcher preferenced post-positivism and viewed perceptions of researchers and respondents as value-based. Thus, reality depends on the perceptions of individuals. This corresponds with the positivist ontology that reality exists but does not correspond with the idea that it is certain and apprehensible. Also, it agrees with the positivist epistemology that knowledge can be achieved by scientific methods but disagrees that findings are always true. It supports the interpretivist ontology that

reality is socially constructed and is uncertain, and epistemology that findings may be true, and that knowledge is relative.

The post-positivism research approach emanated from the limitations of the positivism paradigm in social science research. It leans heavily on empirical analysis and does not lend itself to the interpretation of perceptions as ensues with interpretivism. Post-positivism resulted from an effort to balance positivism and interpretivism; hence it is pluralist (Panhwar et al., 2017). It enables investigation of organisational issues by using the perceptions of a majority to get results and make findings (Panhwar et al., 2017). It combines comparative aspects of the positivist approach with phenomenological aspects of the interpretivist approach. Post-positivism regards objectivity as relative (Panhwar et al., 2017), emphasises meanings and holds that knowledge is socially constructed (Henderson, 2011).

Post-positivism recognises the significance of subjectivity in research, views people as animate subjects to be studied contextually and recognises that personal views and experiences are valuable in the study of phenomena (Panhwar et al., 2017). It aims to identify and verify basic 'structures that give rise to actions and events that can be experienced in the empirical domain' (Bisman, 2000 p. 9). Post-positivists believe that a reality exists, but it is not entirely apprehensible. Furthermore, post-positivists recognise that perceptions are flexible, and differences exist between reality and people's perception of reality. While positivists focus on a single, concrete reality, and interpretivists embrace multiple realities, post-positivists focus on 'multiple perceptions about a single, mind-independent reality' (Bisman, 2000 p. 9).

Organisational research, like many areas in social research, is pluralist, and researchers use different methods to investigate issues. Some researchers use a solely quantitative method and ignore the subjective aspects of data while others use a quantitative method and ignore objective aspects of data. Some have used a mixed method approach that gives equal priority to quantitative and qualitative methods, while others used a mixed method approach where one method predominates (Panhwar et al., 2017). By offering more than one method to study a research area, post-positivism reduces prejudices and personal biases of researchers and participants and enhances reliability and validity.

Post-positivists maintain that all scientific methods have imitations and are not perfect. They suggest that using multiple methods to solve a particular research problem reduces potential errors and researcher or participant prejudice (Henderson, 2011). Post-positivism leans more on a quantitative approach but emphasises that findings should be strengthened by triangulation with qualitative data (Phillips & Burbles, 2000). Post-positivists suggest a critique of research questions, research design, data analysis and interpretation of results by using different theoretical viewpoints to produce the best possible understanding.

According to Phillips & Burbles (2000), post-positivism allows researchers to study groups or individuals, patterns or personal actions in an organisation, intentions or unintended consequences by using statistical or interpretive research. Furthermore, ‘postpositivist research principles emphasise meaning and creation of new knowledge and are able to support committed social movements’ (Ryan, 2006 p. 12) such as sustainability. Hence, post-positivism enabled the researcher in this study to use empirical methods to collect perceptions of respondents and use interpretive methods

to create meaning from value statements. Use of opposing methods in this study enabled the researcher to get more understanding about organisational culture and sustainability performance in the case-study institutions (Panhwar et al., 2017). Using a postpositivist approach enabled a deeper understanding of culture and performance issues by combining findings from quantitative methods of data analysis as done in positivism with findings from the interpretation of meanings from qualitative data. Hence, post-positivism enhanced triangulation of quantitative and qualitative findings in this study and findings from both methods enhanced the development of understanding (Panhwar et al., 2017). By using a postpositivist approach, quantitative methods allowed the researcher to assess the potential for wider application of patterns in data while qualitative methods provided depth and contextual interpretation of data (Bisman, 2010).

Conducting this study within a postpositivist approach is based on replicability and validity as these are the benchmarks for judging results from using quantitative and qualitative methods. In a positivist approach, reliability involves having stable results obtained by applying a measurement instrument such as a questionnaire. At the same time, validity involves being able to test hypotheses sufficiently and being able to apply obtained results in wider areas. In an interpretivist approach, criteria such as confirmability, dependability, transferability and trustworthiness are used for reliability and validity due to the absence of statistics (Bisman, 2010). This study used a quantitative instrument (survey questionnaire) to collect respondent perceptions on organisational culture and performance and analyses different perceptions to know the most popular by using statistical instrument. However, it is important to note that perceptions are qualitative as they are subjective and involve the use of words and not

numbers. It is also key that the researcher understands the context of the reality of sustainability performance, hence interpreting of value statements of institutions to understand their meaning is crucial (Fox, 2008). These explanations demonstrate that using a strictly positivist or interpretivist approach for this study would not be appropriate.

4.3 Research Approach

There are two main approaches to research: deductive and inductive (Bendassolli, 2013). In the deductive approach, the researcher starts with a theory, generates hypotheses and then collects data to test hypotheses. Opposingly, the inductive approach is the reverse because the researcher starts with data collection before developing a theory (Gregory & Muntermann, 2011). The constructs or variables to be researched in a deductive approach are operationally defined and embedded within the hypotheses, and appropriate data collection strategies are designed based on the operational definition of the constructs (Bryman, 2008). The type of data collected in deductive research is determined by the hypotheses or theory being tested. Thus, deduction moves from abstract to concrete (Monette et al., 2011).

This study adopted the deductive approach because it begins with a theory, the Denison 'Theory of Organisational Culture', which was used to investigate the relationship between organisational culture and sustainability performance variables of selected Ilorin institutions. A set of hypotheses are generated based on the theory and from knowledge about the research area (sustainability in Nigerian higher education). Variables in the hypotheses were operationalised, data was collected, and hypotheses were tested (Monette et al., 2005; Babbie, 2010). Findings from the

content analysis of vision and mission statements were triangulated with findings from the analysis of data to provide an understanding of the relationship between organisational culture and sustainability performance in Ilorin HEIs. The influence of subcultures like religion, language and local culture on the culture-performance linkage in each institution were not examined.

Pathirage et al. (2008) posited that the deductive approach is more common in the natural sciences and follows a highly structured approach. It is used to explain causal relationships between variables, and samples of sufficient size are drawn to generalise conclusions. However, the inductive approach is more common in the social sciences and has a flexible structure that permits changes. Also, the inductive approach is used to explain an understanding of the meanings that humans attach to events and is less concerned with the need to generalise. Induction, however, involves drawing generalisable inferences from observations so as to generate theory (Bryman, 2008). Generally, in inductive research theories and hypotheses for explaining research findings are developed from the data collected. Thus, induction moves from concrete to abstract (Monette et al., 2011).

4.4 Research Design

A research design is described as a plan that provides guidance during collection, analyses and interpretation of observations. ‘It is a logical model of proof that allows the researcher to draw inferences concerning causal relations among the variables under investigation’ (Yin, 2003 p. 21). Yin further described it as a research outline that identifies the questions to be studied, the relevant data to collect and the method for analysing results.

There are three main approaches to a research design: qualitative, quantitative or mixed methods approach (Creswell, 2003). Quantitative research analyses general trends across a population and focuses on numbers, while qualitative research is an in-depth study of social and cultural phenomena and focuses on texts (Asiamah & Patel, 2009). The method for collecting and analysing both qualitative and quantitative data in a single study is the mixed methods approach. This approach combines methods such as texts, interviews and observations (qualitative data) with traditional surveys (quantitative data). It evolved because researchers recognised that there are limitations in all research methods and reasoned that prejudices intrinsic in one research method might offset prejudices in another (Creswell, 2003).

The mixed research method was chosen for this study because it enabled the researcher to statistically investigate the relationship between organisational culture and sustainability performance variables in the Ilorin HEIs under study. Moreover, it assisted in the understanding of themes and patterns in the vision and mission statements of the institutions, which facilitated generalisability of the outcome of this research across all HEIs in Ilorin. The researcher systematically integrated the findings of quantitative and qualitative methods in order to obtain a deeper understanding of the independent and dependent variables, the relationship between them and their contexts. This provided more confidence in the findings from analysis and conclusions generated based on findings (Johnson et al., 2007) because quantitative methods confer greater reliability while qualitative methods confer greater validity (Babbie, 2010).

Rajasekar et al. (2013) explained that some characteristics of qualitative research include:

- It investigates the why and how of decision-making
- It is exploratory
- Qualitative data cannot be graphed
- Its aim is to get the meaning, feeling and describe the situation
- It is non-numerical, descriptive, applies reasoning and uses words

The authors also listed some of the characteristics of quantitative research as:

- It investigates the what, where and when of decision-making
- It is conclusive
- The results are often presented in tables and graphs
- It is an iterative process whereby evidence is evaluated
- It is numerical, non-descriptive, applies statistics or mathematics and uses numbers

Based on the work of Creswell (2003), the three approaches to research design can be explained as follows:

- **Qualitative approach:** is one in which a researcher bases knowledge claims principally on advocacy and/or participatory perspectives (i.e. change-oriented, collaborative, issue-oriented, or political) or constructionist perspectives (i.e. an intent to develop a theory or pattern based on socially and historically constructed meanings or multiple meanings of individual experiences) or both. This approach uses inquiry strategies like case studies, grounded theory studies, ethnographies, phenomenologies and narratives to develop themes from the data. Qualitative methods focus on description and understanding; thus, researchers place a high premium on interpreting and

conveying the expressions, words and behaviour of research participants in a manner that elicit meaning (Creswell, 2003).

- **Quantitative approach:** is one in which a researcher develops knowledge (i.e. cause and effect thinking, breaking down into definite variables, hypotheses and questions, use of observation and measurement, and testing theories) by principally using postpositivist claims and inquiry strategies like surveys and experiments, and gathers data on statistical-data-yielding predetermined instruments. Quantitative methods focus on the relationships and predictions among variables. Researchers using this method control for these variables, tests the hypotheses and try to establish relationships (Creswell, 2003).

- **Mixed methods (triangulation) approach:** is one in which a researcher uses pragmatic grounds (such as pluralistic, problem-centred, and consequence-centred) as a basis for knowledge claims. This approach provides the best understanding of research problems by using inquiry strategies that involve sequential or simultaneous data collection. Both text and numeric information are gathered so that the final database represents both qualitative and quantitative information (Creswell, 2003).

Qualitative research thrives on its ability to answer ‘why’ and ‘how’ questions, and in the knowledge it provides of the dynamics of social context, change and social processes. On the other hand, quantitative research maps and attempts to forecast changes and wide patterns in social phenomena. A focus on analyses and correlation of variables means that while relationships between variables can be identified,

quantitative research has limited capacity to comprehend the technicalities of the relationship processes and to explain what these mean. Therefore, qualitative research becomes very useful because it focuses more on explanation than on causation or measurement (Mason, 2006).

Furthermore, Mason (2006) suggested that a qualitatively-driven approach to mixing methods offers huge potential to generate new ways to understand contexts and complexities of social experience, and to enhance the capacity for explaining social phenomena and generalise findings. However, for the purpose of this research, the researcher used a quantitatively-driven approach to mixed method research because the study adopts a deductive reasoning approach and focuses on theory testing, that is, using the Denison theory to analyse sustainability performance. A qualitative-driven approach is not appropriate because it leans more to inductive reasoning and theory building (De Lisle, 2011).

4.5 Triangulation

Fielding & Fielding (1986) explained triangulation or mixed methods as combining different perspectives and points of view by using different data analysis tools, different research paradigms or different researchers. Denzin (1978 p. 291) simplified it as ‘the combination of methodologies in the study of the same phenomenon’. Denzin (1970) explained different types of triangulation as:

- Methodical triangulation, which involves using different research methods to solve a research problem.

- Theoretical triangulation which involves using multiple theoretical points of view.
- Investigator triangulation which involves using different researchers to control subjective bias.
- Data triangulation which involves combining data from different sources.

According to Fielding (2012), 'mixed methods potentially offer depth of qualitative understanding with the reach of quantitative techniques'. Fick (2017 p. 55) explained that 'methodical triangulation is not just the combination of methods; it is rather the triangulation of methodologies including their theoretical, epistemological and conceptual backgrounds'.

Initially, the mixed methods approach was mostly used by quantitative leaning researchers, but it became more established in qualitative research after the emergence of the constant comparative method (Fielding, 2012). Fielding (2012 p. 125) argued that mixed methods should concentrate more on the integration of 'data derived from different methods' than having contradictory 'findings from different methods'. Fielding held that to have effective data integration, a researcher needs to use approaches that are able to recognise when to combine corresponding findings and when to respect and investigate contrasting findings.

Postpositivist approach is cited as an approach that uses mixed methods to ascertain social facts, but the author stressed that researchers need to fully utilise all the potentials of mixed methods by integrating 'the two fundamental ways of thinking (quantitative and qualitative) about social phenomena' (Fielding, 2012 p. 125). Mixed methods should consider epistemological and ontological differences (Mertens &

Hesse-Biber, 2012) and consider threats to validity intrinsic in methods that are combined (Fielding & Fielding, 1986). For example, Fielding & Fielding (1986) emphasised that triangulation needs to solve challenges in convergent validation which pertains to the difficulty in accurately measuring social phenomena twice. According to Fielding & Fielding (1986) and Fielding (2012), trying to validate an analysis by repetition is erroneous because phenomena change over time and this may be due to a change in the perception of subjects which itself can be attributed to lessons from past research. The author, however, said that it is possible to overcome this challenge with a clever research design that combines different methods in a way that overcomes the intrinsic weaknesses in each especially when they lean on contrasting epistemologies.

Fick (2017 p. 54) proposed a systematic triangulation of perspectives in which 'not only methods are combined but also their theoretical and epistemological backgrounds are considered in the combination'. However, Fielding and Fielding (1986) and Denzin (1989) cautioned that triangulation should not be simply viewed as a method of validation of findings, or achieving objectivity and validity but should be seen as a method for achieving a deeper and more comprehensive understanding of the phenomenon. Fielding and Fielding (1986 p. 32) stated that 'we should combine theories and methods carefully and purposefully with the intention of adding breadth or depth to our analysis, but not for the purpose of pursuing ''objective'' truth'. Fick (2017 p. 53) reiterated this and said triangulation should be 'a source of extra knowledge about the issue in question and not just for confirming that is already known from the first approach'.

4.5.1 Mixed Methods, Triangulation and Causation

Howe (2012) analysed two conceptions to mixed methods: disjunctive and conjunctive. A disjunctive conception of mixed methods or a disjunctive conception of triangulation denotes a 'within methods' triangulation, which involves using different methods to solve different research questions (Howe, 2012; Denzin 1978). A conjunctive conception of mixed methods or conjunctive conception of triangulation denotes a 'between methods' triangulation that involves using different methods to solve the same research questions (Howe, 2012; Denzin, 1978). A version of disjunctive conception called mixed methods experimentalism can use quantitative data and statistical analysis to describe phenomena and is a reliable way to investigate causal relationships. Mixed method experimentalism uses qualitative data and analysis to describe phenomenon and conjecture hypotheses (Howe, 2012).

According to Howe (2012), there are two ways to understand causal relationships between two things: mechanical and agential. Mechanical causation is common in qualitative experimental methods and is viewed by mixed methods experimentalism as the only valid conception in social research that explains causal relationships. Agential causation can be explained by a framework comprising three concepts: collective intentionality, social fact and background. For example, when stakeholders of HEIs work together to pursue sustainability goals they demonstrate collective intentionality and doing so they create a social fact which in this case is sustainability performance that would not have existed without their collective efforts. Hence, sustainability performance is viewed as a social and institutional fact in this study in which status functions and responsibilities apply to stakeholder roles such as students, teaching staff, non-teaching staff, management and other groups.

It is important to note that the concept of intentionality does not assume that stakeholders constantly and normally comply with sustainability performance guidelines or are even aware that such guidelines have been put in place. Background refers to stakeholder capacity such as knowledge, disposition and ability that build motivation and influence behaviour (Howe, 2012). Avenues exist for stakeholders to play active roles in shaping their work lives just as they are shaped by external influences. However, this is different from one individual to another as the extent to which they have an opportunity to shape their work lives is determined by opportunities for capacity development, their skills and disposition, their social/official position, and the political atmosphere in their institution (Howe, 2012).

4.5.2 Triangulation in this Study

The researcher implemented a mixed methods research that combined quantitative and qualitative methods of research (Cortini & Tria, 2014). The quantitative method enabled the researcher to collect and analyse data on perceptions of stakeholders on organisational culture and sustainability performance of their HEI to ascertain stakeholders' perception about the extent to which sustainability is performed and the role of each organisational culture trait in promoting sustainability performance. The qualitative method enabled the researcher to analyse value statements and discover underlying issues about organisational culture and sustainability performance. This provided more understanding about challenges facing sustainability practice in the case-study HEIs (Howe, 2012).

Both quantitative and qualitative methods have unique strengths and weaknesses, and triangulation helps to capitalise on the strengths and counteract the weaknesses (Jick,

1979). Triangulation allowed qualitative method of content analysis of textual data to be used to provide more understanding of context of sustainability practice in each HEI, while quantitative method of questionnaire survey provided greater confidence for generalisation and enabled the researcher to avoid making 'reasonable guesses about his area of ignorance in the effort to reduce bias' (Jick, 1979 p. 604).

Olsen (2004) defended the use of triangulation in mixed methods research as an effective tool for exploring and improving knowledge about real-world situations. The author argued that there should not be a conflict between quantitative and qualitative methods, but rather both methods should be integrated to provide better understanding of any chosen social research topic. Hussein (2009) mentioned two ways of combining quantitative and qualitative methods; a qualitative method can be used as supplementary method in a quantitative study, or a quantitative method can be used as a supplementary method in a qualitative study. The researcher ensured he had a clear understanding of the epistemology and ontology of both methods and implemented the former.

This mixed methods study is quantitatively driven, applies qualitative data and approach to provide context and more understanding; it relies on the postpositivist research philosophy (Schoonenboom & Johnson, 2017). A disjunctive or 'within' method triangulation was used to combine quantitative and qualitative methods because each method was used to answer different research questions (Howe, 2012). This study views sustainability performance as an institutional fact and stakeholders as agents of sustainability performance. The study used Denison organisational culture traits and indices to explain causation relationship between culture traits and sustainability performance constructs.

An explanatory sequential design was implemented in this study. This involves completing collection and analysis of quantitative data first before doing collection and analysis of qualitative data and using this to explain the initial quantitative result (Creswell & Clark, 2011; Schoonenboom & Johnson, 2017). Furthermore, the 'merging' method of data integration is used to integrate quantitative and qualitative results. Thereafter, a discussion is conducted to examine whether there is a convergence or divergence in findings from quantitative and qualitative results and to provide more understanding of the context of sustainability practice in the three institutions (Creswell & Clark, 2011; Schoonenboom & Johnson, 2017).

4.6 Questionnaire and Vision and Mission Statements

A questionnaire is a planned set of questions which respondents are expected to answer, generally by using closely defined options (Sekaran, 2003). According to Zikmund (2003 p. 378), 'a questionnaire survey is only as good as a question it asks' and is read and answered by the respondent. The author emphasised that it is imperative to evaluate the questionnaire through pilot testing to ensure accuracy and relevance. Also, sequencing of questions, question length and the number of questions is crucial. The researcher followed the guideline provided by Malhotra et al. (2008) for developing questionnaires. The type of data required were defined; this was followed by determining the content, wording and structure and order of each question.

The two main formats for collecting responses in a questionnaire continue to provoke debate among social research scholars who use either or a combination of both. Closed questions (or structured questionnaire) are easy to analyse but difficult to construct

whereas, open questions (or unstructured questionnaires) are difficult to analyse but easy to construct (Sarantakos, 2005). According to Bird (2009), quantitative research uses closed questions, while qualitative research uses open questions.

For this research, the structured questionnaire format is adopted (Twaissi, 2008; Sarantakos, 2005; Bird, 2009). This makes the questionnaire easy to administer, enables respondents to complete the questionnaire in less time, enables easy coding and analysis of the questionnaire, enables easy quantification and comparison of responses, and lastly, helps to avoid irrelevant responses and provides a greater likelihood of fully-completed questionnaires.

The questionnaire is worded in the English language – the official and most widely used language of Nigeria. In a questionnaire survey, the sequence of questions must follow a logical order to allow easy transition from one subject matter to another. This helped respondents to understand the research's purpose and encouraged them to answer all the survey questions carefully (Bird, 2009). The questionnaire is five pages or less in length which, is considered acceptable and appropriate by Norman (2006).

4.6.1 Pilot Testing

This improved the questionnaire, eliminating difficulties during data recording and enabling respondents to answer the questions without any difficulty. Additionally, it allowed the researcher to assess the validity of the questions and the reliability of the data to be collected (Saunders et al., 2007). The drafted questionnaire was pilot-tested by using (University of Wisconsin-Extension, Cooperative Extension, 2008) guidelines:

- Does it collect the information you want?
- How long does it take to complete?
- If a telephone survey, do the questions flow in a conversational manner?
- Does it create a positive impression that motivates people to respond?
- Do respondents correctly follow directions?
- Is the range of response choices actually used?
- Are all response choices appropriate?
- Do all respondents interpret the question in the same way?
- Are all the words understood?
- Does each question measure what it is supposed to measure?

This research used self-administered questionnaires to collect quantitative data, and semi-structured interviews to collect qualitative data. A self-administered questionnaire method was used to collect quantitative data because it ensures minimum interviewer bias (Twaissi, 2008), is less time consuming compared to interview-administered questionnaires (Sekara, 2003) and is the most popular data collection method for business studies (Ghauri et al., 1995).

Twaissi (2008) explained that self-administered questionnaires are sent to, completed and returned by respondents by hand (delivery and collection), by post (mail questionnaire) or electronically (online questionnaires). Zikmund (2010) provided details of a self-administered questionnaire in figure 4.1 below.

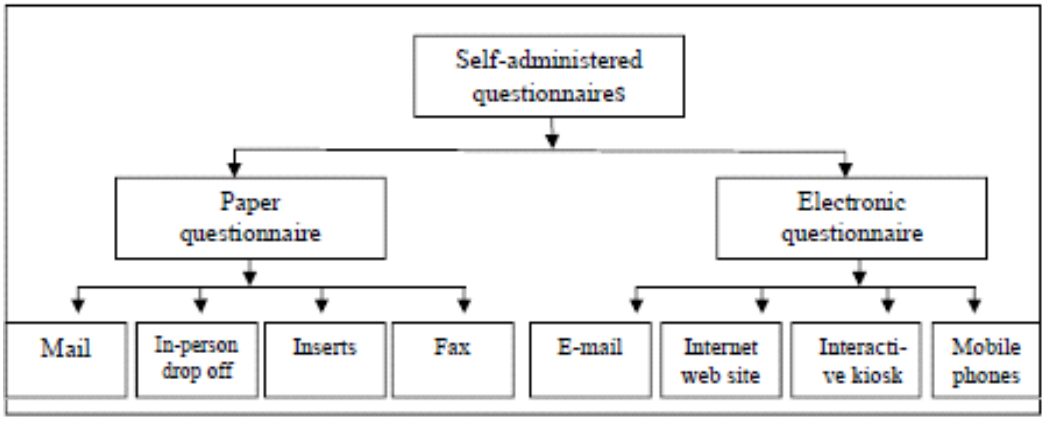

Figure 4.1: Details of self-administered questionnaires
Source: Zikmund et al. (2010 p. 219)

This research adopted the delivery and collection questionnaire method, also referred to as in-person drop off because it generates the most response rate (Twaissi, 2008; Sekaran, 2003). According to the authors, this is because it provides better opportunity to clarify any misunderstanding or doubt about the questionnaire, it provides an opportunity to introduce research area and encourage respondents to volunteer honest answers, it provides an opportunity to establish rapport with respondents which aid quick collection of completed questionnaires. Other methods offer very little control over the speed of responses and accuracy in sampling and also require a special means for delivery and collection of responses, that is, internet and postal service.

4.6.2 Vision and Mission Statements

Gregory et al. (2009) suggested that information about organisational culture is best sourced from information provided by the top management of an organisation. This can be through vision and mission statements or other communication. This view is consistent with prior studies on organisational culture (Glick et al., 1990; Denison & Mishra, 1995; Howard, 1998; Cameron & Freeman, 1991; Gupta et al., 2000). The

researcher studied mission and vision statements of each institution under study to find out if there is any reference to sustainability practice in them. This enabled the researcher to have adequate knowledge of the most significant areas that concern each institution.

4.7 Research Strategy

There are different strategies for conducting a research, and the most popular are case study, survey research and action research. Each of these strategies is explained below:

4.7.1 Case Study

According to Yin (2003), the case study strategy is the most suitable strategy for research seeking answers to 'why' and 'how' questions. It is very useful for research where the researcher has little control over events in the organisation being investigated. This strategy is also helpful when the area of research borders on contemporary phenomena within a real-life context. However, Corcoran et al. (2004) took an opposing stance by citing concerns about the methodology for conducting case studies. The authors considered that the way research is conducted and reported needs to be addressed if case studies are to result in an improvement in the response of HEIs to sustainability issues in functions, policies, activities and curriculum.

The researcher took this criticism into account and ensured that the methodology used in this study enables adequate understanding of organisational culture traits that influence sustainability performance. The process of data collection and analysis methods, and the findings of this study are reported in a way that can help Ilorin HEIs

to understand and implement best practice of sustainability. Also, the rationale for choosing the models used to investigate how culture influences sustainability performance and to integrate best practice of sustainability is explained in the Conceptual Framework chapter of this study.

Ability to perform data analysis alongside data collection distinguishes case study from other methods. In experiment and survey methods, collecting data and analysing data are separate stages, and one comes before the other. Different people may be involved in each stage; for instance, a senior researcher may be tasked with data analysis only while the data collection stage may be delegated to a research assistant. One researcher can also perform these two stages; therefore, the person must acquire the requisite skills for understanding substantive issues relating to a research topic while controlling their substantive thoughts during data collection. According to Yin (2004), the expertise and skill of a researcher to pursue a whole (or at times partial) line of inquiry simultaneously as (not separately) data collection is a crucial requirement of the case-study method.

4.7.2 Survey Research

This strategy entails collecting information about the opinions, actions, or characteristics of a population (Ajmal, 2009). In survey research, quantitative data is collected empirically from a comparatively big sample taken from a population (Leeuw et al., 2008). According to Pinsonneault & Kraemer (1991), survey research is conducted to promote scientific knowledge and has three main features:

Firstly, survey research provides quantitative descriptions of a number of features of the population under study. The primary concern of a survey analysis may be with

relationships between variables or descriptive projection of findings to a predefined population. The authors explained that being a quantitative method, survey research requires standardised information about and/or from subjects being studied – these subjects may be communities, organisations, groups or individuals.

The second feature put forward by the authors is that information collection is by asking questions that are structured and predefined. The answers may refer to a unit of analysis that represents the data to be analysed.

The third feature offered by the authors is that a sample that is large enough to permit wide statistical analyses is drawn from a population, e.g. a fraction of the population that enables generalisation of the findings to the population is collected.

In the survey process, the initial stage is agreeing on well-defined research objectives. The following stage is to translate the objectives into research questions. Thereafter, based on the goal of the study, some survey questions are then formulated (Leeuw et al., 2008).

4.7.3 Designing the Strategy

In this study, the researcher used a combination of case study strategy and the survey research strategy. This involved administering a questionnaire to collect quantitative data from a randomly selected sample drawn from the population of each institution in this study. This was followed statistical analysis of data to enhance the reliability and generalisability of results. Also, a content analysis of vision and mission statements to compare with findings from the survey. The case study strategy allowed the researcher to conduct an explanatory research which has the advantage of greater

reliability and internal validity and is able to establish the cause and effect relationship between two or more variables (Saudi, 2014).

Defining the cases to be studied was the first step in this regard because this greatly enhances the organisation of work (Yin, 2004). A thorough review of relevant extant literature and the development of research objectives and research questions was performed before this. A researcher may elect to keep their case holistic or have sub-cases embedded within a holistic case (Yin, 2004). This research investigated three HEIs, and each HEI represents a holistic case. Employing a single case study demands a special focus on the case but using multiple case studies strengthens research findings. This is because multiple case studies are used as hypothesised variations, deliberate and contrasting comparisons or replications of each other (Yin, 2004). A multiple case-study design was employed because the culture-performance relationship of each case-study institution was studied holistically and analysed based on their unique culture and characteristics. This study combined findings from quantitative analysis of organisational culture and sustainability performance linkages in each institution with findings from qualitative analysis of vision and mission statements. However, this study did not investigate what impact sub-cultures like religion, language and local tradition have on the culture-performance linkage of each institution.

4.8 Sampling

According to Diamond (2011), a target population comprises all elements (individuals, objects or social entities) whose perceptions or characteristics are to be represented in the survey. Furthermore, Cooper & Schindler (2003 p. 179) opined that

‘a target population is the total collection of elements about which we wish to make inference’. This means that the selection of a sample that is an accurate representation of the population must follow the identification of a population for the survey. The use of probability sampling techniques maximises the ability to assess the accuracy of estimates obtained from the survey and the representativeness of the survey result. Probability sampling allows researchers to measure accurately the probability that a sample and the true population differ by a given amount, and significantly reduces the probability of getting a non-representative sample (Monette et al., 2005). This technique ensures that each individual in the population of this study has a probability of being included in the drawn sample, and the researcher is able to estimate the probability of each participant’s inclusion (ibid.). Diamond (2011) explained that probability sampling surpasses other sampling types because it has two significant advantages:

1. Probability sampling can provide an unbiased estimate which sums up the responses of everyone in the population from which a sample is taken. This means that the population value being estimated should reflect the expected value of the sample estimate.
2. Probability sampling allows the calculation of a confidence interval which clearly explains the expected reliability level of the sample estimate. Sampling error is the difference between the estimate and the exact value in an unbiased sample.

The credibility of the evidence resulting from a study will substantially be affected by the basis for choosing cases to be included in the study out of a larger population of potential cases. McGrath (1994 p. 162) stated ‘*most of the ways that social scientists*

have to assess correlations and differences rely on statistical reasoning that requires that the cases in the study be a 'random sample' of the population to which the results apply'. Therefore, the results of a survey are relevant to the population wherein the cases represent a random sample. Furthermore, McGrath (1994) explained that while 'sampling' involves the process of determining which cases out of a larger population will be used in a study, 'allocation' is the process for determining the condition(s) that respective cases in the study will be allotted. Additionally, a researcher gets the best chance that the resulting population will be representative if he uses a random procedure to sample from a population or to allocate cases (ibid.).

Random sampling means selecting participants from the total population which a sample is supposed to represent (Mackey & Gass, 2005). There are two types of random sampling: simple random sampling (i.e., having all participants in the total population and drawing from the pool) and stratified random sampling (i.e., using categories for random sampling) (ibid.). The authors suggested that, as the size gets larger, by and large, the best way to obtain a sample that accurately represents a population is by using simple random sampling. According to the authors, this is because simple random sampling ensures that each member of a population has an equal chance of getting selected for a study. However, the authors opined that when the representative presence of certain sub-groups (e.g., gender or age groups) within a population under study is to be ensured, then simple random sampling should not be used. In this case, stratified random sampling should be used because it ensures that determination of quantity of the subgroups in the population is done before random selection of participants from inside each stratum (plural is strata) depending on the determined quantities. Mackey & Gass (2005) submitted that preselected

characteristics are allowed to be used as variables and precision (how representative the sample is) is provided by stratified random sampling.

Authors such as Monette et al. (2005) believe that simple random sampling is more appropriate or small-sized research with a moderate-sized population. The authors hold that this technique can be impractical especially in terms of cost when a large sample consisting of groups of participants are to be investigated and also suggested the use of alternative sampling techniques that can provide even better representativeness within a smaller sample. The authors, however, agree that the technique gives individuals in a population an equal chance of selection into the sample. Monette et al. (2005) stressed that the significance of this technique does not lie in opportunity for wide application; instead, they said the technique forms the benchmark upon which other sampling techniques are assessed. Furthermore, the authors agreed that the stratified sampling technique divides the target population into groups before the sample is drawn, and then separate random samples are drawn from each group. There are two main types of stratified sampling:

a. *Proportionate stratified sampling:* here, the size of the sample drawn from each category is proportionate to the category's occurrence in the population. This is used when the goal of stratification is to reduce sampling error. However, stratification can only reduce sample errors when the stratification variables and the dependent variables under study are related. Other studies like Linnenluecke & Griffiths (2010) have demonstrated the relationship between organisational culture of stakeholders of an organisation and sustainability performance of that organisation. Thus, the researcher contends that using 'organisational

culture of stakeholder groups' as a stratification variable in a study as this is valid. More than one variable may be used for stratification, and generally, using suitable variables improve a sample; however, researchers must use stratification carefully as using too many variables complicates sampling and does not reduce sampling error (ibid.).

b. *Disproportionate stratified sampling:* here, the size of the sample drawn from each category is not proportionate to the category's occurrence in the population. In disproportionate sampling, individuals in one category have an equal probability of inclusion in the sample of that category. However, individuals in some categories have a greater probability of inclusion in the overall sample than individuals of other categories. This is in contrast to proportionate sampling, where representativeness is achieved by providing each individual in the population an equal probability of inclusion in the sample. If the goal of stratification is not to reduce sampling errors but to provide adequate numbers of cases for analysis in all categories of interest, then stratification will usually be based on the category with the smallest number of cases (usually an independent variable) (ibid.).

Simple random sampling and stratified sampling are examples of probability sampling, while examples of non-probability sampling methods (which are considered less reliable than probability sampling) include purposive, quota and convenience sampling (Zikmund et al., 2010).

4.8.1 Cluster Sampling Method

According to Kumar (2014), both simple random and stratified sampling methods are premised on the ability of a researcher to identify each member of a population. The author contends that these methods are more suited to research using small population sizes because as population size becomes larger, identifying each member of the population becomes difficult and costly. Cluster sampling method was chosen for this study because it enabled the researcher to systematically draw a sample from the large population sizes in each institution under study without the researcher needing to identify each individual in the population. Hence, only the elements in selected clusters were listed, not all elements in the entire population. This attribute, according to Cadima et al. (2005), makes this sampling method often more cost-effective than others.

Ross (2005) submitted that in educational research, cluster sampling is often used in lieu of simple random sampling to decrease the cost of research for a given sample size. The author stressed that probability sampling techniques could also be applied in cluster sampling. Babbie (2013) described cluster sampling as highly efficient but conceded that it produces a less accurate sample than the simple random sampling method. The author however advised that sampling errors can be reduced by an increase in sample size and homogeneity of elements being sampled. Babbie (2013) said these factors affect each level of a multistage design. A multistage design is when cluster sampling is done in several stages, that is,

> *'probability sampling of the primary sampling units; from each of these primary units, a probability sample of the secondary sampling units is*

> *then drawn; a third level of probability sampling is done from each of these secondary units, and so on, until we have reached the final stage of breakdown for the sample units, when we sample every member in those units'* (Sekaran & Bougie, 2010 p. 275).

A multistage clustering design was used in this study in order to save cost and time; however, clustering can also be done with a simple one-stage design wherein clusters are selected by using simple random sampling (Levy & Lemeshow, 2013).

According to Babbie (2013), all clusters will be best represented by a sample of clusters if the number of clusters selected is large, and if all clusters are very similar. The author also advised that, generally, in cluster design, the number of clusters selected should be maximised while the number of elements in each cluster should be decreased. The author acknowledged that this advice contradicts the efficiency factor of cluster sampling, which is premised on the capacity of the method to reduce the listing of elements in a population. Listing of elements in a large number of clusters will be more cumbersome and costlier than in a small number because, in cluster design, listing of all the elements in a selected cluster is necessary irrespective of the number to be chosen in the sample (Babbie, 2013). Also, Daniel (2012) suggested six steps for undertaking cluster sampling:

1. *The target population is defined:* in this study, the target population is stakeholders of Ilorin HEIs, and this population is spread over one university, one polytechnic and one college of education. The stakeholders of the HEIs were grouped into five categories; management staff, academic staff, non-academic staff, students and community.

2. *The sample size is determined:* a sample of 300 respondents spread across three categories of institutions was used in this study. Each institution produced 100 respondents spread across the five categories of stakeholders.
3. *A sampling frame of clusters of the target population is identified or developed:* the researcher identified and developed a list of all members or elements of each cluster that was selected. The sampling frame of each institution was identified and developed separately.

Administration of questionnaires was performed on behalf of the researcher by an agent called IMPAD Research. The researcher interviewed the agent to ensure that they understood both the quantitative and qualitative aspects of this research. The researcher also explained the aim and objectives of the research, the research questions and the data collection and analysis methods. The researcher assessed similar data collection works completed by the agent on behalf of other researchers and research organisations to ensure competency.

Samples were drawn from each institution through the following procedure:

UNIVERSITY OF ILORIN

For the University of Ilorin, the following were identified: the name of each faculty, the name of each department in each faculty and the number of academic levels in each department. Each faculty, department and academic level individually constituted a cluster with unique elements. Afterwards, one faculty, department and academic level was selected (in that order) at random by using a random number generator.

In the selected faculty, the number of departments was identified and put into a cluster. Then a department was selected at random by a random number generator. In the selected department, each academic staff was identified (assigned a unique number) and put in a cluster and each non-academic staff was identified (assigned a unique number) and put in another cluster. Similarly, in the selected academic level, each student was identified (assigned a unique number) and put in a cluster.

The category 'others' is made up of five groups: contractors, traders, residents and transporters. The individuals in each group were identified (assigned a unique number) and put in a cluster. Thereafter, a unique number was randomly selected from each cluster by using a random number generator.

KWARA STATE POLYTECHNIC

For Kwara State Polytechnic, the following were identified: the name of each institute, the name of each department and the number of academic levels in each department. Each institute, department and academic level individually constituted a cluster with unique elements. Afterwards, one institute, department and academic level was selected (in that order) at random by using a random number generator.

In the selected institute, the number of departments was identified and put into a cluster. Then a department was selected at random by a random number generator. In the selected department, each academic staff was identified (assigned a unique number) and put in a cluster, and each non-academic staff was identified (assigned a unique number) and put in another cluster. Similarly, in the selected academic level, each student was identified (assigned a unique number) and put in a cluster.

The category ‘others’ is made up of five groups: contractors, traders, residents and transporters. The individuals in each group were identified (assigned a unique number) and put in a cluster. Thereafter, a unique number was randomly selected from each cluster by using a random number generator.

KWARA STATE COLLEGE OF EDUCATION

For Kwara State College of Education, the following were identified: the name of each school, the name of each department and the number of academic levels in each department. Each school, department and academic level individually constituted a cluster with unique elements. Afterwards, one school, department and academic level was selected in that order at random by using a random number generator.

In the selected school, the number of departments was identified and put into a cluster, and a department was selected at random by a random number generator. In the selected department, each academic staff was identified (assigned a unique number) and put in a cluster, and each non-academic staff was identified (assigned a unique number) and put in another cluster. Similarly, in the selected academic level, the total number of students was identified (assigned a unique number) and put in a cluster.

The category ‘others’ is made up of five groups: contractors, traders, residents and transporters. The individuals in each group were identified (assigned a unique number) and put in a cluster. Thereafter, a unique number was randomly selected from each cluster by using a random number generator.

Both the researcher and agent ensured that there was no omission or duplication of individuals in the sampling frame. They also ensured that the clusters were collectively exhaustive, mutually exclusive and as heterogeneous as the population.

4.8.2 Sample Size

A sample size that enhanced representativeness of the population was used in order to provide more precision, increase confidence and reduce incidences of error (Sekaren, 2001). The researcher used a sample size of 300 in this study to enable drawing of valid conclusions from the population. This figure is spread across the three institutions with each having 100 stakeholders of similar diversity. A number of factors, for example; population homogeneity, data analysis methods, and time availability can determine the sample size (Sampe, 2012). The researcher used a five-step process for sampling: defining the target population, determining the sample size, identifying the sample frame, determining the type of sampling method to be used, selecting the sample (Zikmund et al., 2010).

4.8.3 Unit of Analysis

A unit of analysis is an item one examines to generate summary descriptions of similar items and to describe distinctions between them (Babbie, 2010). The unit of analysis of this study is the institution as an entity. The researcher investigated sustainability performance in each institution, analysed the relationship between organisational culture and sustainability performance in each institution, and analysed vision and mission statements from each institution. Quantitative analysis was performed by analysing stakeholder responses of each institution as a whole and then collating the results of analyses into a set of findings for each institution. Qualitative analysis was performed by content analysis of vision and mission statements of each institution. The stakeholders comprise students, academic staff, non-academic and operational staff, management staff and other HEI community members around the campuses.

4.8.4 Time Horizon

This study adopted a cross-sectional study of the relationship between organisational culture and sustainability performance. The cross-sectional study is suitable for this study because in centres on responses of respondents collected through questionnaires over a short period (Saudi, 2014).

4.9 Validity and Reliability

Maxwell (1996 p. 87) defined validity as 'correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account' while Merriam (1998 p. 205) stated that 'reliability refers to the extent to which research findings can be replicated'. Validity entails the degree to which an empirical measure sufficiently reveals the true meaning of a concept, while reliability refers to the tendency of a certain method to produce the same result each time it is applied to the same object (Babbie, 2010).

Data from completed questionnaires may be subjective and may not ensure validity because the researcher determines what is deemed as important and may miss some other important aspect. Respondents may read each question differently and base their answers on individual interpretation. They also may not think within a full context of a situation or be forgetful; and there is no way of telling how much thought a respondent had put in or how truthful a respondent is being (Popper, 2005). However, the researcher enhanced validity by defining organisational culture and providing a simple explanation of the sustainability performance constructs used in the questionnaire to enable each respondent to understand the context of use for each. Furthermore, the researcher increased validity by ensuring that proven empirical

indicators like mission, consistency, involvement and adaptability with adequate face, criterion-related, construct and content validity were used to investigate the relationship between organisational culture and sustainability performance (Denison, 1990).

According to Babbie (2010), each criterion for measuring validity can be explained as:

a. *Face validity:* an indicator's quality which makes it appear to be a reasonable measure for a variable
b. *Criterion-related validity:* the extent to which an indicator is related to an external criterion
c. *Construct validity:* the extent to which an indicator is related to other variables as in a typical conceptual framework
d. *Content validity:* the extent to which an indicator encompasses the variety of meanings in a concept

Reliability was ensured in this study by asking easy-to-understand, easy-to-answer and relevant questions in the questionnaire. The researcher further ensured reliability by using an adapted Denison organisational culture survey questionnaire which is a tested and proven tool for investigating organisational culture in any organisation. Lastly, the researcher ensured that different understandings and explanations of phenomena are considered, and discrepant data is paid attention in order to support or discard conclusions.

4.10 Potential Challenges

Potential challenges to this study may include a threat to trustworthiness arising from possible bias of respondents, i.e., respondents may provide answers that they believe the researcher wants to see and not their actual opinions about an issue.

In order to reduce bias and its effect on collection and analysis of empirical evidence, the researcher checked whether each respondent's answer bears telling similarities to or sharp differences from the answers of others. The researcher compensated for 'questionable' answers in the questionnaire by having a large pool of respondents.

Furthermore, because there are just three case-study institutions to be studied, using research findings for generalisation across the educational sector in Nigeria may be limited. Generalisation can be defined as 'the degree to which research findings are applicable to other populations or samples. [...] it involves the usefulness of one set of findings in explaining other similar situations' (Falk & Guenther, 2006 p. 2). The researcher has carefully selected each case-study institution based on unique characteristics to ensure that they are representative of the larger set of HEIs in Ilorin. This enhanced generalising from the selected HEIs to the larger population of HEIs, even though only three unique cases were used (Mejia, 2009).

There was also the challenge of encountering sample bias which manifests in two forms: response bias and selection bias. Response bias occurred when respondents selected in a sample declined to participate in the research. This happened within each selected HEI, i.e., a department or faculty or particular individuals politely refused to participate in the research for reasons known to them. To tackle response bias, a

researcher ensured each sample was large enough to compensate for the respondent that declined to participate in the research.

Selection bias occurred when potential data from a population are left out of a sample. This happened when certain departments, faculties or individuals that were not selected by the random number generator were left out of the sample. To tackle selection bias, the researcher ensured that sampling conformed to the 'equal likelihood principle' wherein each element of a cluster in a population had an equal probability of selection for the sample.

4.11 Ethical Considerations

The researcher conformed to the guidelines of the ethics committee of Cardiff Metropolitan University on conducting a questionnaire survey. The researcher attended seminars on 'ethics in research' where he acquainted himself with guidelines about ethical practice in research. The researcher applied four main ethical principles in research:

1. *Harm to participants:* the researcher understood that it is his responsibility to evaluate the likelihood of harm to research participants, and to use confidentiality and anonymity safeguards to ensure that participants are not harmed or negatively affected as a result of their participation in the research (Babbie, 2010; Bryman & Bell, 2011; Joungtrakul & McGhie, 2012).
2. *Lack of informed consent:* the researcher ensured that potential participants were given as much information as might be needed to make an informed decision about whether or not they wish to participate in the study. As the study used a questionnaire survey, participants were provided with an

information sheet about the study and an explanation of all the terminology used in the questions (Babbie, 2010; Bryman & Bell, 2011; Joungtrakul & McGhie, 2012).

3. *Invasion of privacy:* the researcher ensured that he respected the right to privacy of all participants. As privacy is closely linked to informed consent, the researcher ensured that the extent of involvement of each participant in the study is clearly understood and that participants reserve the right to refuse to answer any question or withdraw their participation. Privacy is also closely linked to anonymity and confidentiality. Thus, the researcher ensured that personal information about participants was and is, kept confidential (Babbie, 2010; Bryman & Bell, 2011; Joungtrakul & McGhie, 2012).
4. *Deception:* the researcher presented his research to participants exactly the way it is explained in the study information sheet. This study did not use interview methods, hence did not need to use means such as recording equipment or observation techniques (Byman & Bell, 2007; Babbie, 2010; Bryman & Bell, 2011; Joungtrakul & McGhie, 2012).

The researcher understood that ethical guidelines and the university ethics committee are there to protect research participants, the researcher and his institution from possible negative consequences of his research. As part of his education about ethics in research, the researcher completed and submitted an ethics approval form to show that he has considered potential ethical issues that could arise from his study. The researcher also ensured that data collected was used solely for the purpose of the study and was not shared with a third party or used for other a different study (Byman & Bell, 2007; Bryman & Bell, 2011). The dignity of all participants was respected to

avoid anxiety or discomfort. All participant information was destroyed at the end of the study. The researcher declared that he did not receive funding for the study and did not have any affiliation with any other body other than Cardiff Metropolitan University. The researcher ensured honesty and openness in communicating information about the study to all participants and assured that the study could assist their institutions to improve the overall quality of education (Byman & Bell, 2007; Bryman & Bell, 2011). The other research method used in this research is a qualitative content analysis of values statements of institutions obtained online, and it does not require ethical approval and guidelines as observed in the quantitative questionnaire survey method.

CHAPTER 5

Findings on Existing Sustainability Performance

5.1 Introduction

This chapter presents the findings from the questionnaire that rates the organisational culture and sustainability performance of the three case-study institutions. Respondents in each institution were asked to answer questions that rate the sustainability performance of their institution. Sustainability performance was rated based on the chosen constructs of sustainability performance, while organisational culture was rated based on traits and indices of Denison's organisational culture discussed in Chapter 3 (Conceptual Framework). It is important to note that the ratings provided by the respondents were based on their perception of organisational culture and sustainability performance in their institutions. This chapter answers the research question 'what are the perceptions of stakeholders about the organisational culture of sustainability and sustainability performance in each institution?'

The findings are compared to evidence from literature on organisational culture and sustainability performance of Nigerian HEIs to provide a context and better understanding.

5.2 Sustainability Performance

One hundred respondents from each institution were asked questions about the sustainability performance of their institution based on selected sustainability performance indicators.

5.2.1 Environment Management System (EMS)

When respondents from each institution were asked the question 'How satisfied are you with the sustainability performance of your institution in the area of EMS?' the response was as follows:

- *University of Ilorin:* 32% responded that they are moderately, 48% responded that they do not know and 20% responded that they are not at all. No respondent responded that they are to a great deal.
- *Kwara State Polytechnic:* 17% responded that they are moderately, 58% responded that they do not know, 24% responded that they are not at all, and 1% responded they are a great deal.
- *College of Education:* 37% responded that they are moderately, 23% responded that they do not know, 40% responded that they are not at all.

5.2.2 Social Responsibility and Stakeholder Participation

When respondents from each institution were asked the question 'How satisfied are you with the sustainability performance of your institution in the area of social responsibility and stakeholder participation?' the response was as follows:

- *University of Ilorin:* 29% indicated that they are moderately, 48% indicated that they are do not know, and 23% indicated not at all. No respondent indicated that they are satisfied to a great deal.
- *Kwara State Polytechnic:* 18% indicated that they are moderately, 58% indicated that they do not know, and 23% indicated that they are not at all. 1% indicated that they are satisfied a great deal.

- *College of Education*: 37% indicated that they are moderately, 23% indicated that they do not know, and 40% indicated that they are not at all. No responded indicated that they are a great deal.

5.2.3 Integration of Sustainability into Curriculum, Research and Operations

When respondents from each institution were asked the question 'How satisfied are you with the sustainability performance of your institution in the area of integration of sustainability into curriculum, research and operations?' the response was as follows:

- *University of Ilorin:* 29% of respondents indicated that they are moderately and 48% indicted that they do not know, and 23% indicated that they are not at all. No respondent indicated that they are to a great deal.
- *Kwara State Polytechnic:* 19% of respondents indicated that they are moderately, 60% indicated that they do not know, and 20% indicated that they are not at all. 1% indicated that they are to a great deal.
- *College of Education:* 36% of respondents indicated that they are moderately, 23% indicated that they do not know, and 41% indicated that they are not at all. No respondent indicated that they are to a great deal.

5.2.4 Sustainability Assessment and Disclosure

When respondents from each institution were asked the question 'How satisfied are you with the sustainability performance of your institution in the area of sustainability assessment and disclosure?' the response was as follows:

- *University of Ilorin*: 29% of respondents indicated that they are moderately, 49% indicated that they do not know, and 22% indicated that they are not at all. No respondent indicated that they are to a great deal.
- *Kwara State Polytechnic*: 19% of respondents indicated that they are moderately, 60% of respondents indicated that they do not know, and 20% indicated that they are not at all. 1% of respondents indicated that they are to a great deal.
- *College of Education*: 37% of respondents indicated that they are moderately, 23% indicated that they do not know, 40% indicated that they are not at all. No respondent indicated that they are to a great deal.

5.3 Discussion

University of Ilorin: the majority of respondents indicated that they do not know if they are satisfied with the overall sustainability performance of their institution. This may be due to issues such as inadequate understanding of intricacies of best practice of sustainability and/or inadequate engagement of stakeholders in sustainability processes. It may also be that respondents are not confident because the institution does not have adequate sustainability management skills or sustainability management tools. Also, it may be that respondents think the sustainability drive of their institution is still at an inception stage, and it would be rather early to comment on performance at this stage. The next majority are respondents that indicated that they are moderately satisfied with the overall sustainability performance of their institution. The minority are those that indicated that they are not at all satisfied with the overall sustainability performance of their institution. A lack of sustainability

assessment and disclosure of assessment results could be responsible for this. It may also be that respondents think the sustainability performance of their institution is dismal given effort and resources expended on supporting sustainability

Kwara State Polytechnic: the majority of respondents indicated that they do not know if they are satisfied with the overall sustainability performance of their institution. Issues such as inadequate understanding of intricacies of best practice of sustainability and/or inadequate engagement of stakeholders in sustainability processes may be accountable for this. Again, this may be due to issues such as poor or lack of disclosure of assessment results, and/or poor engagement of stakeholders in sustainability processes. As was the case in the University of Ilorin, respondents in Kwara State Polytechnic may not be confident because their institution does not have adequate sustainability management skills or sustainability management tools. Again, as stated in the case of the University of Ilorin, it may be that respondents in Kwara State Polytechnic think the sustainability drive of their institution is still at an inception stage and it would be rather early to comment on performance at this stage. The next majority are respondents that indicated that they are not at all satisfied with the overall sustainability performance of their institution. A lack of sustainability assessment and disclosure of assessment results and an expectation of better sustainability performance given effort and resources expended on supporting sustainability could be responsible for this. The next populous group are those that indicated that they are moderately satisfied. The minority are those that indicated that they a great deal satisfied with the overall sustainability performance of their institution.

College of Education: the majority of respondents indicated that they are not at all satisfied with the overall sustainability performance of their institution. This is a sharp

contrast to the response of the majority in the University of Ilorin and the Kwara State Polytechnic. Here, the response of the majority may arise from reasons already postulated in the cases of the University of Ilorin and Kwara State Polytechnic. Respondents in the College of Education may not be confident that their institution has adequate sustainability management skills or sustainability management tools. A lack of sustainability assessment and disclosure of assessment results, and/or inadequate engagement of stakeholders in sustainability processes could be responsible for this. It may also be that respondents think the sustainability performance of their institution is dismal given effort and resources expended on supporting sustainability. The next majority are respondents that indicated that they are moderately satisfied with the overall sustainability performance of their institution. The minority are those that indicated that they do not know if they are satisfied with the overall sustainability performance of their institution. As said in the case of the preceding institutions, this may be due to issues such as poor or lack of disclosure of assessment results, and/or poor engagement of stakeholders in sustainability processes.

Environment management system (EMS)

- The Kwara State Polytechnic has a respondent that is satisfied to a great deal with EMS performance of their institution. The College of Education has the greatest number of respondents that are moderately satisfied with the EMS performance of their institution. This is followed by the University of Ilorin and lastly, the Kwara State Polytechnic.

- The Kwara State Polytechnic has the greatest number of respondents who do not know if they are satisfied with the EMS performance of their institution. This is followed by the University of Ilorin, and then the College of Education.
- The College of Education has the greatest number of respondents that are not at all satisfied with the EMS performance of their institution. This is followed by the Kwara State Polytechnic, and then the University of Ilorin.

Iyalomhe et al. (2017) held that there is awareness about EMS in Nigerian institutions, but this is not reflected in the actions and attitudes of management, faculty and staff. The authors cited inadequate environmental training and misplaced focus in departments of environmental studies among problems frustrating best practice EMS practice in Nigerian HEIs. The authors identified internal drivers for EMS such as inclusion of EMS in curriculum, removal of top-down approach to EMS management, proper maintenance of institutional infrastructure and facilities; and external drivers such as increased government environmental research funding, introducing government EMS policy for HEIs, punishment for institutions that do not comply, and incentives for that comply.

Bogoro (2015) maintained that more investment in higher education would enable Nigerian HEIs to improve research and development and develop the capacity to implement programmes such as EMS. The author also enthused that to promote innovative practices such as EMS and improve its implementation, effective and mutually beneficial collaboration between institutions and industry experts.

Social responsibility and stakeholder participation

- The Kwara State Polytechnic is the only institution that has a respondent who is satisfied to a great deal with social responsibility and stakeholder participation efforts of their institution.
- The College of Education has the greatest number of respondents who are moderately satisfied with social responsibility and stakeholder participation performance of their institution. This is followed by the University of Ilorin, and then the Kwara State Polytechnic.
- The Kwara State Polytechnic has the greatest number of respondents who do not know if they are satisfied with social responsibility and stakeholder participation performance of their institution. This is followed by the University of Ilorin, and then the College of Education.
- The College of Education has the greatest number of respondents who are not at all satisfied with social responsibility and stakeholder participation performance of their institution. This is followed by a tie between the University of Ilorin and the Kwara State Polytechnic.

Yaro et al. (2016) held that the National Policy on Education in Nigeria ensures the participation of stakeholders in policymaking and implementation. However, the authors insisted that this is not always the case and gave some reasons for this such as lack of continuity of policies and inadequate information dissemination about policies. The authors recommended that stakeholders of institutions, communities and government should jointly develop policies that also takes into consideration beliefs

and values of local communities; and that adequate information should be shared within institutions and with the general public about programmes and policies.

Unni (2013) contended that development in communities and society is hardly traceable to research findings of Nigerian HEIs, and that majority of the public are unaware of the relevance of HEIs in social development. Furthermore, the author said that teaching, research findings and community services of Nigerian HEIs should be improved to contribute more to society and the environment.

Integration of Sustainability into curriculum, research and operations

- The Kwara State Polytechnic is the only institution with a stakeholder who is satisfied to a great deal with sustainability integration efforts of their institution.
- The College of Education has the greatest number of students that are moderately satisfied with sustainability integration performance of their institution. This is followed by the University of Ilorin, and then the Kwara State Polytechnic.
- The Kwara State Polytechnic has the greatest number of students that do not know if they are satisfied with sustainability integration performance of their institution. This is followed by the University of Ilorin, and then the College of Education.
- The College of Education has the greatest number of respondents who are not at all satisfied with sustainability integration performance of their institution. This is followed by the University of Ilorin, and then the Kwara State Polytechnic.

Iyalomhe et al. (2017) suggested that the majority of stakeholders of Nigerian HEIs believe that development in HEIs and the nation can be promoted by integrating environmental courses into all programmes of study. The authors maintained that legislative backing, as well as government-sponsored environmental awareness campaigns, would help this cause. Salami et al. (2015) applauded the drive to integrate sustainability into the curriculum in Nigerian institutions but admitted that the target had not been reached. The authors acknowledged that matters about sustainability were becoming popular among stakeholders and noted that sustainable structures (such as the mainstreaming environment and sustainability in African Universities partnership) for strengthening education for sustainability is gradually being built in Nigerian HEIs.

Such structures are targeted at achieving collaboration with other institutions and experts to increase the quality of teaching and learning of sustainability, propagating and mainstreaming sustainability education for sustainability to provide a quality experience, knowledge and skills to higher education stakeholders, and extending the benefits of sustainability education and practice to local communities. However, the authors lamented the challenges being faced by Nigerian HEIs, namely intricate and burdensome procedures and rules surrounding curricular development, demotivation among champions of sustainability due to lack of encouraging results in research and operations, and confrontation to innovation and ideas especially when it involves changing long-established practice and behaviour. The authors also cite poverty as a major hindrance to inculcating sustainability awareness in institutions and society as a whole because many stakeholders struggle to have a decent livelihood and are not so bothered with sustainability education or awareness.

Sustainability assessment and disclosure

- The Kwara State Polytechnic has the sole respondent who is satisfied to a great deal with sustainability assessment and disclosure performance of their institution.
- The College of Education has the highest number of respondents who are moderately satisfied with sustainability assessment and disclosure performance of their institution. This is followed by the University of Ilorin, and then the Kwara State Polytechnic.
- The Kwara State Polytechnic has the highest number of respondents who do not know if they are satisfied with the sustainability assessment and disclosure performance of their institution. This is followed by the University of Ilorin, and then the College of Education.
- The College of Education has the highest number of respondents who are not at all satisfied with sustainability assessment and disclosure performance of their institution. This is followed by the University of Ilorin, and then the Kwara State Polytechnic.

Most studies found on sustainability assessment and reporting in Nigeria cover the manufacturing industry. A study by Akinlo & Iredele (2014) found that environmental disclosure has a positive impact on the market value of companies. However, Uwalomwa & Uadiale (2011) found significant differences in environmental disclosure practices between Nigerian industries and that disclosure is very low across the industries. This is consistent with findings of Onyali et al. (2014) and Alawiye-Adams & Akomolafe (2017) who maintained that environmental assessment and

disclosures in Nigerian industries are almost non-existent. This is also true for the education industry as the researcher did not find any official sustainability assessment and disclosure from any Nigerian HEI.

The researcher holds that there is a need for studies dedicated to ascertaining the level of understanding of international best practice of sustainability among stakeholders of Nigerian HEIs, and availability of sustainability assessment tools in institutions. However, to improve sustainability performance, management of institutions need to implement new higher education policy that brings sustainability issues to the fore of academics, research and operations (Udida et al., 2009). Also, an improvement in data management can help to keep track of sustainable developments and can enable better stakeholder engagement and sustainability disclosure (Abdulkareem & Oyeniran, 2011). Furthermore, an improved quality assurance would help to improve sustainability performance, and this can be achieved by regular sustainability assessment (Akubuilo, 2013; Ibara, 2015). This means that each institution needs to use a standard SA tool or could enlist the assistance of experts to create one that is adapted to suit their unique characteristics and capacity (Shriberg, 2002). Funding and capacity can determine if the sustainability drive of an institution is not, thus, government and the private sector need to provide more resources and opportunities for partnership for institutions (Asiyai, 2013; Akinyemi & Bassey, 2012). Although the stakeholders of the case-study institutions demonstrated some knowledge of sustainability matters, institutions need to make information about sustainability more available especially in their annual reports and their websites (Katiliute et al., 2014). This will engender an organisational culture that supports sustainability among all stakeholders and will reflect in how institutions relate with local communities. Lastly,

the institutions need more internal drivers such as visionary leadership, sustainability champions among stakeholders, and a more flexible method of incorporating sustainability into curriculum to promote interdisciplinary research (Ferrer-Balas et al., 2008).

CHAPTER 6

Hypotheses Testing and Results

6.1 Introduction

This section begins by testing the quantitative data collection instrument for reliability and validity. Results of validity and reliability tests are presented as well as a demographic representation of the respondents and three institutions studied. Furthermore, the results of hypotheses testing and regression analyses of organisational culture and sustainability practice variables in the three institutions are shown. Thus, this chapter answers the research question 'What is the relationship between organisational culture and sustainability performance of HEIs in Ilorin?' It attempts to achieve the research objective of investigating the linkages between organisational culture traits and pre-defined sustainability performance indicators of each institution.

6.2 Reliability of Data Collection Instrument

As discussed in the Research Methodology chapter, a pilot test was used to determine the reliability of the questionnaire. According to Radhakrishna (2007), a pilot test helps to determine if a questionnaire accurately constructs the construct it is meant to measure. In this research, it entails testing if the adapted Denison organisational culture questionnaire (DOCS) developed for this study sufficiently provides a map of the organisational culture in three HEIs in Ilorin.

The nature of data (interval/ratio, ordinal, nominal) will determine the type of reliability test (internal consistency, alternate form, split half, test-retest) to be performed (ibid.). In this study, the researcher elected to use the internal consistency reliability test because the questions in the questionnaire are measured on an interval/ratio scale. In the pilot test, data was collected from thirty respondents that are separate from the sample used for this research. The collected data was analysed with SPSS to study the correlation matrix and reliability coefficient (Cronbach's alpha). The researcher did not exclude items (statements) that returned 1s and 2s during the test for reliability; thus, all returned values were used. Cronbach's alpha has a range of 0 to 1, and a value of 0.7 or higher is judged as satisfactorily reliable (Denis & Alsaffar, 2013) (see Tables 6.1 and 6.2 in appendix).

6.3 Validity of Data Collection Instrument

The validity and reliability of DOCS has been tested over the years in various studies and the statistical validity of this instrument to show the effect of organisational culture on performance and effectiveness in different organisations has been proven (Denison & Mishra, 1995; Lawry, 2002; Duan et al., 2014; Davidson et al., 2007; Skarphedinson & Gudlaugsson, 2013). This study tested the validity of the adapted DOCS questionnaire to measure organisational culture by using Pearson correlation and found that correlation coefficient for all the constructs of the dependent variable are significant (see Table 6.3 in appendix).

6.4 Sample Description

In this study, a sample of 300 respondents from three institutions located in Ilorin was used for quantitative data collection (questionnaire). The three institutions were

selected by a simple random method from clusters, and each cluster contained universities, polytechnics and colleges of education, respectively. The sample for quantitative data collection comprises four groups of stakeholders; teaching staff, non-teaching staff, students and others (HEI community members), while the sample for qualitative data collection comprise top, middle and lower management staff. A total of 351 questionnaires were completed, and 300 out of these were useable – representing 85% of completed questionnaires.

6.5 Demography of Sample

The sample used in the quantitative aspect of this study was analysed by using SPSS. The following demographic characteristics were used: connection with institution (whether student (40), teaching staff (10), non-teaching staff (20), management staff or other (20): contractors, traders, residents, transporters) and number of years of connection. The qualitative study sample was analysed by using NVIVO, and the following demographic characteristics were used: position and number of years of service.

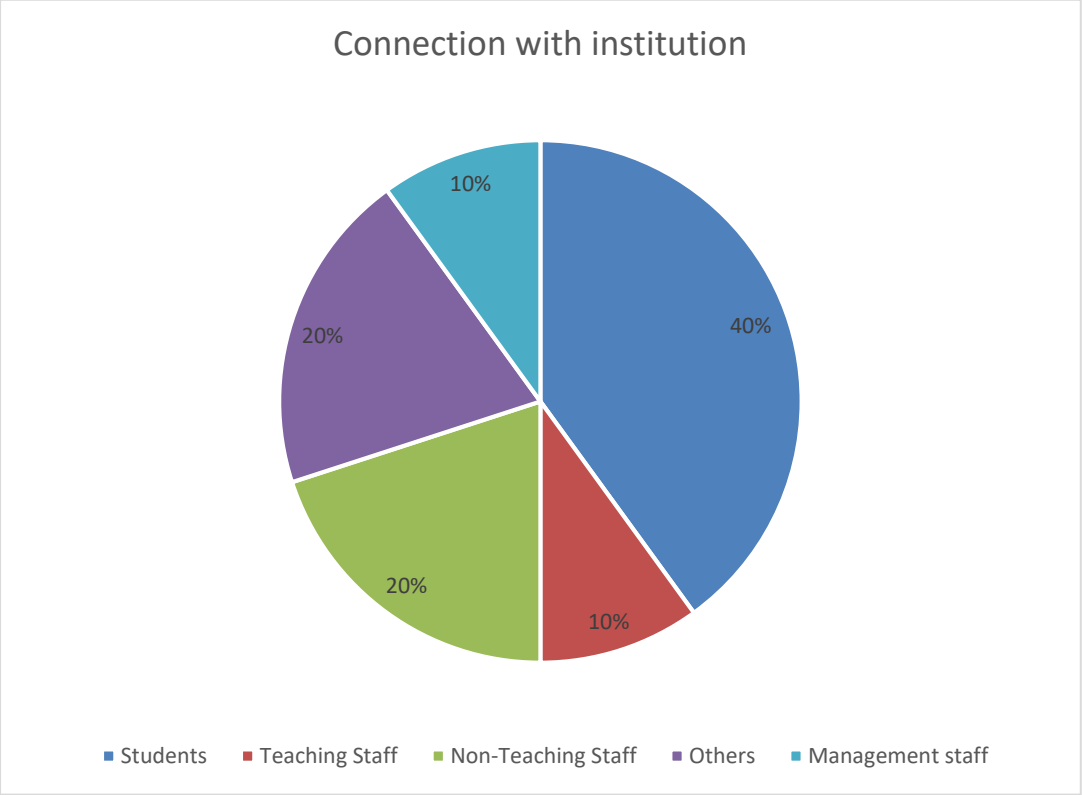

Figure 6.1: Chart showing connection of stakeholders with institution A

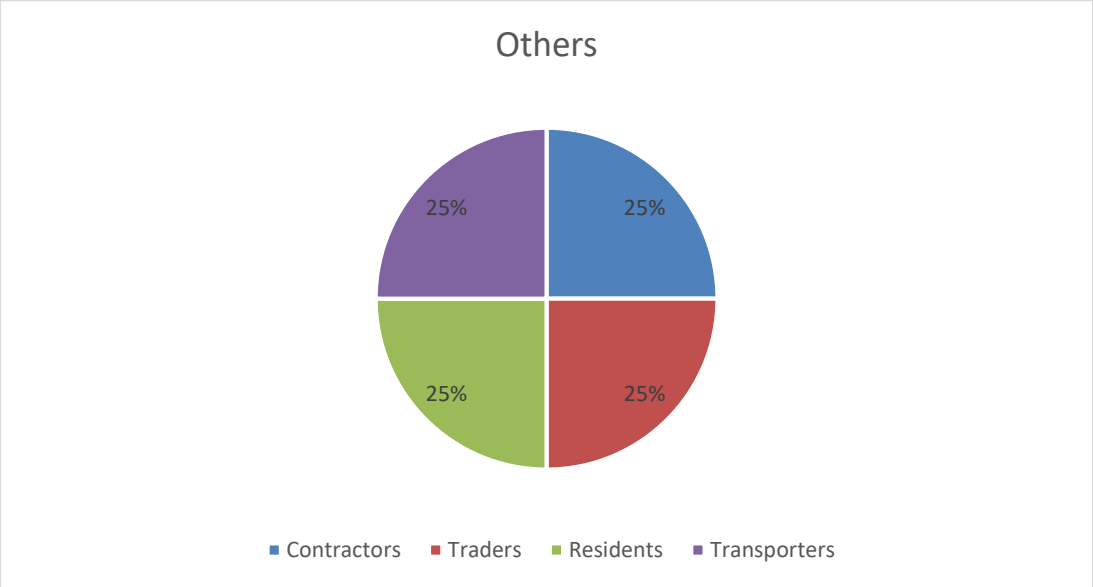

Figure 6.2: Breakdown of others in institution A

6.5.1 Organisational Profile

This study was conducted in three HEIs, and the breakdown of the number of years of connection of each stakeholder group is shown below. Also, the organisational culture towards sustainability practice in each institution is described below.

6.5.1.1 Institution A

6.5.1.1.1 Hypothesis 1

Mission is positively related to each of the four constructs of sustainability performance.

POINT A

In the results of regression analysis below, the EMS is the dependent variable (DV), while vision, goals and objectives, and strategic direction and intent are the independent variables (IV).

The adjusted R-square shows that 94% of the variance in the DV is explained by the IVs. Also, we see that there is little discrepancy between the R-square and the adjusted R-square values showing that the independent variables are adequate for this analysis (see Table 6.4 in appendix).

The R-square is calculated by comparing actual-mean and estimated-mean, where:

1. Actual-mean is estimated by calculating the distance of the actual values of the DV to the mean of the DV.

2. Estimated-mean is estimated by comparing the estimated values from the regression line to the mean of the DV.

The standard error of the estimate is calculated by adding up the errors emerging from comparing the actual values of the DV to the estimated values from the regression line.

The P value has a significance value of 0.000. This value is far less than the 0.05 threshold, and this demonstrates that the theoretical model of independent variables sufficiently explains changes in the DV (see Table 6.5 in appendix).

The unstandardised coefficient B of the independent variables are all positive. The analysis shows that a unit improvement in the culture of strategic direction and intent will lead to a 0.194 improvement in the performance of environmental management. The constant value 0.491 is the intercept on the Y axis (independent variable), In contrast, the values 0.194, 0.270 and 0.273 are the slopes or gradient of the regression line when each of the independent variables strategic direction, goals and objectives, and vision respectively are plotted against environmental management system. (i.e. $y=0.491+0.194x$, $y=0.491+0.270x$, and $y=0.491+0.273x$) (See Table 6.6 in appendix).

Furthermore, the arithmetic mean of strategic direction and intent, goals and objectives, and vision is used to calculate the values for mission. The regression of the environmental management system as a DV, and mission as an independent variable produced Table 6.7 in the appendix.

The adjusted R-square value also indicates that 94% of the variability in the DV is explained by the independent variable (see Table 6.7 in appendix).

The P value has a significance of 0.00 which also strongly suggests that the adopted model used in this study is sufficient to explain the relationship between organisational culture in the HEIs under study, and sustainability performance in the institutions (see Table 6.8 in appendix).

Furthermore, the unstandardised coefficient value for mission shows that there is a high positive regression coefficient (see Table 6.9 in appendix). Thus, this confirms part of the hypothesis that **mission is positively related to the EMS.**

POINT B

The following results show the regression of DV social responsibility and stakeholder participation in the sustainability process, and independent variables strategic direction and intent, goals and objectives, and vision:

As in the case of the EMS, the regression also shows that 94% of the variance in the DV is explained by the independent variable (see Table 6.10 in appendix).

Again, the P value 0.000 strongly suggests that the model used is appropriate to analyse the relationship between the variables (see Table 6.11 in appendix).

The positive values of the unstandardised coefficients, again, shows a strong positive relationship between the dependent and independent variables (see Table 6.12 in appendix).

The following outcomes show the results of the regression of DV social responsibility and stakeholder participation, and independent variable mission:

The adjusted R-square value also shows 94% of the variability in the DV is explained by the IV (see Table 6.13 in appendix).

The P value also shows that the model used sufficiently explains the relationship between DV and IV (see Table 6.14).

The positive values of unstandardised coefficients show a strong positive relationship between DV and IV (see Table 6.15 in appendix). This shows that **mission is positively related to social responsibility and stakeholder participation.**

POINT C

The following results show the regression of DV integration of sustainability into curriculum, research and operations:

The adjusted R-square value indicates that 88% of the variance in DV is explained by the IV (see Table 6.16 in appendix).

A P value of 0.000 shows that the model used sufficiently explains the relationship between DV and IV (see Table 6.17 in appendix).

The positive values of unstandardised coefficients show a strong relationship between DV and IV (see Table 6.18 in appendix).

The following results show the results of the regression of DV integration of sustainability and IV mission:

The adjusted R-square value shows that 87% of the variance in DV is explained by the IV (see Table 6.19 in appendix).

The P value of 0.000 indicates that the model is appropriate for explaining the relationship between DV and IV (see Table 6.20 in appendix).

The positive value of unstandardised coefficients shows a strong relationship between DV and IV (see Table 6.21 in appendix). This shows that **mission is positively related to the integration of sustainability into curriculum, research and operations.**

POINT D

The following results show the regression of DV sustainability assessment and disclosure and IV strategic direction and intent, goals and objectives, and vision:

According to the adjusted R-square, 93% of variance in DV is explained by IV (see Table 6.22 in appendix).

The P value indicates that the model is suitable for explaining the relationship between DV and IV (see Table 6.23 in appendix).

The positive values of unstandardised coefficient show a positive relationship between DV and IV (see Table 6.24 in appendix).

The following are the results of the regression of DV sustainability assessment and disclosure, and IV mission:

The adjusted R-square shows that 93% of variance in DV is explained by IV (see Table 6.25 in appendix).

The P value 0.000 tells that the model is appropriate for analysing the relationship between DV and IV (see Table 6.26 in appendix).

The strong positive value of unstandardised coefficient shows a strong positive relationship between the DV and IV (see Table 6.27 in appendix). This shows that **mission is positively related to sustainability assessment and disclosure.**

6.5.1.1.2 Hypothesis 2

Consistency is positively related to each of the four constructs of sustainability performance.

POINT A

The following are the results of the regression of DV environmental management system and IV core values, agreement, and coordination and integration:

The adjusted R-square shows that 88% of variance in DV is explained by IV (see Table 6.28 in appendix).

The P value of 0.000 shows that the model is appropriate for analysing the relationship between DV and IV (see Table 6.29 in appendix).

The sign of the unstandardised coefficients shows a positive relationship between the DV and the IVs (see Table 6.30 in appendix).

The adjusted R-square shows that 87% of the variance in DV is explained by IV (see Table 6.31 in appendix).

With a significance of 0.000, the P value shows that the model adequately explains the relationship between the DV and IV (see Table 6.32 in appendix).

The unstandardised coefficients show that the relationship between DV and IV is strongly positive (see Table 6.33). This shows that **consistency is positively related to the environmental management system.**

POINT B

The following are the results of the regression of DV social responsibility and stakeholder participation in sustainability processes, and IV core values, agreement and coordination, and integration:

The adjusted R-square shows that 86% of the variance in DV is explained by IV (see Table 6.34 in appendix).

The P value shows that the model used is sufficient to explain the relationship between DV and IV (see Table 6.35 in appendix).

All the unstandardised coefficients show a positive relationship between DV and IV (see Table 6.36 in appendix).

The following shows the results of the regression of DV social responsibility and stakeholder participation and IV consistency:

The adjusted R-square shows that 85% of the variance in DV is explained by the IV (see Table 6.37 in appendix).

The P value demonstrates that the model is ideal for analysing the relationship between DV and IV (see Table 6.38 in appendix).

The unstandardised coefficient shows a strong positive relationship between DV and IV (see Table 6.39 in appendix). This shows that **consistency is positively related to social responsibility and stakeholder participation in the sustainability processes.**

POINT C

The following are the results of the regression of DV integration of sustainability into curriculum, research and operations and IV core values, agreement and coordination, and integration:

The adjusted R-square shows that 84% of the variance in DV is explained by the IV (see Table 6.40 in appendix).

The P value indicates that the model is suitable for analysing the relationship between DV and IV (see Table 6.41 in appendix).

All the unstandardised coefficients show a positive relationship between DV and IVs (see Table 6.42 in appendix).

The following shows results of the regression of DV integration of sustainability and IV consistency:

The adjusted R-square shows that 84% of the variance in DV is explained by IV (see Table 6.43 in appendix).

The P value indicates that the model used in this study is adequate to analyse the relationship between DV and IV (see Table 6.44 in appendix).

The unstandardised coefficient shows a strong positive relationship between DV and IV (see Table 6.45 in appendix). This shows that **consistency is positively related to the integration of sustainability into curriculum, research and operations.**

POINT D

The following shows the result of the regression of DV sustainability assessment and disclosure, and IV core values, agreement, and coordination and integration:

The adjusted R-square shows that 89% of the variance in DV is explained by IV (see Table 6.46).

The P value shows that the model used adequately explains the relationship between DV and IV (see Table 6.47).

The values of unstandardised coefficients show a positive relationship between DV and IVs (see Table 6.48 in appendix).

The following are the results of regression of DV sustainability assessment and disclosure and IV consistency:

The adjusted R-square shows that 89% of the variance in DV is explained by IV (see Table 6.49 in appendix).

The P value indicates that the model used is adequate to explain the relationship between DV and IV (see Table 6.50 in appendix).

The unstandardised coefficient shows a strong positive relationship between the DV and IV (see Table 6.51 in appendix). This shows that **consistency is positively related to sustainability assessment and disclosure.**

6.5.1.1.3 Hypothesis 3

Involvement is positively related to each of the four constructs of sustainability performance.

POINT A

The following are the results of the regression of DV EMS and IV empowerment, team orientation and capacity development:

The adjusted R-square shows that 86% of the variation in the DV is explained by the IV (see Table 6.52 in appendix).

The P value demonstrates that the model used for analysing the effect of the IV on the DV is appropriate (see Table 6.53 in appendix).

As all the IV have positive values, the coefficients show that the relationship between IV and DV is positive (Table 6.54 in appendix).

The following are the result of the regression of DV environment management system and IV involvement:

The adjusted R-square shows that 86% of the variation in the DV is explained by the IV (see Table 6.55 in appendix).

The ANOVA table shows that the model used is appropriate for analysing the relationship between the DV and IV (see Table 6.56 in appendix).

The coefficients show that the relationship between the DV and IV is positive (see Table 6.57 in appendix). This shows that **involvement is positively related to the environmental management system.**

POINT B

The following are the results of the regression of DV social responsibility and stakeholder participation and IV empowerment, team orientation and capacity development:

The adjusted R-square shows that 89% of the variance in DV is explained by the IV (see Table 6.58 in appendix).

The P value shows that the model used in this research is appropriate for explaining the relationship between DV and IV (see Table 6.59 in appendix).

The coefficients show a positive relationship between DV and IV (see Table 6.60 in appendix).

The following are the results of the regression of DV social responsibility and stakeholder participation and IV involvement:

The adjusted R-square shows that 89% of the variance in DV is explained by IV (see Table 6.61 in appendix).

The P value shows that the model used in this research is appropriate for explaining the relationship between DV and IV (see Table 6.62 in appendix).

The coefficient shows a positive relationship between DV and IV (see Table 6.63 in appendix). This shows that **involvement is positively related to social responsibility and stakeholder participation in the sustainability processes.**

POINT C

The following are the results of regression of integration of sustainability and IV empowerment, team orientation and capacity development:

The adjusted R-square shows that 75% of the variance in DV is explained by the IV (see Table 6.64 in appendix).

The P value shows that the model used to analyse the DV and IV is appropriate (see Table 6.65 in appendix).

The coefficients show a positive relationship between DV and IV (see Table 6.66 in appendix).

The following are the results of regression of DV integration of sustainability and IV involvement:

The adjusted R-square shows that 75% of the variation in DV is explained by IV (see Table 6.67 in appendix).

The P value shows that the model used to analyse DV and IV is appropriate (see Table 6.68 in appendix).

The coefficient shows a highly positive relationship between DV and IV (see Table 6.69 in appendix). This shows that **involvement is positively related to integration of sustainability into curriculum, research and operations.**

POINT D

The following are the results of regression of DV sustainability assessment and disclosure and IV empowerment, team orientation and capacity development:

The adjusted R-square shows that 83% of the variance in DV is explained by IV (see Table 6.70 in appendix).

The P value shows that the model used is appropriate to analyse DV and IV (see Table 6.71 in appendix).

The coefficients show that there is a positive relationship between DV and IV (see Table 6.72 in appendix).

The following are the results of regression of DV sustainability assessment and disclosure and IV involvement:

The adjusted R-square shows that 83% of the variance in DV is explained by IV (see Table 6.73 in appendix).

The P value shows that the model used is appropriate for analysing DV an IV (see Table 6.74 in appendix).

The coefficients show a highly positive relationship between DV and IV (see Table 6.75 in appendix). This shows that **involvement is positively related to sustainability assessment and disclosure.**

6.5.1.1.4 Hypothesis 4

Adaptability is positively related to each of the four constructs of sustainability performance.

POINT A

The following are the results of regression of DV environment management system and IV creating change, customer focus and organisational learning:

The adjusted R-square shows 88% of the variance in DV is explained by IV (see Table 6.76 in appendix).

The P value shows that the model used is appropriate for analysing DV and IV (see Table 6.77 in appendix).

The coefficients show a positive relationship between DV and IV (see Table 6.78 in appendix).

The following shows the results of regression of DV environment management system and IV adaptability:

The adjusted R-square shows that 88% of the variance in DV is explained by IV (see Table 6.79 in appendix).

The P value shows that the model used is appropriate to analyse DV and IV (see Table 6.80 in appendix).

The coefficients show a highly positive relationship between DV and IV (see Table 6.81 in appendix). This shows that **adaptability is positively related to the environment management system.**

POINT B

The following are the results of regression of DV social responsibility and stakeholder participation and IV creating change, customer focus and organisational learning:

The adjusted R-square shows that 87% of the variance in DV is explained by IV (see Table 6.82 in appendix).

The P value shows that the model used is appropriate to analyse DV and IV (see Table 6.83 in appendix).

The coefficients show a positive relationship between DV and IV (see Table 6.84 in appendix).

The following are the results of regression of DV social responsibility and stakeholder participation and IV adaptability:

The adjusted R-square shows that 87% of the variance in DV is explained by IV (see Table 6.85 in appendix).

The P value shows that the model is appropriate for explaining DV and IV (see Table 6.86 in appendix).

The coefficient shows a highly positive relationship between DV and IV (see Table 6.87 in appendix). This shows that **adaptability is positively related to social responsibility and stakeholder participation in the sustainability processes.**

POINT C

The following are the results of regression of DV integration of sustainability and IV creating change, customer focus and organisational learning:

Adjusted R-square shows that 80% of the variance in DV is explained by IV (see Table 6.88 in appendix).

The P value shows that the model is appropriate for explaining DV and IV (see Table 6.89 in appendix).

The coefficients show that the relationship between DV and IV is positive (see Table 6.90 in appendix).

The following are the results of regression of DV integration of sustainability and IV adaptability:

Adjusted R-square shows that 80% of the variance in DV is explained by IV (see Table 6.91 in appendix).

The P value shows that the model is appropriate for analysing DV and IV (see Table 6.92 in appendix).

The coefficient shows a highly positive relationship between DV and IV (see Table 6.93 in appendix). This shows that **adaptability is positively related to integration of sustainability into curriculum, research and operations.**

POINT D

The following are the results of regression of DV sustainability assessment and disclosure and IV creating change, customer focus and organisational learning:

Adjusted R-square shows that 89% of the variance in DV is explained by IV (see Table 6.94 in appendix).

The P value shows that the model is appropriate for analysing DV and IV (see Table 6.95 in appendix).

The coefficients show a positive relationship between DV and IV (see Table 6.96 in appendix).

The following are the results of regression of DV sustainability assessment and disclosure and IV adaptability:

Adjusted R-square shows that 89% of variance in DV is explained by IV (see Table 6.97 in appendix).

The P value shows that the model is appropriate for analysing DV and IV (see Table 6.98 in appendix).

The coefficient shows a highly positive relationship between DV and IV (see Table 6.99 in appendix). This shows that **adaptability is positively related to sustainability assessment and disclosure.**

6.5.1.1.5 Hypothesis 5

Organisational Culture is positively related to sustainability performance. The results of testing of prior hypotheses demonstrate this.

6.5.1.2 Institution B

6.5.1.2.1 Hypothesis 1

Mission is positively related to each of the four constructs of sustainability performance.

POINT A

The following are the results of the regression of DV environmental management system and IVs vision, goals and objectives, and strategic direction and intent:

The adjusted R-square shows that 90% of the change in variance of DV is explained by the IVs (see Table 6.100 in appendix).

The P value shows that the model used is appropriate for analysing the effect of IVs on the DV (see Table 6.101 in appendix).

The coefficients show that there is a positive relationship between the IVs and the DV (see Table 6.102 in appendix).

The following are the results of the regression of DV environment management system and IV Mission:

The adjusted R-square shows that 90% of the variability in DV is explained by the IV (see Table 6.103 in appendix).

The P value shows that the model used to analyse the effect of IV on DV is appropriate (see Table 6.104 in appendix).

The coefficients show that there is a highly positive relationship between mission and environment management system (see Table 6.105 in appendix). This shows that **mission has a positive relationship with the environment management system.**

POINT B

The following are the results of regression of DV social responsibility and stakeholder participation in sustainability processes, and IVs vision, goals and objectives, and strategic direction and intent:

The adjusted R-square shows that 90% of the variability in DV is explained by IV (see Table 6.106 in appendix).

The P value shows that the model used to explain the effects of IV on DV is appropriate (see Table 6.107 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.108 in appendix).

The following are the results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV mission:

The adjusted R-square shows that 91% of the variability in DV is explained by IV (see Table 6.109 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.110 in appendix).

The coefficients show that there is a highly positive relationship between DV and IV (see Table 6.111 in appendix). This shows that mission is positively related to **social responsibility and stakeholder participation in the sustainability processes.**

POINT C

The following are the results of regression of DV integration of sustainability into curriculum, research and operations, and IVs vision, goals and objectives, and strategic direction and intent:

The adjusted R-square shows that 90% of the variability in DV is explained by IV (see Table 6.112 in appendix).

The P value shows that the model used to analyse this relationship between DV and IVs is appropriate (see Table 6.113 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.114 in appendix).

The following are the results of regression of DV integration of sustainability into curriculum, research and operations, and IV mission:

The adjusted R-square shows that 90% of variability in DV is explained by IV (see Table 6.115 in appendix).

The P value shows that the model used to analyse this relationship between DV and IV is appropriate (see Table 6.116 in appendix).

The coefficients (see Table 6.117 in appendix) show that **mission is positively related to integration of sustainability into curriculum, research and operations.**

POINT D

The following are the results of regression of DV sustainability assessment and disclosure and IVs vision, goals and objectives, and strategic direction and intent:

The adjusted R-square shows that 91% of the change in variance in DV is explained by IVs (see Table 6.118 in appendix).

The P value shows that the model used to analyse this relationship between DV and IV is appropriate (see Table 6.119 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.120 in appendix).

The following are the results of regression of DV sustainability assessment and disclosure and IV mission:

The adjusted R-square shows that 91% of change in variance in DV is explained by IV (see Table 6.121 in appendix).

The P value shows that the model used to analyse this relationship between DV and IV is appropriate (see Table 6.122 in appendix).

The coefficients show that **mission is positively related to sustainability assessment and disclosure** (see Table 6.123 in appendix).

6.5.1.2.2 Hypothesis 2

Consistency is positively related to each of the four constructs of sustainability performance.

POINT A

The following are the results of regression of DV environment management system and IVs core values, agreement, and coordination and integration:

The adjusted R-square shows that 89% of change in variance in DV is explained by IV (see Table 6.124 in appendix).

The P value shows that the model used to analyse this relationship between DV and IV is appropriate (see Table 6.125 in appendix).

The coefficients show that the relationship between DV and IVs is positive (see Table 6.126 in appendix).

The adjusted R-square shows that 89% of change in variance in DV is explained by IV (see Table 6.127 in appendix).

The P value shows that the model used to analyse this relationship between DV and IV is appropriate (see Table 6.128 in appendix).

The coefficients show that **consistency is positively related to the environment management system** (see Table 6.129 in appendix)**.**

POINT B

The following are the results of regression of DV social responsibility and stakeholder participation in sustainability processes, and IVs core values, agreement, and coordination and integration:

The adjusted R-square shows that 90% of change in variance in DV is explained by IV (see Table 6.130 in appendix).

The P value shows that the model used to explain this relationship between DV and IV is appropriate (see Table 6.131 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.132 in appendix).

The following are the results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV consistency:

The adjusted R-square shows that 90% of change in variance in DV is explained by IV (see Table 6.133 in appendix).

The P value shows that the model used to analyse this relationship between DV and IV is appropriate (see Table 6.134 in appendix).

The coefficients show that consistency is positively related to **social responsibility and stakeholder participation in sustainability processes** (see Table 6.135 in appendix).

POINT C

The following are the results of regression of DV integration of sustainability into curriculum, research and operations, and IV core values, agreement, and coordination and integration:

The adjusted R-square shows that 90% of the change in variance in DV is explained by IV (see Table 6.136).

The P value shows that the model used to analyse this relationship between DV and IV is appropriate (see Table 6.137 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.138 in appendix).

The following are the results of regression of DV integration of sustainability into curriculum, research and operations, and IV consistency:

The adjusted R-square shows that 89% of change in variance in DV is explained by IV (see Table 6.139 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.140 in appendix).

The coefficients show that **consistency is positively related to integration of sustainability into curriculum, research and operations** (see Table 6.141 in appendix)**.**

POINT D

The following are the results of regression of DV sustainability assessment and disclosure and IVs core values, agreement, and coordination and integration:

The adjusted R-square shows that 89% of change in variance in DV is explained by IV (see Table 6.142 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.143 in appendix).

The coefficients show that there is a positive relationship between DV and IV (see Table 6.144 in appendix).

The following are the results of regression of DV sustainability assessment and disclosure and IV consistency:

The adjusted R-square shows that 89% of change in variance in DV is explained by IV (see Table 6.145 in appendix).

The P value shows the model used for analysing the relationship between DV and IV is appropriate (see Table 6.146 in appendix).

The coefficients show that **consistency is positively related to sustainability assessment and disclosure** (see Table 6.147 in appendix)**.**

6.5.1.2.3 Hypothesis 3

Involvement is positively related to each construct of sustainability performance.

POINT A

The following are the results of regression of DV environment management system and IV's empowerment, team orientation, and capacity development:

The adjusted R-square shows that 86% of change in variance in DV is explained by IV (see Table 6.148 in appendix).

The P value shows that the model used to analyse DV and IV is appropriate (see Table 6.149 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.150 in appendix).

The following are the results of regression of DV EMS and IV's involvement:

The adjusted R-square shows that 85% of change in variance in DV is explained by IV (see Table 6.151 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.152 in appendix).

The coefficients show that **involvement is positively related to environment management system** (see Table 6.153 in appendix).

POINT B

The following are the results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV empowerment, team orientation, and capacity development:

The adjusted R-square shows that 86% of change in variance in DV is explained by IVs (see Table 6.154 in appendix).

The P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.155 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.156 in appendix).

The following are the results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV involvement:

The adjusted R-square shows that 85% of change in variance in DV is explained by IV (see Table 6.157 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.158 in appendix).

The coefficients show that **involvement is positively related to social responsibility and stakeholder participation** (see Table 6.159)**.**

POINT C

The following are the results of regression of DV integration of sustainability into curriculum, research and operations and IVs empowerment, team orientation, and capacity development:

The adjusted R-square shows that 84% of change in variance in DV is explained by IV (see Table 6.160 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.161 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.162 in appendix).

The following are the results of regression of DV integration of sustainability into curriculum, research and operations, and IV involvement:

The adjusted R-square shows that 83% of change in variance in DV is explained by IV (see Table 6.163 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.164 in appendix).

The coefficients show that **involvement is positively related to integration of sustainability into curriculum, Research and Operations** (see Table 6.165 in appendix)**.**

POINT D

The following are results of regression of DV sustainability assessment and disclosure and IVs empowerment, team orientation, and capacity development:

The adjusted R-square shows that 87% of changes in variance in DV is explained by IV (see Table 6.166 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.167 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.168 in appendix).

The following are the results of regression of DV sustainability assessment and disclosure and IV involvement:

The adjusted R-square shows that 87% of changes in variance in DV is explained by IV (see Table 6.169 in appendix).

The P value shows that the model used to analyse DV and IV is appropriate (see Table 6.170 in appendix).

The coefficients show that **involvement is positively related to sustainability assessment and disclosure** (see Table 6.171 in appendix)**.**

6.5.1.2.4 Hypothesis 4

Adaptability is positively related to each of the four constructs of sustainability performance.

POINT A

The following are results of regression of DV environment management system and IV creating change, customer focus, and organisational learning:

The adjusted R-square shows that 85% of change in variance in DV is explained by IV (see Table 6.172 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.173 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.174 in appendix).

The following are the results of regression of DV environment management system and IV adaptability:

The adjusted R-square shows that 85% of change in variance in DV is explained by IV (see Table 6.175 in appendix).

The P value shows that the model used for analysing the relationship between DV and IV is appropriate (see Table 6.176 in appendix).

The coefficients show that **adaptability is positively related to environment management system** (see Table 6.177 in appendix)**.**

POINT B

The following are the results of regression of DV social responsibility and stakeholder participation in sustainability processes, and IVs creating change, customer focus, and organisational learning:

The adjusted R-square shows that 84% of change in variance in DV is explained by IV (see Table 6.178 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.179 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.180 in appendix).

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes, and IV adaptability:

The adjusted R-square shows that 84% of change in variance in DV is explained by IV (see Table 6.181 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.182 in appendix).

The coefficients show that **adaptability is positively related to social responsibility and stakeholder participation** (see Table 6.183 in appendix).

POINT C

The following are results of regression of DV integration of sustainability into curriculum, research and operations and IVs creating change, customer focus, and organisational learning.

The adjusted R-square shows that 85% of change in variance in DV is explained by IV (see Table 6.184 in appendix).

The P value shows the model used to analyse the relationship between DV and IV is appropriate (see Table 6.185 in appendix).

The coefficients show that there is a positive relationship between the DV and IVs (see Table 6.186 in appendix).

The following are results of regression of DV integration of sustainability into curriculum, research and operations and IV adaptability:

The adjusted R-square shows that 85% of change in variance in DV is explained by IV (see Table 6.187 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.188 in appendix).

The coefficients show that **adaptability is positively related to integration of sustainability into curriculum, research and operations** (see Table 6.189 in appendix)**.**

POINT D

The following are results of regression of DV sustainability assessment and disclosure and IVs creating change, customer focus, and organisational learning:

The adjusted R-square shows that 83% of change in variance in DV is explained by IV (see Table 6.190 in appendix).

The P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.191 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.192 in appendix).

The following are results of regression of DV sustainability assessment and disclosure and IV adaptability:

The adjusted R-square shows that 83% of the change in variance in DV is explained by IV (see Table 6.193 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.194 in appendix).

The coefficients show that **adaptability is positively related to sustainability assessment and disclosure** (see Table 6.195 in appendix)**.**

6.5.1.2.5. Hypothesis 5

Organisational culture is positively related to sustainability performance. The results of testing of prior hypotheses demonstrate this.

6.5.1.3 Institution C

6.5.1.3.1 Hypothesis 1

Mission is positively related to each of the four constructs of organisational culture.

POINT A

The following are results of regression of DV environment management system and IVs vision, goals and objectives, and strategic direction and intent:

The adjusted R-square shows that 89% of the change in variance in DV is explained by IVs (see Table 6.196 in appendix).

The P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.197 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.198 in appendix).

The following are results of regression of DV environment management system and IV mission:

The adjusted R-square shows that 89% of change in variance of DV is explained by IV (see Table 6.199 in appendix).

The P value shows that the model used is appropriate for analysing the relationship between DV and IV (see Table 6.200).

The coefficients show that **mission is positively related to environment management system** (see Table 6.201 in appendix)**.**

POINT B

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IVs vision, goals and objectives, and strategic direction and intent:

The adjusted R-square shows that 89% of change in variance of DV is explained by IVs (see Table 6.202 in appendix).

The P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.203 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.204 in appendix).

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV mission:

The adjusted R-square shows that 89% of the variance in DV is explained by IVs (see Table 6.205 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.206).

The coefficients show that **mission is positively related to social responsibility and stakeholder participation in sustainability processes** (see Table 6.207 in appendix)**.**

POINT C

The following are results of regression of DV integration of sustainability into curriculum, research and operations and IVs vision, goals and objectives, and strategic direction and intent.

The adjusted R-square show that 89% of variance in DV is explained by IVs (see Table 6.208 in appendix).

The P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.209 in appendix in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.210 in appendix).

The following results of regression of DV integration of sustainability into curriculum, research and operations and IV mission:

The adjusted R-square shows that 89% of variance in DV is explained by IV (see Table 6.211 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.212 in appendix).

The coefficients show that **mission is positively related to integration of sustainability into curriculum, research and operations** (see Table 6.213 in appendix)**.**

POINT D

The following are results of regression of DV sustainability assessment and disclosure and IVs vision, goals and objectives, and strategic direction and intent:

The adjusted R-square shows that 89% of variance in DV is explained by IVs (see Table 6.214 in appendix).

The P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.215 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.216 in appendix).

The following are results of regression of DV sustainability assessment and disclosure and IV mission:

The adjusted R-square shows that 89% of variance in DV is explained by IV (see Table 6.217 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.218 in appendix).

The coefficients show that **mission is positively related to sustainability assessment and disclosure** (see Table 6.219 in appendix)**.**

6.5.1.3.2 Hypothesis 2

Consistency is positively related to each of the four constructs of sustainability performance.

POINT A

The following are results of regression of DV environment management system and IVs core values, agreement, and coordination and integration:

The adjusted R-square shows that 94% of variance in DV is explained by IVs (see Table 6.220 in appendix).

The P value shows that the model used to analyse the relationship between DV and IVs (see Table 6.221 in appendix).

The coefficients show that the DV is negatively related to agreement but positively related to core values and coordination, and integration (see Table 6.222 in appendix).

The following are results of regression of DV environment management system and IV consistency:

Adjusted R-square shows that 73% of variance in DV is explained by IV (see Table 6.223 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.224 in appendix).

The coefficients show that **consistency is positively related to the environment management system** (see Table 6.225 in appendix)**.**

POINT B

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IVs core values, agreement, and coordination and integration:

The adjusted R-square shows that 94% of variance in DV is explained by IVs (see Table 6.226 in appendix).

The P value shows that the model used for analysing the relationship is appropriate (see Table 6.227 in appendix).

The coefficients show that the DV is negatively related to agreement but positively related to core values, and coordination and integration (see Table 6.228 in appendix).

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV consistency:

Adjusted R-square shows that 73% of variance in DV is explained by IV (see Table 6.229 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.230 in appendix).

The coefficients show that **consistency is positively related to social responsibility and stakeholder participation in sustainability processes** (see Table 6.231 in appendix)**.**

POINT C

The following are results of regression of DV integration of sustainability into curriculum, research and operations and IVs core values, agreement, and coordination and integration:

Adjusted R-square shows that 94% of variance in DV is explained by IVs (see Table 6.232 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.233 in appendix).

The coefficients show that IV agreement has a negative relationship with DV, while core values and coordination, and integration have positive relationships with the DV (see Table 6.234 in appendix).

The following are results of regression of DV integration of sustainability into curriculum, research and operations and IV consistency:

Adjusted R-square shows that 72% of variance in DV is explained by IV (see Table 6.235 in appendix).

The P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.236 in appendix).

The coefficients show that **consistency is positively related to integration of sustainability into curriculum, research and operations** (see Table 6.237 in appendix)**.**

POINT D

The following are results of regression of DV sustainability assessment and disclosure and IVs core values, agreement, and coordination and integration:

Adjusted R-square shows that 94% of variance in DV is explained by IVs (see Table 6.238 in appendix).

P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.239 in appendix).

The coefficients show that agreement has a negative relationship with DV, while core values and coordination, and integration have a positive relationship with DV (see Table 6.240 in appendix).

The following are results of regression of DV sustainability assessment and disclosure and IV consistency:

Adjusted R-square shows that 73% of variance in DV is explained by IV (see Table 6.241 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.242 in appendix).

The coefficients show that **consistency is positively related to sustainability assessment and disclosure** (see Table 6.243 in appendix)**.**

6.5.1.3.3 Hypothesis 3

Involvement is positively related to each of the four constructs of sustainability performance.

POINT A

The following are results of regression of DV environment management system and IVs empowerment, team orientation, and capacity development:

Adjusted R-square shows that 95% of variance in DV is explained by IVs (see Table 6.244 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.245 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.246 in appendix).

The following are results of regression of DV environment management system and IV involvement:

Adjusted R-square shows that 95% of variance in DV is explained by IVs (see Table 6.247 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.248 in appendix).

The coefficients show that **involvement is positively related to the environmental management system** (see Table 6.249 in appendix)**.**

POINT B

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IVs empowerment, team orientation and capacity development:

Adjusted R-square shows that 95% of variance in DV is explained by IVs (see Table 6.250 in appendix).

P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.251 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.252 in appendix).

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV involvement:

Adjured R-square shows that 95% of variance in DV is explained by IVs (see Table 6.253 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.254 in appendix).

The coefficients show that **involvement is positively related social responsibility and stakeholder participation in sustainability processes** (see Table 6.255 in appendix)**.**

POINT C

The following are results of regression of DV integration of sustainability into curriculum, research and operations and IVs empowerment, team orientation, and capacity development:

Adjusted R-square shows that 95% of variance in DV is explained by IVs (see Table 6.256 in appendix).

P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.257 in appendix).

The coefficients show that there is a positive relationship between DV and IVs (see Table 6.258 in appendix).

The following are results of regression of DV integration of sustainability and IV involvement:

Adjusted R-square shows that 95% of variance in DV is explained by IV (see Table 6.259 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.260 in appendix).

The coefficients show that **involvement is positively related to integration of sustainability into curriculum, research and operations** (see Table 6.261 in appendix)**.**

POINT D

The following are results of regression of DV sustainability assessment and disclosure and IVs empowerment, team orientation, and capacity development:

Adjusted R-square shows that 95% of variance in DV is explained by IVs (see Table 2.62 in appendix).

P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.263 in appendix).

The coefficients show that there is appositive relationship between DV and IVs (see Table 6.264 in appendix).

The following are results of regression of DV sustainability assessment and disclosure and IV involvement:

Adjusted R-square shows that 95% of variance is explained by IV (see Table 6.265 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.266 in appendix).

The coefficients show that **involvement is positively related to sustainability assessment and disclosure** (see Table 6.267 in appendix)**.**

6.5.1.3.4 Hypothesis 4

Adaptability is positively related to the four constructs of sustainability performance.

POINT A

The following are results of regression of DV environment management system and IV creating change, customer focus, and organisational learning:

Adjusted R-square shows that 93% of variance in DV is explained by IVs (see Table 6.268 in appendix).

P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.269 in appendix).

The coefficients show that organisational learning has a negative relationship with DV while creating change and customer focus have a positive relationship with DV (see Table 6.270 in appendix).

The following are results of regression of DV environment management system and IV adaptability:

Adjusted R-square shows that 92% of variance in DV is explained by IV (see Table 6.271 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.272 in appendix).

The coefficients show that **adaptability is positively related to environment management system** (see Table 6.273 in appendix)**.**

POINT B

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IVs creating change, customer focus, and organisational learning:

Adjusted R-square shows that 93% of variance in DV is explained by IVs (see Table 6.274 in appendix).

P value shows that the model used to analyse relationship between DV and IVs is appropriate (see Table 6.275 in appendix).

The coefficients show that organisational learning has a negative relationship with DV while creating change and customer focus have a positive relationship with DV (see Table 6.276 in appendix).

The following are results of regression of DV social responsibility and stakeholder participation in sustainability processes and IV adaptability:

Adjusted R-square shows that 92% of variance in DV is explained by IV (see Table 6.277 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.278 in appendix).

The coefficients show that **adaptability is positively related to social responsibility and stakeholder participation in the sustainability processes** (see Table 6.279 in appendix)**.**

POINT C

The following are results of regression of DV integration of sustainability into curriculum, research and operations and IV creating change, customer focus, and organisational learning:

Adjusted R-square shows that 94% of variance in DV is explained by IVs (see Table 6.280 in appendix).

P value shows that the model used for analysing the relationship between DV and IV is appropriate (see Table 6.281 in appendix).

The coefficients show that organisational learning has a negative relationship with DV while creating change and customer focus have a positive relationship (see Table 6.282 in appendix).

Adjusted R-square shows that 92% of variance in DV is explained by IV (see Table 6.283 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.284 in appendix).

The coefficients show that **adaptability is positively related to integration of sustainability into curriculum, research and operations** (see Table 6.285 in appendix)**.**

POINT D

The following are results of regression of DV sustainability assessment and disclosure and IVs creating change, customer focus, and organisational learning:

Adjusted R-square shows that 93% of variance in DV is explained by IVs (see Table 6.286 in appendix).

P value shows that the model used to analyse the relationship between DV and IVs is appropriate (see Table 6.287 in appendix).

The coefficients show that organisational learning has a negative relationship with DV while creating change and customer focus have a positive relationship with DV (see Table 6.288 in appendix).

The following are results of regression of DV sustainability assessment and disclosure and IV adaptability:

Adjusted R-square shows that 92% of variance in DV is explained by IV (see Table 6.289 in appendix).

P value shows that the model used to analyse the relationship between DV and IV is appropriate (see Table 6.290 in appendix).

The coefficients show that **adaptability is positively related to sustainability assessment and disclosure** (see Table 6.291 in appendix)**.**

6.5.1.3.5. Hypothesis 5

Organisational culture is positively related to sustainability performance. The results of testing of prior hypotheses demonstrate this.

6.6 Overview of Findings from Hypotheses Testing

This section and its sub-sections summarise the results of the investigation of the relationship between organisational culture and sustainability performance in three Nigerian HEIs. It covers results from testing the relationship between organisational culture traits and sustainability performance constructs, and the relationship between each index of the organisational culture traits and sustainability performance constructs. Moreover, the section answers the research question 'How does each organisational cultural trait relate to each sustainability performance indicator in each institution?'

6.6.1 Findings from Test of Relationship Between Organisational Culture Traits and Sustainability Performance Constructs

Sixteen hypotheses were tested during quantitative analysis for each institution to find out if each trait of organisational culture is positively related to each measure of sustainability performance. The results of hypotheses are shown below (see Table 7.1 in appendix).

The results in each institution show that each trait of organisational culture is positively related to each measure of sustainability performance. The empirical

findings demonstrate the applicability of the Denison Organisational Culture Survey to explain sustainability performance in a Nigerian context (Denison, 2005). Importantly, the results also show that the organisational culture in each institution positively affects sustainability performance. Therefore, each institution has a good balance of organisational culture traits that can promote understanding of principles of sustainability and potentially improve performance. Consequently, this confirms the theory that there is a positive relationship between organisational culture and performance (Efanga & Ifejiagwa, 2014; Khan et al., 2012; Amah, 2013), and answering the third research question of this study.

The researcher argues that the balance between organisational culture and sustainability performance in each institution can be improved to return a value greater than what was obtained in regression analysis. This can be achieved by targeting a stronger relationship between indices of culture and sustainability performance constructs. To achieve this, the researcher proposes that each institution designs and applies a bespoke sustainability implementation tool that suits the needs of each institution and utilises their unique capacities. The UNGC-GRI sustainability assessment tool and the EFQM model could be modified to suit the needs of each institution.

6.6.2 Findings from Test of Relationship Between Indices of Organisational Culture Traits and Sustainability Performance Constructs

Hypotheses testing also included testing the relationship between the indices of each trait and constructs of sustainability performance. A total of forty-eight tests of

relationships were performed, and the findings are shown below (see Table 7.2 in appendix).

As demonstrated in the results of regression analysis of relationships between organisational culture indices and constructs of sustainability performance, findings from analyses of relationships between organisational culture traits and constructs of sustainability performance also show that there is a good balance between organisational culture and sustainability performance across the three institutions.

The results provide theoretical underpinning and understanding about linkages between organisational culture indices and sustainability performance in the institutions (Millan et al., 2014; Jofreh et al., 2014; Baumgartner, 2012). They also show that imbalances in cultural traits in each institution have a positive impact on sustainability practice (Yilmaz & Ergun, 2008). However, as already mentioned, the researcher argues that a better balance between cultural traits and sustainability performance can be attained through implementation of an institution-specific sustainability model. This will enable the institutions to achieve higher values for unstandardised coefficient B and improve organisational culture and sustainability performance. Generally, an unstandardised coefficient B value of +0.7 and above for each cultural index-sustainability construct relationship is deemed as high. Hence, the researcher proposes this value as the right balance that will improve organisational culture and sustainability performance in each institution.

In institution A (University of Ilorin) and institution B (Kwara State Polytechnic), hypotheses tests of relationships between respective organisational culture index and sustainability performance construct returned ‘true’ values which show that the

organisational culture towards sustainability performance in the institution is commendable. This study argues that organisational culture and sustainability performance of both institutions can be improved considerably by using a more effective sustainability management model that will ensure greater returns on investment and improved quality of education and social responsibility.

Results show that out of a total of twelve indices, only two indices (agreement and organisational learning) returned 'false' values in institution C (College of Education). This means that tests of relationship between each index and constructs of sustainability performance returned negative values. According to the results of questionnaire analysis, this is because other stakeholders (excluding stakeholders from management) do not agree across all levels on the sustainability strategy for their institution or how much their institution learns from challenges encountered during efforts to promote sustainability.

The results also provide empirical knowledge about similarities and differences between organisations implementing sustainability practices, and about organisational culture factors that enable or inhibit sustainability practice in an organisation (see table 310) (Palmer et al., 2012).

6.6.3 Relationship Between Organisational Culture and Sustainability Performance

The purpose of the study was to investigate the relationship between organisational culture and sustainability performance in Ilorin HEIs. Both quantitative and qualitative analyses indicated that organisational culture influences sustainability performance in the institutions under study. For example, both internally-focused

cultures (consistency and involvement) and externally-focused cultures (mission and adaptability) recorded positive relationships with constructs of sustainability performance during quantitative analyses. Furthermore, out of the total of twelve indices of organisational culture, only two indices (agreement and organisational learning) recorded negative relationships with the constructs of sustainability performance.

The findings of this study confirm that organisational culture influences sustainability performance are consistent with the findings of Pennington (2014 p. 2), which also 'concluded there is a strong association between culture and organisational commitment to sustainability'.

The findings of this study confirm the applicability of Denison's model of organisational culture for studying organisational performance in different areas (Yilmaz & Ergun, 2008; Pirayeh et al., 2011; Lari et al., 2012; Ahmad, 2012; Teymorzadeh et al., 2014).

6.6.4 Role of Organisational Culture Traits

This section discusses the role of organisational culture traits: mission, involvement, consistency and adaptability in influencing sustainability performance in the three institutions. The relationship between the indices of each organisational culture trait and each construct of sustainability was analysed statistically by testing of hypotheses. Results of hypotheses testing show that the influence each index varies across each institution as each institution is unique and has different circumstances.

6.6.4.1 Role of mission

In all three institutions, results indicate that all indices of organisational culture trait 'mission' (strategic direction and intent, goals and objectives, vision, and core values) have a positive relationship with each sustainability performance construct (EMS, social responsibility and stakeholder participation, integration of sustainability into curriculum, research and operations and sustainability assessment and disclosure). The relationships were all found to be significant with P value greater than 0.05. The findings confirm that organisational culture trait 'mission' influences organisational sustainability performance and Nigerian HEIs should ensure that adequate attention is paid to all indices of mission when planning and implementing policies for sustainability.

Results also show that organisational mission in each institution is producing positive results in terms of sustainability drive, and this portends well for sustainability in Nigerian HEIs. Stakeholders in each institution are aware of their institution's mission to improve sustainability performance. Similarly, each stakeholder group has been engaged in sustainability planning and implementation to provide ideas and opinions on how organisational mission can be harnessed to improve sustainability performance.

A positive relationship between 'vision' and constructs of sustainability performance shows that there is a long-term vision that produces inspiration and interest and is not compromised by short-term reasoning. A positive relationship between 'goals and objectives' and constructs of sustainability performance indicates that the management of the three institutions are demonstrating ambition and have set realistic

goals that are understandable and measurable. A positive relationship between 'strategic direction' and constructs of sustainability performance shows that the three institutions demonstrate a clear strategy that provides direction, purpose and meaning (Kotrba et al., 20011, Denison, 2005).

6.6.4.2 Role of consistency

In the University of Ilorin and Kwara State Polytechnic, results of hypotheses testing indicate that indices of organisational culture trait 'consistency' (core values, agreement, coordination and integration, and empowerment) have a positive relationship with all four constructs of sustainability performance. However, in the College of Education, findings indicate that indices of consistency (core values, coordination and integration, and empowerment) have a positive relationship with all four constructs of sustainability performance, while index 'agreement' has a negative relationship with all of the four constructs of sustainability performance.

In the College of Education, results of hypotheses testing show that the relationship between the other indices and constructs of sustainability performance is significant with P value greater than 0.05. Despite this, the relationship between index 'agreement' and the constructs of sustainability performance is insignificant (that is, the null hypothesis is true) with negative P values. This shows that there is underperformance in the organisational culture index and that stakeholders of the institution have challenges in achieving consensus in sustainability planning and implementation.

A positive relationship between 'core values' and constructs of sustainability performance indicates that stakeholders of the three institutions share a set of values

that produce logical expectations and a strong sense of identity. A positive relationship between ‘agreement’ and constructs of sustainability performance show that the stakeholders of the University of Ilorin and Kwara State Polytechnic are able to agree on important matters and resolve misunderstandings, while stakeholders of the College of Education need to improve on these. A positive relationship between ‘coordination and integration’ indicates that different stakeholders of the three institutions work together to attain their set sustainability goals (Kotrba et al., 20011, Denison, 2005).

6.6.4.3 Role of involvement

In all three institutions, results of hypotheses testing indicate that all indices of organisational culture trait ‘involvement’ (empowerment, team orientation, and capacity development) have a positive relationship with all the constructs of sustainability performance. All the relationships recorded a P value greater than 0.05 in all three institutions and show that organisational culture trait ‘involvement’ has a significant influence on sustainability performance.

A positive relationship between ‘empowerment’ and constructs of sustainability performance indicates that each stakeholder in the three institutions has the ability, initiative and authority to manage their sustainability responsibilities. This enhances a sense of responsibility and ownership towards the sustainability drive of their institution. A positive relationship between ‘team orientation’ and constructs of sustainability performance indicates that the three institutions place value on collaborative efforts towards achieving their institution’s sustainability goals to which all stakeholders feel equally responsible. A positive relationship between ‘capability

development' and constructs of sustainability performance indicates that the three institutions consistently develop stakeholder skills to keep them informed about sustainability advancements and enable them to fulfil their sustainability responsibilities (Kotrba et al., 20011, Denison, 2005).

6.6.4.4 Role of adaptability

In the University of Ilorin and Kwara State Polytechnic, results of hypotheses testing show that all indices of organisational culture trait 'adaptability' (creating change, customer focus, and organisational learning) have a positive relationship with all constructs of sustainability performance. However, in the College of Education, organisational culture index 'organisational learning' has a negative relationship with all four constructs of sustainability performance (that is, the null hypothesis is true in this case).

Results suggest that the College of Education has challenges with applying learning gained from its sustainability planning and implementation efforts. The institution, however, has demonstrated a strong desire to transform towards becoming a sustainability leader by bringing student experience to the fore in its sustainability drive.

The University of Ilorin and Kwara State Polytechnic are also committed to creating positive change in their sustainability drive and place a high premium on student experience and organisational learning.

A positive relationship between 'organisational learning' and constructs of sustainability performance indicates that the University of Ilorin and Kwara State

Polytechnic receives, translates and interprets feedback from stakeholders, sustainability experts and other institutions into opportunities for developing capacity, gaining knowledge, and encouraging innovation. Results show that the College of Education is not faring as well in this area and needs to improve (Kotrba et al., 20011, Denison, 2005).

A positive relationship between 'customer focus' and constructs of sustainability performance indicates that the three institutions understand and react to student education experience, anticipate their future needs and equip them to become sustainability drivers and national policymakers. A positive relationship between 'creating change' and constructs of sustainability performance indicates that all three are able and ready to create adaptive change towards sustainability. It also shows that the institutions are able to sense changes towards implementation of best practice of sustainability in higher education, quickly react to these changes, and anticipate future changes (Kotrba et al., 20011, Denison, 2005).

6.6.5 Nigerian Institutions with Organisational Culture That Supports Sustainability

The results of hypotheses testing (see Chapter 6) showed that there is a positive relationship between organisational culture traits and sustainability performance constructs in the three institutions under study. Results showed that organisational culture traits (mission, consistency, involvement and adaptability) influenced sustainability performance constructs (EMS, social responsibility and stakeholder participation in sustainability processes, integration of sustainability into curriculum, research and operations, and sustainability assessment and disclosure). These findings

are consistent with findings from studies on organisational culture and performance (Efanga & Ifejiagwa, 2014; Khan et al., 2012; Amah, 2013 Denison 2005).

Findings validate the applicability of the Denison model of organisational culture in Nigerian HEIs and demonstrate that it can be used to investigate performance in organisations, both in developed and developing countries (Mojibi et al., 2013; Rietmann, 2013; Pavllca et al., 2013). Findings from analysis of questionnaire responses display that each of the three institutions shows some commitment towards practice of sustainability and that more respondents indicated 'a great deal' and 'moderately' than those who indicated 'not at all'. However, stakeholders in all institutions need to improve awareness and their disposition to sustainability practice to reduce the number who indicated that they do not know.

Findings from the analysis of questionnaire contrast with findings from the analysis of vision and mission statements (see next chapter) in that organisational culture and sustainability performance are not discernible in the value statements of the three institutions. The vision and mission statements do not show that the institutions are developing their organisational culture and sustainability performance. Similarly, management realises the role of culture in realising the sustainability vision and mission of their institutions. The value statements only present strictly academic visions and mission that are devoid of mentions about how each institution utilise a culture of sustainability to facilitate sustainability performance in teaching, research and operations. Hence, unlike findings from the analysis of questionnaires, the vision and mission statements of the three institutions do not give confidence to readers that the institutions understand the roles of organisational culture traits in promoting sustainability practice. This is a significant shortfall. Management and other

stakeholders should work together to correct this as it is vital that external stakeholders such as government and non-government organisations, donors, investors and sustainability experts are informed that the institutions take sustainability issues seriously.

Findings from both quantitative analysis and qualitative analysis achieve three of the objectives of this study:

- To investigate stakeholders' perception of the organisational culture of sustainability and sustainability performance in each institution.
- To statistically analyse the relationship between stakeholders' perception of organisational culture of sustainability and sustainability performance of each institution.
- To conduct content analysis of vision and mission statements of HEIs to examine the extent to which principles of best practice of sustainability are reflected in the organisational values of the case-study institutions.

CHAPTER 7

Analysis of Vision and Mission Statements

7.1 Introduction

In this section, validity and reliability of the data collection method are discussed, along with content analysis of text as a method for analysing qualitative data. The vision and mission statements of each institution under study are outlined and compared to those of leading institutions in the United Kingdom. This will provide an understanding of international practice. Furthermore, the results of quantitative analyses in each institution are compared to the results of qualitative data analyses to check for consistency.

This chapter answers the research question '*To what extent do mission and vision statements reflect that sustainability practice is as an organisational value of each institution?*'

7.2 Reliability of Data Collection Instrument

Reliability in quantitative research means the replicability of a process and its result, whereas qualitative research deals more with consistency in process and result (Carcary, 2009; Grossoehme, 2014). Reliability can be enhanced by use of tables, including a deviant case, comprehensive data, constant data comparison and refutational analysis (Silverman, 2009). Here, the researcher compared results from analysing vision and mission statements to findings of existing literature on

sustainability performance of Nigerian HEIs. Also, these data were compared for consistency with the results of the questionnaire pilot study (Patton, 1999).

7.3 Validity of Data Collection Method

In qualitative study, validity refers to the suitability of the research tool, method and data (Leung, 2015). The method used for qualitative data collection in this research is the examination of vision and mission statements. It is appropriate for finding out the value placed on the practice of sustainability in the institutions under study based on themes found in their vision and mission statements.

7.4 Content Analysis of Vision and Mission Statements

This section presents the results of analyses of vision and mission statements of the three institutions under study. The researcher started by analysing vision and mission statements of the University of Ilorin, Kwara State Polytechnic and the College of Education, respectively.

Content analysis is used in this study to analyse vision and mission statements in order to identify themes and draw valid inference from the text data (Hsieh & Shannon, 2005). This provides a practical guide to action, a representation of facts, new insight and knowledge. Content analysis can be used with either quantitative or qualitative data (Elo & Kyngas, 2008) and is ideal for a mixed methods study (Mayring, 2014). The method involves a qualitative step of assigning categories to text, examining passages of text, and the quantitative step of analysing frequency of categories (Mayring, 2014). Content analysis can be used deductively to bring findings of prior

analysis in contact with text, and inductively to formulate themes and categories directly from text data (Mayring & Fenzl, 2014).

Many authors have discussed different types of content analysis like conventional, directed, and summative (Hsieh & Shannon, 2005; Zhang et al., 2009; Humble, 2009; Hashemnezhad, 2015). Based on the research question 'To what extent has good practice of sustainability been implemented in Ilorin HEIs?' and the objective of examining the extent to which principles of best practice of sustainability have been integrated into the organisational culture of the case-study institutions, the researcher used directed content analysis.

Also, directed content analysis approach supports the deductive design of this study and uses research findings from quantitative analysis as a guide for preliminary codes (Hsieh & Shannon, 2005). According to Elo & Kyngas (2008 p. 107), 'deductive content analysis is used when the structure of analysis is operationalised on the basis of previous knowledge'. Furthermore, this approach enables researchers to extend or validate a theory or conceptual framework, and in the case of this study, enabled the researcher to provide further understanding of the findings from quantitative study (ibid.).

According to Kaefer et.al (2015), software-assisted qualitative content analysis requires a step-by-step approach, however, in this study content analysis was done manually.

7.4.1 Analysis of Vision and Mission Statements

This section outlines the vision and mission statements of each institution under study and compares these with vision and mission statement from leading institutions in the United Kingdom. Comparison enables the researcher to compare practice and put the value placed on sustainability in the values statement of each institution into perspective. Content analysis of each statement is performed on each to identify sustainability practice themes.

7.4.1.1 University of Ilorin

The researcher begins by analysing vision and mission statements of the institution. The vision statement is as follows:

'To be an international centre of excellence in learning, research, probity and service to humanity'.

The vision statement of the institution is very brief. There is mention of the main function of the institution: 'learning' and 'research' and other functions 'probity' and 'service to humanity'. This shows the values the institution places emphasis on, but the statement conveys too little information about how these values are promoted and institutionalised. The vision statement does not give adequate information about the commitment of the institution to sustainability practice. Saying the institution is 'an international centre for and service to humanity' conveys a message of commitment to human development, but it is not clear enough to convince a reader.

The mission statement is as follows:

'To provide world-class environment for learning, research and community service'.

The mission statement is almost identical to the vision statement, in that it contains the same themes on commitment to 'learning', 'research' and 'community service'. It is also brief with little information about how values are embedded in the institution's operation. However, the phrase 'community service' provides a clearer commitment to a sustainability principle and is encouraging to a reader.

The mission and core values statement of the University of Cambridge is provided as follows:

Mission

The mission of the University of Cambridge is to contribute to society through the pursuit of education, learning, and research at the highest levels of excellence.

Core Values

The University's core values are as follows:

- *Freedom of thought and expression*
- *Freedom from discrimination*

The University's relationship with society

- *The widest possible student access to the university*

- *The contribution which the university can make to society through the pursuit, dissemination, and application of knowledge*
- *The place of the university within the broader academic and local community*
- *Opportunities for innovative partnerships with business, charitable foundations, and healthcare*
- *Concern for sustainability and the relationship with the environment*

The Collegiate University

- *The relationship between the University and the colleges as fundamental to the nature of Cambridge*
- *The interdisciplinary nature of the Colleges as a major stimulus to teaching and learning*
- *The enhanced quality of experience for students and staff through College membership*

The mission and core values statement of the University of Cambridge is comprehensive and highlights in detail the commitment of the institution to students, staff, the environment and society at large. Its commitment: 'the place of the University within the broader academic and local community' shows that the institution takes seriously its reputation in society, especially in its local community. The University of Cambridge ensures a good reputation by providing 'opportunities for innovative partnerships with business, charitable foundations, and healthcare'. The institution also shows a strong commitment to sustainability practice through 'concern for sustainability and the relationship with the environment'. The institution enhances

student and staff awareness and commitment to sustainability values through 'the interdisciplinary nature of the Colleges as a major stimulus to teaching and learning'.

The statements from the University of Ilorin and the University of Cambridge are very different in length and content. The length and content of vision and mission statements are crucial as they convey the core values of a higher education institution. This can determine the quality of student and staff that it attracts, its ability to secure funding, and conservation of materials and resources by inculcating an attitude of conservation in stakeholders. The statement from Cambridge University suggests that the organisational culture of the institution actively supports environmental protection, social responsibility and stakeholder engagement, integration of sustainability into curriculum, operations, and possibly sustainability assessment and disclosure.

7.4.1.2 Kwara State Polytechnic

The vision statement of the Kwara State Polytechnic is as follows:

'To be the foremost provider of technological and entrepreneurial skills'

This statement gives the impression that the institution focuses on academic learning only, despite being an HEI. The phrasing of the vision statement does not clearly say if the 'technological and entrepreneurial skills' the institution provides is to students only or also to local communities and stakeholders. Provision of such skills to all stakeholders would fulfil the so-economic aspect of sustainability.

The mission statement of the institution is as follows:

'To teach, imPOINT and foster the highest level of intellectual development and provide services to humanity through the exploration of available scientific and research methods'.

The mission statement of the institution contains the phrase 'provide services to humanity'. This statement suggests a commitment to human development – a key principle of sustainability. However, it is not clear if this statement refers to services available to student and staff only or it includes local communities and other stakeholders.

The statements do not give confidence to a reader that the institution's organisational culture adequately supports sustainability practice.

In 1992, all polytechnics in the United Kingdom became universities, which included Nottingham Trent University. The new universities are therefore quite young in comparison to the older, more established institutions. The vision statement of Nottingham Trent University is as follows:

'Our vision is to create the University of the future through five strategic themes: creating opportunity, valuing ideas, enriching society, connecting globally and empowering people'.

The strategic themes are summarised as follows:

'Creating Opportunity: all our students excel in developing the knowledge, skills, and resilience to play the positive role in society they envisage for themselves. They

personalise their learning, combining theoretical rigour, practical relevance, and personal development. As the destination of choice for an increasingly diverse group of students and professionals, we collaborate with employers to challenge, surprise, and inspire all those who study with us.

Valuing Ideas: we possess strong relationships and robust processes that enable discovery, drive innovation, and change the world, our students, and ourselves. They promote our disciplinary breadth, our intellectual depth, and our commitment to working across boundaries.

Enriching Society: we play a leading role in the social, cultural, economic and environmental development of the City, East Midlands and United Kingdom. We deploy our resources and expertise in close alignment with strategic partners and engage with a wide range of organisations in order to enhance their prospects and those of our students.

Connecting Globally: as an international University, we nurture global citizenship, engage with the international research community, and attract talented students and staff from around the world.

Empowering People: we champion an environment of collective pride in the university in which the contribution of our colleagues is recognised and respected. We encourage their courage their creativity and voice and have a reputation for attracting, rewarding and retaining colleagues who share our ambitions and display the expertise, experience and enterprise to deliver them'.

The main vision statement of Nottingham Trent University is short but contains a link to a page that explains the five themes contained in the main vision statement. Among these are 'enriching society' which involves playing 'a leading role in the social, cultural, economic and environmental development of the city, East Midlands and United Kingdom'. This is a strong statement of commitment from the institution to socio-economic and environmental principles of sustainability. According to the statement, the institution deploys its 'resources and expertise in close alignment with strategic partners and engage with a wide range of organisations in order to enhance their prospects and those of our students'. Again, this shows that the institution reaches out to people within its local community and across different regions in order to develop the capacity of both communities and its students.

The statements of Nottingham Trent University suggest that the organisational culture of the institution supports sustainability principles such as environmental protection, social responsibility and stakeholder engagement, and integration of sustainability into operations. However, the statement is not clear whether sustainability assessment and disclosure is performed in the institution.

7.4.1.3 Kwara State College of Education

The college does not have a vision and mission statement but has a statement of philosophy. This is as follows:

'The philosophy of the college is based on the integration of the individual into a sound and effective citizen. This is summed up in the Motto: Education for Excellence. Since no education system can rise above the quality of its teachers, the College, in pursuance of its philosophy, lays emphasis on the production of highly motivated,

conscientious, efficient and effective classroom teachers with the intellectual and professional background adequate for their assignment, and to make them adequate to any changing situation not only in the life of their country but also in the world at large.

Man, his complex nature and the increasingly more complex society in which he lives, and his relationship with the metaphysical world (expressed in myths and religions) have been interesting subjects for investigation by scholars. Using various instruments (qualitative and quantitative, or a combination of both). The Arts and Social Sciences disciplines have sought to answer the basic questions concerning man, his society and his relationship with the metaphysical world. The NCE Arts and Social Sciences programmes seek to draw the teacher and his students into a mutual dialogue about their collective realities'.

The philosophy statement of the college is comprehensive but dwells on classroom education only. It has no mention of any sustainability principle, such as community relations or environmental programmes. The statement gives a reader the impression that the organisational culture of the institution does not support sustainability practice or intends to do so in the future.

At St Helens College, Liverpool, their mission, vision and values statement reads:

'Transforming lives through excellence in education and training

Statement of Aims

1. *To make a leading contribution to the welfare and development of our local communities and the Liverpool City Region by providing the curriculum and skills that employers need*
2. *To provide good value for taxpayers' money ensuring high quality education and training and delivering the commitments to product offer, high quality provision and strong financial health made by the College Group in response to the Restructuring Facility investment*
3. *To be an inclusive College Group where each individual is respected, valued and safeguarded as part of an enjoyable, supportive and caring learning and working environment*
4. *To motivate high performance and innovation within a culture of high expectations of professionalism, integrity, strong work ethics and teamwork*
5. *To ensure successful education, training and personal, social, moral, cultural and spiritual development and welfare for students ensuring that they are well prepared for life and work in Britain today*
6. *To build students' confidence and employability skills, including English and maths, through excellent careers advice, teaching and training and work experience resulting in progression to further study or sustainable development*
7. *To achieve consistently high customer satisfaction from students, parents, employers and other stakeholders*
8. *To lead in education and training partnerships for the benefit of all partners and the local community*

Public Value Statement

1. *Providing education and training in accordance with the College Group's mission, statement of aims and values meeting the needs of learners, employers and the wider communities in general*
2. *Raising aspirations of learners and the communities by promoting prospects and celebrating success*
3. *Ensuring a broad curriculum offer with good progression routes from entry level to Higher Education and Training*
4. *Promoting healthy lifestyles and good citizenship skills to all students and colleagues*
5. *Being responsive to the changing needs and circumstances*
6. *Actively listening and engaging with stakeholders of the College Group aiming to provide the best possible service within the mission of the College Group*
7. *Being a respectful and responsible employer*
8. *Always acting with corporate integrity'*

The mission, vision and values statement of St Helens College demonstrate that the institution is committed to contributing 'to the welfare and economic development of local communities and the Liverpool City Region'. This fulfils a key sustainability principle and shows that the institution is committed to the social and economic development of communities in the geographic region. The statement further states that the institution provides 'education and training partnerships for the benefit of all partners and the local community'. The above reinforces their commitment to socio-economic development that benefits all stakeholders in their local community.

Furthermore, according to the statements, the institution endorses values such as ‘promoting healthy lifestyles and good citizenship skills to all students and colleagues’, ‘being responsive to changing needs and circumstances’ and ‘actively listening and engaging with the stakeholders of the College Group’.

The statements suggest that St Helens College has strong organisational culture traits that support sustainability practice. While social responsibility and stakeholder participation and integration of sustainability into operations is clearly among the values of the institution, it is not clear whether sustainability principles such as EMS and sustainability assessment and disclosure are embedded in organisational culture.

7.4.2 Discussion

In contrast to inference from the values statement of all three Ilorin HEIs, evidence from quantitative analyses of the relationship between organisational culture and sustainability performance in each institution returned positive values. This is so for all the institutions except two cases in the College of Education where indices ‘agreement’ and ‘organisational learning’ returned negative values for all constructs of organisational culture. Evidence from quantitative analysis suggests that each institution has organisational values that support sustainability practice, but this is not evident in the values statement of each institution. This leads the researcher to conclude that there is a mismatch between findings from quantitative questionnaire analysis and findings from qualitative analysis of values statements in each institution.

In the University of Ilorin and Kwara State Polytechnic, the positive values across all organisational culture indices suggest that stakeholders believe that the mission of their institution promotes sustainability. They also felt that there was consistency in

the drive towards achieving their institution's sustainability goals, involved in the drive towards sustainability, and believed that their institution is adaptable to circumstances that a drive towards sustainability requires.

The same can be said of the College of Education except for the two where there is no agreement across all stakeholders on matters about the sustainability drive of their institution. Some stakeholders were not convinced about the adaptability of their institution to circumstances necessary for a successful sustainability drive. Furthermore, this suggests that the sustainability drive may require better circumstances such as improved technical knowledge and available tools to be successful. However, despite the obvious shortcoming, the positive values returned for other indices portends well for better sustainability performance in the institution.

Findings on sustainability performance in the University of Ilorin and Kwara State Polytechnic show that the number of respondents who do not know if they are satisfied with sustainability performance of their institution are more than the sum of the number of respondents that indicated that they are moderately satisfied and number who are satisfied to a great deal. The College of Education has the least number of respondents who indicated that they do not know if they are satisfied.

The above implies that respondents in each institution, especially in the University and Polytechnic, may not be aware of sustainability performance of their institution in the areas covered by this study. Interestingly, the College of Education has the least number who do not know if they are satisfied because contents of the vision and mission statements bear the least semblance to principles of sustainability. Each institution must understand the significance of a vision and mission statement as it

relates to sustainability (Katiliute et al., 2014). Being a sustainability-conscious institution can enhance their ability to recruit high quality staff and students. It can attract funding and investment for innovation and research and an ability to conserve resources and materials (Eccles, 2012). Having sustainability embedded in their vision and mission statements can enable each institution to align stakeholders with their sustainability drive (Trew et al., 2012; Barr, 2000).

As discussed earlier in the literature review chapter, government and private owners of HEIs usually determine the statement of purpose and existence of Nigerian institutions. Mission statements provide an overview of the history of the institution, academic programmes, services and organisational culture of institutions. This view is supported by Keeling (2013 p. 30) who theorised that mission statements of educational organisations reveal the goals of their sponsor, describes the existing state of affairs and relates how the organisations meet the desires of their stakeholders. Since evidence from quantitative analysis indicates that the case-study institutions practice some aspects of sustainability, the researcher advises the institutions to use their mission statement to explain their sustainability stance, and as a means of communicating their strategic direction to stakeholders (Bartkus et al., 2004).

Also, the case-study HEIs can use mission and vision statements to communicate the desired organisational cultures and attitudes they want their stakeholders to imbibe (Darbi, 2012). This enables the institutions to use their mission statement as a guide for encouraging sustainability behaviour among stakeholders. The researcher believes that a culture of sustainability can be nurtured when employees are committed to the objectives and values stated by their organisation. A culture of sustainability can attract the best quality of students and staff, reduce costs, conserve resources and

attract more funding. All these can improve productivity in terms of the quality of education and services provided (Osibanjo & Adeniji, 2013). A study by Awuzie & Emuze (2017) found that cost reduction was the most effective driver for sustainability at the Central University of Technology in South Africa. Identifying the most effective drivers for sustainability in each of the institutions under study could also help to promote practice.

In Nigeria, The National Policy on Education provides guidelines for administration of HEIs (Ogbogu, 2013) while each HEI adopts policies and processes that most suit them. Such policies and processes include defining the contents of their vision, mission and values statements and the emphasis placed on different aspects of their institution's culture. Akintayo (2008) cited the Nigerian National Policy on Education 2002, which set the objectives for Nigerian universities. These included: achievement of an objective understanding of both national and international environments; achievement of both intellectual and physical abilities to empower an individual to become useful for society; develop intellectual capacity of an individual to appreciate and understand their environment; and to achieve, develop and inculcate proper-value philosophy for endurance of an individual and society.

The Nigerian National Policy on Education clearly expects Nigerian HEIs to integrate principles of sustainability into curriculum, activities, and other functions in order to achieve the set objectives. It would, therefore, be beneficial to all HEIs and stakeholders if these objectives are pursued and reflected in their vision and mission statements.

According to Hinton (2012), a mission statement may not be a component of a strategic plan; however, it forms the basis upon which other components are formed. Other components that make up a strategic plan include values statement, institutional goals and a vision statement. All these can be used by the case-study institutions to provide valuable direction in their strategic planning process. Based on the findings from quantitative analysis, the values statement of the case-study institutions should include a commitment to sustainability, which can be used to explain how they intend to achieve their goals. Similarly, the institutional goals should include a commitment to sustainability because goals can be used as a method for assessing progress towards the vision. The vision statement should express, among other things, the sustainability aspirations of the institution (Hinton, 2012).

Having a long-term vision of sustainability that protects their future can be a source of inspiration and an example to society. Thus, each case-study institution's sustainability vision can provide strategic direction on how to improve current sustainability practice (Mirvis, Googins & Kinnicutt, 2010).

Kreber & Mhina (2005 p. 51) cautioned that although vision and mission statements provide insight into the values institutions regard as important, the 'statements cannot serve as proof of the institutions actually enacting the goals and ideals by which they choose to portray themselves to the public'. In contrast, findings from this study indicate that although respondents from each institution agree that their institution practices some aspects of sustainability to some extent, this is not portrayed in the vision and mission statements of the institutions.

A study of seven-two public universities in Turkey found that most vision statements of the universities focused on services attached to research while mission statements focused on providing education services to produce a competent graduate (Ozdem, 2011). Findings from the vision and mission statements of the Ilorin institutions studied show that this assertion is also true for the institutions. The statements focus only on academic responsibilities and have almost no mention of sustainability responsibilities. Furthermore, a different study found that there are no significant lexical differences in the vision and mission statements of private and state universities in Turkey (Efe & Ozer, 2015). This is also demonstrated by the statements of the institutions studied, in that they overly focus on academic goals and neglect sustainability goals.

A study of mission statements of Baccalaureate Colleges in the United States revealed that, in a bid to attract improved reviews, sampled colleges submitted better-phrased mission statements that convey a strong strategic plan to educational magazines than what can be found on their websites (Taylor & Morphew, 2010). This shows that the institutions understand that excellent statements can attract the best resources in terms of students, staff, funding and other opportunities. However, all institutions must ensure that vision and mission statements on their websites are the same as those given to third parties and that they actually practice what they claim.

Lee et al. (2013) conducted a content analysis of vision, mission and value statements on the public websites of Australian universities. Their study found that although many universities declared a commitment to sustainability principles, this was not portrayed in the vision, mission and value statements of faculties of the same institution. This brought into question the commitment of the institutions to the

principles of sustainability. Faculties, departments, institutes and schools in the three institutions under study do not have vision and mission statements; thus, there is no message on a commitment to sustainability values in their websites. This is inconsistent with findings from regression analysis of the relationship between organisational culture and sustainability performance in each institution as findings indicate that organisational culture in each institution supports sustainability performance based on the constructs used in this study.

It is necessary to conduct a study that examines the extent of understanding of the best practice of sustainability among stakeholders in Nigerian HEIs in order to better understand findings from both quantitative and qualitative analyses. Furthermore, there is a need for studies that assess actual sustainability performance by using an assessment tool appropriate for the institutions. Lastly, interviews need to be conducted with different stakeholders in Nigerian HEIs to examine how institutions promote sustainability values, and how much this is embedded in organisational culture.

Deus et al. (2016) found that 90 per cent of the institutions emphasised public service in their mission statements and just 6.6 per cent cited environmental management. The authors said the latter scenario might be due to difficulties in promoting matters such as resource conservation, energy efficiency, and reducing negative impacts of activities and operations in mission statements. The first case is similar to the University of Ilorin that cited providing ‘services to humanity’ in its vision statement and ‘community service’ in its mission statement, and the Kwara State Polytechnic that cited providing ‘services to humanity’ in its mission statement. The College of Education did not make such reference in its statement of philosophy. However, none

of the three institutions makes any reference to environmental management in any of their values statements.

A commitment to sustainability can be promoted by following the ISO 14001 standard developed around W. Edwards Deming's plan-do-check-act (PDCA) model. This standard can be adapted to have these steps:

1. Defining institution's goals for sustainability
2. Securing management's commitment
3. Involving all stakeholders
4. Selecting a sustainability champion and building an implementation team
5. Holding a commencement meeting and conducting initial reviews of existing (if any) system
6. Preparing budget and timetable and securing support and resources
7. Monitoring and communicating progress.

CHAPTER 8

Conclusion and Recommendation

8.1 Introduction

This chapter begins with a summary of the findings of this study. Thereafter, the theoretical and practical implications of the study for academic research and administration of HEIs are discussed. Proceeding this is the enumeration of the limitations of the study, the conclusion and recommendations for further study.

8.2 Review of Objectives of the Study

1. *The first objective:* this was achieved by conducting a thorough literature review to understand the concepts of sustainability, organisational culture, the relationship between them, and some theories underpinning each concept. The study also reviewed sustainability practice in Nigerian HEIs, organisational culture in Nigeria, and the case-study institutions. Earlier studies have demonstrated that organisational culture affects many important organisational variables such as individual behaviours and attitudes (Cameron & Quinn, 2011), while other research show that organisational culture impacts organisational performance (Peters & Waterman, 2004). Evidence from this study and prior studies underscore the need for HEIs to cultivate an organisational culture that facilitates best practice of sustainability. As Tanaka & Tabucanon (2014) stated, good practice of sustainability in HEIs ultimately

leads to good practice in society. Thus, Ilorin HEIs should aspire to be a sustainability role model for society both locally and nationally.

2. *The second objective:* to ascertain organisational culture and sustainability performance in each institution. This provided stakeholders' views of existing organisational culture and sustainability performance of their institutions. Also, it enabled comparison with what the values statements of the three institutions portray about organisational culture and sustainability performance.
3. *The third objective:* to investigate the linkages between organisational culture traits (mission, consistency, involvement and adaptability) and pre-defined sustainability performance indicators (EMS, social responsibility and stakeholder participation, integration of sustainability in studies and operation, and sustainability assessment and disclosure) of each institution. This enabled the researcher to understand the extent to which organisational culture traits influence sustainability performance in the institutions.
4. *The fourth objective:* to examine the extent to which principles of best practice of sustainability are reflected in the organisational values of the case-study institutions. This provided a context and enabled the researcher to find out the value placed of good practice of sustainability and the efforts made towards achieving good performance. Also, it enabled comparison with quantitative results to find out if both results converge or diverge.

8.3 Summary of Findings

The findings of this study are summarised below:

1. In all three institutions, findings from quantitative analysis show that organisational culture is good, and sustainability performance is at an early stage. More stakeholders perceived that organisational culture and sustainability performance in their institutions is great or moderate than those who perceived that there is not at all.

   Generally, most stakeholders across the three institutions were not sure about the sustainability performance and organisational culture of their institutions. This could be due to a variety of reasons, such as inadequate awareness among stakeholders about sustainability matters, disposition of stakeholders towards sustainability matters, and immature organisational culture. The differences in the balance of traits could be due to differences in the type of institution, size of institution, age of institution, ownership and funding of institution, and knowledge and expertise of stakeholders in the institutions.

2. Findings from quantitative analysis show that there is a positive relationship between organisational culture and sustainability performance in the three HEIs under study. Analysis showed that the University and Polytechnic have positive values for the relationship between all organisational culture indices and all sustainability performance constructs. Only the College of Education had two indices (agreement and organisational learning) that have negative values with sustainability performance constructs. Generally, this portends well for the three institutions as developing a good organisational culture is having a positive impact on developing sustainability performance. However, there is a need for improving the organisational culture and sustainability

performance in all three institutions because values of unstandardised coefficient B fall short of the +0.7 mark for a strong relationship.

3. Findings from qualitative analysis show that the three case-study institutions have similarities in the extent to which principles of best practice of sustainability have been integrated into their values statement. Content analysis of vision and mission statements suggest a contrasting finding to that of quantitative analysis of perceptions of stakeholders about organisational culture and sustainability performance. In this case, there is a divergence of findings because qualitative analysis of vision and mission statements show that the three institutions do not practice sustainability principles and have not embedded sustainability into organisational culture.

In contrast to findings from quantitative analyses, findings from qualitative analysis do not provide confidence to the readers of the value statements that the institutions have any semblance of sustainability performance in their daily activities. As explained with examples in the preceding chapter, sustainability performing institutions make efforts to convey sustainability messages in their official values statements to ensure that existing and prospective stakeholder are adequately informed. Furthermore, a lack of or inadequate mention of sustainability in value statements suggest that the institutions are not performing well based on the four organisational culture traits and the four sustainability performance constructs used in this study.

Importantly, it suggests that the management of the institutions do not have a sustainability vision and mission; hence, existing and prospective stakeholders would not know their role and how to support a sustainability vision.

Therefore, the three institutions should invest more effort in ensuring that all their departments embrace values of best practice of sustainability, engage and convince all their stakeholders in their sustainability drive, and reflect sustainability values in their official vision and mission statements. Consequently, qualitative analysis in this study provides a contextual understanding of value placed on sustainability in official vision and mission statements of the institution.

8.4 Explanatory Framework of Mixed Method

This study relied on an explanatory sequential mixed method design to explain the initial quantitative results – survey data was collected and analysed first, and textual data was collected and analysed later (Creswell & Plano Clark, 2011). Both quantitative and qualitative analyses were independent of each other as the implementation of qualitative analysis did not depend on the result of quantitative analysis (Schoonenboom & Johnson, 2017). A 'results point of integration' (Morse & Niehaus, 2009) was used in final sections of the chapters on quantitative and qualitative analyses respectively, and also in this chapter. This method (results point of integration) is also referred to as 'merging data' where integration of both quantitative and qualitative methods can be achieved by reporting results together in a discussion section of a study (Creswell & Plano Clark, 2011; Schoonenboom & Johnson, 2017). The researcher found a divergence in the findings of both quantitative and qualitative analyses and suggests further research to investigate the level of stakeholders' understanding of best practice of sustainability in order to resolve the divergence. The explanatory framework below shows how quantitative and qualitative data were implemented and how findings were merged:

Quantitative research questions are stated.

Decision is made to use questionnaire to collect stakeholder perceptions on organisational culture of sustainability and sustainability performance.

Research Ethics is observed.

Sample of stakeholders is identified

Quantitative data on organisational culture traits (mission, consistency, involvement, and adaptability) and sustainability performance are collected.

Quantitative data is analysed using regression analysis to investigate relationship between organisational culture traits and sustainability performance constructs.

↓

Quantitative results on organisational culture, sustainability performance and relationship between organisational culture and sustainability performance are explained. Qualitative data collection approach is determined based on quantitative results.

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Qualitative research question is stated.

Decision is made to use analysis of official value statements of institutions.

Identify qualitative data source which is vision and mission statements of institutions.

Collect textual data from value statements to provide context and verify quantitative results.

Qualitative data is analysed using content analysis of vision and mission statements to identify themes on sustainability practice.

↓

Quantitative results show that generally, some stakeholders indicated that organisational culture traits and sustainability performance exists moderately or to a great deal in the three institutions, but the majority of stakeholders indicated that they do not know. Also, results show that there is a strong relationship between organisational culture traits mission, consistency, involvement and adaptability and sustainability performance constructs used.

Qualitative results are summarised and interpreted.

Qualitative results and quantitative results are discussed to examine the divergence in findings and examine the probable cause of divergence and probable solution to it.

Figure 8.1: Explanatory framework for mixed method used in the study

8.5 Implications to Practice and Theory

The implications of the findings of this study to sustainability practice in HEIs in Ilorin and academic theory are discussed below.

8.5.1 Theoretical Implications

This section discusses how the findings of this study contributes to literature on organisational culture and sustainability practice.

1. The findings of the study confirm that there is a positive relationship between organisational culture and performance generally (Efanga & Ifejiagwa, 2014; Khan et al., 2012; Amah, 2013; Ahmad, 2012; Ehtesham et al., 2011). Also, this study provides findings on how organisational culture (Olughor, 2014) affects sustainability performance of HEIs (Godemann et al., 2011; Millan et al., 2014; Jofreh et al., 2014).
2. Yilmaz & Ergun (2008 p. 302) used the Denison model of organisational culture to analyse the effects of imbalance in cultural traits and the impacts on effectiveness. This study analyses the effects of imbalance in cultural traits and the impacts on sustainability performance in three HEIs in Ilorin.
3. Since the Denison organisational culture model (Denison, 2005) was used as the conceptual underpinning for the organisational culture construct in this study, findings of the study confirm the applicability of the model for investigating sustainability practice in organisations. Also, there is a general lack of studies on the applicability of Denison organisational culture model in a Nigerian context; hence, findings of this study provide empirical evidence that expands knowledge in organisational culture studies.

4. According to Palmer et al. (2012), few empirical studies have examined the similarities and differences between organisations when implementing sustainability practices and there is limited research on organisational cultural factors that enable or inhibit implementation of sustainability practice in an organisation. Furthermore, Eccles et al. (2011) stressed that a better understanding of mechanisms for integrating sustainability issues into management models of organisations needs to be developed. The authors explained that even when conditions are favourable for integrating social and environmental issues, the extent and speed of integration could vary across organisations. This study provides empirical evidence on the relationship between organisational cultural and sustainability performance in three Nigerian HEIs. Research findings show the extent to which stakeholders in each institution are satisfied with sustainability performance of their institution, and the extent to which values of sustainability are reflected in the vision and mission statements of the institutions.

8.5.2 Practical Implications

Findings of this study have practical implications for HEIs in Ilorin and provide insight for other HEIs in Nigeria. The applicability of the Denison organisational culture model in the context of a Nigerian HEI has been empirically tested in this study and institutions can use the model to assess their organisational culture. The findings of the study show how trait and indices of organisational culture affect certain elements of sustainability practice, and this can help institutions to identify strengths and weaknesses in their present culture and plan strategy on how to improve culture. Advancements and innovation in methods for teaching, learning, research and

operations in higher education have increased competition among HEIs around the world, and this is the same for Nigerian institutions.

This study suggests that using a SA tool and implementation tool can improve organisational culture of sustainability practice in HEIs in Nigeria (Sheffield Hallam University, 2008). Examples of suitable SA tools are best practice models of the United Nations Global Compact (UNGC) and the Global Reporting Initiative (GRI), and an example of a suitable sustainability implementation model is the excellence framework of the European Foundation for Quality Management (EFQM). These best practice models can be adapted to fit the unique characteristics of an institution so that it recognises the resources and capacity of an institution.

An excellent organisational culture that facilitates best practice of sustainability can help the institutions to attract higher quality students, teaching and non-teaching staff because of the higher quality learning, teaching, research and operations on offer. HEIs with a high reputation for sustainability practice can also attract more investment, donations and sponsorships from industry and government for technological innovation and research into sustainable development, methods and operations.

8.6 Limitations of the Study

As with all studies, there are limitations. This study:

1. Used an adapted format of the Denison Organisational Culture questionnaire to collect data on how organisational culture influences certain constructs of sustainability performance. Pilot studies revealed that a simplified and shorter

format with a context was necessary to help respondents to understand better and answer questions.

2. Employed carefully selected constructs of sustainability performance based on extant literature on sustainability practice in Ilorin HEIs. Other constructs of sustainability performance were not applied, and this limits the generalisation of the sustainability construct. Also, this study proposes an institution-specific approach and not a general approach in applying the SA tool and implementation model because each institution has unique attributes and circumstances. The institution-specific approach will enable individual institutions to identify their unique strengths and weaknesses and implement sustainability principles gradually without the pressure of being compared to more established institutions.
3. Focuses on investigating the relationship between organisational culture and sustainability performance in the case-study institutions. In this study, performance is interpreted as effort towards the implementation of best practice of sustainability. Thus, the study examines how organisational culture of each institution affects attitude to sustainability and does not use a SA tool to assess sustainability performance in the institutions.
4. Used a cross-sectional approach; hence, it was not able to assess how organisational culture influences sustainability performance over a set time. Thus, the study is unable to assess causality over a period of time, and findings from culture-performance relationships are based on theoretical grounds.
5. Did not investigate the intervening variables such as local religion and custom in the geographical area of study (Ilorin). Both ownership status of each institution and their impact (if any), were held constant.

6. Drew its sample from HEIs only in Ilorin. This restricts the generalisability of findings to Nigeria as a whole or to organisations across similar industries such as healthcare.
7. Will have incongruity between the findings from the application of the Denison organisational culture model to investigate how organisational culture influences attitude to sustainability and the research from other nations due to differences in national culture, national development and other intervening variables.

8.7 Conclusion

The idea for this study was conceived while reading about the contribution made by universities in the developed countries to sustainable development. Many articles on sustainability discussed how great ideas for a sustainable future could begin in university classrooms and laboratories and eventually materialise into achievements that benefit humanity (Ferrer-Balas et al., 2008; Ogbogu, 2013).

Leading institutions in developed countries are embracing an organisational culture that supports sustainability and are collaborating with experts to promote a culture of innovation that is fuelling the development of ground-breaking solutions to environmental challenges such as applications of solar power pioneered by Massachusetts Institute of Technology (MIT), creation of a transparent solar concentrator by researchers at Michigan State University, power generating tiles by a University of Loughborough student, and B-Droid for pollinating crops developed by researchers at University of Warsaw.

Simpler sustainability innovations created by institutions in developed countries for everyday use include the creation of edible water by the European Institute of Innovation and Technology (EIT) and the Sprout Pencil by MIT students. Other institutions have notable sustainability practices such as Lower Carbon Futures Programme at the University of Oxford, UK, the Energy Management Plan at the University of British Columbia in Canada, and EMS at Unisinos University in Brazil. The researcher desired such successes for Nigerian institutions and reviewed literature on sustainability practice in the country. Unfortunately, there are inadequate studies on subjects of sustainability practice in Nigerian higher education and other industries. Thereafter, the researcher was determined to explore if nurturing an organisational culture that supports sustainability in Nigerian HEIs would have a positive influence on sustainability practice in institutions and society as a whole.

The research problem was how to solve the challenge of embedding sustainability into the organisational culture of Nigerian HEIs. This was solved by investigating the relationship between organisational culture and sustainability performance in three distinct HEIs in Ilorin, Nigeria. After a review of literature on sustainability practice in Nigeria, the researcher found that sustainability challenges raised by Alshuwaikhat & Abubakar (2008) were prevalent across Nigerian institutions (Ikudayisi et al., 2012; Daniel & Ibok, 2013; Modebelu & Agommuoh, 2014). These challenges were: having an institution environment management system, public participation and social responsibility, and sustainability teaching and research. The researcher added sustainability assessment and disclosure to the above, to make it four main challenges. The researcher decided to investigate how institutions can best manage these challenges by encouraging a culture in which all stakeholders can contribute ideas and

work together to find solutions to sustainability matters in their institution and the broader community. This involved analysing stakeholders' perception of organisational culture and sustainability performance and exploring linkages between these two variables in three institutions.

To the best of the researcher's knowledge, Denison's model of organisational culture had not been used to investigate organisational culture in Nigerian organisations. This model had been extensively used in practice by organisations wanting to improve culture in order to develop organisational performance in different areas (Denison, 2011). Also, many researchers had demonstrated its applicability as a theory for investigating organisational phenomena in many countries (Pirayeh et al., 2011; Lari et al., 2012; Teymorzadeh et al., 2014).

Arguably, HEIs in developing countries, including Nigeria, are lagging in cultivating an organisational culture that promotes sustainability performance (Abdullahi & Tuna, 2014). Also, many of the institutions are very different in terms of availability of funds, technical capacity and equipment. This disproportion can affect the cultivation of an organisational culture that supports sustainability and sustainability performance by extension. Differences in institutional capacity must be taken into consideration during the discussion of sustainability practice. Findings from this research revealed that differences in the individual capacity of institutions play a role in the balance of organisational culture traits influencing sustainability performance.

Analysis of quantitative data revealed that a considerable number of respondents across the three institutions indicated 'a great deal' and 'moderately' when asked about the extent to which they agree with organisational culture and sustainability

performance of their institution. However, across the three institutions, the majority of respondents answered, ‘don’t know’. This indicates a challenge about sustainability practice in the institutions and may be due to inadequate information about sustainability efforts, attitude of stakeholders to sustainability matters, inadequate capacity in terms of skills and equipment, and inadequate education on international best practice of sustainability.

Regression analysis of quantitative data on organisational culture and sustainability performance showed that there is a positive relationship between organisational culture traits and sustainability performance constructs. The study showed that organisational culture traits such as mission, consistency, adaptability and involvement influences the sustainability performance constructs used. The researcher explained the roles played by organisational culture traits in sustainability performance of the three institutions and underlined that higher institutions need to pay attention to improving organisational culture indices in order to improve sustainability performance. The values of the unstandardised coefficient B showed that organisational culture influences sustainability performance differently in each institution. This may be due to differences in stakeholder commitment or capacity of each institution in terms of funding, expertise, equipment and external partners.

In contrast to the results of questionnaire analysis, results of the content analysis of vision and mission statements of the institutions revealed that the three institutions do not reflect principles of sustainability as an organisational value. This was made even more evident when mission and vision statements of the three institutions were compared with those of UK institutions. This does not give readers of the statements confidence that the institutions are committed to sustainability practice. It is therefore

necessary that Nigerian institutions cultivate a good organisational culture that promotes sustainability performance and communicates this in institution websites and publications. Communicating good practice of sustainability, especially through mission and vision statements, can stimulate government, industries, organisations, individuals to invest in finding solutions to common challenges in Nigerian society.

Achieving good practice of sustainability in HEIs and effectively communicating this through well-phrased mission and vision statements can improve the reputation of an institution and can give it a competitive advantage over competing institutions. Additionally, it can enable institutions to attract the best kind of students, teachers and partners that are motivated by the existence of an organisational culture that sustainability. Moreover, it can save institutions money through waste reduction, resource conservation, and use of renewable/alternative resources and attracts investment in from government and non-government research grants, sponsorship for events and projects, collaboration with other like-minded institutions and experts. These benefits can encourage Nigerian industries to look inwards and develop a pool of talent that can provide expert advice and develop bespoke products and services for their local communities.

As there is both inadequate study and emphasis on organisational culture that supports sustainability in Nigeria, most industries in the country do not invest in integrating sustainability into their daily operations and activities. This study provides different industries with empirical evidence to the relevance of having an organisational culture that supports sustainability in order to improve sustainability performance. These findings can assist the Nigerian Universities Commission and National Board for Technical Education in integrating sustainability into the curriculum, outreach

programmes, and other operations of HEIs. This can also enable higher education planners to understand the need for providing adequate support to institutions in the form of funding, technical expertise, equipment, and facilitating collaboration with local communities.

8.8 Recommendation for Future Studies

1. As mentioned earlier, only a few selected sustainability constructs were used in this study. Future studies can examine how organisational culture influences other constructs of sustainability performance of HEIs in Ilorin or, to increase generalisability, in Nigeria as a whole.
2. Subsequent research on sustainability practice in HEIs in Ilorin can ascertain the level of understanding of best practice of sustainability among stakeholders, assess sustainability in each institution by using a standard assessment tool and conduct interviews with different stakeholders in Nigerian HEIs to examine how institutions promote sustainability values and much this is embedded in organisational culture. This will help to resolve the divergence in findings between quantitative and qualitative results.
3. Future studies on sustainability practice in Ilorin can adopt a longitudinal study approach to determine the causality of relationships by examining the strength and consistency of relationships over time.
4. Future studies on organisational culture and sustainability performance can investigate the role of national culture or other intervening variables on culture-performance relationship to have a broader understanding of the issues in a Nigerian context.

5. To identify the drivers of sustainability practice in Nigerian HEIs in order to know which one has the most effect. Such drivers include cost reduction, resource conservation, capacity to attract best quality students and staff, and capacity to attract funding

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Appendix

Questionnaire

Explanation of Terms:

1. **Environmental Management System:** involves structure, planning, and resources for developing, implementing and maintaining policy for environmental protection in your institution.
2. **Social Responsibility & Stakeholder Participation** in sustainability implementation processes**:** Social Responsibility is an ethical framework which suggests that your institution has an obligation to act for the benefit of society at large.
   Stakeholder participation involves your institution engaging stakeholders in dialogue to find out what social, environmental and economic issues matter most to them in order to improve decision-making and accountability.
3. **Integration of Sustainability** into curriculum, research, and operations**:** involves promoting and adopting a clear understanding of the role and importance of sustainability practices for strategy and goals of your institution.
4. **Sustainability Assessment & Disclosure:** Sustainability assessment involves the methods that your institution uses to assess sustainability performance.
   A **s**ustainability disclosure is a report that gives information about performance of all of the above.
5. **Sustainability:** means development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
6. **Organisational Culture:** describes the way things are done in your institution in order to solve both internal management problems and those related to students, staff, community and environment.

Survey on Relationship between Organisational Culture and Sustainability Practice.

Section 1: Using the given scale, *please indicate by ticking the appropriate box the extent to which you agree with the following questions about the sustainability performance of your institution.*

1. How satisfied are you with the sustainability performance of your institution in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management System. Examples: a. Waste Reduction b. Resource conservation c. Pollution Prevention				
Social Responsibility & Stakeholder Participation. Examples: a. Community Development b. Stakeholder Engagement				

c. Public Awareness				
Integration of Sustainability. Examples: a. Sustainability Content of Curriculum b. Workshops/Seminars c. Renewable Energy				
Sustainability Assessment & Disclosure. Examples: a. Education on Best Practice of Sustainability b. Use of Standard Tool for Assessment c. Publication of Results of Assessment				

Section 2: Using the given scale, *please indicate by ticking YES or NO if you agree with the following questions about the relationship between organisational culture and sustainability performance in your institution.*

2. Is there a clear strategic direction and intent for implementing sustainability practice in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

3. Are you aware of the goals and objectives of implementing a sustainability strategy in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

4. Do you share the vision that drives the sustainability ambition of your institution in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

5. Do the core values of your institution support and reflect its sustainability ambition in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility &				

Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

6. Is there agreement across all stakeholders of your institution during planning and implementation stages of the sustainability strategy in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

7. Is there coordination and integration of all resources of your institution when planning and implementing the sustainability strategy for the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				

Sustainability Assessment & Disclosure				

8. Are you empowered to participate in the planning and implementation process of the sustainability strategy for the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

9. Does your institution provide opportunities for teamwork and allow you to provide inputs during planning and implementation stages of the sustainability strategy for the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

10. Does your institution provide regular capacity development training to stakeholders as part of the sustainability strategy for the following?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

11. Are stakeholders of your institution willing to accept changes that will be created during planning and implementation stages of the sustainability strategy in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

12. Are the interests of customers of your institution better served by implementing a sustainability strategy in the following areas?

	Don't know	Not at all	Moderately	A great deal

Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

13. Does your institution (i.e. stakeholders) demonstrate organisational learning during stages of planning and implementing the sustainability strategy in the following areas?

	Don't know	Not at all	Moderately	A great deal
Environmental Management Syste				
Social Responsibility & Stakeholder Participation				
Integration of Sustainability				
Sustainability Assessment & Disclosure				

Section 4: Background Information

1. My name (optional):_____
2. Name of institution under focus(optional):_____
3. My connection with the institution is:

   ☐ Student ☐ Teaching Staff ☐ Non-Teaching Staff ☐ Other _____
4. If Student, number of years studying in institution is:

   ☐ 1 or less ☐ 2-3 ☐ 4-5 ☐ over 5
5. If Teaching or Non-Teaching Staff, number of years connected to this institution is:

☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ over 15

6. If any other category, number of years connected to this institution is:

☐ 1-5 ☐ 6-10 ☐ 11-15 ☐ over 15

If you answered positively to Question 7 above, then proceed to the next question.

7. In stakeholder involvement meeting, my role is:

☐ Team Leader ☐ Team Member ☐ I do not participate ☐ Absence of Stakeholder Involvement

Thank you for participating in this survey.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.714	.766	15

Table6.1: SPSS output for Cronbach's correlation

Item Statistics

	Mean	Std. Deviation	N
StrategicDirectionAndntentOnSustainabilityPerformance	2.8833	1.53793	30
GoalsAndObjectivesOnSustainabilityPerformance	3.2833	.60434	30
VisionOnSustainabilityPerformance	3.4083	.45240	30
CoreValusOnSustainabilityPerformance	3.4917	.47563	30
AgreementOnSustainabilityPerformance	3.1000	.83460	30

CoordinationAndIntegrationOnSustainabilityPerformance	3.0250	.65439	30
EmpowermentOnSustainabilityPerformance	3.0667	.60148	30
TeamOrientationOnSustainabilityPerformance	3.0750	.72561	30
CapacityDevelopmentOnSustainabilityPerformance	3.1833	.63291	30
CreatingChangeOnSustainability Performance	3.5333	.45832	30
CustomerFocusOnSustainability Performance	3.4250	.70145	30
OrganisationalLearningOnSustainabilityPerformance	3.0667	1.00630	30

Table6.2: Item Statistics

Correlations

		Environment Management System	SocialResponsibilityAndStakeholderParticipation	IntegrationOf Sustainability	Sustainability AssessmentAndDisclosure
EnvironmentManagementSystem	Pearson Correlation	1	.701**	.644**	.488**
	Sig. (2-tailed)		.000	.000	.006
	N	30	30	30	30
SocialResponsibilityAnd StakeholderParticipation	Pearson Correlation	.701**	1	.956**	.673**
	Sig. (2-tailed)	.000		.000	.000
	N	30	30	30	30
IntegrationOfSustainability	Pearson Correlation	.644**	.956**	1	.756**
	Sig. (2-tailed)	.000	.000		.000
	N	30	30	30	30

SustainabilityAssessmentAndDisclosure	Pearson Correlation	.488**	.673**	.756**	1
	Sig. (2-tailed)	.006	.000	.000	
	N	30	30	30	30

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

Table6.3: Correlations of Constructs of Sustainability

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972[a]	.945	.944	.19689

a. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.4: Model Summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	64.551	3	21.517	555.052	.000[b]
	Residual	3.722	96	.039		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.5: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.491	.070		6.970	.000
	StrategicDirection	.194	.041	.317	4.698	.000
	GoalsandObjectives	.270	.044	.296	6.145	.000

Vision	.273	.045	.400	6.133	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.6: Result of Coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.972[a]	.945	.944	.19627

a. Predictors: (Constant), MISSION

Table6.7: Model Summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	64.497	1	64.497	1674.335	.000[b]
	Residual	3.775	98	.039		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), MISSION

Table6.8: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.540	.048		11.218	.000
	MISSION	.723	.018	.972	40.919	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.9: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971[a]	.943	.941	.19425

a. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.10: Model Summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.062	3	20.021	530.571	.000[b]
	Residual	3.622	96	.038		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.11: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.512	.070		7.361	.000
	StrategicDirection	.156	.041	.264	3.834	.000
	GoalsandObjectives	.286	.043	.326	6.611	.000
	Vision	.279	.044	.423	6.348	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.12: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.970[a]	.941	.940	.19612

a. Predictors: (Constant), MISSION

Table6.13: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.915	1	59.915	1557.774	.000[b]
	Residual	3.769	98	.038		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), MISSION

Table6.14: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.597	.048		12.425	.000
	MISSION	.697	.018	.970	39.469	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.15: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.938[a]	.880	.877	.32602

a. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.16: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.047	3	25.016	235.361	.000[b]

	Residual	10.204	96	.106		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.17: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.235	.117		2.013	.047
	StrategicDirection	.277	.068	.406	4.057	.000
	GoalsandObjectives	.384	.073	.377	5.277	.000
	Vision	.150	.074	.196	2.028	.045

a. Dependent Variable: IntegrationOfSustainability

Table6.18: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936[a]	.875	.874	.32942

a. Predictors: (Constant), MISSION

Table6.19: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	74.616	1	74.616	687.599	.000[b]
	Residual	10.635	98	.109		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), MISSION

Table6.20: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.345	.081		4.273	.000
	MISSION	.777	.030	.936	26.222	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.21: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967[a]	.936	.934	.22139

a. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.22: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.851	3	22.950	468.237	.000[b]
	Residual	4.705	96	.049		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), Vision, GoalsandObjectives, StrategicDirection

Table6.23: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.355	.079		4.478	.000
	StrategicDirection	.335	.046	.528	7.219	.000
	GoalsandObjectives	.325	.049	.344	6.575	.000
	Vision	.095	.050	.135	1.907	.059

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.24: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.964[a]	.929	.929	.23016

a. Predictors: (Constant), MISSION

Table6.25: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.365	1	68.365	1290.511	.000[b]
	Residual	5.192	98	.053		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), MISSION

Table6.26: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.389	.056		6.888	.000
	MISSION	.744	.021	.964	35.924	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.27: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939[a]	.881	.877	.29117

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.28: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.134	3	20.045	236.432	.000[b]
	Residual	8.139	96	.085		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.29: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.737	.111		6.609	.000
	CoreValues	.151	.048	.158	3.133	.002
	Agreement	.246	.053	.378	4.627	.000
	CoordinationandIntegration	.308	.057	.463	5.381	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.30: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.936[a]	.875	.874	.29454

a. Predictors: (Constant), CONSISTENCY

Table6.31: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	59.771	1	59.771	688.986	.000[b]
	Residual	8.502	98	.087		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CONSISTENCY

Table6.32: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.567	.074		7.702	.000
	CONSISTENCY	.744	.028	.936	26.249	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.33: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.927[a]	.860	.855	.30500

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.34: Model summary

ANOVA[a]

Model	Sum of Squares	Df	Mean Square	F	Sig.

1	Regression	54.754	3	18.251	196.199	.000[b]
	Residual	8.930	96	.093		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.35: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.842	.117		7.208	.000
	CoreValues	.123	.051	.132	2.426	.017
	Agreement	.224	.056	.356	4.025	.000
	CoordinationandIntegration	.317	.060	.493	5.280	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.36: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923[a]	.852	.850	.31046

a. Predictors: (Constant), CONSISTENCY

Table6.37: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.238	1	54.238	562.733	.000[b]

	Residual	9.446	98	.096		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CONSISTENCY

Table6.38: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.643	.078		8.294	.000
	CONSISTENCY	.709	.030	.923	23.722	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.39: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918[a]	.843	.838	.37390

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.40: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	71.830	3	23.943	171.267	.000[b]
	Residual	13.421	96	.140		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.41: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.441	.143		3.080	.003
	CoreValues	.213	.062	.198	3.430	.001
	Agreement	.252	.068	.346	3.684	.000
	CoordinationandIntegration	.327	.074	.440	4.450	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.42: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.917[a]	.841	.839	.37224

a. Predictors: (Constant), CONSISTENCY

Table6.43: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	71.672	1	71.672	517.263	.000[b]
	Residual	13.579	98	.139		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CONSISTENCY

Table6.44: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.

		B	Std. Error	Beta		
1	(Constant)	.340	.093		3.653	.000
	CONSISTENCY	.815	.036	.917	22.743	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.45: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.894	.891	.28483

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.46: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.768	3	21.923	270.213	.000[b]
	Residual	7.789	96	.081		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.47: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.439	.109		4.025	.000
	CoreValues	.227	.047	.228	4.810	.000
	Agreement	.245	.052	.363	4.718	.000

CoordinationandIntegration	.295	.056	.427	5.260	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.48: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945[a]	.893	.892	.28287

a. Predictors: (Constant), CONSISTENCY

Table6.49: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.715	1	65.715	821.251	.000[b]
	Residual	7.842	98	.080		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CONSISTENCY

Table6.50: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.383	.071		5.417	.000
	CONSISTENCY	.780	.027	.945	28.657	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.51: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.931[a]	.868	.863	.30687

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.52: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.232	3	19.744	209.666	.000[b]
	Residual	9.040	96	.094		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.53: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.277	.118		2.357	.020
	Empowerment	.372	.070	.339	5.349	.000
	TeamOrientation	.219	.058	.312	3.800	.000
	CapacityDevelopment	.255	.062	.343	4.081	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.54: Result of coefficient Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.930[a]	.864	.863	.30757

a. Predictors: (Constant), INVOLVEMENT

Table6.55: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	59.001	1	59.001	623.692	.000[b]
	Residual	9.271	98	.095		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), INVOLVEMENT

Table6.56: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.406	.083		4.872	.000
	INVOLVEMENT	.804	.032	.930	24.974	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.57: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.895	.892	.26356

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.58: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.015	3	19.005	273.588	.000[b]
	Residual	6.669	96	.069		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.59: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.364	.101		3.607	.000
	Empowerment	.320	.060	.302	5.357	.000
	TeamOrientation	.249	.049	.367	5.029	.000
	CapacityDevelopment	.243	.054	.339	4.535	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.60: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.894	.893	.26210

a. Predictors: (Constant), INVOLVEMENT

Table6.61: Model summary

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	56.952	1	56.952	829.020	.000[b]
	Residual	6.732	98	.069		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), INVOLVEMENT

Table6.62: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.432	.071		6.091	.000
	INVOLVEMENT	.790	.027	.946	28.793	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.63: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.873[a]	.762	.754	.46013

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.64: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.926	3	21.642	102.220	.000[b]
	Residual	20.325	96	.212		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.65: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.185	.176		1.048	.297
	Empowerment	.344	.104	.280	3.300	.001
	TeamOrientation	.304	.086	.388	3.525	.001
	CapacityDevelopment	.216	.094	.261	2.311	.023

a. Dependent Variable: IntegrationOfSustainability

Table6.66: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.872[a]	.760	.758	.45689

a. Predictors: (Constant), INVOLVEMENT

Table6.67: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	64.794	1	64.794	310.393	.000[b]
	Residual	20.457	98	.209		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), INVOLVEMENT

Table6.68: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.254	.124		2.055	.043
	INVOLVEMENT	.843	.048	.872	17.618	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.69: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.914[a]	.836	.831	.35443

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.70: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	61.497	3	20.499	163.176	.000[b]
	Residual	12.060	96	.126		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.71: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.097	.136		.713	.478

Empowerment	.410	.080	.360	5.102	.000
TeamOrientation	.138	.067	.190	2.075	.041
CapacityDevelopment	.328	.072	.425	4.540	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.72: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.909[a]	.827	.825	.36071

a. Predictors: (Constant), INVOLVEMENT

Table6.73: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.806	1	60.806	467.341	.000[b]
	Residual	12.751	98	.130		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), INVOLVEMENT

Table6.74: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.278	.098		2.850	.005
	INVOLVEMENT	.816	.038	.909	21.618	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.75: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.939[a]	.881	.877	.29077

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.76: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.156	3	20.052	237.170	.000[b]
	Residual	8.117	96	.085		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.77: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.633	.082		7.753	.000
	CreatingChange	.239	.040	.312	5.931	.000
	CustomerFocus	.259	.035	.392	7.468	.000
	OrgLearning	.231	.034	.354	6.732	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.78: Result of coefficient analysis

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	60.135	1	60.135	724.198	.000[b]

	Residual	8.138	98	.083		
	Total	68.272	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), ADAPTABILITY

Table6.80: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.627	.070		8.978	.000
	ADAPTABILITY	.730	.027	.939	26.911	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.81: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.932[a]	.869	.865	.29478

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.82: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.342	3	18.447	212.302	.000[b]
	Residual	8.342	96	.087		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.83: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.694	.083		8.381	.000
	CreatingChange	.234	.041	.316	5.727	.000
	CustomerFocus	.264	.035	.414	7.512	.000
	OrgLearning	.202	.035	.320	5.798	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.84: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.931[a]	.867	.866	.29348

a. Predictors: (Constant), ADAPTABILITY

Table6.85: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.243	1	55.243	641.409	.000[b]
	Residual	8.441	98	.086		
	Total	63.684	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), ADAPTABILITY

Table6.86: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.

		B	Std. Error	Beta		
1	(Constant)	.690	.071		9.711	.000
	ADAPTABILITY	.700	.028	.931	25.326	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.87: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.897[a]	.804	.798	.41671

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.88: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.581	3	22.860	131.648	.000[b]
	Residual	16.670	96	.174		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.89: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.496	.117		4.234	.000
	CreatingChange	.223	.058	.261	3.871	.000

	CustomerFocus	.304	.050	.411	6.111	.000
	OrgLearning	.246	.049	.337	4.993	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.90: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.896[a]	.803	.801	.41438

a. Predictors: (Constant), ADAPTABILITY

Table6.91: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	68.423	1	68.423	398.482	.000[b]
	Residual	16.828	98	.172		
	Total	85.251	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), ADAPTABILITY

Table6.92: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.454	.100		4.521	.000
	ADAPTABILITY	.779	.039	.896	19.962	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.93: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.944[a]	.891	.887	.28936

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.94: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.519	3	21.840	260.841	.000[b]
	Residual	8.038	96	.084		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.95: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.463	.081		5.701	.000
	CreatingChange	.244	.040	.307	6.095	.000
	CustomerFocus	.253	.035	.369	7.328	.000
	OrgLearning	.263	.034	.387	7.687	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.96: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.944[a]	.891	.890	.28652

a. Predictors: (Constant), ADAPTABILITY

Table6.97: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	65.511	1	65.511	798.003	.000[b]
	Residual	8.045	98	.082		
	Total	73.556	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), ADAPTABILITY

Table6.98: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.454	.069		6.539	.000
	ADAPTABILITY	.762	.027	.944	28.249	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.99: Result of coefficient

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.901	.898	.29217

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.100: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	74.352	3	24.784	290.338	.000[b]

	Residual	8.195	96	.085		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table 6.101: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.512	.057		8.925	.000
	StrategicDirection	.199	.043	.294	4.628	.000
	GoalsandObjectives	.197	.064	.265	3.065	.003
	Vision	.331	.066	.432	4.990	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.102: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.948[a]	.898	.897	.29242

a. Predictors: (Constant), MISSION

Table6.103: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.166	1	74.166	867.317	.000[b]
	Residual	8.380	98	.086		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), MISSION

Table6.104: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.511	.057		8.914	.000
	MISSION	.721	.024	.948	29.450	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.105: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952[a]	.906	.903	.28538

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.106: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.539	3	25.180	309.177	.000[b]
	Residual	7.818	96	.081		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.107: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.497	.056		8.866	.000
	StrategicDirection	.230	.042	.338	5.473	.000
	GoalsandObjectives	.213	.063	.285	3.391	.001
	Vision	.287	.065	.373	4.433	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.108: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.952[a]	.906	.905	.28317

a. Predictors: (Constant), MISSION

Table6.109: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.499	1	75.499	941.586	.000[b]
	Residual	7.858	98	.080		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), MISSION

Table6.110: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.496	.056		8.930	.000
	MISSION	.727	.024	.952	30.685	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.111: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.948[a]	.899	.896	.29869

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.112: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76.168	3	25.389	284.588	.000[b]
	Residual	8.565	96	.089		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.113: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.504	.059		8.604	.000
	StrategicDirection	.239	.044	.348	5.432	.000
	GoalsandObjectives	.224	.066	.298	3.404	.001
	Vision	.269	.068	.347	3.973	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.114: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.948[a]	.899	.898	.29585

a. Predictors: (Constant), MISSION

Table6.115: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76.154	1	76.154	870.059	.000[b]
	Residual	8.578	98	.088		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), MISSION

Table6.116: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.504	.058		8.685	.000
	MISSION	.731	.025	.948	29.497	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.117: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953[a]	.909	.906	.28068

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.118: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.573	3	25.191	319.752	.000[b]
	Residual	7.563	96	.079		
	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.119: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.482	.055		8.755	.000
	StrategicDirection	.220	.041	.324	5.337	.000
	GoalsandObjectives	.221	.062	.296	3.574	.001
	Vision	.290	.064	.377	4.545	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.120: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953[a]	.908	.907	.27874

a. Predictors: (Constant), MISSION

Table6.121: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.522	1	75.522	972.052	.000[b]
	Residual	7.614	98	.078		
	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), MISSION

Table6.122: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.482	.055		8.818	.000
	MISSION	.728	.023	.953	31.178	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.123: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945[a]	.892	.889	.30453

a. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.124: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	73.644	3	24.548	264.704	.000[b]

	Residual	8.903	96	.093		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.125: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.497	.060		8.214	.000
	CoreValues	.345	.048	.473	7.149	.000
	Agreement	.231	.053	.265	4.325	.000
	CoordinationandIntegration	.217	.047	.273	4.592	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.126: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943[a]	.889	.888	.30560

a. Predictors: (Constant), CONSISTENCY

Table6.127: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	73.394	1	73.394	785.849	.000[b]
	Residual	9.153	98	.093		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CONSISTENCY

Table6.128: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.497	.061		8.206	.000
	CONSISTENCY	.805	.029	.943	28.033	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.129: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.900	.897	.29440

a. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.130: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.036	3	25.012	288.584	.000[b]
	Residual	8.321	96	.087		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.131: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.482	.058		8.237	.000
	CoreValues	.349	.047	.476	7.488	.000
	Agreement	.219	.052	.250	4.241	.000
	CoordinationandIntegration	.231	.046	.289	5.052	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.132: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.947[a]	.897	.896	.29579

a. Predictors: (Constant), CONSISTENCY

Table6.133: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	74.783	1	74.783	854.721	.000[b]
	Residual	8.574	98	.087		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CONSISTENCY

Table6.134: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.481	.059		8.203	.000
	CONSISTENCY	.813	.028	.947	29.236	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.135: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.949[a]	.901	.898	.29551

a. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.136: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	76.349	3	25.450	291.424	.000[b]
	Residual	8.384	96	.087		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.137: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.491	.059		8.366	.000
	CoreValues	.380	.047	.514	8.115	.000
	Agreement	.146	.052	.165	2.810	.006
	CoordinationandIntegration	.268	.046	.333	5.851	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.138: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945[a]	.893	.892	.30351

a. Predictors: (Constant), CONSISTENCY

Table6.139: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	75.705	1	75.705	821.821	.000[b]
	Residual	9.028	98	.092		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CONSISTENCY

Table6.140: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.486	.060		8.082	.000
	CONSISTENCY	.818	.029	.945	28.667	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.141: Result of coefficiengt analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.947[a]	.898	.894	.29773

a. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.142: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	74.627	3	24.876	280.628	.000[b]
	Residual	8.510	96	.089		
	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CoordinationandIntegration, Agreement, CoreValues

Table6.143: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.476	.059		8.047	.000
	CoreValues	.340	.047	.464	7.208	.000
	Agreement	.179	.052	.204	3.420	.001
	CoordinationandIntegration	.275	.046	.345	5.959	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.144: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.945[a]	.894	.893	.29999

a. Predictors: (Constant), CONSISTENCY

Table6.145: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	74.317	1	74.317	825.776	.000[b]
	Residual	8.820	98	.090		
	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CONSISTENCY

Table6.146: Result of ANOVA

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.928[a]	.862	.858	.34434

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.148: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.163	3	23.721	200.058	.000[b]
	Residual	11.383	96	.119		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.149: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		

1	(Constant)	.292	.088		3.305	.001
	Empowerment	.208	.056	.219	3.751	.000
	TeamOrientation	.460	.067	.544	6.868	.000
	CapacityDevelopment	.173	.049	.238	3.560	.001

a. Dependent Variable: EnvironmentManagementSystem

Table6.150: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923[a]	.851	.850	.35389

a. Predictors: (Constant), INVOLVEMENT

Table6.151: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.273	1	70.273	561.119	.000[b]
	Residual	12.273	98	.125		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), INVOLVEMENT

Table6.152: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.252	.080		3.137	.002
	INVOLVEMENT	.843	.036	.923	23.688	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.153: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.928[a]	.862	.857	.34670

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.154: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.818	3	23.939	199.157	.000[b]
	Residual	11.539	96	.120		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.155: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.286	.089		3.215	.002
	Empowerment	.205	.056	.214	3.657	.000
	TeamOrientation	.451	.067	.531	6.687	.000
	CapacityDevelopment	.188	.049	.257	3.838	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.156: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.923[a]	.852	.851	.35450

a. Predictors: (Constant), INVOLVEMENT

Table6.157: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	71.041	1	71.041	565.302	.000[b]
	Residual	12.316	98	.126		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), INVOLVEMENT

Table6.158: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.241	.081		2.987	.004
	INVOLVEMENT	.847	.036	.923	23.776	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Tablel6.159: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.919[a]	.844	.839	.37132

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.160: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	71.496	3	23.832	172.852	.000[b]
	Residual	13.236	96	.138		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.161: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.295	.095		3.095	.003
	Empowerment	.216	.060	.224	3.598	.001
	TeamOrientation	.438	.072	.511	6.061	.000
	CapacityDevelopment	.191	.053	.258	3.636	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.162: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.914[a]	.836	.834	.37667

a. Predictors: (Constant), INVOLVEMENT

Table6.163: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.828	1	70.828	499.215	.000[b]
	Residual	13.904	98	.142		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), INVOLVEMENT

Table6.164: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.258	.086		3.008	.003
	INVOLVEMENT	.846	.038	.914	22.343	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.165: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.936[a]	.876	.872	.32801

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.166: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.808	3	24.269	225.564	.000[b]
	Residual	10.329	96	.108		

	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.167: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.221	.084		2.618	.010
	Empowerment	.258	.053	.270	4.866	.000
	TeamOrientation	.400	.064	.471	6.265	.000
	CapacityDevelopment	.203	.046	.277	4.369	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.168: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.933[a]	.871	.870	.33104

a. Predictors: (Constant), INVOLVEMENT

Table6.169: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	72.397	1	72.397	660.627	.000[b]
	Residual	10.740	98	.110		
	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), INVOLVEMENT

Table6.170: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.211	.075		2.800	.006
	INVOLVEMENT	.855	.033	.933	25.703	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.171: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.926[a]	.857	.852	.35109

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.172: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.713	3	23.571	191.221	.000[b]
	Residual	11.834	96	.123		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.173: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.368	.076		4.860	.000
	CreatingChange	.126	.056	.177	2.256	.026
	CustomerFocus	.279	.033	.395	8.553	.000
	OrgLearning	.353	.055	.493	6.397	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.174: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921[a]	.849	.847	.35694

a. Predictors: (Constant), ADAPTABILITY

Table6.175: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.060	1	70.060	549.894	.000[b]
	Residual	12.486	98	.127		
	Total	82.546	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), ADAPTABILITY

Table6.176: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.369	.077		4.798	.000

	ADAPTABILITY	.752	.032	.921	23.450	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.177: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.921[a]	.849	.844	.36205

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.178: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.773	3	23.591	179.976	.000[b]
	Residual	12.584	96	.131		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.179: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.362	.078		4.633	.000
	CreatingChange	.147	.057	.206	2.561	.012
	CustomerFocus	.280	.034	.395	8.331	.000
	OrgLearning	.332	.057	.461	5.824	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.180: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918[a]	.843	.842	.36490

a. Predictors: (Constant), ADAPTABILITY

Table6.181: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	70.308	1	70.308	528.027	.000[b]
	Residual	13.049	98	.133		
	Total	83.357	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), ADAPTABILITY

Table6.182: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.364	.079		4.628	.000
	ADAPTABILITY	.754	.033	.918	22.979	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.183: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.924[a]	.855	.850	.35820

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.184: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	72.415	3	24.138	188.130	.000[b]
	Residual	12.317	96	.128		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.185: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.361	.077		4.662	.000
	CreatingChange	.125	.057	.173	2.197	.030
	CustomerFocus	.288	.033	.403	8.673	.000
	OrgLearning	.354	.056	.488	6.285	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.186: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.920[a]	.846	.845	.36459

a. Predictors: (Constant), ADAPTABILITY

Table6.187: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	71.706	1	71.706	539.450	.000[b]
	Residual	13.027	98	.133		
	Total	84.732	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), ADAPTABILITY

Table6.188: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.362	.078		4.613	.000
	ADAPTABILITY	.761	.033	.920	23.226	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.189: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.915[a]	.837	.832	.37540

a. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.190: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	69.607	3	23.202	164.640	.000[b]
	Residual	13.529	96	.141		
	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), OrgLearning, CustomerFocus, CreatingChange

Table6.191: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.367	.081		4.531	.000
	CreatingChange	.128	.060	.180	2.158	.033
	CustomerFocus	.262	.035	.370	7.515	.000
	OrgLearning	.360	.059	.500	6.092	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.192: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.911[a]	.830	.828	.37976

a. Predictors: (Constant), ADAPTABILITY

Table6.193: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	69.003	1	69.003	478.471	.000[b]
	Residual	14.133	98	.144		
	Total	83.136	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), ADAPTABILITY

Table6.194: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.365	.082		4.462	.000
	ADAPTABILITY	.747	.034	.911	21.874	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.195: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.895	.892	.25731

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.196: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.447	3	18.149	274.113	.000[b]
	Residual	6.356	96	.066		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.197: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.238	.081		2.919	.004
	StrategicDirection	.082	.160	.094	.516	.607

	GoalsandObjectives	.225	.220	.256	1.024	.309
	Vision	.545	.144	.602	3.782	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.198: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943[a]	.890	.889	.26166

a. Predictors: (Constant), MISSION

Table6.199: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.093	1	54.093	790.071	.000[b]
	Residual	6.710	98	.068		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), MISSION

Table6.200: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.254	.082		3.080	.003
	MISSION	.842	.030	.943	28.108	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.201: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.896	.893	.25706

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.202: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.566	3	18.189	275.243	.000[b]
	Residual	6.344	96	.066		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.203: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.237	.081		2.911	.004
	StrategicDirection	.086	.160	.099	.541	.590
	GoalsandObjectives	.219	.220	.249	.996	.322
	Vision	.548	.144	.605	3.809	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.204: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943[a]	.890	.889	.26145

a. Predictors: (Constant), MISSION

Table6.205: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.211	1	54.211	793.089	.000[b]
	Residual	6.699	98	.068		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), MISSION

Table6.206: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.253	.082		3.075	.003
	MISSION	.843	.030	.943	28.162	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.207: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.947[a]	.896	.893	.25604

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.208: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	54.442	3	18.147	276.812	.000[b]
	Residual	6.294	96	.066		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.209: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.236	.081		2.909	.005
	StrategicDirection	.143	.159	.164	.899	.371
	GoalsandObjectives	.161	.219	.184	.737	.463
	Vision	.548	.143	.607	3.827	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.210: Result of coefiicient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.944[a]	.891	.890	.25937

a. Predictors: (Constant), MISSION

Table6.211: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.142	1	54.142	804.835	.000[b]

	Residual	6.593	98	.067		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), MISSION

Table6.212: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.252	.082		3.088	.003
	MISSION	.843	.030	.944	28.370	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.213: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.946[a]	.895	.891	.25821

a. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.214: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	54.351	3	18.117	271.721	.000[b]
	Residual	6.401	96	.067		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), Vision, StrategicDirection, GoalsandObjectives

Table6.215: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.238	.082		2.918	.004
	StrategicDirection	.078	.160	.090	.488	.626
	GoalsandObjectives	.216	.220	.246	.979	.330
	Vision	.557	.144	.617	3.857	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.216: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.943[a]	.888	.887	.26309

a. Predictors: (Constant), MISSION

Table6.217: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	53.968	1	53.968	779.725	.000[b]
	Residual	6.783	98	.069		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), MISSION

Table6.218: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.255	.083		3.083	.003
	MISSION	.841	.030	.943	27.924	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.219: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971[a]	.942	.940	.19135

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.220: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.288	3	19.096	521.536	.000[b]
	Residual	3.515	96	.037		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.221: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.133	.062		2.152	.034
	CoreValues	.736	.027	.804	27.649	.000

	Agreement	-.056	.097	-.072	-.583	.561
	CoordinationandIntegration	.261	.097	.334	2.675	.009

a. Dependent Variable: EnvironmentManagementSystem

Table6.222: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.854[a]	.729	.727	.40980

a. Predictors: (Constant), CONSISTENCY

Table6.223: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	44.345	1	44.345	264.067	.000[b]
	Residual	16.457	98	.168		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CONSISTENCY

Table6.224: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.702	.115		6.107	.000
	CONSISTENCY	.785	.048	.854	16.250	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.225: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971[a]	.943	.942	.18955

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.226: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.460	3	19.153	533.081	.000[b]
	Residual	3.449	96	.036		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.227: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.131	.061		2.145	.034
	CoreValues	.736	.026	.803	27.912	.000
	Agreement	-.055	.096	-.070	-.571	.569
	CoordinationandIntegration	.261	.097	.333	2.700	.008

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.228: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.855[a]	.731	.729	.40854

a. Predictors: (Constant), CONSISTENCY

Table6.229: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44.553	1	44.553	266.930	.000[b]
	Residual	16.357	98	.167		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CONSISTENCY

Table6.230: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.699	.115		6.105	.000
	CONSISTENCY	.787	.048	.855	16.338	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.231: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971[a]	.942	.941	.19101

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.232: Model analysis

ANOVA[a]

Model	Sum of Squares	df	Mean Square	F	Sig.

1	Regression	57.233	3	19.078	522.886	.000[b]
	Residual	3.503	96	.036		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.233: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.134	.062		2.179	.032
	CoreValues	.736	.027	.805	27.711	.000
	Agreement	-.091	.096	-.117	-.944	.348
	CoordinationandIntegration	.294	.097	.376	3.018	.003

a. Dependent Variable: IntegrationOfSustainability

Table6.234: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.853[a]	.727	.724	.41120

a. Predictors: (Constant), CONSISTENCY

Table6.235: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	44.164	1	44.164	261.193	.000[b]
	Residual	16.571	98	.169		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CONSISTENCY

Table6.236: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.705	.115		6.112	.000
	CONSISTENCY	.783	.048	.853	16.161	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.237: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.971[a]	.943	.942	.18918

a. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.238: Model smmary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.316	3	19.105	533.842	.000[b]
	Residual	3.436	96	.036		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CoordinationandIntegration, CoreValues, Agreement

Table6.239: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.132	.061		2.160	.033
	CoreValues	.733	.026	.801	27.867	.000
	Agreement	-.056	.095	-.071	-.584	.561
	CoordinationandIntegration	.263	.096	.337	2.734	.007

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.240: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.856[a]	.733	.730	.40669

a. Predictors: (Constant), CONSISTENCY

Table6.241: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	44.542	1	44.542	269.303	.000[b]
	Residual	16.209	98	.165		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CONSISTENCY

Table6.242: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		

1	(Constant)	.697	.114		6.112	.000
	CONSISTENCY	.786	.048	.856	16.410	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.243: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.951	.949	.17687

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.244: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.800	3	19.267	615.897	.000[b]
	Residual	3.003	96	.031		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.245: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.095	.061		1.561	.122
	Empowerment	.237	.065	.237	3.658	.000
	TeamOrientation	.278	.178	.308	1.561	.122

CapacityDevelopment	.405	.188	.443	2.161	.033

a. Dependent Variable: EnvironmentManagementSystem

Table6.246: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.950	.949	.17624

a. Predictors: (Constant), INVOLVEMENT

Table6.247: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.759	1	57.759	1859.616	.000[b]
	Residual	3.044	98	.031		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), INVOLVEMENT

Table6.248 Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.075	.058		1.298	.197
	INVOLVEMENT	.928	.022	.975	43.123	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.249: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.951	.950	.17592

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.250: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.939	3	19.313	624.044	.000[b]
	Residual	2.971	96	.031		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.251: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.094	.061		1.545	.126
	Empowerment	.238	.064	.238	3.698	.000
	TeamOrientation	.276	.177	.305	1.556	.123
	CapacityDevelopment	.408	.187	.445	2.185	.031

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.252: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate

1	.975[a]	.951	.950	.17528

a. Predictors: (Constant), INVOLVEMENT

Table6.253: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.899	1	57.899	1884.465	.000[b]
	Residual	3.011	98	.031		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), INVOLVEMENT

Table6.254: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.057		1.285	.202
	INVOLVEMENT	.929	.021	.975	43.410	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.255: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.951	.949	.17628

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.256: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.752	3	19.251	619.460	.000[b]
	Residual	2.983	96	.031		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.257: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.096	.061		1.575	.119
	Empowerment	.236	.065	.236	3.663	.000
	TeamOrientation	.279	.177	.309	1.570	.120
	CapacityDevelopment	.405	.187	.443	2.164	.033

a. Dependent Variable: IntegrationOfSustainability

Table6.258: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.950	.950	.17567

a. Predictors: (Constant), INVOLVEMENT

Table6.259: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.711	1	57.711	1870.028	.000[b]

	Residual	3.024	98	.031		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), INVOLVEMENT

Table6.260: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.075	.058		1.309	.194
	INVOLVEMENT	.927	.021	.975	43.244	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.261: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.975[a]	.950	.949	.17757

a. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table2.62: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.724	3	19.241	610.229	.000[b]
	Residual	3.027	96	.032		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), CapacityDevelopment, Empowerment, TeamOrientation

Table6.263: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.096	.061		1.568	.120
	Empowerment	.236	.065	.236	3.633	.000
	TeamOrientation	.279	.179	.309	1.561	.122
	CapacityDevelopment	.404	.188	.442	2.146	.034

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.264: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974[a]	.949	.949	.17694

a. Predictors: (Constant), INVOLVEMENT

Table6.265: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	57.683	1	57.683	1842.422	.000[b]
	Residual	3.068	98	.031		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), INVOLVEMENT

Table6.266: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	.076	.058		1.304	.195
	INVOLVEMENT	.927	.022	.974	42.923	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.267: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967[a]	.934	.932	.20412

a. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.268: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.803	3	18.934	454.434	.000[b]
	Residual	4.000	96	.042		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.269: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.228	.064		3.584	.001
	CreatingChange	.697	.097	.778	7.205	.000

	CustomerFocus	.220	.092	.261	2.399	.018
	OrgLearning	-.056	.081	-.068	-.683	.496

a. Dependent Variable: EnvironmentManagementSystem

Table6.270: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.958[a]	.917	.916	.22652

a. Predictors: (Constant), ADAPTABILITY

Table6.271: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	55.774	1	55.774	1086.947	.000[b]
	Residual	5.029	98	.051		
	Total	60.803	99			

a. Dependent Variable: EnvironmentManagementSystem

b. Predictors: (Constant), ADAPTABILITY

Table6.272: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.291	.069		4.206	.000
	ADAPTABILITY	.824	.025	.958	32.969	.000

a. Dependent Variable: EnvironmentManagementSystem

Table6.273: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967[a]	.936	.934	.20205

a. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.274: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.991	3	18.997	465.318	.000[b]
	Residual	3.919	96	.041		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.275: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.226	.063		3.583	.001
	CreatingChange	.706	.096	.788	7.378	.000
	CustomerFocus	.208	.091	.247	2.291	.024
	OrgLearning	-.051	.080	-.063	-.638	.525

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.276: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.958[a]	.919	.918	.22506

a. Predictors: (Constant), ADAPTABILITY

Table6.277: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.946	1	55.946	1104.532	.000[b]
	Residual	4.964	98	.051		
	Total	60.910	99			

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

b. Predictors: (Constant), ADAPTABILITY

Table6.278: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.289	.069		4.210	.000
	ADAPTABILITY	.825	.025	.958	33.235	.000

a. Dependent Variable: SocialResponsibilityAndStakeholderParticipation

Table6.279: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.968[a]	.937	.936	.19888

a. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.280: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.938	3	18.979	479.826	.000[b]
	Residual	3.797	96	.040		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.281: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.225	.062		3.623	.000
	CreatingChange	.702	.094	.785	7.455	.000
	CustomerFocus	.209	.089	.248	2.335	.022
	OrgLearning	-.049	.079	-.060	-.616	.540

a. Dependent Variable: IntegrationOfSustainability

Table6.282: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.959[a]	.921	.920	.22187

a. Predictors: (Constant), ADAPTABILITY

Table6.283: Model summary

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	55.911	1	55.911	1135.831	.000[b]

	Residual	4.824	98	.049		
	Total	60.735	99			

a. Dependent Variable: IntegrationOfSustainability

b. Predictors: (Constant), ADAPTABILITY

Table6.284: Result of ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.288	.068		4.247	.000
	ADAPTABILITY	.825	.024	.959	33.702	.000

a. Dependent Variable: IntegrationOfSustainability

Table6.285: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.966[a]	.934	.932	.20431

a. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.286: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	56.744	3	18.915	453.111	.000[b]
	Residual	4.007	96	.042		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), OrgLearning, CreatingChange, CustomerFocus

Table6.287: Result from ANOVA

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.227	.064		3.562	.001
	CreatingChange	.728	.097	.813	7.518	.000
	CustomerFocus	.184	.092	.219	2.003	.048
	OrgLearning	-.050	.081	-.061	-.611	.543

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.288: Result of coefficient analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.957[a]	.916	.915	.22841

a. Predictors: (Constant), ADAPTABILITY

Table6.289: Model summary

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	55.639	1	55.639	1066.476	.000[b]
	Residual	5.113	98	.052		
	Total	60.752	99			

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

b. Predictors: (Constant), ADAPTABILITY

Table6.290: Result of ANOVA

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.

		B	Std. Error	Beta		
1	(Constant)	.293	.070		4.196	.000
	ADAPTABILITY	.823	.025	.957	32.657	.000

a. Dependent Variable: SustainabilityAssessmentAndDisclosure

Table6.291: Result of coefficient analysis

Hypothesis	Result of Hypothesis test and Value of Unstandardized Coefficient B in Institution A (**University of Ilorin**)	Result of Hypothesis test and Value of Unstandardized Coefficient B in Institution B (**Kwara State Polytechnic**)	Result of Hypothesis test and Value of Unstandardized Coefficient B in Institution C (**College of Education**)
Mission is positively related to Environment Management System	True 0.723	True 0.721	True 0.842
Mission is positively related to Social Responsibility and Stakeholder Participation	True 0.697	True 0.727	True 0.843
Mission is positively related to Integration of Sustainability into Curriculum, Research and Operations	True 0.777	True 0.731	True 0.843

Mission is positively related to Sustainability Assessment and Disclosure	True 0.744	True 0.728	True 0.841
Consistency is positively related to Environment Management System	True 0.744	True 0.805	True 0.785
Consistency is positively related to Social Responsibility and Stakeholder Participation	True 0.709	True 0.813	True 0.787
Consistency is positively related to Integration of Sustainability into Curriculum, Research and Operations	True 0.815	True 0.818	True 0.783
Consistency is positively related to Sustainability Assessment and Disclosure	True 0.780	True 0.810	True 0.786
Involvement is positively related to Environment Management System	True 0.804	True 0.843	True 0.928
Involvement is positively related to Social Responsibility and Stakeholder Participation	True 0.790	True 0.847	True 0.929

Involvement is positively related to Integration of Sustainability into Curriculum, Research and Operations	True 0.843	True 0.846	True 0.927
Involvement is positively related to Sustainability Assessment and Disclosure	True 0.816	True 0.855	True 0.927
Adaptability is positively related to Environment Management System	True 0.730	True 0.752	True 0.824
Adaptability is positively related to Social Responsibility and Stakeholder Participation	True 0.700	True 0.754	True 0.825
Adaptability is positively related to Integration of Sustainability into Curriculum, Research and Operations	True 0.779	True 0.761	True 0.825
Adaptability is positively related to Sustainability Assessment and Disclosure	True 0.762	True 0.747	True 0.823

Table7.1: Results of Hypotheses test between each organisational culture trait and each sustainability performance construct

Hypothesis (relationship between Indices and sustainability constructs)	Traits	Result of Hypothesis test and Value of Unstandardized	Result of Hypothesis test and Value of Unstandardized	Result of Hypothesis test and Value of Unstandard ized

		Coefficient B in Institution A	Coefficient B in Institution B	Coefficient B in Institution C
Strategic Direction & Intent is positively related to Environment Management System	Mission	True 0.194	True 0.199	True 0.082
Strategic Direction & Intent is positively related to Social Responsibility and Stakeholder Participation	Mission	True 0.156	True 0.230	True 0.086
Strategic Direction & Intent is positively related to Integration of Sustainability into Curriculum, Research and Operations	Mission	True 0.277	True 0.239	True 0.143
Strategic Direction & Intent is positively related to Sustainability Assessment and Disclosure	Mission	True 0.335	True 0.220	True 0.078
Goals & Objectives is positively related to Environment Management System	Mission	True 0.270	True 0.064	True 0.225
Goals & Objectives is positively related to Social Responsibility and Stakeholder Participation	Mission	True 0.286	True 0.213	True 0.219
Goals & Objectives is positively related to Integration of Sustainability into Curriculum, Research and Operations	Mission	True 0.384	True 0.224	True 0.161
Goals & Objectives is positively related to	Mission	True	True	True

Sustainability Assessment and Disclosure		0.325	0.221	0.216
Vision is positively related to Environment Management System	Mission	True 0.273	True 0.066	True 0.545
Vision is positively related to Social Responsibility and Stakeholder Participation	Mission	True 0..279	True 0.287	True 0.548
Vision is positively related to Integration of Sustainability into Curriculum, Research and Operations	Mission	True 0.150	True 0.269	True 0.548
Vision is positively related to Sustainability Assessment and Disclosure	Mission	True 0.095	True 0.290	True 0.557
Core Values is positively related to Environment Management System	Consistency	True 0.151	True 0.345	True 0.736
Core Values is positively related to Social Responsibility and Stakeholder Participation	Consistency	True 0.123	True 0.349	True 0.736
Core Values is positively related to Integration of Sustainability into Curriculum, Research and Operations	Consistency	True 0.213	True 0.380	True 0.736
Core Values is positively related to Sustainability Assessment and Disclosure	Consistency	True 0.227	True 0.340	True 0.733

Agreement is positively related to Environment Management System	Consistency	True 0.246	True 0.231	False -0.056
Agreement is positively related to Social Responsibility and Stakeholder Participation	Consistency	True 0.224	True 0.219	False -0.055
Agreement is positively related to Integration of Sustainability into Curriculum, Research and Operations	Consistency	True 0.252	True 0.146	False -0.091
Agreement is positively related to Sustainability Assessment and Disclosure	Consistency	True 0.245	True 0.179	False -0.056
Coordination & Integration is positively related to Environment Management System	Consistency	True 0.308	True 0.217	True 0.261
Coordination & Integration is positively related to Social Responsibility and Stakeholder Participation	Consistency	True 0.317	True 0.231	True 0.261
Coordination & Integration is positively related to Integration of Sustainability into Curriculum, Research and Operations	Consistency	True 0.327	True 0.268	True 0.294
Coordination & Integration is positively related to Sustainability Assessment and Disclosure	Consistency	True 0.295	True 0.275	True 0.263

Empowerment is positively related to Environment Management System	Involvement	True 0.372	True 0.208	True 0.237
Empowerment is positively related to Social Responsibility and Stakeholder Participation	Involvement	True 0.320	True 0.205	True 0.238
Empowerment is positively related to Integration of Sustainability into Curriculum, Research and Operations	Involvement	True 0.344	True 0.216	True 0.236
Empowerment is positively related to Sustainability Assessment and Disclosure	Involvement	True 0.410	True 0.258	True 0.236
Team Orientation is positively related to Environment Management System	Involvement	True 0.219	True 0.460	True 0.278
Team Orientation is positively related to Social Responsibility and Stakeholder Participation	Involvement	True 0.249	True 0.451	True 0.276
Team Orientation is positively related to Integration of Sustainability into Curriculum, Research and Operations	Involvement	True 0.304	True 0.438	True 0.279
Team Orientation is positively related to Sustainability Assessment and Disclosure	Involvement	True 0.138	True 0.400	True 0.279
Capacity Development is positively related to	Involvement	True 0.255	True 0.173	True 0.405

Environment Management System				
Capacity Development is positively related to Social Responsibility and Stakeholder Participation	Involvement	True 0.243	True 0.188	True 0.408
Capacity Development is positively related to Integration of Sustainability into Curriculum, Research and Operations	Involvement	True 0.216	True 0.191	True 0.405
Capacity Development is positively related to Sustainability Assessment and Disclosure	Involvement	True 0.328	True 0.203	True 0.404
Creating Change is positively related to Environment Management System	Adaptability	True 0.239	True 0.126	True 0.697
Creating Change is positively related to Social Responsibility and Stakeholder Participation	Adaptability	True 0.234	True 0.147	True 0.706
Creating Change is positively related to Integration of Sustainability into Curriculum, Research and Operations	Adaptability	True 0.223	True 0.125	True 0.702
Creating Change is positively related to Sustainability Assessment and Disclosure	Adaptability	True 0.244	True 0.128	True 0.728
Customer Focus is positively related to	Adaptability	True 0.259	True 0.279	True 0.220

Environment Management System				
Customer Focus is positively related to Social Responsibility and Stakeholder Participation	Adaptability	True 0.264	True 0.280	True 0.208
Customer Focus is positively related to Integration of Sustainability into Curriculum, Research and Operations	Adaptability	True 0.304	True 0.288	True 0.209
Customer Focus is positively related to Sustainability Assessment and Disclosure	Adaptability	True 0.253	True 0.262	True 0.184
Organisational Learning is positively related to Environment Management System	Adaptability	True 0.231	True 0.353	False -0.056
Organisational Learning is positively related to Social Responsibility and Stakeholder Participation	Adaptability	True 0.202	True 0.332	False -0.051
Organisational Learning is positively related to Integration of Sustainability into Curriculum, Research and Operations	Adaptability	True 0.246	True 0.354	False -0.049
Organisational Learning is positively related to Sustainability Assessment and Disclosure	Adaptability	True 0.263	True 0.360	False -0.050

Table7.2: Result of hypotheses test between each index of each organisational culture trait and sustainability performance constructs.