KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

EXAMINING THE MEDIATING ROLE OF ETHICAL SENSITIVITY ON THE INFLUENCE OF ETHICAL CULTURE FORMATION ON CIRCULAR PROCUREMENT AMONG CONSTRUCTION IN GHANA

By

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MASTER OF SCIENCE IN LOGISTICS AND SUPPLY CHAIN MANAGEMENT

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DECLARATION

I hereby declare that this submission is my work towards the Masters of Science in Logistics and Supply Chain Management and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgment has been made in the text.

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DEDICATION

This work is dedicated to God Almighty and to my kids

ACKNOWLEDGMENT

This research has been made possible by the Grace of God Almighty my creator. I would like to sincerely thank my supervisor Prof. Kwame Owusu Kwateng for the good guidance, may the good Lord bless him. I also thank the entire lectures of the KNUST Business School especially all the Lectures of the Department of Logistics and Supply Chain Management who guided my study. My appreciation to staff included in this study for their kind support in responding to the questionnaires. My thanks and gratitude to a great friend of mine Francis Tetteh Kamewor for his inspiring valuable insights as this study progressed. His constant encouragement, support, patience, and invaluable suggestions made this work possible. I would like to express my warmest love and forever appreciation to my family and group members during the course work for their continuous support and encouragement to complete my thesis. Finally, I would like to thank everybody who contributed to the successful realization of this work, meanwhile expressing my apologies for being unable to mention the names of all those who assisted in diverse ways.

ABSTRACT

This study was conducted to examine how ethical sensitivity may mediate the association between ethical culture formation and circular procurement. Primary data was collected via a standardized questionnaire sent to 381 top-level managers of Ghanaian construction firms. Stratified sampling was used in the research. Structural Equation Modeling was used to verify or disprove the study's hypotheses. Descriptive statistics were used to compile an overview of the data. The study's findings revealed that ethical culture formation has a positive and significant influence on circular procurement. In addition, ethical culture formation has a positive and significant influence on ethical sensitivity. Furthermore, ethical sensitivity has a positive and significant influence on circular procurement. The mediated effects are analyzed, ethical culture formation effect on circular procurement in the presence of ethical sensitivity (indirect effect) is statistically significant. This study, therefore, makes a twofold contribution. While this study happens to be the first of a kind to explore how ethical culture impacts circular procurement in the context of developing economies. This study extends existing knowledge on ethical leadership theory. The outcome of this study may also be useful to buyer and supplier entities, especially in public procurement interested in building and maintaining ethical practices among themselves. Secondly, examining how ethical sensitivity may mediate the association between ethical culture and circular procurement provides a contemporary theoretical extension.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The development of both industrialised and developing countries depends on the construction industry. In addition to its function in building an economy's infrastructure, it employs sizable workforces, especially in developing nations. Achieving sustainable related goals in construction is quickly evolving into a critical performance measure in the business, notwithstanding the industry's contribution to socioeconomic growth (Agyekum et al., 2022). The sector is responsible for 30–40% of the world's energy needs. This suggests that the sector has a significant environmental impact (Xia et al., 2015; Agbesi et al., 2018). In order to address social fairness and economic advancement in the construction sector while reducing environmental effect and supporting broader efforts to achieve sustainable development, the industry can use circular procurement (Meehan and Bryde, 2015).

Circular procurement is defined as the process where firms procure a circular solution, this is a solution that contributes to two of the three goals of circular construction (protecting the environment, the stock of materials, and the existing values) (Platform CB'23, 2021). Oppen et al. (2018) further noted that not only should procuring circular goods be considered with circular procurement, but the purchaser should also consider the circularity of use of a material or service because to obtain the maximum achievable circularity, the use of materials, design, production and reuse for the future all needs to be considered (Sprakel, 2022). Though the concept of circular procurement is new in many developing economies, it has received increased global attention in both academic and industrial

discourse (Bak, 2020; Volodymyr and Oksana, 2021; Gyori, 2021; Kristensen et al., 2021; Sprakel, 2022; Zijp et al., 2022; Qazi and Appolloni, 2022; Xu et al., 2022).

Despite the increased trend in circular procurement research and practice, the implementation of a circular economy faces many challenges (Qazi and Appolloni, 2022; Agyekum et al., 2022). Key among these challenges that face the implementation of a circular economy is stakeholder management. The numerous challenges faced by public sector coped with the growing unethical issues surrounding procurement, it is therefore imperative to develop strategies enhance ethical culture in public sector organizations in the quest to ensure sustainable procurement. Ethical culture reflects employee opinions of their organization's dedication to how ethical rules are applied to them (Victor and Cullen, 1988; Razana et al., 2021). Three things threaten the values: whether or not employees act morally; whether or not they accomplish what is anticipated; and ethical programs like reward and punishment schemes. According to Douglas et al. (2001) and Jenkins (2008), the ethical culture of an organization can affect the way ethical decisions are made. Jolien (2016) indicated that the drivers of sustainable procurement and its interrelationships have not been thoroughly investigated in the existing literature. This study therefore examines how ethical culture may influence sustainable procurement in public sector organizations in Ghana.

1.2 Statement of the Problem

The construction industry constitutes the essential backbone of economic progress and is recognized to be the key driver of economic growth and the sustainable development agenda (Muriithi 2017). Despite the role of the industry in growth, it has serious environmental implications when not properly handled. In this regard, circular

procurement remains essential if nations desire to continue enjoying the support of the industry and keeping the environment safe. Procurement in the construction industry makes the sector prone to many environmental impacts. Hence, procurement plays a very important role for construction firms because of its role in advancing the sustainability agenda, given its position and ability to influence external organizations in the supply chain (Seuring 2004) through organizational policies and practices (Renukappa et al. 2016). Unfortunately, the implementation of environmentally firm procurement practices such as circular procurement faces multiple obstacles. This is due to the lack of understanding of circular procurement due to the unavailability of circular procurement guidelines particularly in emerging economies (Wirahadikusumah et al., 2021; Ogunsanya et al., 2019). The effect of ethical formation on circular procurement in supply chains is an important but relatively unexplored area of research. Circular procurement involves the integration of sustainable and environmentally friendly practices into the procurement process, with the goal of minimizing waste, conserving resources, and promoting a circular economy. Ethical formation refers to the cultivation of ethical values, principles, and decision-making processes within organizations. The problem at hand is to understand how ethical formation influences the adoption and implementation of circular procurement practices in supply chains.

While there is growing recognition of the importance of circular procurement, many organizations still face challenges in fully embracing and implementing it. One potential factor that could influence the adoption of circular procurement practices is the ethical formation of organizations. Ethical formation encompasses the development of a strong ethical culture, ethical awareness, and ethical decision-making capabilities. It involves

instilling a sense of responsibility towards sustainability, environmental stewardship, and social impact within the organization.

Understanding the relationship between ethical formation and circular procurement is crucial for several reasons. Firstly, ethical values and principles can act as motivators for organizations to adopt sustainable practices, including circular procurement. Organizations with a strong ethical formation may be more inclined to prioritize environmental and social considerations in their procurement decisions. However, the specific mechanisms through which ethical formation influences circular procurement practices remain unclear.

Secondly, ethical formation may influence the willingness of supply chain partners to engage in circular procurement initiatives. Ethical organizations may seek out suppliers and partners who share similar values and are committed to sustainable practices. Conversely, organizations with weak ethical formation may struggle to find like-minded partners, hindering the implementation of circular procurement initiatives. Lastly, ethical formation could also impact the internal processes and structures necessary for successful circular procurement. Organizations need to develop the necessary policies, procedures, and training programs to support circular procurement practices. Ethical formation may contribute to the creation of a supportive organizational culture that fosters innovation, collaboration, and continuous improvement in sustainability practices.

Apart from the vacuum of literature on the association between ethical culture and circular procurement, past studies have certain drawbacks. First, prior research has been limited to a few developed countries. Therefore, this study was undertaken in Ghana with a distinct cultural context to determine whether the analyzed context may yield significantly different findings. Second, in addition to the variables listed above, other mediating variables can

be investigated based on a particular theory. Therefore, ethical sensitivity is introduced in this study as a mediating variable. To date, limited or no study has been conducted to examine how ethical sensitivity may mediate the association between ethical culture formation and circular procurement. Though the applicability of ethical sensitivity is missing in sustainable procurement literature, Razana et al. (2021) indicated that ethical culture significantly drives ethical sensitivity, and further recommended the need to investigate the indirect role of ethical sensitivity in ethical culture relationships. In response to the calls to examine the indirect role of ethical sensitivity, this study to the best of the researchers' knowledge, represents the first attempt to investigate how ethical sensitivity may mediate the association between ethical culture and circular procurement. This study, therefore, makes a twofold contribution. While this study happens to be the first of a kind to explore how ethical culture impacts circular procurement in the context of developing economies. This study extends existing knowledge on ethical leadership theory. The outcome of this study may also be useful to buyer and supplier entities, especially in public procurement interested in building and maintaining ethical practices among themselves. Secondly, examining how ethical sensitivity may mediate the association between ethical culture and circular procurement provides a contemporary theoretical extension.

1.3 Objective of the Study

This study was conducted to examine how ethical sensitivity may mediate the association between ethical culture and circular procurement with evidence from construction firms. Specifically, this study intends:

1. To examine the effect of ethical culture on circular procurement in the Ghanaian construction sector.

2. To determine the relationship between ethical sensitivity and circular procurement in the Ghanaian construction sector.

3. To unearth the mediating role of ethical sensitivity in the direct link between ethical culture and circular procurement.

1.4 Research Questions

1. What is the effect of ethical culture on circular procurement in the Ghanaian construction sector?

2. What is the relationship between ethical sensitivity and circular procurement in the Ghanaian construction sector?

3. What is the mediating role of ethical sensitivity in the direct link between ethical culture and circular procurement in the Ghanaian construction sector?

1.5 Significance of the Study

The study is conducted basically to investigate the influence of ethical culture formation on circular procurement in the context of construction firms in emerging economies. The outcome of this study will make significant practical and theoretical contributions. The

nature of the study is such that it is categorized into two folds concerning its benefit to the adoption of sustainable procurement. First and foremost, the nature of the study will benefit these firms by contributing immensely towards how these organizations will come out with policies that will ensure that stakeholders' issues are respectfully addressed based on the recommendations that will be made available in the studies. Again, this study will also contribute to firms with institutional frameworks that by far will ensure effective and efficient stakeholder management to drive growth in construction firms.

The findings of this study will also provide owners and managers and policymakers with insights to put the appropriate strategies and measures in place to boost circular procurement through ethical culture and sensitivity. Therefore, this study may provide a better understanding to both practitioners and regulatory institutions regarding accounting adoption and its outcome in the Ghanaian construction firm's context

1.6 Research Methodology

The proposed study will employ a positivist research approach which will use a quantitative methodology. Again, the study also will combine both descriptive and explanatory research designs. Combining these two designs enabled the researcher to describe the study variables in the Ghanaian context and also explore the relationship among the variables at the aggregate level. The study population comprised senior managers of construction firms in Ghana. A sample of 308 firms is proposed to be sampled in the study. After selecting the manufacturing firms, the researcher will further have used purposive sampling method to select individuals that are directly involved in the subject under investigation. The study will conduct an extensive literature review to help to discover the academic writings supporting the relevance of the topic and the research hypotheses. Again, the study

proposes the use of a primary source of data to validate the results produced in literature through field surveys using questionnaires adopted from previously validated instruments. After the data collection, the primary data that has been gathered from the field will be vetted for accuracy and reliability. The questionnaires that have been adequately filled will be coded into excel for analysis. This study will employ two data analysis approaches (i.e. descriptive and inferential analysis using multivariate data analyses) as the Structural Equation Modelling (SEM) and factor analysis to fulfill the set objectives in chapter one. Descriptive analysis will be based on information provided by respondents concerning their organization (demographical data), which include the profile of the organization and the respondents. The essence of the descriptive analysis is to test for normality and this includes frequencies, percentages, means, skewness, and kurtosis statistics. The motive of this analysis is to ensure that the data gathered are suitable for covariance-based-SEM analysis. It is done to check for missing data, outliers, and data distribution (Hair et al., 2017). The inferential analysis will be used to test the hypothesis in the study.

1.7 Scope of the Study

The scope sets the context and boundaries of the research. Contextually the study will focus on construction firms across the country. Though many factors may affect construction firms, this study focuses on the effect of ethical culture formation, ethical sensitivity and circular procurement of construction firms.

1.8 Limitations of the study

Though prior studies recommend the use of a single respondent in a study of this nature, however, in practice no single person controls or manages the entire firm, this study therefore will be limited by using a single respondent. It would have been useful to employ

a longitudinal research design in understanding the level of ethical culture among managers in the context of construction firms in Ghana and the impact of the ethical culture on circular procurement, with evidence from managers of construction firms.

1.9 Organization of the Study

There are five chapters in the study. The study's subject and the intriguing problem at hand are introduced in the first chapter. The study's context, problem statement, research aims and questions, and importance are among the many elements that make up this document. By reviewing pertinent material on the research topic and field, the second chapter comes to a close. An analysis of previous theoretical and empirical efforts is provided in this section. The third chapter outlines the research techniques required to fulfill the study's goals. The study design, data, procedures, and analytical tools are all included in the research methodology. The study's results are outlined in the fourth chapter, which also has pertinent commentary. The last chapter summarizes, concludes, and makes suggestions in light of the research's conclusion.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

Chapter two of this thesis is organized into four main sub-headings. The chapter provides information organized under conceptual review, theoretical review, empirical review, and finally the research model and hypotheses development. The Conceptual review section provides definitions, operationalizations, and how the constructs have been used in this study. The theoretical review section also provides the theoretical underpinnings of the study. The various prepositions proposed in this study were depicted using a conceptual framework and various relationships were well discussed. The Chapter ends with a summary that also highlights the gap explored in this study.

2.2 Conceptual Review

This section provides definitions of the constructs and how they have been used in the study. The research work was made up of three (3) variables. However, these variables have been operationalized in the subsequent sections below.

2.2.1 Circular Procurement

Circular procurement is the process of purchasing items and services in line with the principles of the circular economy, and it should be integrated into a company's overall sustainable procurement strategy (Qazi, and Appolloni, 2022). Circular procurement is the procurement strategy used by governments and corporate enterprises to seek a circular economy (Neessen et al., 2021b). Circular procurement, according to Khan et al. (2021) and Zhu et al. (2008), focuses on collaboration with environmental suppliers to acquire products with lower environmental implications. Circular procurement, according to the

United Nations Environment Programme (UNEP), occurs when the buyer purchases products or services that follow the principles of the circular economy, supporting the assessment of designing, making, selling, reusing, and recycling products to determine how to get the maximum value from them, both in use and at the end of their life (UNEP, 2021). Contrarily, public procurement refers to the purchase of goods and services that public organizations require to meet their functional objectives (Kristensen, et al., 2021). Additionally, using public procurement might help achieve more general goals like social or environmental ones. Depending on the scope and goals of the buying organization, the level of circular procurement as either a system, supplier, or solution permits the integration of various circular economy tactics (European Commission, 2017). Additionally, a circular economy is an economic system based on business models that replace the idea of end-of-life with methods for reducing, alternatively reusing, recycling, and recovering materials in the production, distribution, and consumption processes. It operates at three different scales: micro (consumers, businesses, and products), meso (Eco-Industrial Parks), and macro (cities, regions, and beyond) (Hartley, et al., 2020). The notion of circular procurement, according to Sonnichsen and Clement (2019), is useful when trying to take into consideration the new techniques, instruments, and procedures ushered in by the circular economy. As long as public authorities have significant purchasing power, circular public procurement, according to Litardi et al. (2020), can be an effective tool for establishing or expanding markets for green goods. However, Cheng et al. (2018) emphasize that when these public actors are sufficiently potent, they can also stimulate innovation investment and competition. Because it fully explains the nature of procurement toward a circular procurement methodology, we use the UNEP (2021) circular

procurement concept in this study. According to the definition, circular procurement happens when a buyer purchases goods or services that adhere to the principles of the circular economy, supporting the evaluation of product design, manufacture, sale, reuse, and recycling to determine how to get the most value from them, both in the short and long terms use and at the end of their life.

2.2.2 Ethical Culture

The ethical culture of an organization is a collection of managers' and employees' experiences, presumptions, and expectations regarding how it inhibits unethical behavior and promotes it (De Vries and Van Gelder, 2015). Ethical culture is a component of the ethical environment, which comprises several elements, including formal and informal systems, (Hiekkataipale, 2018). The author goes on to characterize formal systems as the actual organizational components related to ethics that are consciously planned and executed (such as ethics programs), and informal systems as the unwritten policies, practices, and values that are pertinent to ethics (e.g., ethical culture or climate). Abdurakhmonova et al. (2021) further argued that because ethical culture is firmly ingrained in a business and its worker's mindsets, it is more challenging to measure than the formal components of ethics programs (such as a code of ethics, helpline, and training). It is crucial to study previous research on the notion of shared ethical ideas, attitudes, and expectations among employees and managers in order to quantify ethical culture (Zakaria, et al., 2021). On the other side, organizational culture (EC) is defined as the deeply established values, attitudes, norms, beliefs, and perceptions of organizational members (Baquillas, 2018). Thelen and Formanchuk (2022) also claimed that ethical organizational culture explains the ethical norms of the workplace by combining the behaviors, skills,

expectations, and ambitions of job holders in maintaining an ethical environment and abstaining from unethical actions. The ethical component of corporate management, which influences how workers behave, is connected to ethical culture (Baquillas, 2018). Organizational culture is also described (Vito, 2020) as a complicated mash-up of values, conduct, structures, behavior, and missions that interact with one another to establish the cultural fit for a company. These assumptions and common views are founded on individual learning through issues. Zollo (2021) has pointed out the significance of individual ethical reactions, such as ethical behavior, in assessing the results of an ethical society. Ethical culture may affect employees' and supervisors' intentions to disclose unethical behavior (i.e., internal whistleblowing) (Ullah, et al., 2022). The authors went on to claim that firms with ethical cultures are more likely to have workers who are more dedicated to reporting unethical activity and acting ethically themselves. According to Said, et al. (2022), ethical culture is also defined as the factors that workers believe to exist within the company setting that encourages them to act ethically. Mwikonji (2021) goes on to define ethical culture as the elements that encourage moral behavior. This study will use the definition provided by (De Vries and Van Gelder, 2015), which states that ethical culture can be defined as a collection of managers' and employees' experiences, presumptions, and expectations about how the organization discourages unethical behavior and promotes ethical behavior.

2.2.3 Ethical Sensitivity

Ethical sensitivity is described as the attention to the ethical norms involved in a conflict-laden scenario and self-awareness of one's position and duty in a situation" (Zhang, et al., 2020). Education, professional competence, and exhibiting behaviors that adhere to the

ethical standards of the field all contribute to the development of ethical awareness (Dalcal, et al., 2016). High ethically sensitive organizations are substantially better at seeing ethical issues and choosing the appropriate course of action (Filizöz et al., 2015). (Kumsar, et al., 2021) stressed the need to instill in the education of health professionals a feeling of compassion as a foundation for ethics. (Zhang and Zhang, 2016) defined ethical sensitivity as the ability to perceive whether a situation contains ethical content. Kipkorir et al., 2022) also define ethical sensitivity as a person's ability to detect the ethical content of a decision situation, which acts as a form of triggering mechanism that initiates the ethical decision-making process. According to (Hemberg, and Bergdahl, 2020), ethical sensitivity is concerned with how people first encode an ethical situation and the effects of a person's behavior on others. (Toti, et al., 2021) defines ethical sensitivity as an individual's proclivity to judge a certain behavior as unethical. According to the writers, someone who is ethically sensitive will be able to analyze or comprehend situations to determine whether they have a moral or ethical component. Rest (1986) asserts that the first and most important element of moral judgment, which is the identification of the salient ethical characteristics of a situation, is ethical sensitivity. In a similar vein, (Yochai, 2018) asserts that ethics education can increase people's levels of ethical sensitivity, which is the starting point for the formation of moral judgment. According to (Muramatsu, et al., 2019), ethical awareness is a crucial facilitator for people to demonstrate moral response in their actions. (Tukamuhabwa, et al., 2022) pointed out that moral clinical decision-making and the subsequent delivery of high-quality treatment depend on ethical sensitivity. Ethical sensitivity is a crucial component of the ethical decision-making process, which is essential in realizing and resolving ethical difficulties, according to (Muramatsu et al. 2019).

(Nguyen, and Dellaportas, 2020). Yochai (2018) therefore showed that a person's capacity to acquire moral judgment might be severely hampered by having low levels of ethical sensitivity. According to (Muramatsu, et al., 2019), ethical sensitivity is the ability to make decisions with intelligence and compassion in the face of uncertainty in a care situation, drawing as necessary from clinical experience, academic learning, and self-knowledge, as well as having the foresight to anticipate outcomes and the courage to take appropriate action. This study will follow the definition provided by (Zhang, et al., 2020), which claims that ethical sensitivity is defined as paying attention to the ethical principles present in a scenario that is fraught with conflict and being conscious of one's contribution to it..

2.3 Theoretical Review

To focus the research direction, two underpinning theories were used as a research foundation in supporting and addressing the gap, and as a guide to align this research into an appropriate direction. In this section, the researcher discusses underpinning theories that form the basis to investigate and study the phenomenon of ethical culture formation, ethical sensitivity and circular procurement. The driving theories of this study are the principal agent theory and deontological theory. Theoretical frameworks provide a clear prism or context through which a subject is studied; it explains the context and the connections between the various factors and dimensions.

2.3.1 The Principal – Agent Theory

The theory outlines the connection between the principals, such as shareholders and agents or firm leaders and managers. According to this notion, the agents are hired by the company's stockholders. The principals transfer business management to managers, who act as the shareholders' agents (Clarke, 2004). According to this theory, the activities of an agent and the principal are both impacted by the actions of their relationship, so the agent must pick actions that have implications for both the principal and the agent (Gomez-Mejia, and Wiseman, 2007) Furthermore, the Principal-Agent paradigm informs both parties in the public procurement process on the critical importance of their relationship. According to dependable agency theory, agents always act in their best interests to maximize profits in relationships between the two organs (principals and agents). The main objective is to maximize utility for principals and agents. It is not expected that these actors act cunningly and selfishly, nevertheless. For example, although it is considered that people are opportunistic in the sense that they may shirk in a self-interested manner by attempting to reduce effort if it meets their needs, it is not anticipated that they will voluntarily mislead or lie about that effort (Arrowsmith, P. (2003). In fact, a lack of information exchange between the principal and agent might allow the agent to opportunistically use the circumstance, sometimes to the principal's cost. This latter circumstance, known as moral hazard, is frequently brought on by asymmetric knowledge, which will result in unethical procurement process behaviors (Fama, 2003). In this study, the principal-agent theory was seen as an appropriate method for studying how the development of an ethical culture affects sustainable procurement practices, which are at the heart of procurement in both public and private institutions. In that regard, the principal-agent theory was seen in the

current study as the beginning point for establishing excellent relationships between the principal and agents by taking ethical problems, notably in the procurement process, into consideration. It enables the creation of relevant tools, methods, and processes to implement ethical procurement practices in the public organization's procurement process.

2.3.2 Deontological Theory

Prioritizing obligations over consequences is the core of Kant's deontological sensibility. Regardless of the situation, according to Kant, derives from voluntarily and intelligently obeying the moral law's rules (Portmore, 2007). Morality being dependent on the ambiguities of daily life is a foundation for sociopolitical unrest, social unrest, and even severe moral relativism. The moral law is violated when a deontological obligation is broken; the consequences are just incidentally important (Arneson, 2004). The categorical imperative, which requires that we treat others not only as ends rather than means but also treat others as we would want them to treat us, appears to leave room for consequentialist tinkering even though it is one of the fundamental tenets of Kant's system. The categorical imperative requires that we treat others not only as ends rather than means but also treat others as we would want them to treat us (Peterson, 2010). On the one hand, the categorical imperative establishes general moral obligations that will serve to safeguard people from potentially harmful actions by others while also stabilizing societal expectations. The categorical imperative has a quasi-contractual sensibility that is similar to rule consequentialism, but it also resembles a consensus among individuals on a fundamental set of rules that will guarantee individual freedom, civil order, and the rule of law. This theory had great potential and was fundamental to this study because it explains the implicit rationale for ethical procurement practices and claims that if organizations and employees

abide by rules requiring them to treat others as ends rather than means, a desirable outcome (universal freedom, morality rooted in law rather than circumstances, and stable social expectations) will follow. Furthermore, in order to adhere to the legal and widely recognized moral standards of procurement that are globally and locally acceptable, this idea had to be put into reality by both public and private entities. According to this theory, if employees prefer to abide by procurement codes of ethics in the procurement process, this would help prevent unethical actions such as corruption, which are inappropriate behaviors, in the procurement process.

2.4 Conceptual Framework

The section explains the conceptual framework and underlying assumptions that relate the ethical culture formation and sustainable procurement as well as how ethical sensitivity affect the relationship. The study examined the direct effect of ethical culture formation on sustainable procurement and the indirect role of ethical sensitivity in the ethical culture formation and sustainable procurement link.

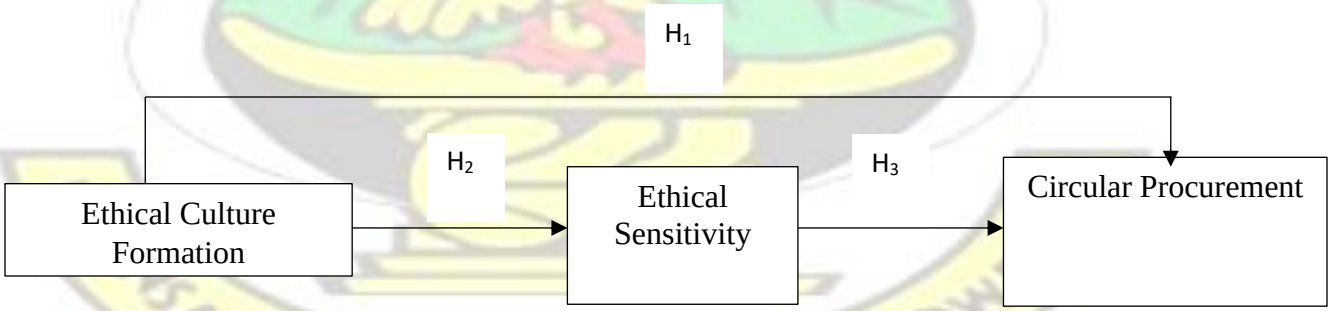

Figure 2.1: Conceptual framework of the study

2.4.1 Effect of Ethical Culture Formation on Circular Procurement

According to Watto, et al., (2020), ethical culture is a key element of organizational culture and is therefore seen as both the channel and effect of social interaction. (Merkle, et al., 2020). It has been recognized as such as a determinant of ethical conduct and as such serves to determine what is seen to be acceptable or not in an organization. The establishment of internal and external partnerships that are necessary for day-to-day operations and long-term growth is governed by ethical procurement standards, which offer clear direction. More businesses now understand that gaining a competitive advantage in the market requires more than just offering high-quality goods or services (Boruchowitch, and Fritz, 2022). Previous research has discovered a strong link between ethical culture and sustainable procurement. For instance, a study by Kabubu et al. (2015) discovered a strong relationship between ethical culture and the procurement process in public hospitals in Nyeri County, Kenya. Additionally, (Ogol and Moronge, 2017) discovered in their study that ethical conduct might enhance Kenyatta National Referral Hospital's procurement performance. Once more, research by (Pujoyono, et al., 2019) showed how the Indonesian Ministry of Health's ethical corporate culture improves Circular procurement. In light of the aforementioned research, this study also suggests that strong ethical cultures inside firms will improve circular procurement. Consequently, the research suggests the following hypothesis:

H1. Ethical Culture has a significant impact on circular procurement.

2.4.2 Effect of Ethical Culture Formation on Ethical Sensitivity

Ethical culture refers to employees' judgments of their organization's dedication to how ethical dilemma guidelines are imposed on them (Al Halbusi, et al., 2021). Three factors

undermine values: if employees do the right thing, doing what is correct and expected, and ethical programming such as incentive and punishment systems. According to a prior study, there is a considerable association between ethical culture and ethical sensitivity (Johari, et al., 2021) and (Dill, and Triki, 2022)). However, the outcome was examined across many dimensions. Johari, et al., 2021) and (Dill, and Triki, 2022), for example, utilized ethnicity as the dimension for ethical culture, whereas Jeffry et al. (2004) used nation. (Johari, et al., 2021) looked at how ethical culture affected ethical sensitivity among Taiwanese auditors, and the findings indicated that ethical culture had a favorable impact on ethical judgments. A strong ethical culture also increases reporting of misconduct to leadership, increases satisfaction with managements handling of misconduct, increases satisfaction with the organization as a whole, reduces exposure to situations that invite misconduct, and increases the sense of preparedness to handle such situations, according to a study by Trevino et al. Consequently, the following hypothesis is put out by modifying the relationship between organizations ethical cultures and ethical sensitivity:

H2. Ethical culture has a significant effect on ethical sensitivity.

2.4.3 Effect of Ethical Sensitivity on Circular Procurement

Ethical sensitivity, according to (Wijaya, et al., 2018) is concerned with how people first encode an ethical situation and the effects that their actions could have on other people. People must have ethical sensibility in order to act morally (Hemberg, and Bergdahl, 2020). According to (Uramatsu et al. 2019), ethical sensitivity is a crucial component of the ethical decision-making process, which is essential for recognizing and resolving ethical difficulties (Wijaya, et a., 2018). (Yochai, 2018) showed that the capacity to acquire moral judgment might be severely hampered by having low levels of ethical sensitivity.

Numerous research has shown how professional ethical sensitivity improves procurement performance. According to research by (Afifah, et al., 2015), the more sensitive a company's professional ethics are, the more successful the organization will be. Additionally, Choiriah (2013) showed how professional ethics have a good and significant impact on the procurement performance of an organization. Understanding the code of ethics can help procurement managers focus their attitudes, behaviors, and actions as they carry out their responsibilities and try to uphold the standard of their job. As a result, the hypothesis is proposed as:

H3. Ethical sensitivity has a significant impact on circular *procurement.*

2.5.4 The mediating Role of Ethical Sensitivity

Ethical sensitivity is a quality that makes it possible to recognize moral dilemmas, to emotionally and mentally perceive individuals in precarious situations, and to be aware of the moral implications of other people's actions (Esmaelzadeh, et al., 2017). High ethically sensitive organizations can see ethical issues considerably more quickly and choose the proper course of action (Filizöz et al., 2015). The body of existing work has shown that there is a significant link between ethical sensitivity and corporate ethical culture which enhance procurement performance. For instance, a study by Patterson (2001) discovered that the context of the industry, the context of the organization, and the context of the individual all significantly linked to ethical sensitivity. According to Blodgett et al. (2001), cultural factors significantly influenced ethical sensitivity. Their study compared the ethical sensitivity of Americans and Taiwanese to the interests of various stakeholders in marketing settings. Employers, customers, stockholders, creditors, suppliers, coworkers, rivals, and other communities or organizations that can be impacted by actions involving

ethical considerations were among the stakeholders. The findings demonstrated that culture has an impact on ethical sensibility. Once more, Chen et al., (1997) study discovered a link between ethical culture and ethical sensitivity. In light of the aforementioned literature, the study puts forth the following hypothesis:

H4. Ethical Sensitivity mediates the relationship between ethical culture and circular procurement.

2.5 Empirical Review

Riaz, (2018) did a study to look at how ethical leadership affects corporate favoritism through ethical culture. A representative sample of 306 workers was gathered from businesses in the private sector in Islamabad and Rawalpindi. Leader-Member Exchange (LMX), theory, was employed. Moderated regression analysis was used to analyze the data. Findings supported the idea that ethical culture might act as a buffer between corporate favoritism and ethical leadership. The study suggested using a qualitative research methodology as well to learn more about cronyism.

Said et al. (2017) evaluated the relationship between the performance of Malaysian Government-linked enterprises and ethical culture practices, leadership characteristics, entrepreneurial orientation, and innovation existence (GLCs). 102 government-linked firms at the state and federal levels provided the data. The results showed a positive correlation between ethical culture practices and organizational performance. In order to increase stakeholders' degree of confidence, the study suggested that an organization establish an ethical culture and an entrepreneurial attitude.

Goebel et al. (2012) looked at the factors that should influence purchasing and supply management (PSM) behavior in order to choose suppliers that are socially and ecologically responsible. 286 purchasing managers' responses to a third-party web-hosted survey were gathered for the data. The results showed that various aspects of the ethical cultures of the organizations had a big influence on how buying managers consider social and environmental factors when choosing suppliers. The study recommends more research to enhance the sample size since the generalization of the results is constrained by the short sample size.

Essilfie-Baiden, (2020) carried out a study to look into the impact of fairness, openness, code of ethics, conduct, and integrity on ethical procurement processes. The principal-agency theory and deontological theory served as the study's foundations. A case study approach was taken for the investigation. 30 workers' data were gathered via a questionnaire. Data analysis was done using descriptive analysis. According to the findings, the entity's degree of ethical practices in its procurement process is positively influenced by adherence to the code of ethics and conduct, fairness, openness, and integrity. The study concluded that every person in a business has a duty to enhance ethical procurement processes.

Saha et al. (2020) carried out a thorough review of the ideas of ethical leadership and corporate social responsibility, as well as their influence on business performance. To propose, 114 publications published over 58 years (1958-2016) were chosen and assessed based on descriptive and content perspectives. Personal values have an influence on ethical leadership, which has a direct beneficial impact on corporate social responsibility and a direct and indirect impact on business performance, according to the research. A cross-

sectional empirical investigation of the links between ethical leadership, corporate social responsibility, and business performance might be conducted in future research.

Johari et al., (2021) investigated the influence of ethical orientation, locus of control, and the firm's ethical culture on the ethical sensitivity of auditors in Malaysia. The data was gathered through a questionnaire survey conducted among audit businesses in the Klang Valley area and registered with the Malaysian Institutes of Accountants. The findings revealed a statistically significant positive link between ethical sensitivity and ethical culture. Future research might seek to duplicate and employ bigger and more diverse samples of target respondents that focus on all auditors in Malaysia with a range of various audit work settings and scenarios.

Asif et al., (2019) looked at the connections between ethical leadership (EL), affective commitment (AC), work engagement (WE), and workers' creativity (EC). 233 Chinese workers in the public sector provided information through a questionnaire. Confirmatory factor analysis (CFA) and structural equation modeling (SEM) was utilized in the study to analyze the data. The results showed that ethical leadership and both work engagement and employee creativity had beneficial connections. According to the study's findings, exploring these connections through a variety of media has greatly advanced the field of leadership research.

Vitolla et al., (2021) explored the association between national culture and the quality of ethical codes. The dimensions of Hofstede were used in the investigation. Data was gathered from 191 worldwide businesses from 29 different countries. The power distance approach was used to analyze the data. According to the findings, the quality of ethical codes is connected to five of Hofstede's six aspects. The study suggested that future studies

examine the impact of national culture on the effectiveness of ethical codes to understand the true impacts of document quality on employee behavior.

Shim and Kim's (2021) investigation examines the relationship between public ethical philosophy and perceptions of business dishonesty resulting from corporate social responsibility (CSR) initiatives. 342 respondents from the United States and 261 from South Korea provided the data. Utilizing structural equation modeling, the data was examined (SEM). The results showed that corporate hypocrisy had a substantial mediating influence between individual ethical orientations and the public's communication intention based on ethical attribution of crisis-related CSR actions. The study suggested that future research may look more closely at variables related to corporate social responsibility's ethical evaluation.

Ratnasari, et al. (2021) looked at several variables, such as teamwork, business interests, individual morality, norms and procedures, friendship, and motivation that might affect moral awareness. In order to acquire data, 205 informants who worked for the Indonesian Department of Public Works and East Kutai Regency's Public Housing Department were interviewed. Two effects were calculated using the MRA approach and SPSS (direct effect and indirect effect). The results demonstrated that moral awareness is highly influenced by friendship, teamwork, business interests, personal morality, norms and procedures, and personal ethics. The study suggested that to achieve an interactive reaction from the informants, it is necessary to thoroughly investigate the aims of the ideas and indicators in the variables.

Tukamuhabwa, et al. (2022) researched to examine the impact of future procurement professionals' ethical sensitivity. Data was gathered from 303 final-year procurement

students at Uganda's two main state universities as part of the study's descriptive research approach. The study drew on the organic theory of state and the theory of moral habituation of Aristotle. The statistical package for (SPSS) and Amos Version 27 were also utilized in the study to examine the data. The findings of the study revealed that the ethical sensitivity of aspiring procurement professionals is poor. For the objectives of external validity, the study advised that more research be conducted to improve generalizability to the university population in Uganda, including private universities and other developing nations.

Gholami et al. (2015) investigated the cultural independence and cultural invariance of teachers' ethical sensibility in two nations. Data was gathered from 864 Finnish teachers, who represented the West, and 556 Iranian teachers, who represented the East. The results demonstrated that 0-p According to the study's findings, teachers' professional development should include ethical awareness as one of their core moral competencies.

Afifah, et al. (2015) performed a study to examine the moderating function of emotional quotient on the effects of role conflict, self-efficacy, and professional ethical sensitivity on auditor performance. The sample size for the study was decided using a purposive sampling method. 145 auditors from 29 accounting companies in Pekanbaru, Batan, Medan, and Indonesia provided the information. Using a moderated regression analysis, the data were examined. The findings showed that ethical sensitivity has a favorable and substantial impact on auditor performance. The study concluded that emotional quotients increase auditors' capacity for empathy, self-control, and efforts that influence their emotional quotients.

Toti et al., (2021) performed a study to evaluate the association between ethical sensitivity (CES), ethical judgment, and ethical consumption practices among consumers (ECB). A

quantitative research technique was applied in the investigation. The HuntVitell and Kotler-Zaltman theories were employed in the investigation. A questionnaire was used to obtain data from 684 French customers. The data were analyzed using the structural equation model approach. The findings showed that Consumers' ethical sensitivity (CES) has a direct and beneficial influence on both ethical judgment and ethical consumption practices. Future research might test a more comprehensive model and incorporate more personal characteristics, such as materialism, ambivalence toward ethical items, or religiosity, according to the study.

Kumsar et al., (2021) did a study to determine the association between nurses' compassion degree and ethical sensitivity in Turkey. A cross-sectional survey involving 689 nurses working at a university hospital in Turkey from January to March 2020 was used. The data were analyzed using the Mann-Whitney U-test, Kruskal-Wallis test, Spearman's correlation test, and multiple linear regression analysis. The findings demonstrated that nurses' compassion and ethical sensitivity levels were partially high and that as nurses' compassion levels increased, so did their degree of ethical sensitivity. The study advised that future studies look not just at qualitative traits but also at human factors like compassion and responsibility while selecting nurses for the facility.

Su'un et al. (2020) did a study to evaluate the influence of professional devotion and locus of control on the level of ethical sensitivity in whistleblowing. The data for this study came from four public accounting companies in Makassar. The data was gathered from 31 respondents using a questionnaire. PLS was used to examine the data (partial least square). The findings demonstrated a favorable association between professional dedication and locus of control, which significantly influences the intensity of whistleblowing through

ethical sensitivity. Further research is proposed to broaden the area of the study, increase research samples, and introduce new variables that are not included in this study in order to discover numerous factors that impact this research.

Yasin (2021) used the corporate social responsibility theory and the social identity theory to examine the mediating role of ethical climate and business image. Utilizing the convenience sampling approach, a sample of 280 banking workers from Pakistan was gathered for a questionnaire-based study. The hypothesised model was tested using the structural equation modeling method using Smart Partial Least Squares. According to the research, the association between ethical leadership and company image is mediated by ethical climate, and the relationship between ethical climate and employee turnover intention is also mediated by corporate image. Future research might concentrate on the viewpoint of employees.

Zhang and Zhang (2016) carried out research to investigate the impact of the ethical climate on the link between the business ethics sensitivity of Chinese insurance agents and the ethical leadership. 502 insurance agents from 56 PICC Life Insurance Company Ltd. enterprises in the Shijiazhuang, Baoding, and Handan areas participated in the data collection. Multilevel analysis was used to evaluate the data. The findings showed that the association between organizational ethical leadership and business ethical sensitivity is totally mediated by organizational ethical environment. Mutual evaluation between managers and staff members should be employed in the future to provide more accurate information about the participants' ethical standards.

CHAPTER THREE

RESEARCH METHODOLOGY AND ORGANIZATIONAL PROFILE

3.1 Introduction

This chapter objectively presents the methodology of the research. The methods projected in this chapter, purpose to accomplish the study objectives and answer the research questions. The methodology chapter commenced by clearly explaining the research design, secondly, the research sampling procedures, and then the research instrument. The final stage in this section addresses the explanation of the proposed data analysis.

3.2 Research Design

This study used quantitative approaches to research to examine its objectives. Quantitative research, according to Queirós, Faria, and Almeida (2017), aims to build and apply mathematical theories, models, and hypotheses concerning certain phenomena. The central hypothesis of this analysis is that sustainability reporting by corporations is associated with improved firm performance hence, a quantitative methodology is required to test the hypothesis through the use of statistical tools. Another quality of quantitative methods is their potential for representativeness, provided a sufficient amount of data is gathered from a sufficiently large sample (Collis & Hussey, 2013; Lune & Berg, 2017). Additionally, it is appropriate for testing and verifying previously established assumptions regarding how and why events occur through the evaluation of hypotheses generated before data collection (Lune & Berg, 2017). Furthermore, a similar study used a quantitative approach to examine the impact of ethical culture and sensitivity on circular procurement (Laskar, 2018).

The research design is the real structure that specifies the time frame(s) for data collection, the sort of study to be undertaken, and the number of research groups (Edmonds & Kennedy, 2012). Therefore, the research design acts as the researcher's road map to achieving the research objectives and answering the study's research questions. The research purpose (descriptive, explanatory, exploratory, or a mixture of two or more purposes), research methodologies (quantitative, qualitative, and mixed methods), and time horizon are components of the study design, according to Okesina (2020) (cross-sectional or longitudinal). This study employed explanatory as opposed to descriptive and exploratory. This is because the explanatory research design is characterized by hypotheses that predict the nature and direction of the relationship among the variables of the study.

In addition, borrowing from Okesina (2020) the study is a cross-sectional one as opposed to a longitudinal design since data was collected in a short space of time spanning one month..

The quantitative research approach was chosen on the basis that it produces accurate and measurable data that can be generalized to a broader population (Goertzen, 2017). Aside from that, it is ideal for evaluating and verifying already known concepts about how and why events occur by testing hypotheses developed before data collection. In general, quantitative research is regarded as a deductive approach to the investigation (Ragab and Arisha, 2018). The study will combine both descriptive and explanatory research types. While the descriptive provides a description of the constructs. The explanatory research will also aid in examining the mediating role of ethical sensitivity in the relationship between ethical culture and circular procurement. Finally, the study will employ the cross-sectional survey design where deductive reasoning is applied to the quantitative data (Cohen, Manion, and Morrison, 2017). The survey design allows the collection of data from different units over a specific period. Since the study is conducted

over a limited time, the cross-sectional survey is deemed more appropriate to examine the mediating role of ethical sensitivity in the relationship between ethical culture and circular procurement.

3.3 Population of the Study

The significance of a research population has a substantial effect on the quality of an investigation. Thus, if inappropriate, unqualified, and unsuitable respondents are recruited, the outcome of the study will be utterly discredited. Before collecting data, it is always essential to define the population and the target demographic. To comprehend the population under study, it is necessary to distinguish between the target population and the accessible population. While the target population represents the larger group of interest to the researcher, the accessible population represents the actual study participants. This is also determined by the unit of analysis, thus if the researcher intends to conduct the study at the organizational level, then it is advisable to use a single response, however, if the study is at an individual level. Then the focus could be on multiple respondents from a case study. This study is conducted at the organizational level; hence the target populations include all construction firms in Ghana. Hence the target population of this study is made up of senior managers of construction companies in Ghana. Data is gathered from procurement, logistics, and top executives or managers of all the construction companies in Ghana.

3.4 Sample Size and Sampling Technique

A sample size represents the population the researcher utilized, and from whom inferences are made (Babbie, 2020). In determining the sample size for a small population, Wagner and Stehman (2015) argue that the sample size should be approximately 30% of the population. The author further indicated that the sample size should be around 10% in the case of a large

population. According to Ary, Jacob, Sorensen, and Walker (2018), a significant factor in sample size determination is representivity, and not necessarily its size. It can therefore be argued that the determination of sample size is very much of an 'educated' personal choice. For this study, sample size determination was established from Singh & Masuku's (2014) formula of sample size determination.

$$n = \frac{Z^2(P)(1-P)}{C^2}$$

Where Z= the standard normal deviation set at 95% confidence level

P=percentage picking a choice or response (50%)

C=Confidence interval

$n = \frac{(1.96)^2(0.50)(1-0.50)}{0.05^2}$

n=384.16

n~384

Based on the formula, 384 managers of construction firms were drawn for the study. This represents the total number of participants that were included in the study sample. this study, the research adopted a purposive sampling technique under the non-probability sampling method due to the following reasons: the study targeted owners and managers of construction firms in Ghana, and the generalizability of the findings to construction firms within Ghana.

3.5 Data Collection

Data collection defines the instruments and processes used in gathering data to analyze to address research objectives (Singh 2015). The section below describes the data collection instruments used, the reliability and validity of the instrument, and the procedure used in the data collection. Issues of ethical consideration are addressed in this section. The main instrument used in the data collection was a close-ended structured research questionnaire. According to Cohen, Manion, and Morrison (2017), a questionnaire is an efficient data collection instrument if only the researcher knows exactly what is required and how to measure the variables of interest. The language used in the questionnaire was English as it is the formal language used in Ghana. The items in the questionnaires measured the independent variable which was stakeholder orientation and the dependent variable which was made up of circular procurement. The questionnaire, comprised of three sections, captured the candid opinions of employees on the above variables. The first part of the questionnaire referred to as section A captured the biographical data of the respondents. Section B of the questionnaire collected data on stakeholder orientation. While Section C required information on circular procurement. All the variables were measured on a 1–5-point scale (1=strongly disagree, 2=disagree, 3=neither agree nor disagree, 4= agree and 5= strongly agree).

Ethical culture formation was measured using seven (7) items adapted from (Khalil Gholami, Elina Kuusisto & Kirsi Tirri (2015). Ethical sensitivity was measured by fifteen (15) items adopted from Khalil Gholami, Elina Kuusisto & Kirsi Tirri (2015). Finally, circular procurement was measured using a 5-item adopted by Amoako et al. (2021). A pilot study is the first step of the entire research protocol and is often a smaller-sized study assisting in the planning and modification of the main study (Thabane et al 2010). In this regard, a pilot study was carried out

using a sample size of 50 respondents from the sample frame. Some of the items including the wording of questions were modified based on the feedback from the pilot study. The data collection process began with a letter from the KNUST Business School, requesting firms to give the researcher permission to collect data of relevance to the study. After the permission letter was taken from the school, the researcher spoke with selected companies to be used in the study. Permission was officially sought from human resource managers, informing them of the purpose of the study and the importance of the data collection for the current study. Those who qualified and were interested in the study stated consent to read and sign as evidence of their willingness to participate, after which the questionnaires were administered to each respondent. Respondents were given a week to fill out the questionnaires and subsequently retrieved from the respondents. Participants who needed clarification on the questionnaire were provided with further clarification to assist them in filling it out. According to Sekaran (2006), for items on a questionnaire to be regarded as statistically reliable, they must have a Cronbach's alpha value of 0.6 and above. From the reliability statistics showed that the lowest Cronbach's alpha value was 0.801, while the highest Cronbach's alpha value was 0.951. This implies that the items used in measuring the variables were statistically reliable.

The method employed in the data collection was self-administered. It simply means the questionnaire was personally given to the actual respondents. To encourage participation, each questionnaire was accompanied by a cover note from the researcher clarifying the aim of the study as well as soliciting respondent involvement in the study; it as well assured the confidentiality of the selected participants and briefly introduce the research work.

3.6 Data Processing and Analysis

Data analysis is the process of using a systematic procedure to draw inferences from data gathered from the field as well as considering the various procedures that can be used to analyze the data (Churchill and Iacobucci, 2009). The researchers further suggest that the research design, the kind of data and assumptions made in the research, and concerns associated with the study will influence the suitability of a given technique. Data analysis may follow quantitative or qualitative procedures in scrutinizing the large volume of information obtained from the field. In the quantitative context, the procedure includes the use of statistical techniques to describe and examine variation in the quantitative measures. The quantitative approach emphasizes the use of either inferential or descriptive statistics (statistical techniques), to understand and establish relationships between constructs.

In this study Statistical Package for Social Sciences (SPSS) version 23 and SmartPLS 3 software will be utilized to conduct descriptive statistics and inferential statistics respectively. The data collected will be coded, cleaned, and prepared for analysis. The data will first be coded in Microsoft excel. In excel the data will be thoroughly checked to avoid possible data entry errors.

After cleaning the data will then be exported to SPSS. The data checks in SPSS include missing values, reliability, descriptive statistics, and test of assumptions for multivariate analysis.

Subsequently, SmartPLS version 3 (Ringle et al., 2015) will be employed to conduct inferential statistics through multivariate data analysis

3.7 Reliability and Validity

Reliability tests verify that a survey instrument generates the same results across measures, whether they are conducted with the same population or with a similar population (Singh, 2015).

By measuring or analyzing the Cronbach alpha coefficient, it is possible to determine or analyze the instrument's reliability. Following George and Mallery (2010)'s Cronbach alpha coefficient of 0.7 or higher was considered to be a reliable instrument to meet the reliability standard.

Singh (2015) indicated that validity is a measure of the degree to which an instrument measures what it claims to measure. Robson, (2011) also defined validity as the degree an instrument measures what it is intended to measure or how accurate an instrument is. The process of ensuring that the survey accurately measured what it was intended to evaluate in terms of stakeholder orientation and circular procurement is known as the validity of the research instrument (Singh, 2015). For data collection and analysis, proper research processes were followed to verify the validity of the results. The questionnaire was presented to the supervisory team of experts to review the instrument. Once corrections were approved, no changes were made to the questionnaire, and was distributed as such. The validity of the instrument was measured using the discriminant validity, convergent validity, and average variance extracted.

3.8 Ethical Considerations/Issues

Ethical considerations are the principles that must be followed in conducting any type of research (Singh 2015). According to Fleming and Zegward (2018), ethical issues of informed consent, risk of harm, confidentiality, anonymity, and conflict of interest must be considered and presented with a plan on how these ethical issues will be managed in a study.

Ethical considerations were followed during the data collection process the first of which was informed consent. All respondents of the study were duly informed of what the entire study was about and then allowed to decide whether they wanted to participate or not. Only participants who willingly agreed to participate in the study were included in the study for data collection purposes. However, individuals who were uncomfortable with releasing information about their workplaces were exempted from the study. In

this regard, participation in this study was strictly voluntary and respondents could withdraw from the data collection process at any time.

Another ethical consideration that guided the data collection process was the confidentiality of the information gathered. The researcher ensured that every data gathered from the respondents through questionnaires were kept in safety such that no external party had access to them.

The anonymity of participants was also very essential during the data collection process. The researcher ensured to ensure that any kind of information that revealed the identity of the participants such as names, residential addresses, and phone numbers among others was not part of the instruments used for data collection

3.9 Profile of the Construction Industry

Construction includes the creation, repair, maintenance, modification, and demolition of buildings, highways, streets, bridges, roads, sewers, railroads, and communication systems. Key construction subsectors in Ghana include;

1. Housing and urban development, including the construction of residential, municipal, and commercial buildings;
2. Water and sanitation infrastructure.
3. Transportation infrastructure, including highways, airports, seaports, and harbors.

Demand for construction and infrastructure development to satisfy housing needs, modernize highways for freight transport, and create export transportation corridors, among other areas, remains high.

The building industry appears to be thriving in Ghana, contributing significantly to gross domestic product (GDP) and jobs. As an illustration, the demand for cement, a crucial indicator of construction activity, is projected to reach 12.5 million tons by 2021.

In recent years, the nearly $8 billion Ghanaian construction industry has contributed more than 15% of the country's annual GDP. The industry employs around 420 thousand individuals. Approximately 2,500 active building and construction companies are currently operating in Ghana. Players range from domestic microbusinesses and independent contractors to multinational international civil engineering and construction behemoths.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND DISCUSSION

4.1 Introduction

The results of the data analysis are presented in this chapter. The study used descriptive statistics, exploratory factor analysis, and confirmatory factor analysis. Study hypotheses were evaluated using SmartPLS 4. In this section, the researcher looks more closely at the study's key results and compare them to those of similar research.

4.2 Exploratory Factor Analysis

An exploratory factor analysis was carried out to ensure that the data went through some minimal quality control checks. SPSS was the main program used for this operation. Different components of the response rate, the non-response bias, and the common method bias was dissected. The several analyses run and their various conclusions for this early data quality evaluation are listed below.

4.2.1 Response Rate

The methodology described in the previous chapter was employed to distribute a total of 400 questionnaires to the managers and owners of construction enterprises in Ghana. A total of 400 questionnaires were distributed, out of which 381 valid responses were received, resulting in a response rate of 95%. According to Kamel and Lloyd (2015), a response rate of over 50 percent is considered appropriate for analysis in the realm of business management research. As a result of this, the researcher will be able to draw reliable conclusions by utilising the study's projected response rate of 95%.

Table 4.1: Responses Rate

Distributed	Collected	Percentage of Usable
Response	381	95%
Non-Response	19	5%
Total	**400**	**100%**

4.2.1 Test for Common Method Bias and Sampling Adequacy

As The research method that will be used is interviewing key informants. Given the potential for common method bias in such a survey, it is important to investigate the possibility. As a result, the research has included a short summary of the goal of the investigation in the introduction, as well as paragraphs briefly summarizing the constructs (stakeholder orientation, Customer orientation, public orientation, and Circular performance at suitable portions of the questionnaire. The reason behind this was to make it easier for respondents to provide the information needed for each section of the survey. As a post hoc assessment on the prevalence of method bias, Harman's one-factor test was used since it was recommended by Podsakoff et al. (2003). Based on the results of the factor analysis, it was found in table 4.1 that 70.89 percent of the variation can be accounted for by four factors with eigenvalues of one or more. Given that over 46% of the variation could be accounted for by the first component, the problem of common technique bias was addressed in the data set.

Table 4.2: Common Method Bias

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	10.719	44.661	44.661	10.719	44.661	44.661
2	2.773	11.555	56.216	2.773	11.555	56.216
3	1.993	8.306	64.522	1.993	8.306	64.522
4	1.521	6.337	70.86	1.521	6.337	70.86
5	0.929	3.872	74.732			
6	0.722	3.007	77.739			
7	0.555	2.311	80.05			

8	0.485	2.021	82.071			
9	0.478	1.99	84.061			
10	0.438	1.824	85.885			
11	0.413	1.722	87.607			
12	0.386	1.606	89.214			
13	0.335	1.397	90.611			
14	0.314	1.308	91.918			
15	0.294	1.225	93.143			
16	0.262	1.092	94.235			
17	0.236	0.982	95.217			
18	0.229	0.952	96.17			
19	0.204	0.849	97.019			
20	0.189	0.786	97.805			
21	0.166	0.691	98.497			
22	0.145	0.604	99.1			
23	0.128	0.532	99.632			
24	0.088	0.368	100			
Extraction Method: Principal Component Analysis.						

The results presented in Table 4.2 about the Kaiser-Meyer-Olkin (KMO) sample adequacy provide additional evidence supporting the validity of the research. In juxtaposition to the values of zero and the identity matrix, the values pertaining to this particular dimension exhibit a strong correlation, as evidenced by the findings of this study. Exploratory factor analysis demonstrates the ability to yield precise estimates when applied to a designated sample size. The statistical significance is shown by a p-value of less than 0.05, as presented in table 4.3. The conclusions derived from the data suggest that factors other than random sampling fluctuations are responsible for the observed internal correlations among the variables. To assess the latent idea, numerous measuring techniques have undergone substantial updates.

Table 4.3: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.924
Bartlett's Test of Sphericity	Approx. Chi-Square	7356.685
	df	276.000
	Sig.	0.000

4.2.2 Non-response Bias

The study looked at the possibility of bias in the participants' answers. Non-response bias occurs when a less percentage of the population responds to a survey than would be expected based on the population as a whole. When a survey invites a group of people but only a subset of them responds, this is known as non-response bias. This lowers the validity of the findings and the reliability of the data acquired. In order to reduce the impact of this bias, this study compared the responses of early and late respondents. Oppenheim (2000) states that there should be no differences in the dependent or independent variables between the two groups. This proves there was no issue with non-response bias and that the samples are indeed representative of the target population. The first 190 answers were considered early responses, while the subsequent 191 were considered late responses. After that, the study used T-tests to look for signs of non-response bias. Results are shown in Table 4.3. T-test results showed no statistically significant differences. In conclusion, the research demonstrates there is consistency between the first- and last-month responses.

Table 4.4: Results of Independent-Samples t-Test for Non-Response Bias

			Levene's Test for Equality of Variances		
Variables	**Group**	**Mean**	**F**	**Sig.**	**T**
Ethical Culture	1.000	19.8377	0.027	0.871	0.106
	2.000	19.8000			
Ethical Sensitivity	1.000	24.4031	1.156	0.076	0.576
	2.000	24.1368			
Circular Procurement	1.000	40.4503	0.051	0.822	0.982
	2.000	39.8368			

4.3 Demographic Information

The demographic details of the participants are shown below. The results are shown in the table 4.4 below. From the result, the female participants represent 48.3% of the sample whiles the

male participants represents 51.7%. The results also show that 24.7% of the participants were aged between 18 and 30 years, 40.4% were aged between 31 and 40 years, 27.3% were aged between 41 and 50 years and 7.6% were also aged above 50 years. The findings also indicated that 22.6% of the participants were bachelor's degree holders, 26.0% were diploma holders, 12.3% were master's/PhD holders, 0.8% were HND holders, 10.0% were BECE holders, 0.5% hold other certificates and 27.0% were WASSCE holders. The findings also indicated that 22.8% of the participants were business owners, 44.5% were business owners and managers, 2.1% were proxy employees, 13.9% were managers, 11.8% were production managers, 0.5% were sales executives and 2.0% were workers. The data also shows that 27.8% of the participants have worked in the firm for about 1-5 years, 28.9% have worked in the firm about 11-15 years, 11.8% have worked for 16 years and above and 31.5% of the remaining have also worked in the firms for about 6-10 years. From the data also, 8.9% of the participant's indicated 30-99 employees in their firm, 50.7% of them also indicated 6-29 employees in their firm, 37.0% also indicated less than 5 employees in their firm and 3.4% of the remaining indicated more than 100 employees in their firm.

Table 4.5: Demographic Information

Variable	Dimension	Frequency	Percent
Gender	Female	184	48.3
	Male	197	51.7
Age	18 - 30 Years	94	24.7
	31 - 40 Years	154	40.4
	41 - 50 Years	104	27.3
	Above 50 Years	29	7.6
Level of Education	Bachelor Degree	86	22.6
	Diploma	102	26.8
	Graduate Studies (Master / Ph.D)	47	12.3
	HND	3	0.8
	Junior High School	38	10.0

	Others	2	0.5
	Senior High School	103	27.0
Your Position in the Firm	Business Owner	87	22.8
	Business Owner & Manager	177	46.5
	Employee (proxy)	8	2.1
	Manager	53	13.9
	Production Manager	45	11.8
	Sales executive	2	0.5
	Worker	9	2.4
How many years have you been working in your firm?	1-5 Years	106	27.8
	11-15 Years	110	28.9
	16 Years and Above	45	11.8
	6-10 Years	120	31.5
How many employees are in the firm?	30-99 employees	34	8.9
	6-29 employees	193	50.7
	Less than 5 employees	141	37.0
	More than 100	13	3.4
	Total	**381**	**100.0**

4.4 Confirmatory Factors Analysis

SEM was utilized to conduct a confirmatory factor analysis (CFA) to evaluate the model's fitness. It was anticipated that there would be some cross-loading of error terms due to the size of the dataset. CFA was performed on all items synchronously, and item deletions were made by analyzing the modification indices to remove all spurious items ensure that only key items were kept to reflect each construct and achieve model fit to the data (Kline, 2005). With the removal of several high-correlating error factors, a measurement model that provides a good fit to the data was finally accomplished, as is demonstrated in subsequent sections below.

4.4.1 Reliability and Validity

Although, the CFA index values have provided evidence that the model has good fitness, a further test to confirm reliability and validity of the latent variables is necessary. To ensure the validity and reliability of the construct variables, a measurement model was implemented. Convergent validity and discriminant validity are two types of reliability and validity that must be assessed when performing structural equation modelling (SEM) (Kline, 2005; Henseler et al., 2015).

4.4.1.1 Convergent Validity

As discussed earlier, several high-correlating error factors were removed during the CFA. After removing those items loading below 0.5 (Kline, 2005), the model showed good fitness with acceptable index values as shown in Table 4.7. Next, the study examined the convergent validity consisting of average variance extracted (AVE), construct reliability (CR), and Cronbach alpha (CA) of the latent variables. The recommended thresholds are that AVE should be greater than or equal to 0.50; CR should be greater than 0.70 (Henseler et al., 2015; Hair et al., 2022) and CA should be greater or equal to 0.70 (Nunnally, 1978). The results in Table 4.6 shows a satisfactory AVE, CR, and CA values. Therefore, we can conclude that convergent validity has been achieved.

Table 4.6: Reliability and Validity

Constructs	Loadings	CA	CR	AVE	VIF
Ethical Culture	0.859	0.889	0.919	0.693	2.894
	0.858				2.909
	0.811				2.089
	0.814				2.364
	0.820				2.368
Ethical Sensitivity	0.753	0.906	0.925	0.638	2.192
	0.807				2.527
	0.820				2.363

	0.828				2.588
	0.815				2.357
	0.781				2.379
	0.785				2.512
Circular Procurement	0.795	0.878	0.912	0.677	2.187
	0.866				3.286
	0.868				2.826
	0.884				3.268

4.4.1.2 Discriminant Validity

Discriminant validity examines if there is, in fact, no connection between two theoretically unrelated constructs (Henseler et al., 2015). One common method of determining discriminant validity is the Fornell-Larcker Criterion (see Henseler et al. 2015; Hair et al. 2017). According to Hair et al. (2017), if the square root of AVE for each construct variable is greater than the correlation between two theoretical constructs, the model has good discriminant validity. The Fornell-Larcker statistic is presented in Table 4.7. The bold diagonal values in Table 4.7 represent the square root of AVE (from Table 4.7), which is greater than the correlation between the model's construct variables. As a result, the discriminant validity of the construct variables is supported by the Fornell-Larcker criterion.

Additionally, a statistical overview of the study's variables is shown in Table 4.7 below. While means provide a general description of the data, standard deviations show how well the means account for the data (Field, 2009). The results of the descriptive analysis are shown in Table 4.7. The data demonstrated that Circular Procurement score (M=4.05; SD=0.862), Ethical Culture score (M=3.02; SD=1.303) and Ethical Sensitivity score (M=4.01; SD=0.786). The findings show that for all constructs, the observed mean was consistent with the computed or statistical mean.

Table 4.7: Fornell-Larcker test

Variable	Mean	StD	1	2	3
Circular Procurement	4.05	0.862	**0.776**		
Ethical Culture	3.02	1.303	0.699	**0.873**	
Ethical Sensitivity	4.01	0.786	0.210	0.090	**0.949**

4.4.1.2 HTMT Test

In light of problems with the Fornell-Larcker criteria, the heterotrait-monotrait (HTMT) ratio of correlations has been developed as a stricter measure for evaluating discriminant validity (Hair et al., 2019; Henseler et al., 2015; Voorhees et al., 2016). According to studies conducted in the scientific community, HTMT scores below 0.90 are the most beneficial. This is calculated by dividing the average value of the items' correlations across constructs by the geometric mean of the average correlations for scales measuring the same variable (Henseler et al., 2015). Table 4.8 shows that the model works up to an HTMT of 0.747.

Table 4.8: HTMT Test results

Variable	1	2	3
Circular Procurement			
Ethical Culture	0.747		
Ethical Sensitivity	0.215	0.102	

4.4.1.3 Multicollinearity Test

When two independent variables in a regression model have a high correlation with one another, multicollinearity is present. According to Field (2018), a variance inflation factor (VIF) of 4 indicates that multicollinearity might be present which requires further analysis. The VIF statistic for the independent and mediator variables is presented in Table 4.6. Table 4.6 shows that the VIF values are less than 4, indicating the absence of multicollinearity.

4.4.2 Model Fit Indices

The values and ranges of the appropriate indices (Fitness of Extracted-Index; SRMR; Root Mean Square of Approximation; and Chi-Square) are all suitable (Table 4.9). Both the abnormal index and the extracted index fall below 0.9, below the threshold for acceptability. Both the square root and the common root of a residual indicate that the residual is not trivially small. Future researchers will have to take into account all relevant aspects and conceptions.

Table 4.9: Fit Summary

Indices	Saturated model	Estimated model
SRMR	0.083	0.083
d_ULS	1.042	1.042
d_G	0.448	0.448
Chi-square	751.854	751.854
NFI	0.804	0.804

4.5 Hypotheses for Direct and Indirect Relationship

After confirming reliability and validity of the latent variables, the next is to present the structural model. The structural model consists of direct and mediation test in order to generate evidence in support of the hypotheses. The SEM was used to perform the structural equation modelling. The result is shown in Figure 4.1 and Table 4.10 as follows.

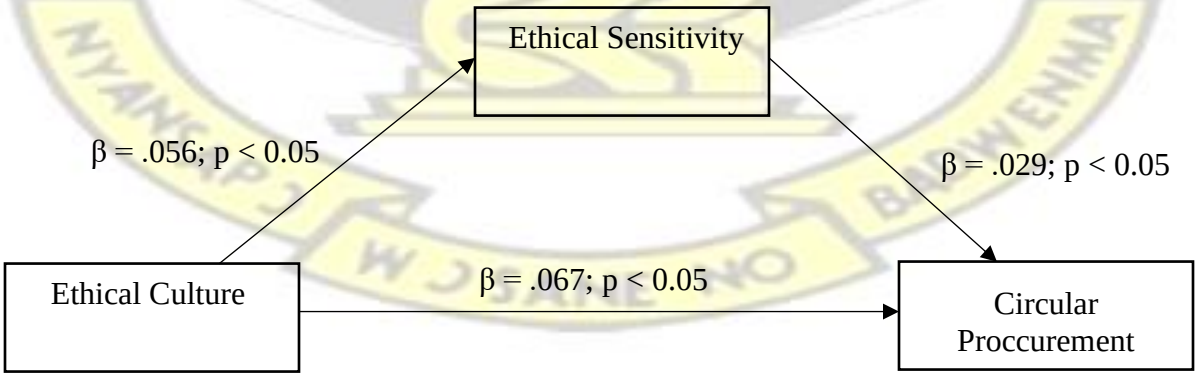

Figure 4. 1 Structural Model

Table 4. 10 Path Coefficients

Direct Relationship	Coefficient	T-value	P-value
Ethical Culture -> Circular Procurement	.067	5.190	.000*
Ethical Culture -> Ethical sensitivity	.056	2.324	.000*
Ethical Sensitivity -> Circular Procurement	.029	4.548	.001*
EC -> ES-> CP	.336	7.376	.000*

*Significant at the 0.05 level

The result in Table 4.10 shows that ethical culture formation has a positive and significant influence on circular procurement ($\beta = .067$, $p < 0.05$). This provides support for H1. In addition, ethical culture formation has a positive and significant influence on ethical sensitivity ($\beta = .052$, $p < 0.05$). This provides support for H2. Furthermore, ethical sensitivity has a positive and significant influence on circular procurement ($\beta = .029$, $p < 0.05$). This provides support for H3. When the mediated effects are analyzed, ethical culture formation effect on circular procurement in the presence of ethical sensitivity (indirect effect) is .336 and is statistically significant. Since the direct and indirect effect are both significant and point in the same positive direction, we can conclude that the type of mediation is complementary partial mediation or positive confounding or a consistent model (Zhao et al., 2010).

Table 4. 1 Summary of Research Hypotheses

No.	Hypothesis	Conclusion
H1	Ethical culture formation has a positive and significant influence on circular procurement.	Supported
H2	Ethical culture formation has a positive and significant influence on ethical sensitivity.	Supported
H3	Ethical sensitivity has a positive and significant influence on circular procurement.	Supported
H4	Ethical sensitivity mediate the relationship between ethical culture and circular procurement.	Supported

4.8 Discussion of Findings

The study was conducted to test how ethical sensitivity mediate the relationship between ethical culture and circular procurement. Therefore, the discussion of the results is presented according to the research objectives and the theoretical model.

The findings showed that ethical culture formation has a positive and significant influence on circular procurement. The ethical culture present within an organisation has the potential to impact the selection criteria employed when choosing suppliers. Organisations that possess a robust ethical culture are more inclined to give priority to suppliers who demonstrate a commitment to sustainable and circular concepts. This assertion is substantiated by the findings of Tseng and Chiu's (2016) study titled "The Influence of Corporate Ethical Values on Green Supply Chain Management." Circular procurement frequently necessitates making extended commitments to suppliers capable of facilitating recycling, reusing, or remanufacturing operations. According to Pagell and Shevchenko's (2014) study titled "Sustainable Procurement Practises," the establishment of an ethical culture is crucial for cultivating trust and collaboration, both of which play a vital role in the development and sustenance of long-term relationships. The implementation of an ethical culture within organisations can facilitate the identification and mitigation of ethical, environmental, and social hazards present in their supply chain. Through

this approach, organisations can decrease the probability of encountering disturbances, harm to their reputation, and legal complications. These outcomes align with the objectives of circular procurement as outlined in the scholarly article "Environmental Purchasing and Firm Performance" authored by Zhu et al. in 2013. Employees inside organisations that possess robust ethical cultures demonstrate a higher propensity to actively participate in sustainability endeavours, such as the implementation of circular procurement practises. The study conducted by Renwick et al. (2013) emphasises that individuals' dedication can effectively stimulate innovation and creativity in the pursuit of circular solutions. Deontological ethics pertains to the study of moral obligations and principles. The establishment of an ethical culture can be regarded as an obligation to foster ethical conduct within an organisational setting. The implementation of circular procurement might be perceived as a moral imperative aimed at mitigating environmental damage and advancing sustainable practises. The establishment of an ethical culture has a favourable impact on the implementation of circular procurement across multiple dimensions. The concept in question provides guidance for organisational behaviour and decision-making, with the aim of promoting choices that are both sustainable and ethical. The alignment of procurement practises not only facilitates the attainment of circular procurement targets for organisations but also plays a significant role in advancing broader objectives related to environmental and social sustainability. Nevertheless, it is crucial to acknowledge that the development of an ethical culture is a multifaceted and continuous undertaking. In order to maintain consistent integration of ethical values into their procurement practises, organisations are required to allocate resources towards education, training, and continuous monitoring. In summary, the existing literature and ethical theories emphasise the crucial role of ethical culture in shaping circular procurement, indicating a notable and favourable impact. The establishment

of this link is crucial for organisations aiming to shift towards more sustainable and circular supply chain practises, ultimately yielding environmental and societal benefits.

The study also found ethical culture formation has a positive and significant influence on ethical sensitivity. This suggests that the establishment of an ethical culture creates a favourable environment for the development and growth of ethical sensitivity inside an organisation. Organisational culture does this by influencing the beliefs, customs, and actions of employees, equipping them with essential expertise and resources, and fostering an environment of transparent communication and psychological well-being. Increased ethical sensitivity, as a result, contributes to improved ethical decision-making, enhanced recognition of ethical problems, and a heightened dedication to ethical behaviour across the entire organisation.

The study also found that ethical sensitivity has a positive and significant influence on circular procurement. Ethical sensitivity is a critical driver in promoting and adopting circular procurement practices. It encourages organizations and individuals to recognize the ethical and environmental implications of their procurement decisions, aligning with the principles of sustainability, responsibility, and resource efficiency. As organizations increasingly prioritize ethical sensitivity, they are more likely to embrace circular procurement as a means to achieve their ethical and sustainable objectives. In conclusion, the literature and ethical theories support the idea that ethical sensitivity has a positive and significant influence on circular procurement. This influence is pivotal in shaping procurement practices that are environmentally responsible, socially ethical, and economically sustainable.

Finally, the findings showed that ethical sensitivity mediate the relationship between ethical culture and circular procurement. Ethical sensitivity can indeed serve as a mediating factor in the relationship between ethical culture and circular procurement. An organization with a strong

ethical culture is more likely to nurture ethical sensitivity among its employees. This heightened ethical sensitivity, in turn, can influence employees' procurement decisions, steering them toward choices that align with circular and sustainable practices.

For organizations looking to enhance circular procurement, it's essential to not only foster an ethical culture but also recognize the critical role of ethical sensitivity in translating that culture into action. Developing training programs, promoting ethical discussions, and providing ethical decision-making tools can further strengthen the mediating role of ethical sensitivity in the context of circular procurement. In conclusion, the literature and theoretical frameworks support the idea that ethical sensitivity can mediate the relationship between ethical culture and circular procurement. It acts as a bridge, translating the values and principles of an ethical culture into tangible practices that promote circularity and sustainability in procurement processes.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter focuses on the summary of the key findings obtained in the previous chapter, the conclusions of the study, and recommendations for managers in the manufacturing industry. Some suggestions for future research are also discussed.

5.2 Summary of Findings

To date, limited or no study has been conducted to examine how ethical sensitivity may mediate the association between ethical culture formation and circular procurement. Though the applicability of ethical sensitivity is missing in sustainable procurement literature, Razana et al. (2021) indicated that ethical culture significantly drives ethical sensitivity, and further recommended the need to investigate the indirect role of ethical sensitivity in ethical culture relationships. In response to the calls to examine the indirect role of ethical sensitivity, this study to the best of the researchers' knowledge, represents the first attempt to investigate how ethical sensitivity may mediate the association between ethical culture and circular procurement. The result showed that ethical culture formation has a positive and significant influence on circular procurement. This provides support for H1. In addition, ethical culture formation has a positive and significant influence on ethical sensitivity. This provides support for H2. Furthermore, ethical sensitivity has a positive and significant influence on circular procurement. This provides support for H3. When the mediated effects are analyzed, ethical culture formation effect on circular procurement in the presence of ethical sensitivity (indirect effect) is statistically significant. Since the direct and indirect effect are both significant and point in the same positive

direction, we can conclude that the type of mediation is complementary partial mediation or positive confounding or a consistent model.

5.3 Conclusion

The major objective of this study was to examine how ethical sensitivity may mediate the association between ethical culture formation and circular procurement. The researcher reached the goals by using a cross-sectional survey design and a quantitative technique that fused explanatory research approaches. Hypotheses that anticipate the type and direction of the connection among the variables in the study were characterized using the explanatory research design. Ghanaian construction industry top-level managers represent the study's targeted population. Primary data was collected via a standardized questionnaire sent to 381 top-level managers of Ghanaian construction firms. Stratified sampling was used in the research. Structural Equation Modeling was used to verify or disprove the study's hypotheses. Descriptive statistics were used to compile an overview of the data. The study's findings revealed that ethical culture formation has a positive and significant influence on circular procurement. In addition, ethical culture formation has a positive and significant influence on ethical sensitivity. Furthermore, ethical sensitivity has a positive and significant influence on circular procurement. The mediated effects are analyzed, ethical culture formation effect on circular procurement in the presence of ethical sensitivity (indirect effect) is statistically significant. This study, therefore, makes a twofold contribution. While this study happens to be the first of a kind to explore how ethical culture impacts circular procurement in the context of developing economies. This study extends existing knowledge on ethical leadership theory. The outcome of this study may also be useful to buyer and supplier entities, especially in public procurement interested in building and maintaining ethical practices among themselves. Secondly, examining

how ethical sensitivity may mediate the association between ethical culture and circular procurement provides a contemporary theoretical extension.

5.4 Recommendations

Improving circular procurement through ethical culture formation in construction firms can be a transformative step towards sustainability and responsible resource management. Here are several recommendations to help construction firms enhance their circular procurement practices by fostering an ethical culture:

Top management should demonstrate a strong commitment to ethical values and circularity in procurement. Leaders should adhere to ethical standards and openly support circular initiatives. Managers of construction firms need to incorporate circularity and ethical considerations into the firm's mission, vision, and strategic objectives. Ensure that sustainability is a fundamental aspect of the organization's purpose.

There is the need to provide comprehensive training on ethical procurement practices and the principles of circularity. Employees should understand the environmental and social impact of their procurement decisions. Encourage employees to stay updated on sustainable and circular trends in the construction industry. Establish clear and comprehensive ethical procurement policies that emphasize circularity, responsible sourcing, and sustainability. Create documented guidelines and procedures for ethical decision-making in procurement. These should include criteria for supplier selection based on sustainability and circularity.

5.5 Limitations and Future Research Directions

The suggestions highlight the research's limitations. In the first place, the findings can't draw conclusion to the whole population since the research used a small sample. Therefore, the scope

of applicability is restricted to organizations that are analogous to one another in terms of size, location, and sector. However, a larger sample group from a variety of regions is needed to evaluate and investigate the expected impacts. There is a need for more study to evaluate the other stakeholder orientations not mentioned in this research. The research need, for instance, to include in the orientation of different companies and the orientation of employees at different tiers of the same company. Procurement professionals working in the Ghanaian construction sector participated in this research. It will be necessary to undertake comparable research in other parts of the nation in order to verify the results.

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