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INSTITUTE OF DISTANCE LEARNING

**ORGANIZATIONAL CREATIVITY, INNOVATION AND FIRM PERFORMANCE;
THE MODERATING ROLE OF NETWORK TIES**

BY

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(MSc PROCUREMENT AND SUPPLY CHAIN MANAGEMENT)

**A THESIS SUBMITTED TO THE DEPARTMENT OF SUPPLY CHAIN AND
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DECLARATION

I hereby declare that this thesis is the result of my original work towards the award of **MSc PROCUREMENT AND SUPPLY CHAIN MANAGEMENT** and that, to the best of my knowledge, it neither contains material published by another person nor materials which have been accepted for the award of any other degree of the University, except where due acknowledgements have been made in the text.

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DEDICATION

I dedicate this Thesis to ISHMAEL KOFI ANDOH, for his relentless support and commitment throughout this thesis.

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The thesis was challenging, but I was able to complete it owing to the guidance, counsel, and patience of everyone who assisted me. I am grateful to numerous organizations and individuals who have provided material assistance. With special thanks to DR. EMMANUEL K. ANIN my supervisors, for his time, guidance and assistance during this project. My heartfelt thanks also go to all the managers who took time to complete my study surveys.



ABSTRACT

Organizational creativity and innovation have become essential elements in achieving firm performance and competitiveness in today's rapidly changing business environment. This study examines the relationship between organizational creativity, innovation, and firm performance while exploring the moderating role of network ties. The study draws on the resource-based view (RBV) of the firm and social network theory to develop a theoretical framework. Data was collected through a survey of 112 firms from the manufacturing industries in Accra. The results indicate that organizational creativity and innovation are positively related to firm performance. Furthermore, network ties do not moderate this relationship, indicating that the strength and quality of a firm's external network ties may not influence the positive impact of organizational creativity and innovation on firm performance. The study further found that innovation had a positive mediating influence on the relationship between organizational creativity and performance. The findings of this study have important implications for managers and policymakers, suggesting that fostering creativity and innovation within organizations and developing strong external network ties can lead to better firm performance. The study concludes that, organizational creativity significantly and positively affects the firm performance of manufacturing firms. Also, innovation, such as constant monitoring and scanning of the environment, improves efficiency through the adaptation of technology impacts performance.

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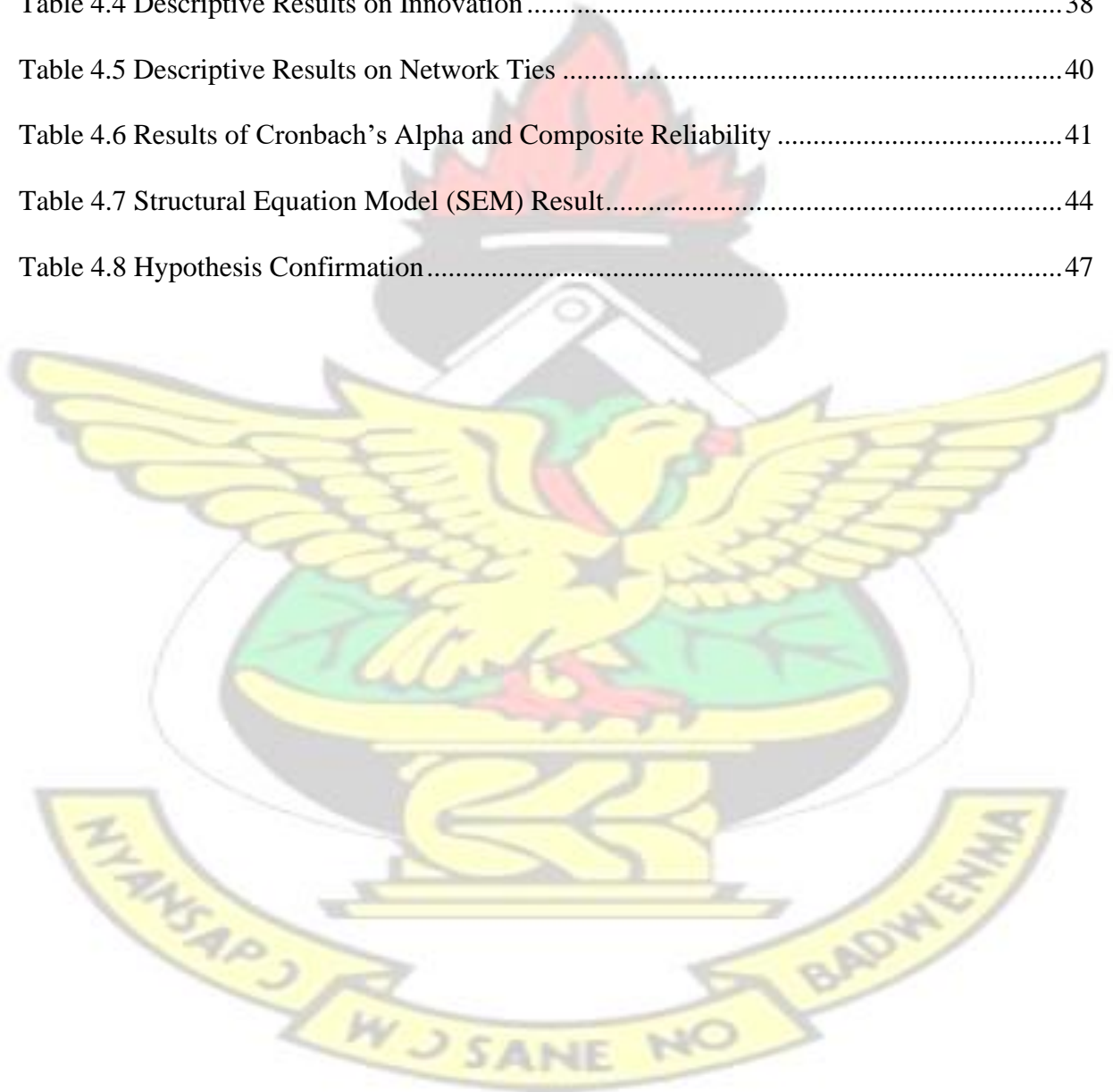
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LIST OF ABBRIVIATIONS

RBV - Resource-Based View

NPD - New Product Development

ICT - Information and Communication Technologies

SMEs - Small and Medium-sized Enterprises

PLS - Partial Least Squares

SD - Standard Deviation

SEM - Structural Equation Modeling

CFA - Confirmatory Factor Analysis

AVE - Average Variance Extracted

SPSS - Statistical Package for the Social Sciences

HND - Higher National Diploma

ROI - Return on Investment

ROA - Return on Assets

ROE - Return on Equity

EDI - Electronic Data Interchange

VMI - Vendor Managed Inventory

CFAR - Collaborative Forecasting and Replenishment

LSPs - Logistics Service Providers

IT - Information Technology

KM - Knowledge Management

IoT - Internet of Things

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CHAPTER ONE

INTRODUCTION

1.1 Background Of The Study

Innovation is widely acknowledged as a critical source of long-term competitive advantage that firms may employ to thrive in today's volatile business climate (Crilly, 2018). Numerous researchers and practitioners from diverse disciplines have been drawn to the notion of innovation. According to research, creativity and innovation in goods, work processes, and services are critical to long-term organizational survival and success (Dave & Sohani, 2019; Jacobs et al., 2016; Kähkönen & Lintukangas, 2012). Creativity, or the capacity to create new work, is seen as both the beginning point and the foundation of innovation, which leads to performance (Franzoni & Pelizzari, 2019). Previous research on the development of creativity has mostly concentrated on individual elements such as IQ, personality, cognition, and strategies for developing individual creativity (Bott *et al.*, 2014; Vally *et al.*, 2019; Erwin, Tran and Koutstaal, 2022). Aside from human characteristics, several studies have sought to identify work conditions and social climates that may support or inhibit creativity in the workplace and how that affects performance levels (Bott *et al.*, 2014; Parikh, Maddulety and Meadows, 2020; Capron Puozzo and Audrin, 2021). Innovation capabilities in individuals in the workplace are significant characteristics that help an organization establish competitive advantages, and individual innovation provides a foundation for generating high performance in organizations.

Furthermore, to be successful, manufacturing organizations must enable innovative answers to increasingly complicated industry complexities. As customer needs and expectations evolve,

these businesses and their employees must innovate and adapt. Meeting these difficulties necessitates the application of all available human and mental resources. One of the most crucial is creativity, which is the ability to think about old issues in new ways to shift viewpoints or to develop fresh and beneficial ideas to make our organizations perform better and satisfy the demands of customers (Tarofder *et al.*, 2019). Creativity in manufacturing organizations has a significant association with employee performance and increases excellence. Creativity promotes patient cooperation and satisfaction significantly. As the complexity of manufacturing grows, organizations are being pushed to provide new solutions in products, that influence their organizational performance.

Organizational Performance was described by (Dickison, Haerling and Lasater, 2019) as the indicator that assesses the organization's performance in attaining its goals. The company may evaluate its performance based on the efficiency and effectiveness with which it achieves its goals. It contains an organization's present output or outcomes. According to Abdul-Halim et al. (2019) organizational performance is the comparison made between expected results and results achieved, investigating deviations from prepared plans and evaluating individual performance, and examining progress achieved in meeting organizational objectives, to help managers, evaluate organizational activities and maintain competitive position or superiority over competitors. In this regard, the interest is reached in a two-way trend, where the first is for the organization's job performance and the second is for the person in terms of being paid, which are connected to the quality of nursing care and organizational excellence (Gkorezis et al., 2018).

Networking ties, as described by (Yeomans *et al.*, 2020), is a process in which persons with opposing viewpoints on a subject may constructively address differences and seek more complete solutions than their narrow point of view. Fayolle et al., (2016) define network ties

as "the process through which diverse companies combine their resources and abilities to produce reciprocal benefits that would be hard to achieve separately if they worked together. Sundram et al., (2018) defined collaboration as a partnership between independent enterprises marked by openness and trust. The risks, benefits, and expenses of the partnership are fairly distributed among the partners. According to Chen, (2019), decision-making requires a coordinated approach when working collaboratively. "Rather than operating in isolation, it is ideal for supply chain operations to be designed and done when two or more separate organizations interact.

Many studies have examined how organizational creativity and its impact on firm performance, but it is unknown how network ties and innovation impact this relationship over time. By establishing a study model positing that networking ties moderates and innovation mediates the relationship between organizational creativity and firm performance, the researcher hopes to fill a gap in the existing literature. The study's overarching objective is to look at how innovation and network ties play a role in facilitating organisational creativity, which in turn leads to greater firm performance.

1.2 Problem Statement

According to Franzoni & Pelizzari, (2019) organizational creativity, or the capacity to create new work, is seen as both the beginning point and the foundation of innovation, which leads to performance. Several research works have investigated the role of organizational creativity on firm performance, but there exist some inconsistencies in their respective findings and methodical approaches, the adopted variables and the scope and location of study.

To start with, the work of (Walker et al., 2011), revealed that the impact of organizational creativity on performance is not direct. The work of (Hamouda et al., 2020) established that there was a highly statistically significant positive correlation between organizational creativity and organizational performance. This research therefore would first want to identify the source of the contradiction and address it in line with manufacturing firms in Ghana.

Secondly, methodically, most of the articles on the research's predictor variable, were qualitatively analysed (BAM2014; Sundram et al., 2018). To draw meaningful extrapolations from the research area, the researcher seeks to adopt a quantitative approach to analysing the effect of the predictor variable on the predicted variable and establish its relative impact on manufacturing firms in Ghana.

Further, most of the articles reviewed were without an intervening variable (Tse *et al.*, 2016; Searcy, 2017; Um, 2017). This research subsequently seeks to bridge that gap, by adopting both innovation and network ties as both mediating and moderating variables respectively. This the researcher believes is important because innovation and collaboration are two critical determinants of greater firm performance and creativity.

Finally, this research seeks to lay particular focus on the manufacturing industry in Accra Ghana and see how creativity in organization and innovation as well as networking can improve firm performance. The model development and empirical testing carried out in the study would add to the knowledge of organizational creativity. Management consultants guide managers on improving the quality of their relationships, management, and results to be more successful in their professions.

1.3 Research Objectives

The study's general objective is to examine how network ties and innovation moderate and mediates the relationship between organizational creativity and firm performance. Specifically, the research seeks to achieve the following objectives.

1. To assess the relationship between organizational creativity and firm performance.
2. To determine the effect of network ties on firm performance.
3. To determine the relationship between organizational creativity and innovation
4. To determine the relationship between innovation and firm performance
5. To evaluate the moderating role networking ties on the relationship between organizational creativity and firm performance
6. To evaluate the mediating role of innovation in the relationship between organizational creativity and firm performance

1.4 Research Questions

The study, therefore, asks the following questions

1. What is the relationship between organizational creativity and firm performance?
2. What is the effect of network ties on firm performance?
3. What is the relationship between organizational creativity and innovation?
4. What is the relationship between innovation and firm performance?
5. Do networking ties moderate the relationship between organizational creativity and firm performance?
6. Does innovation mediate the relationship between organizational creativity and firm performance?

1.5 Significance Of The Study

The study is relevant to key stakeholders, including organizations, industry, economy, and Academia.

From a theoretical point of view, the study contributes to the knowledge of organizational creativity by providing theoretical insights and empirical findings. By focusing on innovation and networking, as mediators and moderators, respectively, between creativity and firm performance, the research extends our understanding of organizational and firm performance.

This study creates awareness of the need to network with key supply chain partners to enhance competitiveness for organizations. Firms could then take a logical approach to collaborate with key supply chain partners.

For the economy and Government, improved collaboration leads to enhance collaborative advantage, which could enhance the overall corporate performance of the firm. Improving corporate performance could lead to an increase in profit which could increase the tax returns for the Government.

This study provides a business case for most companies to adopt improved and healthy networks in the manufacturing industry. This would increase the number of collaborations within the industry, thereby leading to synergies. Overall, the industry is likely to be very competitive compared to others considering the higher level of cooperation.

1.6 Research Methodology

In pursuit of the study's objectives, the researcher adopts a survey and a quantitative approach. The target population for the study is manufacturing organisations within the Greater Accra

region. A hundred and twenty-four (124) sample is drawn from the target population using the probability sampling technique. Data is collected using online questionnaires designed using google forms. To derive meaning from the data gathered, the researcher would conduct descriptive and differential analyses using IBM SPSS version 26. The study complies with all ethical considerations by ensuring that the survey questionnaire protects respondents' identities. Alpha Cronbach and exploratory factor analysis are used to test the data gathered for reliability and validity.

1.7 Scope Of The Study

In researching how innovation and networking influence the relationship between organizational creativity and firm performance, the research focuses on manufacturing companies operating within the Greater Accra Municipality. Only Manufacturing companies that have been in existence for more than five years are considered for this study. Key respondents for the study focus on senior managers of the responding firms.

1.8 The Organisation Of The Study

The study is organised into five major chapters. The first chapter is the introduction. The introduction presents the background of the study, a statement of the problem, research objectives, research questions, significance of the study, the scope of the study, an overview of the research methodology, and the organisation of the study. The literature review is the second chapter. This contains the conceptual review, theoretical framework, empirical review and conceptual framework development. Research methodology is the third chapter and contains the research design, study population, sampling technique, data collection method, data analysis, reliability and validity analysis and ethical considerations. Data analysis is the fourth

chapter. It contains both descriptive and differential analyses and a discussion of findings. The last chapter, chapter five, is the conclusion and recommendation. It contains a summary of findings, recommendations, conclusions, and suggestions for future studies.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter seeks to review appropriate literature, both empirical and conceptual, on organizational creativity, firm performance, innovation, and network creativity.

2.2 Conceptual Review.

This section seeks to explain the concept of organizational creativity, firm performance, innovation, and network ties.

2.2.1 The Concept of Organizational Creativity

Organizations are increasingly attempting to nurture creativity as a source of innovation and improved performance (Bott et al., 2014). Creativity has been characterized as an assessment of something's uniqueness and utility. The topic of creativity has been extensively debated in a range of fields over the past decades, including psychology, sociology, organizational behaviour, and information systems, due to its undeniable significance to individuals, groups, and organizations.

(Parikh, Maddulety and Meadows, 2020) described creativity as the process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and other difficulties; identifying the difficulty; searching for solutions; speculating about the deficiencies; formulating hypotheses; testing and retesting, and finally communicating the results.

In organizations, creativity is often characterized as a result, such as new and valuable goods, services, business models, working practices, or management procedures (Baden-Fuller and Haefliger, 2013). In empirical investigations, creativity is often assessed using measures that include both novelty and utility (Middlebrooks, (2015)). The definition below is provided, drawing from previous studies on organizational creativity and dynamic abilities: Organizational creativity is the capacity of the company to come up with novel and practical solutions to deal with quickly evolving opportunities and dangers by making quick, market-focused choices and to frame radical changes in its resource base (Covin & Slevin, 2015). Novelty and utility as two separate aspects of organizational creativity. In conclusion, originality would not impact an organization's performance if it lacked the resources necessary to put the concept into practice.

A company has a solid foundation to create new procedures and goods for its target market when organizational creativity is shown in the creation of innovative and helpful solutions to market difficulties (Zhou and Wu, 2010). A company that excels in introducing new processes and products is more likely to set itself apart from the competition and have a profitable market position that is too expensive for rivals to imitate (Slater, Mohr and Sengupta, 2014; West and Bogers, 2014; Weaver, 2015). According to (Renko *et al.*, 2015) a company with a high NPD capacity is better positioned to maintain market triumphs even if an ordinary organization may sometimes succeed in bringing new processes and products to the market.

2.2.2. The Concept of Innovation.

Innovation has previously been characterized from a variety of angles as the invention or creation of new ideas or procedures that lead to a discontinuous shift (Balland et al., 2019); the introduction of new elements into manufacturing that represents a discontinuity with the past

(Krafft, Quatraro and Saviotti, 2014); innovation is considered as a process from ideas to the successful implementation of these, which makes a substantial difference to an organization's understanding of the needs it is addressing and the services it delivers (Boschma, 2005). According to (Zhou and Wu, 2010), internal and external forces working in concert to help companies achieve their goal of providing top-notch services to customers promote innovation. These elements consist of elements connected to the organizational environment, elements related to the organization itself, elements related to the employee or person inside the company, and elements associated with innovation (Madrid *et al.*, 2018). Organizational factors like institutional leadership, environmental factors like networking and customer dynamics, and organizational slack resources like skilled workers and innovation capacity were shown to have a significant influence on innovation (Liu, Li and Li, 2016). Studies have shown how customer demands for improved services placed on organizations often act as a primary catalyst for innovation in the manufacturing sector (Lewbel, 2012). According to one research, external forces have a significant impact on innovation (Chiu, 2018). A key tenet of innovation processes is the ever-fast-changing needs of customers. According to different research, industry competition has a significant role in how widely organizational innovations are adopted in the manufacturing sector (Lenihan, McGuirk and Murphy, 2019).

2.2.3 The Concept of Network Ties

Networking, in the words of (Zhou *et al.*, 2022) is a mutually shared emotional, volitional process in which two or more departments collaborate, mutually grasp each other's viewpoints, share resources, and achieve common goals. Many authors from different parts of the supply chain have described network ties. According to (Huang, Han and Macbeth, 2020), networking involves the coordination of two or more parties working together to achieve a common goal and benefit. A network tie is described by Cao *et al.*, (2009) as close, long-term relationships

in which supply chain participants cooperate and share expertise, resources, and risk to achieve their shared goals. There is a new paradigm in the place where supply chain partners share accountability and resources to increase the supply chain's competitive value. (Tukamuhabwa *et al.*, 2015) present a paradigm of networking and problem-solving amongst supply chain partners. There are some suggestions that supply chain integration and supplier cooperation are closely connected.

According to (Duong and Chong, 2020), there are three types of supply chain networking. Type I, Type II, and Type III. Management of collaborative processes. Type I entails working together on organizational objectives and issues as well as sharing large-format data. Vendor-managed inventory (VMI) systems and collective scoring were employed in Category I partnerships. Type II differs from other forms of event planning in that it involves collaborative event planning (such as new product launches) and collaborative events (such as marketing). Information sharing and collective decision-making define Type III collaboration. It stands out thanks to cooperation, ongoing collaboration, and linked supply chains.

2.2.4 The Concept of Firm Performance.

Profitability, return on assets, return on investment, and sales volume were formerly the only financial and quantitative factors that defined an organization's success (Oyemomi *et al.*, 2019) However, (Habidin & Dahiru, 2015) said that using just financial indicators to evaluate an organization's success is insufficient and suggested using a balanced scorecard that takes into account financial, business process, customer viewpoint, innovation, and growth. Performance is described as a collection of indicators that are used to evaluate the efficiency and effectiveness of supply chain connections and operations across various businesses and organizations and to support supply chain orchestration (Haseeb *et al.*, 2019)

A company's performance serves as a gauge of how well it can do business. It is a crucial indicator for assessing an organization's efficiency and even likelihood of survival. Business success depends on firm performance, which is often correlated with a business model (Alosani, Yusoff and Al-Dhaafri, 2020). A key goal of management has traditionally been to increase a company's success. Indeed, organizational management, which has developed into a science, is given top priority by CEOs and administrators. Managers have always evaluated performance using financial metrics. However, there has been a rise in the number of academics and professionals who have expressed concerns about traditional quantitative performance assessments (Zheng et al., 2021).

There are several methods to gauge a company's performance. Although financial success is often used as a stand-in for operational productivity, this is an unreliable indicator. (Liao *et al.*, 2017) believe that operational excellence, sales development, and customer connections play a crucial part in an organization's performance in addition to financial success. A more rigorous and impartial examination is made possible by this larger perspective on corporate success, and it reduces dependence on manipulable or skewed metrics of actual business performance (Leonidou et al., 2015).

2.3 Theoretical Review

This section discusses the theories that underpin this research: resource-based view and organisational information processing theory.

2.3.1 Resource-based View

The resource-based theory and organizational information processing are integrated into the research. The resource-based theory serves as the foundation for classifying organizational

creativity as an individual organizational resource and new product development capability as an organizational competence, while organizational information principles support the value of using environmental dynamism and market responsiveness as contingencies. This research makes the case that a theoretical description and an empirical evaluation of the suggested linkages might provide fresh perspectives on how and when organizational creativity improves company performance. The Resource-Based View (RBV) Theory contends that organizations should accumulate resources to strengthen their competitive advantages (Ciszewska-Mlinarič and Wasowska, 2015). Organizations often employ this idea to improve performance by using resources including human capital, money, equipment, technology, and information. Both physical (factory and inventory) and intangible (technology and information) resources are divided into categories (Donnellan and Rutledge, 2019) The RBV Theory further asserts that to give a lasting competitive advantage, resources "should be valuable, rare, unique, and unreplaceable (Kabue and Kilika, 2016). The non-substitution of essential strategic resources aids in the preservation of a company's competitiveness by preventing rivals from acquiring identical resources. According to Hart (Collins and Clark, 2017), the problem of outer contacts should be taken into consideration while evaluating a competitive strategy that is entirely internally focused. The current study conceptualises organisation's creativity, innovation and network ties as key resources that can be leveraged to enhance performance.

2.4 Empirical Review.

This section empirically reviews the prior studies conducted on organizational creativity and firm performance.

2.4.1 Organizational Creativity

In the work of Boso et al., (2017), Arguments have been proven to be true that the connection between organizational creativity and market performance is made through new product development (NPD) capability and that the indirect impact of creativity on performance through NPD capability is dependent on levels of market responsiveness and environmental dynamism. A sample of 221 small and medium-sized businesses (SMEs) in a significant sub-Saharan African market was used to investigate the claimed links. According to research results, the influence of novelty and utility components of organizational creativity on market success is partly mediated by process and product NPD capabilities.

Again, the work of Azamela et al., (2022), examined how institutional innovation ability and creativity affected public innovation performance in the setting of Ghana. The model's main insight was that inter-agency partnerships, institutional leadership, and stakeholder pressure also support institutional creativity and innovation potential. 195 survey respondents from 50 public sector organizations were surveyed, and their survey answers were estimated using the partial least squares structural equation model. According to the empirical study, institutional creativity and innovation capacity are favourably impacted by inter-agency cooperation and institutional leadership, whereas institutional creativity and innovation capacity are positively impacted by organizational creativity and innovation capacity. Stakeholder pressure, however, has a detrimental influence on the performance of institutional creativity and innovation. This research adds to our understanding of the factors that influence public innovation performance from the standpoint of emerging nations. It explores hypotheses on the effectiveness of public innovation.

The research of (Hamouda et al., 2020), examined the relationship between organizational creativity as a mediating factor for organizational performance and excellence among nurses: developing a model. A model testing-descriptive correlational design was used in conducting this study. The findings were that, that organizational creativity had a high effect on organizational performance and organizational excellence. Also, there was a positive significant correlation between organizational performance and organizational excellence.

The objective of the study conducted by (Ur Rehman, Bhatti and Chaudhry, 2019) aimed to examine the relationship between leadership styles and organizational performance in Malaysian SMEs and the mediation role of creative culture and organizational learning. Owners'/managers' responses to questionnaires were utilized to gather data, and 950 questionnaires were issued using a combination of postal and email methods. Only 409 of the 950 questionnaires were returned, 25 had missing data and were taken out of the sample, and only 384 were utilized for the final analysis. According to research, leadership philosophies significantly impact organizational performance, creative culture, and organizational learning. Organizational performance is significantly influenced by innovative culture and organizational learning. In addition, there is a strong correlation between organizational success and creative culture and organizational learning.

Finally, Shahzad et al., (2016), researched the integration between knowledge strategy and knowledge management (KM) processes that leads to organizational creativity and performance. A quantitative strategy and cross-sectional survey method were used to collect data. In all, 219 randomly selected respondents from 173 listed companies provided feedback through a self-administered questionnaire. Factor analysis and multiple regression techniques were used to test multiple hypotheses. The results showed that Organizational creativity has also been identified as having a strong significant impact on organizational performance.

2.5 Conceptual Framework

The conceptual framework and the development of the study's hypotheses are discussed in this portion of the chapter. The section explores the interdependencies between the respective constructs for the study (organizational creativity, innovation and firm performance and network ties). The research model for the study is depicted in the figure below

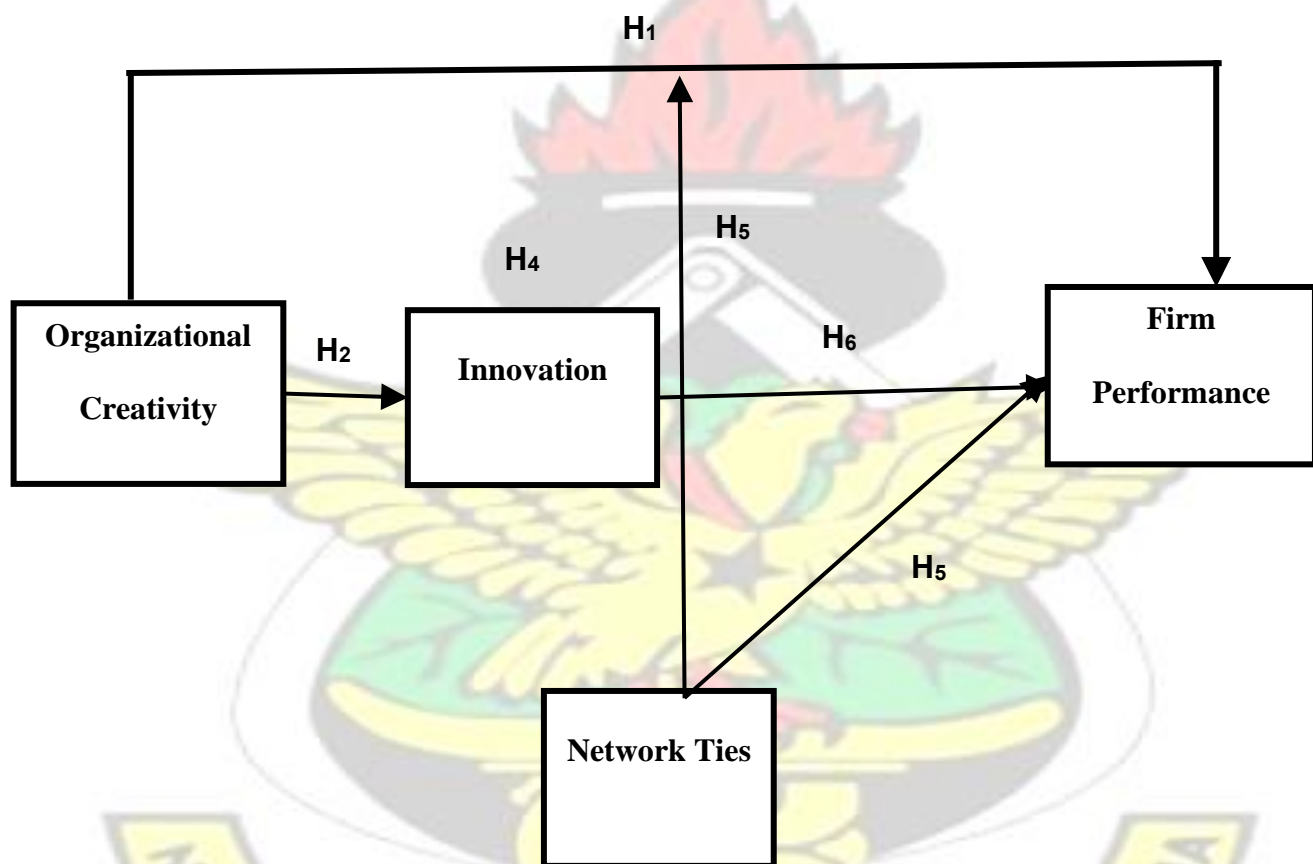


Figure 2.1 Conceptual framework for the study

Source; Researcher's Construct, (2022)

2.5.1 Organizational Creativity and Firm Performance

The Resource-Based View (RBV) Theory contends that organizations should accumulate resources to strengthen their competitive advantages (Ciszewska-Mlinarič & Wasowska, 2015). Organizations often employ this idea to improve performance by using resources including human capital, money, equipment, technology, and information. Both physical (factory and inventory) and intangible (technology and information) resources are divided into categories (Donnellan & Rutledge, 2019). The resource-based view is adopted in the study to determine the correlation between organizational creativity and firm performance. Parikh et al., (2020) described creativity as the process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and other difficulties; identifying the difficulty; searching for solutions; speculating about the deficiencies; formulating hypotheses; testing and retesting, and finally communicating the results.

This research posits from the above that adopting organizational creativity would improve firm performance. The rationale is that firm performance stems from efficiency and diversity in product offerings and the quality the organization provides. This means that the more creative an organization is, the better its product offering and the lower its overall internal and external cost of production.

Numerous research works to support the correlation between organizational creativity and firm performance. (Azamela et al., 2022; Boso et al., 2017; Ibrahim et al., 2016). The findings from all the listed research works revealed that organisational creativity positively impacts firm performance. From the above, the researcher posits that;

H1: organizational creativity significantly and positively correlates with firm performance

2.5.2 Organizational Creativity and Innovation

The research goes on to examine innovation and how it relates to organizational creativity after having a better understanding of what creativity is and how to cultivate it. Companies nowadays are overwhelmed by the speed of societal change. Therefore, they are always searching for the next best method or technique to adopt to avoid being completely overtaken. The resource-based view also indicates that a firm ability to gain greater market share depends on the application of its unique abilities (Ciszewska-Mlinarič and Wasowska, 2015). Zhou & Wu, 2010), defined innovation as the internal and external forces working in concert to help companies achieve their goal of providing top-notch services to customers. The rationale is that in developing an organization's creative ability, it is important to uphold the concept of innovation.

An organization does not become creative by establishing a department or innovation manager but by the successful commercialization of novel combinations, such as new materials and components, the introduction of new processes, the development of new markets, and the construction of new organizational structures (Brzustewicz *et al.*, 2022). On the other hand, creativity as a response to an environment that is changing quickly originates from a point of truth. creativity is the important 'front-end' of the innovation process; before innovation can happen, the creative ideas must be developed by people and teams so that they may be effectively implemented (Fritz and Lara-Rodríguez, 2022). Therefore, to achieve organizational creativity, businesses must have it as a core value that every single employee fervently supports (Gupta and Kanungo, 2022). Based on the above, the researcher posits that;

H2: organizational creativity has a positive correlation with Innovation.

2.5.3 Innovation and Firm Performance

conventional wisdom has it that when innovative new products are first introduced to the market, they face little direct competition, which enables firms to generate relatively high profits (Sánchez-Sellero, Martínez and García-Vázquez, 2013). This is the basis for the traditional explanation for the positive relationship between firm-level innovation and firm performance (Danaj *et al.*, 2013). Due to imitation and competition, these high earnings are expected to diminish with time, but businesses that keep offering novel, inventive items may be able to maintain high profitability for an extended length of time (Atalay *et al.*, 2013). The goal of organizations engaging in innovation activities, according to Yeşil *et al.*, (2013) and many other academics, is to increase success and performance. The Oslo Manual also highlights how innovation efforts affect business success Fritz & Lara-Rodríguez, (2022). The literature on the connection between innovation and company performance is sparse. The research work of (Gupta and Kanungo, 2022) that a firm's operating profit margin benefited from the number of innovations those businesses were able to accomplish. Based on the above, the researcher posits that.

H3: Innovation impacts firm performance positively

2.5.4 The mediating role of Innovation

The adoption of new organizational business processes, company structures, or external interactions constitutes innovation Yeşil *et al.*, (2013). Innovations lowering supplier costs, getting access to non-tradable assets such as uncoded external knowledge or increasing workplace happiness and hence labour productivity, for example, the first-time introduction of management systems for general production or supply operations, such as supply chain management, business reengineering, lean production, quality management system).

According to the resource-based view, an organization's innovative ability improves its overall performance and enhances its creativity. This said it is worth stating that the relationship between organizational creativity and firm performance is accounted for by innovation. The rationale is that an organization is actually on the back of its ability to be innovative. Based on the above, the researcher posits that;

H4: Innovation mediates the relationship between organizational creativity and firm performance.

2.5.5 Network Ties and Firm Performance

According to the RBV, a company's unique mix of resources, including its networks, is expected to explain variances in firm performance results. According to RBV, for a firm to prosper, it must combine resources that are valued, diverse, imperfect, and mobile (Barney & Clark, 2007; Penrose, 1959). The RBV is presented in this research to explain how networking with significant supply chain partners may enhance the organization's overall performance and capacity to compete. According to recent research, networking has advantages such as lower costs, risk sharing, access to financial resources, complementary assets, better ability for quick learning, and knowledge transfer (Yang and Lin, 2020). If supply chain partners work more closely together, they could be better able to meet consumer expectations by offering products that are more versatile (Pradabwong et al., 2017). Decision synchronization and incentive alignment have a substantial influence on an organization's ability to respond quickly to changing situations. A company's ability to grab market opportunities more rapidly and achieve profitability is increased via supply chain networking (Haque et al., 2018). As a result, the following hypothesis is developed in this study:

H5: Networking ties have a significant and positive effect on firm performance.

2.5.6 The moderating Role Networking Ties

According to (Q. Zhou et al., 2022), networking is a shared emotional and volitional process in which two or more departments work together, understand each other's perspectives, exchange resources, and accomplish shared objectives. Numerous writers from various supply chain segments have discussed network linkages. Cooperative problem-solving can speed up the process of getting goods to market, according to the justification. This is because problems are resolved more rapidly in a collaborative setting. Supply chain partners might work together to create new product ideas (Tse et al., 2016). Resources that are exchanged between supply chain partners might be complimentary resources that boost the end product's value or related sources that reduce sub-additive costs. Links to resources that assist in lower sub-additive costs might potentially count as shared resources (Thiruvattal, 2017). A company may benefit from both forms of corporate synergy by developing a shared competitive advantage (i.e., collaborative advantage). Based on the researcher suggests

H6: Networking ties moderates the relationship between organizational creativity and firm performance.

CHAPTER THREE

METHODOLOGY AND PROFILE OF STUDY INDUSTRY

3.1 Introduction

The research design, research strategy, research methodology, study population, sampling methods, sample size, data collecting method, reliability and validity, and data analysis method were all covered in the chapter.

3.2 Research Design

The process of planning and carrying out systematic actions aimed at reaching a study's goal and, as a result, identifying answers to a specific issue, is known as research design (Brereton et al., 2007) According to (Gratton et al., 2010), a research design is a strategy for choosing research participants, study locations, and data collecting techniques to address the research topic (s). The three categories of research are descriptive, exploratory, and explanatory.

Descriptive research involves a direct examination, analysis, and description of a particular event with the aim of making the most understandable presentation (Aversano et al., 2007). According to (Oliveto et al., 2010), descriptive research is a fact-finding method that produces a cross-sectional evaluation of the existing situation. It establishes and defines the characteristics of the relevant variables in a circumstance.

On the other hand, Explanatory research seeks for causes, explanations, and data that either confirm or disprove a theory or prediction. It is done to see whether there is a connection between different aspects of the event being studied (Edmonds, 2017) Exploratory research is done to come up with fresh ideas, discover more about a subject, or merely to learn something new (Khomh et al., 2012). An exploratory study is used when the objective of the research is

to get new insights and better understand the nature of a problem (Eaddy et al., 2008). In this study, the Explanatory research design was used. Additionally, this research used a quantitative technique. Through quantitative research, a phenomenon is often recognized on a numerical scale, allowing the researcher to make predictions using measured numerical numbers to represent the phenomenon (Sauders et al., 2007).

(Cartwright & Shepperd, 2000) define quantitative research as a study that employs structured questions with multiple choice answers and is gathered from a large sample size. According to Creswell & Creswell (2017), quantitative research is fundamentally an unbiased inquiry of a social issue that relies on the testing of a hypothesis based on study variables. Here, statistical procedures are used to count and analyze data to determine if the hypothesis is true or accurate. In quantitative research methodologies, ideas are measured using scales that either directly or indirectly offer numerical data (Zikmund et al., 2010). Through quantitative research, a phenomenon is often recognized on a numerical scale, allowing the researcher to make predictions using measured numerical numbers to represent the phenomenon (Sauders et al., 2007).

The qualitative technique of research is a naturalistic approach to understanding a given event under investigation in certain situations, in which the researcher makes no effort to change an interesting occurrence (Patton, 2001). A sort of social inquiry called qualitative research focuses on how individuals understand and make sense of the world around them (Curry, 2010). However, the research didn't use the qualitative approach.

3.3 Population of the Study

People that share or display traits that the researcher is particularly interested in make up the population of the study (Creswell, 2003). The term "population" may also refer to the whole population of the group under investigation (Gavrilova & Gavrilov, 2011). The group of examples about whom the researcher wants to draw broad conclusions is known as the target population (Polit & Beck 2004). The manufacturing organizations in Accra make up the study's population.

3.4. Sampling Technique and Sample Size

Sampling is the process of choosing a subset of the population to represent the complete population. Thus, a sample was described by Polit & Beck (2004) as a portion of the population that was chosen to take part in the research. In order to learn more about the complete group selected for the research, physical features of a sample, which is a subset of a statistical population, are evaluated (Kumar, 2008). Hair et al. (2010) suggest that employing a sample size that falls within the range of fifty to one hundred is typically adequate for the purpose of detecting significant variability through the application of multiple regression analysis. Accordingly, a total of 124 organizations were used as the sample size for this research's objectives. Out of 124, a total of 112 responses were collected. The researchers determined that the above sample size was sufficient to capture the range of organizations and their characteristics. Additionally, to choose the respondents for the research, the researcher would use purposive sampling to select a sample of one hundred and twenty-four individuals from the target population. Purposive sampling is a non-probability sampling technique used in research studies. Unlike probability sampling methods that aim to provide a representative sample from a larger population, purposive sampling involves selecting participants or cases based on specific characteristics or criteria that are relevant to the research objectives.

3.5 Data Collection Method

A primary source is a data source that gives information directly to the data collector, according to Sugiyono (2012). Information obtained via focus groups, trials, surveys, questionnaires, interviews, and other methods is referred to as primary data (Sakaran, 2003). Primary data were utilized in the investigation. As a tool for gathering information from respondents on the ground, standardized questionnaires were used to collect the main data.

3.6 Research instrument

As the primary tools for gathering data for the study, questionnaires were used. Especially as part of a survey, a questionnaire is a written or printed list of questions that must be completed by several individuals (Saunders et al., 2007). This method was ideal because, in contrast to open-ended questions, which allow for an infinite number of alternative replies, close-ended questions are much easier to assess and are focused on attaining the research's stated goals. Four parts made up the questionnaire's framework; Section A asked for replies about the general characteristics of the respondents. Responses were requested for Sections B, C, and D on the extent of organizational creativity, organizational innovation, firm performance and network ties.

Likert scale responses ranged from 1 to 7, with 1 denoting "strongly disagree," and 7 denoting "strongly agree." The items used to measure each of the study's components were mostly taken from previously published works of literature. The following table 3.1 shows this:

Table 3.1 Measurement items

Construct	No of measurement items	Source
Organizational creativity	9	Sue-Chan & Hempel, 2016
Organizational innovation	6	Ali Raza Sultani , (2016)
Organizational performance	5	Atuahene-Gima & Li, 2004
Network ties	5	Acquaah, 2012

3.7 Data Analysis

Questionnaires were distributed to the respondent and collected by the researcher. The structured questionnaires were coded for all questions in respect to each research objective to ensure that processing of the data was easily done. This is also meant to ensure consistency and avoid possible omissions. The collected questionnaire were analyzed using Statistical Package for Social Sciences (SPSS) software for the descriptive and inferential analyses.

3.8 Validity and Reliability

As a gauge of the veracity or untruth of information gathered via a research tool, validity is described. It is categorized as the internal and external validity of the measurement device (Burns & Grove 2001). According to Trochim (2005), a measure's validity refers to how closely it matches the notion it is intended to assess. Reproducibility is the capacity for research to be repeated (Willis 2007). The capacity to duplicate studies is referred to as reliability. A study is deemed trustworthy if the same result is attained when it is duplicated by other researchers using the same data and technique (Saunders et al., 2009). Reliability, according to Silverman (2004), is the extent to which study results are not the result of random events. It is directly tied

to guaranteeing the accuracy of field notes and ensuring that the process of publicizing research results is accessible to the general audience. The research instrument was created based on a previously defined construct to assure the validity and reliability of the study. In order to examine the validity of the research construct as well as the reliability of the research constructs, the study also used the Cronbach's Alpha and CFA.

3.9 Ethical Limitation

Ensuring ethical research practices is a critical responsibility of the researcher. This study on organizational creativity, innovation, and firm performance must uphold important ethical principles in its design and implementation. A key ethical concern is maintaining confidentiality of the participating organizations and respondents. Their identities and any sensitive information they provide through the surveys must remain protected through anonymous data collection and reporting. Related to this is the principle of informed consent - respondents should fully understand the nature and objectives of the research and consent to participation in a voluntary manner, without any deception.

Another vital ethical obligation is avoiding any conflicts of interest on the part of the researcher that could potentially bias the study. There should be transparency about any affiliations or funding sources, and the researcher must be vigilant about minimizing their own subjective biases that could shape the research process and conclusions. Generalizability of findings is also an ethical consideration - the sample must adequately represent the target population so as not to overstate the applicability of findings. Additionally, meticulous data analysis and objective reporting of results is crucial to avoid any misrepresentation and ensure findings are properly qualified and contextualized.

Upholding academic integrity through proper citations and avoiding plagiarism in literature synthesis demonstrates ethics in action. Moreover, compliance with institutional oversight requirements for research involving human subjects is an obligation. The study design must account for local cultural sensitivities and norms to avoid reinforcing negative stereotypes. While highlighting potential benefits of the research, it is imperative not to exaggerate claims beyond what can be empirically substantiated.

3.10 Profile of the Study Area

Ghana has witnessed an impressive surge in its industrial and manufacturing sectors over the recent years, indicating significant potential for a transformative impact on the nation's economy. Between 2017 and 2019, the industrial sector in Ghana experienced substantial growth, averaging an annual rate surpassing 10%, with manufacturing being a major driver of this expansion. This robust progress holds the promise of fortifying Ghana's position both regionally and globally in terms of economic strength.

The approval of the African Continental Free Trade Agreement has opened up new avenues for Ghana, offering opportunities to acquire raw materials from within Africa itself. This development could fuel the production of processed goods and light manufacturing, thereby potentially amplifying growth in the industrial sector. Such a trend might trigger further expansion, bolstering Ghana's role in the region while fostering greater integration across Africa. Specifically, the manufacturing sector stands poised to redefine Ghana's economic landscape by escalating production levels and exports, ultimately leading to the creation of more employment opportunities, increased incomes, and greater revenue from exports.

Ghana's strengths in industries such as cocoa processing, food production, textiles, and pharmaceuticals are well-positioned to act as catalysts for advancing the manufacturing sector.

Furthermore, ongoing initiatives are focused on tapping into the manufacturing potential by developing local raw material value chains and implementing product standards through programs like the Ghana Conformity Assessment Programme. Moreover, the relaxation of capital requirements for foreign investors in the manufacturing sector signifies a favorable business climate, which could potentially attract both investment and expertise from abroad.

In light of these developments and initiatives, Ghana's industrial and manufacturing sectors exhibit substantial promise for the future. The prospects seem optimistic for fostering a more resilient and robust economy, underpinned by the growth and diversification of the industrial landscape.



CHAPTER FOUR

DATA PRESENTATION, ANALYSIS AND RESULTS

4.1 Introduction

The fourth chapter contains the study findings and their discussions. The main objective of this study was to examine the impact of organizational creativity, innovation and firm performance, the moderating role of network ties. The findings and comments were based on the study goals, and the data was analysed using IBM SPSS and PLS. The research was also analysed using descriptive statistics.

4.2 Response Rate

From a sample size of 124 administered questionnaires, hundred and twelve (112) responses were successfully returned, representing 90.2% response. According to (Freiman *et al.*, 2019) a response rate of 50% is seen as reasonable, a response rate of 60% is excellent or acceptable, and a response rate of more than 70% is regarded as very high. Therefore, the answer may be regarded as sincere and suitable for the study.

4.3 Descriptive Statistics

In-depth descriptions of descriptive analytics on organizational creativity, innovation, business success, and network relationships are provided in this section. The data were analyzed using the descriptive statistics mean, standard deviation, maximum, minimum, and kurtosis.

4.3.1 Profile of Respondents

Given that respondent demographics have a substantial effect on questionnaire responses, it is essential to analyze these qualitative study characteristics and assess their potential influence

on the research output. As a result, demographic factors including gender, department, age, work experience, and educational level were properly assessed.

Table 4.1 Respondent's background information

		Frequency	Percentage (%)
(1) Gender	Male	74	66.1
	Female	38	33.9
(2) Age	20 to 29	20	17.9
	30 to 39	63	56.3
	40 to 49	27	24.1
	50 years and above	2	1.8
(3) Work Experience	0-5 years	29	25.9
	6-10 years	60	53.6
	11-15 years	20	17.9
	15 years and above	3	2.7
(4) Educational Level	HND	4	12.5
	Master's	47	42
	1 st Degree	51	45.5
(5) Managerial Level	Supervisor	31	27.7
	Line Manager	52	46.4
	Top Level	29	25.9
Position within the organisation	Supply Chain	46	41.1
	Manager	33	29.5
	Logistics	17	15.2
	Manager	17	15.2
	Quality Control		
	Other		

Source: Field study (2023)

The provided data represents a demographic breakdown of respondents based on several criteria: gender, age, work experience, educational level, managerial level, and position within the organization. These categories offer insights into the composition and distribution of

individuals surveyed. The respondents were predominantly male, constituting approximately 66.1% of the sample, while females accounted for 33.9%.

Most respondents fell within the age brackets of 30 to 39, representing the largest segment at 56.3%. Those aged between 20 to 29 comprised 17.9% of the sample, while individuals aged 40 to 49 and 50 years and above were 24.1% and 1.8%, respectively.

Work Experience: A majority of respondents had work experience in the range of 6 to 10 years, encompassing 53.6% of the surveyed individuals. Those with 0 to 5 years of experience made up 25.9%, while individuals with 11 to 15 years and 15 years and above constituted 17.9% and 2.7%, respectively. The respondents' educational background varied, with the highest proportion holding a first degree at 45.5%. Master's degree holders represented 42% of the sample, while individuals with an HND (Higher National Diploma) constituted 12.5%.

Regarding managerial positions, line managers were the largest group, accounting for 46.4% of the respondents. Supervisors comprised 27.7% of the sample, whereas those in top-level managerial roles constituted 25.9%.

The distribution based on positions within the organization showed a varied composition. Supply Chain Managers represented the most substantial segment at 41.1%, followed by Logistics Managers at 29.5%. Quality Control and Other positions each constituted 15.2% of the respondents.

The analysis of this data reveals a predominantly male respondent base, with a significant portion aged between 30 to 39 years. There is diversity in educational backgrounds, with a substantial number holding a first degree or master's degree. In terms of work experience, there is a considerable representation from individuals with 6 to 10 years of experience. The distribution across managerial levels and positions within organizations indicates a diverse mix

of roles held by the respondents, with substantial representation from line managers and supply chain managers. This comprehensive demographic breakdown provides valuable insights into the characteristics of the surveyed population, which can be instrumental in understanding the perspectives and experiences of individuals within specific professional realms, aiding in targeted analyses and decision-making processes.

4.3.2 Descriptive Analysis

The descriptive analysis results on organizational creativity, innovation, firm performance, and network ties are analyzed in this section.

4.3.2.1 Organizational Creativity

A company has a solid foundation to create new procedures and goods for its target market when organizational creativity is shown in the creation of innovative and helpful solutions to market difficulties (K. Z. Zhou & Wu, 2010). A company that excels in introducing new processes and products is more likely to set itself apart from the competition and have a profitable market position that is too expensive for rivals to imitate (West & Bogers, 2014). According to (Renko et al., 2015) a company with a high NPD capacity is better positioned to maintain market triumphs even if an ordinary organization may sometimes succeed in bringing new processes and products to the market. Organizational creativity was operationalized using six items on a seven-point Likert scale, where 1-1.99 = strongly disagree, 2.0-2.99 = disagree, 3.0-3.99 = somewhat disagree, 4.0-4.99 = neutral and 5.0-5.99 = somewhat agree, 6.0-6.99 = agree and 7 = strongly agree. The descriptive results for organizational creativity is detailed in Table 4.2.

Table 4.2 Descriptive Results on Organizational Creativity

Variables	Min	Max	Mean	SD	Kurtosis	Skewness
Our company has produced many novel and useful ideas (services/products).	1	7	5.375	0.696	7.882	-1.958
Our company fosters an environment that is conducive to our own ability to produce novel and useful ideas (services/products).	1	7	5.518	0.732	7.757	-1.865
Our company spends much time for producing novel and useful ideas (services/products).	1	7	5.438	0.704	5.508	-1.795
Our company considers producing novel and useful ideas (services/products) as important activities.	1	7	5.321	0.722	6.452	-1.443
Our company actively produces novel and useful ideas (services/products).	1	7	5.473	0.668	6.352	-1.452
We often have fresh approaches to problems	1	7	5.464	0.778	9.028	-1.952
We have a unique perspective to solving problems	1	7	5.536	0.719	13.793	-2.833
We usually generate unprecedented solutions to problems	1	7	5.473	0.823	13.761	-2.735
Our solution to problems is often different from traditional ways of solving problems	1	7	5.473	0.681	5.815	-1.622
COMPOSITR SCALE	1.00	7.00	5.45	0.72	8.48	-1.96

Source: Field sturdy (2023) SCALE: 1= "strongly disagree" via 4= "neutral" to 7= "strongly agree"

The descriptive results of organizational creativity are provided in Table 4.2. With a composite mean of 5.45 and a standard deviation of 0.72, the level of organizational creativity among Greater Accra-based manufacturing firms is deemed to be high. The item ‘My organization write down details of stock whenever purchases are made’ and ‘We have a unique perspective to solving problems’ recorded the highest mean of (5.536). The item ‘Our company considers producing novel and useful ideas (services/products) as important activities.’ recorded the lowest mean of (5.321). These two extremes demonstrate that, even though organizational creativity was found to be strong, a significant portion of this is accounted for by the above highest recorded means.

4.3.2.2 Firm Performance

A company's performance serves as a gauge of how well it can do business. It is a crucial indicator for assessing an organization's efficiency and even likelihood of survival. Business success depends on firm performance, which is often correlated with a business model (Alosani et al., 2020) A key goal of management has traditionally been to increase a company's success. Indeed, organizational management, which has developed into a science, is given top priority by CEOs and administrators. Managers have always evaluated performance using financial metrics Firm performance was operationalized using five items on a seven-point Likert scale, where 1-1.99 = strongly disagree, 2.0-2.99 = disagree, 3.0-3.99 = somewhat disagree, 4.0-4.99 = neutral and 5.0-5.99 = somewhat agree, 6.0-6.99 =agree and 7 = strongly agree. The descriptive result for firm performance is detailed in Table 4.3 below.

Table 4.3 Descriptive Results on Firm Performance

Variables	Min	Max	Mean	SD	Kurtosis	Skewness
Compared with key competitors, our company is more successful.	1	7	5.607	0.817	10.711	-2.145
Compared with key competitors, our company has a greater market share.	1	7	5.67	0.737	5.447	-1.284
Compared with key competitors, our company is growing faster.	1	7	5.589	0.762	4.045	-0.858
Compared with key competitors, our company is more profitable.	1	7	5.679	0.804	6.213	-1.539
Compared with key competitors, our company is more innovative	1	7	5.571	0.764	3.948	-0.913
COMPOSITR SCALE	1.00	7.00	5.62	0.78	6.07	-1.35

Source: Field sturdy (2023) SCALE: 1= "strongly disagree" via 4= "neutral" to 7= "strongly agree"

The descriptive results of the firm's performance are provided in Table 4.3. With a composite mean of 5.62 and a standard deviation of 0.78, the level of performance among Greater Accra-based manufacturing firms are substantial. The item 'Compared with key competitors, our company is more profitable' recorded the highest mean of (5.679). The item 'Compared with key competitors, our company is more innovative' recorded the lowest mean of (5.571). These two extremes demonstrate that, even though firm performance was found to be strong, a significant portion of this is accounted for by the above highest recorded means.

4.3.2.3 Innovation.

Innovation has previously been characterized from a variety of angles as the invention or creation of new ideas or procedures that lead to a discontinuous shift (Balland et al., 2019); the introduction of new elements into manufacturing that represents a discontinuity with the past (Krafft et al., 2014); innovation is considered as a process from ideas to the successful implementation of these, which makes a substantial difference to an organization's understanding of the needs it is addressing and the services it delivers (Boschma, 2005). Innovation was operationalized using six items on a seven-point Likert scale, where 1-1.99 = strongly disagree, 2.0-2.99 = disagree, 3.0-3.99 = somewhat disagree, 4.0-4.99 = neutral and 5.0-5.99 = somewhat agree, 6.0-6.99 = agree and 7 = strongly agree. The descriptive result for innovation is detailed in Table 4.4 below.

Table 4.4 Descriptive Results on Innovation

Variables	Min	Max	Mean	SD	Kurtosis	Skewness
We update our business processes (technical, administrative, production, channels of distribution) more often than our main competitors	1	7	5.643	0.766	11.701	-2.185
-We innovate more often with respect to our business processes than our key target market competitors	1	7	5.536	0.743	7.448	-1.91
-The rate at which we innovate our business processes exceeds industry norms	1	7	5.491	0.668	2.05	-0.422
-Competitors undertake business process innovations less often than we do	1	7	5.625	0.683	5.875	-1.23

-Our company has produced more new products/services for our target markets than our key target market competitors during the past five years	1	7	5.518	0.641	2.549	-0.79
-On average, each year we introduce more new products /services in our target markets than our key target market competitors	1	7	5.536	0.767	10.392	-1.868
COMPOSITR SCALE	1.00	7.00	5.56	0.71	6.67	-1.40

Source: Field sturdy (2023) SCALE: 1= "strongly disagree" via 4= "neutral" to 7= "strongly agree"

The descriptive results of innovation are provided in Table 4.4. With a composite mean of 5.56 and a standard deviation of 0.71, the level of innovation among Greater Accra-based energy producers and manufacturing is substantial. The item ‘We update our business processes (technical, administrative, production, channels of distribution) more often than our main competitors’ recorded the highest mean of (5.643). The item ‘Our company has produced more new products/services for our target markets than our key target market competitors during the past five years’ recorded the lowest mean of (5.518). These two extremes demonstrate that, even though innovation was found to be strong, a significant portion of this is accounted for by the above highest recorded mean.

4.3.2.4 Network Ties

Networking, in the words of (Q. Zhou et al., 2022) is a mutually shared emotional, volitional process in which two or more departments collaborate, mutually grasp each other's viewpoints, share resources, and achieve common goals. Many authors from different parts of the supply chain have described network ties. Network Ties was operationalized using five items on a seven-point

Likert scale, where 1-1.99 = strongly disagree, 2.0-2.99 = disagree, 3.0-3.99 = somewhat disagree, 4.0-4.99 = neutral and 5.0-5.99 = somewhat agree, 6.0-6.99 = agree and 7 = strongly agree. The descriptive result for network ties is detailed in Table 4.5 below.

Table 4.5 Descriptive Results on Network Ties

Variables	Min	Max	Mean	SD	Kurtosis	Skewness
Our firm has developed and utilized business networking relationships.	1	7	5.375	0.696	7.882	-1.958
Our firm has a strong relationship with key financial institutions for overdrafts and secured credit lines	1	7	5.518	0.732	7.757	-1.865
Our firm has consolidated key players in the industry to improve competitiveness	1	7	5.438	0.704	5.508	-1.795
Our firm has developed and utilized political networking relationships	1	7	5.321	0.722	6.452	-1.443
Our firm has developed and utilized political networking, for the 6-years	1	7	5.473	0.668	6.352	-1.452
COMPOSITR SCALE	1.00	7.00	5.43	0.72	7.16	-1.74

Source: Field sturdy (2023) SCALE: 1= "strongly disagree" via 4= "neutral" to 7= "strongly agree"

The descriptive results of network ties are provided in Table 4.5. With a composite mean of 5.43 and a standard deviation of 0.72, the level of network ties among Greater Accra-based manufacturing and distributors is great. The item ‘Our firm has a strong relationship with key financial institutions for overdrafts and secured credit lines’ recorded the highest mean of (5.518). The item ‘Our firm has developed and utilized political networking relationships’ recorded the lowest mean of (5.321). These two extremes demonstrate that, even though network ties was found to be strong, a significant portion of this is accounted for by the above highest recorded mean.

4.3.3 Test of Reliability and Validity

Reliability is a measure of consistency and is assessed in this study using Cronbach Alpha and composite reliability. Table 4.6 below provides the reliability results.

Table 4.6 Results of Cronbach's Alpha and Composite Reliability

Construct	Number of items	Cronbach's Alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Firm Performance	5	0.806	0.81	0.865	0.562
Network Ties	5	0.768	0.778	0.843	0.519
Organizational Creativity	9	0.871	0.875	0.897	0.594
Organizational innovation	6	0.791	0.798	0.852	0.692
Total	25	-		-	

Source: Field study (2023)

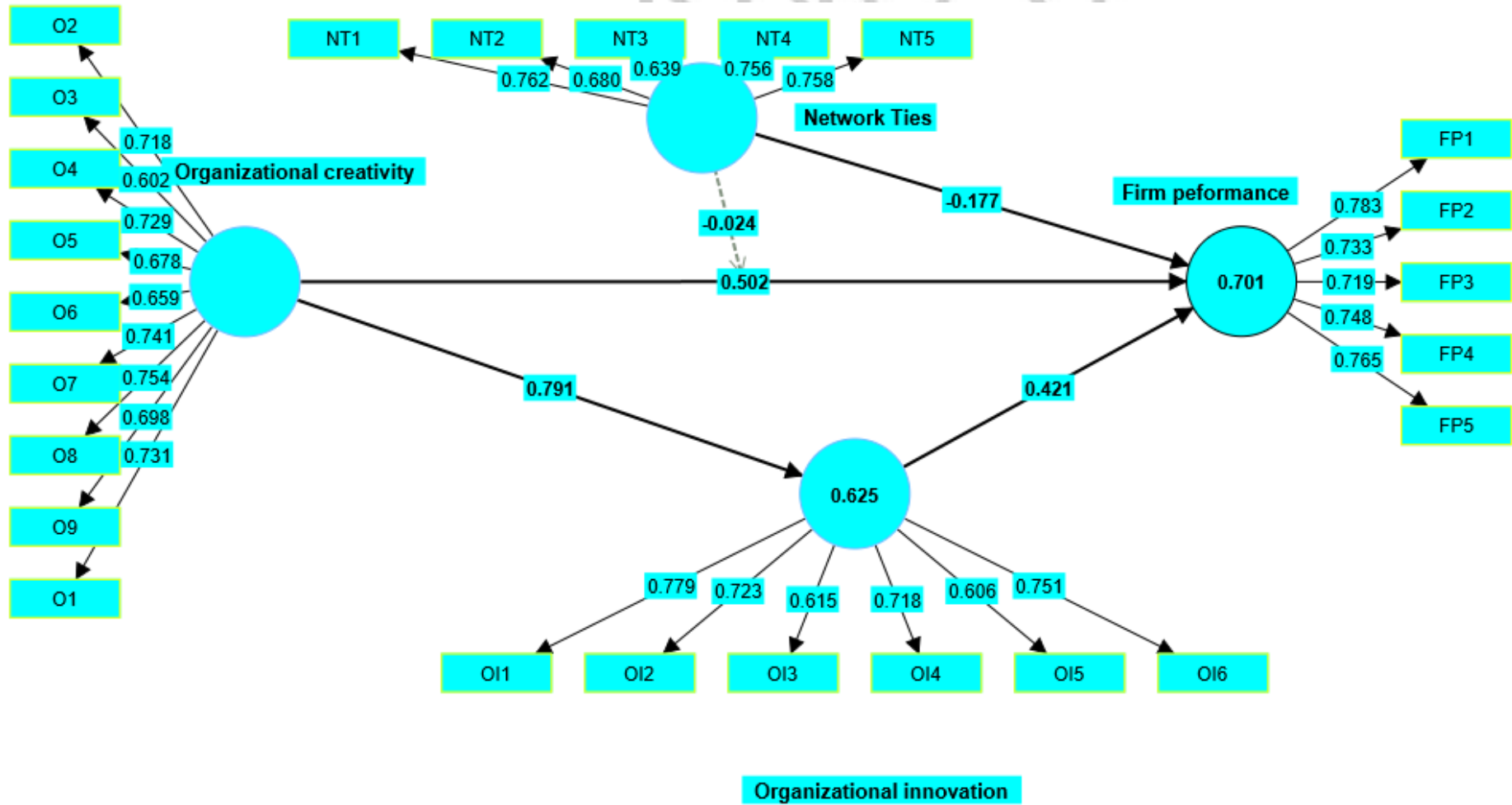
Table 4.6 provides the results of the Cronbach's Alpha and Composite reliability test and average variance extracted. Organizational creativity had an Alpha value of 0.871 and composite reliability of 0.897, firm performance had an Alpha value of 0.806 and composite reliability of 0.865, innovation had an Alpha value of 0.791 and composite reliability of 0.852, while network ties had an Alpha value of 0.768 and composite reliability of 0.843. All four-variables scored above the 0.70 threshold for Cronbach Alpha and composite reliability: the data exhibited high internal consistency and therefore reliable. To test the validity of the data obtained, the study used Average variance extracted (AVE), and confirmatory factor analysis. An AVE of above 0.50 is ideal. From table 4.6, it could be seen that all the variables (Firm Performance, Network Ties, Organizational Creativity,

Organizational innovation) scored higher than the 0.5 threshold indicating that all items accurately measure their respective constructs. The data therefore meets all requirements of validity.

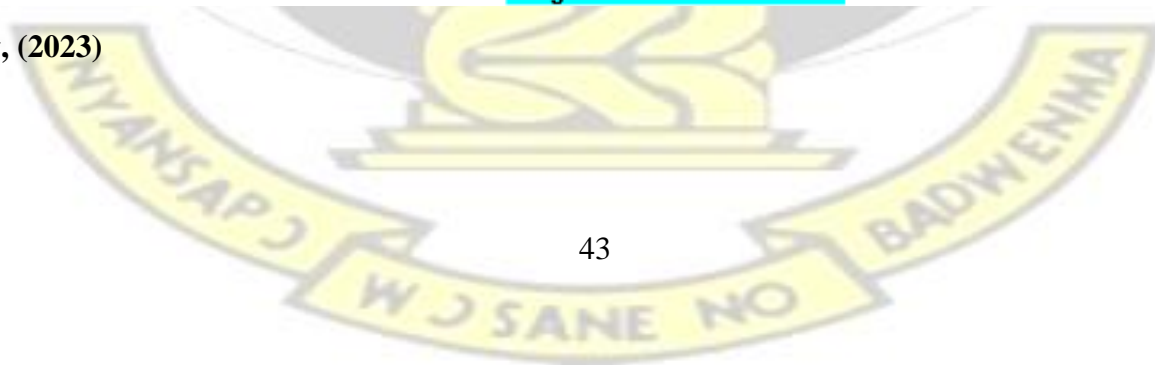
4.3.3.1 Confirmatory Factor Analysis

A statistical technique called CFA is used to confirm the factor structure of a set of observed data. The researcher may use CFA to investigate the relationship between observable variables and the latent constructs that underlie them. The loadings are shown in Figure 4.1 for each build. All items intended to evaluate Firm Performance, Network Ties, Organizational Creativity, Organizational innovation usage loaded over 0.5, as shown in Figure 4.1 below, and as a result, they measure the corresponding latent variables. The information is thus trustworthy. The issue with the code FP4 is going away.





Source: Field Study, (2023)



4.4 Structural Equation Modelling

The route coefficients (also known as direct effects) and moderation connection between the variables were looked at using the PLS Structural Equation model. The route coefficients of the study model were established using a bootstrap of 5000 repetitions.

Table 4.7 Structural Equation Model (SEM) Result

Path	Coefficients	T-value	P-value
<i>Direct Effects</i>			
OC → FP	0.503	1.885	0.059
OC→OI	0.791	5.309	0.00
OI→FP	0.421	3.702	0.00
NT→FP	-0.184	0.819	0.413
<i>Moderation Effect</i>			
OC*FP→NT	-0.025	0.550	0.582
<i>Indirect effect</i>			
OI → OC →FP	0.333	2.823	0.05

Source: Field Study (2023) Notes: organizational creativity, firm performance, organizational innovation, and network ties

Table 4.7 presents the results of the structural equation model to test the direct, moderation and mediating relationships between the variables. According to the table, organizational creativity has a positive, yet not significant effect on firm performance, given the path coefficient results $\beta = .0503$, $t = 1.885$, $p > .05$. This indicates for every unit of organizational creativity, firm performance increases by 0.503 units. With a t-value of 1.885 being above the 1.96 threshold. This supports H1, which stated that organizational creativity has a positive effect on firm performance.

The table 4.7, also established a positive and significant correlation between organizational creativity and organizational innovation given the path coefficient results $\beta = .0791$, $t = 5.309$, $p < .00$. This indicates for every unit of organizational creativity; organizational innovation increases by 0.791 units. With a t-value of 5.309 being above the 1.96 threshold. This supports H2, which stated that organizational creativity has a positive effect on organizational innovation.

Hypothesis 3 posited a strong and positive relationship between organizational innovation and firm performance. From the table 4.7 above, given the path coefficient results $\beta = .421$, $t = 3.702$, $p < .00$. the hypothesis is supported, because there is a positive and significant correlation between the variables, with firm performance increasing by 0.421 as innovation increases.

The study sought to examine the mediating role of innovation on the relationship between creativity and firm performance. The SEM output shows a positive and significant effect of innovation on the relationship between creativity and firm performance, given the path coefficient results $\beta = 0.333$ $t = 02.823$, $p > .05$. This means that hypothesis four which stated that innovation positively and significantly mediates the relationship between creativity and firm performance is supported

Hypothesis five sought to establish the relationship between network ties and firm performance. Based on the results of the statistical analysis, given the path co-efficient of $\beta = -0.184$, $t = 0.189$, $p > .05$.

Finally, the table also shows a negative non-significant moderating role of network ties. Given the path coefficient results $\beta = -0.025$, $t = 0.550$, $p > 0.582$. This implies hypothesis six which stated a positive moderating role of network ties between creativity and firm performance is not supported.

4.5.1 Hypotheses Confirmation

From the prior literature reviewed, three hypotheses were developed for this study. The data gathered are analysed to confirm or refute each of these hypotheses. The summary of the hypothesis's confirmation is presented in table 4.9 below

Table 4.8 Hypothesis Confirmation

Path	Coefficients	T-value	P-value	Hypothesis	
<i>Direct Effects</i>					
OC → FP	0.503	1.885	0.059	H1	Supported
OC→OI	0.791	5.309	0.00	H2	Supported
OI→FP	0.421	3.702	0.00	H3	Supported
NT→FP	-0.184	0.819	0.413	H5	Not Supported
<i>Moderation Effect</i>					
OC*FP→NT	-0.025	0.550	0.582	H6	Not Supported
<i>Indirect effect</i>					
OI → OC → FP	0.333	2.823	0.05	H4	Supported

Source: Field Study (2023) Notes: organizational creativity, firm performance, organizational innovation, and network ties

4.5.2 Organizational Creativity and Firm Performance

Organizations often employ this idea to improve performance by using resources including human capital, money, equipment, technology, and information. Both physical (factory and inventory) and intangible (technology and information) resources are divided into categories (Donnellan & Rutledge, 2019). The resource-based view is adopted in the study to determine the correlation between organizational creativity and firm performance. Parikh et al., (2020) described creativity as the process of becoming sensitive to problems, deficiencies, gaps in

knowledge, missing elements, disharmonies, and other difficulties; identifying the difficulty; searching for solutions; speculating about the deficiencies. The result from this study is consistent with the above reviewed literature given the path coefficient results $\beta = .0503$, $t = 1.885$, $p > .05$.

4.7.2 Organizational Creativity and Organizational Innovation

An organization does not become creative by establishing a department or innovation manager but by the successful commercialization of novel combinations, such as new materials and components, the introduction of new processes, the development of new markets, and the construction of new organizational structures (Brzustewicz et al., 2022). On the other hand, creativity as a response to an environment that is changing quickly originates from a point of truth. Creativity is the important 'front-end' of the innovation process; before innovation can happen, the creative ideas must be developed by people and teams so that they may be effectively implemented (Fritz & Lara-Rodríguez, 2022). The result from this study is not consistent with the reviewed literature above given the path coefficient result $\beta = .0791$, $t = 5.309$, $p < .00$.

4.7.3 Organizational Innovation and Firm Performance

The goal of organizations engaging in innovation activities, according to Yeşil et al., (2013) and many other academics, is to increase success and performance. The Oslo Manual also highlights how innovation efforts affect business success Fritz & Lara-Rodríguez, (2022). The literature on the connection between innovation and company performance is sparse. Even fewer studies were conducted using the Oslo Manual's characterization of innovation. The research work of (Gupta & Kanungo, 2022) that a firm's operating profit margin benefited from the number of innovations those businesses were able to accomplish. The result from this study

is consistent with the above reviewed literature given the path coefficient results $\beta = .421$, $t = 3.702$, $p < .00$.

4.7.4 The Mediating Role of Network Ties

The adoption of new organizational business processes, company structures, or external interactions constitutes innovations et al., (2013). Innovations lowering supplier costs, getting access to non-tradable assets such as uncoded external knowledge or increasing workplace happiness and hence labour productivity, for example, the first-time introduction of management systems for general production or supply operations, such as supply chain management, business reengineering, lean production, quality management system). According to the resource-based view, an organization's innovative ability improves its overall performance and enhances its creativity. The result from this study is not consistent with the reviewed literature above given the path coefficient result $\beta = 0.333$ $t = 02.823$, $p > .05$.

4.7.5 Network Ties and Firm Performance

The RBV is presented in this research to explain how networking with significant supply chain partners may enhance the organization's overall performance and capacity to compete. According to recent research, networking has advantages such as lower costs, risk sharing, access to financial resources, complementary assets, better ability for quick learning, and knowledge transfer (Yang and Lin, 2020). If supply chain partners work more closely together, they could be better able to meet consumer expectations by offering products that are more versatile (Pradabwong et al., 2017). Decision synchronization and incentive alignment have a substantial influence on an organization's ability to respond quickly to changing situations. A company's ability to grab market opportunities more rapidly and achieve profitability is increased via supply chain networking (Haque et al.,

2018). The results is inconsistent with the above research, given that $\beta = -0.184$, $t = 0.189$, $p > .05$.
implying a negative effect.

4.7.6 The Moderating Role of Net work Ties

According to (Q. Zhou et al., 2022), networking is a shared emotional and volitional process in which two or more departments work together, understand each other's perspectives, exchange resources, and accomplish shared objectives. Numerous writers from various supply chain segments have discussed network linkages. Cooperative problem-solving can speed up the process of getting goods to market, according to the justification. This is because problems are resolved more rapidly in a collaborative setting. Supply chain partners might work together to create new product ideas (Tse et al., 2016). The result from this study is not consistent with the reviewed literature above Given the path coefficient results $\beta = -0.025$, $t = 0.550$, $p > 0.582$.



CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

The study examined the moderating and mediating roles of network ties and innovation of the relationship between organizational creativity and firm performance. This chapter discusses the findings summary, conclusions, recommendations, and future study suggestions.

5.2 Summary of Findings

This study sought to assess the impact of organizational creativity and firm performance of manufacturing firms in the greater Accra region, while considering moderating and mediating roles of network ties and innovation on that relationship. The study's key findings are summarised in this section.

5.2.1 Organizational Creativity and firm Performance

The study revealed that organizational creativity was very high amongst the manufacturing firms operating in the Greater Accra Region, given an overall mean score of **5.45 (SD = 0.72)**. The study revealed that there is a positive relationship between creativity and firm performance, given the path coefficient results $\beta = .0503$, $t = 1.885$, $p > .05$. This indicates for every unit of organizational creativity, firm performance increases by 0.503 units. With a t-value of 1.885. this lends support to H1.

5.2.2 Organizational Creativity and Organizational Innovation

The study also revealed the firms can harness their unique abilities, to improve their overall efficiency. This is represented by the high mean 5.56 (SD= 0.71) among the firms under study. The study also showed a Positive significant relationship between innovation and creativity, given the path coefficient results $\beta = .0791$, $t = 5.309$, $p < .00$. this lends support for H2.

5.2.3 Organizational Innovation and Firm Performance

The study also revealed organizational innovation has a positive correlation with firm performance. This is represented by the high mean 5.62 (SD= 0.78) among the firms under study. The study also showed a Positive significant relationship between innovation and performance, given the path coefficient results $\beta = .421$, $t = 3.702$, $p < .00$. this lends support for H3.

5.2.4 The Mediating Role of Network Ties

The study revealed that network ties had a significant and positive mediating effect amongst the manufacturing firms operating in the Greater Accra Region. The path coefficient $\beta = 0.333$, $t = 02.823$, $p > .05$. this support to H4.

5.2.5 Network Ties and Firm Performance

Per the analysis, network ties was found to have a negative correlating effect on firm performance. Given the path co-efficient of $\beta = -0.184$, $t = 0.189$, $p > .05$. this means that H5 which indicated support for the variables, is not supported.

5.2.6 Moderating effect of Network Ties

The study also revealed that, contrary to the study's proposition, network ties did not have moderation effect on creativity and firm performance, given the path coefficient results $\beta = -0.025$, $t = 0.550$, $p > 0.582$. This indicates that the relationship between creativity and performance outcome may not be contingent on network ties. Therefore, H6 which stated a significant positive relationship, is not supported.

5.3 Conclusion

This study using the RBV theory as a theoretical framework, examines the moderating effect of network ties and the mediating role of organizational innovation in the relationship between organizational creativity and firm performance. The study states the following conclusions based on data obtained from one hundred and twelve (112) manufacturing firms operating within the Greater Accra Region. First, organizational creativity significantly and positively affects the firm performance of manufacturing firms. Secondly, innovation, such as constant monitoring and scanning of the environment, improves efficiency through the adaptation of technology impacts performance. Thirdly, network ties do not have a positive moderating effect on creativity and performance. Further innovation plays a positive and significant mediating role in the relationship creativity and firm performance. Organizational creativity and innovation were also found to be significant. Based on the above, it is important for these firms to pay much attention innovative and creativity strategic operations to increase performance.

5.4 Recommendations

Based on the study's results, the researcher suggests the following actions. Complex organizational strategic decision-making procedures are required when integrating organizational creativity into new product development (NDP) initiatives. The study's conclusions have a number of significant ramifications for managers tasked with handling the intricacy involved. First, the findings of this research are consistent with the idea that new and practical creative activities are both essential for improving firm performance. To do this, managers must comprehend that incorporating fresh and practical elements into new NDP methods and products will aid in improving market success.

The senior management should provide a learning environment inside the company that encourages experimenting with novel concepts, notions, and methods. Although the results of this study are limited to the setting of industrial enterprises in greater Accra, compared to the vast population, they still provide fascinating insights for future research in this area, particularly for examining the connections between creativity and innovation. In order to cross-check whether there is convergence or divergence between the empirical and qualitative findings, future studies should include qualitative analysis as well to understand the thoughts and interpretations of the executives or managers working in the research, design, and development units.

Though this study provides valuable insight into how dynamic capability influences supply chain sustainability and firm performance, there are still limitations which set the tone for future studies.

Future studies are encouraged to broaden the concept of innovation and creativity to include technological practices by considering other dimensions such as industry 4.0 and Internet of things.

Secondly, future studies should consider other variables such as top management commitment, resource availability, and organisational culture as moderators or mediators to add to the existing literature.



REFERENCING

Abdul-Halim, H. *et al.* (2019) 'Innovation Culture in SMEs: The Importance of Organizational Culture, Organizational Learning and Market Orientation', *Entrepreneurship Research Journal*, 9(3). Available at: <https://doi.org/10.1515/ERJ-2017-0014>.

Alosani, M.S., Yusoff, R. and Al-Dhaafri, H. (2020) 'The effect of innovation and strategic planning on enhancing organizational performance of Dubai Police', *Innovation and Management Review*, 17(1), pp. 2–24. Available at: <https://doi.org/10.1108/INMR-06-2018-0039/FULL/PDF>.

Atalay, M., Anafarta, N. and Sarvan, F. (2013) 'The Relationship between Innovation and Firm Performance: An Empirical Evidence from Turkish Automotive Supplier Industry', *Procedia - Social and Behavioral Sciences*, 75, pp. 226–235. Available at: <https://doi.org/10.1016/J.SBSPRO.2013.04.026>.

Azamela, J.C. *et al.* (2022) 'The Impact of Institutional Creativity and Innovation Capability on Innovation Performance of Public Sector Organizations in Ghana', *Sustainability (Switzerland)*, 14(3). Available at: <https://doi.org/10.3390/su14031378>.

Baden-Fuller, C. and Haefliger, S. (2013) 'Business Models and Technological Innovation', *Long Range Planning*, 46(6), pp. 419–426. Available at: <https://doi.org/10.1016/J.LRP.2013.08.023>.

Balland, P.A. *et al.* (2019) 'Smart specialization policy in the European Union: relatedness, knowledge complexity and regional diversification', *Regional Studies*, 53(9), pp. 1252–1268. Available at: <https://doi.org/10.1080/00343404.2018.1437900>.

BAM2014 (no date). Available at: <http://www.bam.ac.uk/>.

Boschma, R.A. (2005) 'Proximity and innovation: A critical assessment', *Regional Studies*, 39(1), pp. 61–74. Available at: <https://doi.org/10.1080/0034340052000320887>.

Boso, N. *et al.* (2017) 'Does organizational creativity always drive market performance?', *Psychology and Marketing*, 34(11), pp. 1004–1015. Available at: <https://doi.org/10.1002/mar.21039>.

Bott, N. *et al.* (2014) 'Creativity training enhances goal-directed attention and information processing', *Thinking Skills and Creativity*, 13, pp. 120–128. Available at: <https://doi.org/10.1016/j.tsc.2014.03.005>.

Brereton, P. *et al.* (2007) 'Lessons from applying the systematic literature review process within the software engineering domain', *Journal of Systems and Software*, 80(4), pp. 571–583. Available at: <https://doi.org/10.1016/J.JSS.2006.07.009>.

Brzustewicz, P. *et al.* (2022) 'Emergence of social impact in company–NGO relationships in corporate volunteering', *Journal of Business Research*, 140, pp. 62–75. Available at: <https://doi.org/10.1016/j.jbusres.2021.11.089>.

Cao, M. *et al.* (2009) 'Supply chain collaboration: conceptualisation and instrument development', <http://dx.doi.org/10.1080/00207540903349039>, 48(22), pp. 6613–6635. Available at: <https://doi.org/10.1080/00207540903349039>.

Capron Puozzo, I. and Audrin, C. (2021) 'Improving self-efficacy and creative self-efficacy to foster creativity and learning in schools', *Thinking Skills and Creativity*, 42. Available at: <https://doi.org/10.1016/j.tsc.2021.100966>.

Cartwright, M. and Shepperd, M. (2000) 'An empirical investigation of an object-oriented software system', *IEEE Trans Softw Eng*, 26(8), pp. 786–796. Available at: <https://doi.org/10.1109/32.879814>.

Chen, C.J. (2019) 'Developing a model for supply chain agility and innovativeness to enhance firms' competitive advantage', *Management Decision*, 57(7), pp. 1511–1534. Available at: <https://doi.org/10.1108/MD-12-2017-1236/FULL/HTML>.

Chiu, H.H. (2018) 'Employees' Intrinsic and Extrinsic Motivations in Innovation Implementation: The Moderation Role of Managers' Persuasive and Assertive Strategies', *Journal of Change Management*, 18(3), pp. 218–239. Available at: <https://doi.org/10.1080/14697017.2017.1407353>.

Ciszewska-Mlinarič, M. and Wasowska, A. (2015) 'Resource-Based View (RBV)', *Wiley Encyclopedia of Management*, pp. 1–7. Available at: <https://doi.org/10.1002/9781118785317.WEOM060174>.

Collins, C.J. and Clark, K.D. (2017) 'Strategic Human Resource Practices, Top Management Team Social Networks, and Firm Performance: The Role of Human Resource Practices in Creating Organizational Competitive Advantage', <https://doi.org/10.5465/30040665>, 46(6), pp. 740–751. Available at: <https://doi.org/10.5465/30040665>.

Covin, J.G. and Slevin, D.P. (2015) 'Leadership, Entrepreneurial', *Wiley Encyclopedia of Management*, pp. 1–4. Available at: <https://doi.org/10.1002/9781118785317.WEOM030065>.

Crilly, N. (2018) "'Fixation" and "the pivot": Balancing persistence with flexibility in design and entrepreneurship', *International Journal of Design Creativity and Innovation*, 6(1–2), pp. 52–65. Available at: <https://doi.org/10.1080/21650349.2017.1362359>.

Danaj, L. *et al.* (2013) 'The Improvement of Capacity of Administrative and Local Government Using the Strategic Planning of E-Learning in Albania', *Procedia - Social and Behavioral Sciences*, 75, pp. 1–9. Available at: <https://doi.org/10.1016/j.sbspro.2013.04.001>.

- Dave, Y. and Sohani, N. (2019) 'Improving productivity through Lean practices in central India-based manufacturing industries', *International Journal of Lean Six Sigma*, 10(2), pp. 601–621. Available at: <https://doi.org/10.1108/IJLSS-10-2017-0115>.
- Dickison, P., Haerling, K.A. and Lasater, K. (2019) 'Integrating the national council of state boards of nursing clinical judgment model into nursing educational frameworks', *Journal of Nursing Education*, 58(2), pp. 72–78. Available at: <https://doi.org/10.3928/01484834-20190122-03>.
- Donnellan, J. and Rutledge, W.L. (2019) 'A case for resource-based view and competitive advantage in banking', *Managerial and Decision Economics*, 40(6), pp. 728–737. Available at: <https://doi.org/10.1002/MDE.3041>.
- Duong, L.N.K. and Chong, J. (2020) 'Supply chain collaboration in the presence of disruptions: a literature review', *International Journal of Production Research*, 58(11), pp. 3488–3507. Available at: <https://doi.org/10.1080/00207543.2020.1712491>.
- Eaddy, M. *et al.* (2008) 'Do crosscutting concerns cause defects?', *IEEE Trans Softw Eng*, 34(4), pp. 497–515. Available at: <https://doi.org/10.1109/tse.2008.36>.
- Edmonds, B. (2017) 'Different modelling purposes', *Understanding Complex Systems*, (9783319669472), pp. 39–58. Available at: https://doi.org/10.1007/978-3-319-66948-9_4/COVER.
- Erwin, A.K., Tran, K. and Koutstaal, W. (2022) 'Evaluating the predictive validity of four divergent thinking tasks for the originality of design product ideation', *PLoS ONE*, 17(3 March). Available at: <https://doi.org/10.1371/JOURNAL.PONE.0265116>.

Fayolle, A. *et al.* (2016) ‘Entrepreneurial process and social networks: A dynamic perspective’, *Entrepreneurial Process and Social Networks: A Dynamic Perspective*, pp. 1–367. Available at: <https://doi.org/10.4337/9781785364884>.

Franzoni, S. and Pelizzari, C. (2019) ‘Rainfall financial risk assessment in the hospitality industry’, *International Journal of Contemporary Hospitality Management*, 31(3), pp. 1104–1121. Available at: <https://doi.org/10.1108/IJCHM-10-2017-0632>.

Freiman, J.A. *et al.* (2019) ‘The Importance of Beta, the Type II Error, and Sample Size in the Design and Interpretation of the Randomized Controlled Trial: Survey of Two Sets of “Negative” Trials’, *Medical Uses of Statistics*, pp. 357–389. Available at: <https://doi.org/10.1201/9780429187445-19>.

Fritz, M.M.C. and Lara-Rodríguez, J.S. (2022) ‘Mercury-free artisanal and small-scale gold mining: Proposing a community-business model canvas’, *Extractive Industries and Society*, 9. Available at: <https://doi.org/10.1016/j.exis.2021.101039>.

Gratton, C. *et al.* (2010) ‘Research Methods for Sports Studies’, *Research Methods for Sports Studies* [Preprint]. Available at: <https://doi.org/10.4324/9780203879382/RESEARCH-METHODS-SPORTS-STUDIES-CHRIS-GRATTON-IAN-JONES-CHRIS-GRATTON-DR-IAN-JONES>.

Gupta, S. and Kanungo, R.P. (2022) ‘Financial inclusion through digitalisation: Economic viability for the bottom of the pyramid (BOP) segment’, *Journal of Business Research*, 148, pp. 262–276. Available at: <https://doi.org/10.1016/j.jbusres.2022.04.070>.

Habidin, N.F. and Dahiru, H. (no date) ‘Related papers A Proposed Strategic Balanced Scorecard Model: Strategic Control System and Organization... Balanced Scorecard financial measurement of organizational performance: A review Dr A A Malgwi &’, *IOSR*

Journal of Economics and Finance, 4(6), pp. 1–10. Available at: www.iosrjournals.org (Accessed: 27 September 2022).

Hamouda, G.M., Farghaly, S.M. and El-Aliem, A. (no date) *Organizational Creativity as a Mediating Factor for Organizational Performance and Excellence among Nurses: Developing a Model*, *International Journal of Novel Research in Healthcare and Nursing*. Available at: www.noveltyjournals.com.

Haseeb, M. *et al.* (2019) ‘Industry 4.0: A Solution towards Technology Challenges of Sustainable Business Performance’, *Social Sciences 2019*, Vol. 8, Page 154, 8(5), p. 154. Available at: <https://doi.org/10.3390/SOCSCI8050154>.

Huang, Y., Han, W. and Macbeth, D.K. (2020) ‘The complexity of collaboration in supply chain networks’, *Supply Chain Management*, 25(3), pp. 393–410. Available at: <https://doi.org/10.1108/SCM-11-2018-0382/FULL/XML>.

Ibrahim, H.I., Isa, A. and Shahbudin, A.S.Md. (2016) ‘Organizational Support and Creativity: The Role of Developmental Experiences as a Moderator’, *Procedia Economics and Finance*, 35, pp. 509–514. Available at: [https://doi.org/10.1016/s2212-5671\(16\)00063-0](https://doi.org/10.1016/s2212-5671(16)00063-0).

Jacobs, B.W., Kraude, R. and Narayanan, S. (2016) ‘Operational Productivity, Corporate Social Performance, Financial Performance, and Risk in Manufacturing Firms’, *Production and Operations Management*, 25(12), pp. 2065–2085. Available at: <https://doi.org/10.1111/POMS.12596>.

Kabue, L.W. and Kilika, J.M. (2016) ‘Firm Resources, Core Competencies and Sustainable Competitive Advantage: An Integrative Theoretical Framework’, *Journal of Management and Strategy*, 7(1). Available at: <https://doi.org/10.5430/jms.v7n1p98>.

Kähkönen, A.K. and Lintukangas, K. (2012) 'The underlying potential of supply management in value creation', *Journal of Purchasing and Supply Management*, 18(2), pp. 68–75. Available at: <https://doi.org/10.1016/J.PURSUP.2012.04.006>.

Khan, S.A.R. *et al.* (2022) 'Green capabilities and green purchasing practices: A strategy striving towards sustainable operations', *Business Strategy and the Environment*, 31(4), pp. 1719–1729. Available at: <https://doi.org/10.1002/BSE.2979>.

Khomh, F. *et al.* (2012) 'An exploratory study of the impact of antipatterns on class change- and fault-proneness', *Empirical Software Engineering*, 17(3), pp. 243–275. Available at: <https://doi.org/10.1007/S10664-011-9171-Y/METRICS>.

Krafft, J., Quatraro, F. and Saviotti, P.P. (2014) 'The Dynamics of Knowledge-intensive Sectors' Knowledge Base: Evidence from Biotechnology and Telecommunications', <http://dx.doi.org/10.1080/13662716.2014.919762>, 21(3), pp. 215–242. Available at: <https://doi.org/10.1080/13662716.2014.919762>.

Lenihan, H., McGuirk, H. and Murphy, K.R. (2019) 'Driving innovation: Public policy and human capital', *Research Policy*, 48(9), p. 103791. Available at: <https://doi.org/10.1016/J.RESPOL.2019.04.015>.

Leonidou, L.C. *et al.* (2015) 'Internal Drivers and Performance Consequences of Small Firm Green Business Strategy: The Moderating Role of External Forces', *Journal of Business Ethics* 2015 140:3, 140(3), pp. 585–606. Available at: <https://doi.org/10.1007/S10551-015-2670-9>.

Lewbel, A. (2012) 'Using heteroscedasticity to identify and estimate mismeasured and endogenous regressor models', *Journal of Business and Economic Statistics*, 30(1), pp. 67–80. Available at: <https://doi.org/10.1080/07350015.2012.643126>.

- Liao, Y. *et al.* (2017) 'Past, present and future of Industry 4.0 - a systematic literature review and research agenda proposal', <https://doi.org/10.1080/00207543.2017.1308576>, 55(12), pp. 3609–3629. Available at: <https://doi.org/10.1080/00207543.2017.1308576>.
- Liu, X., Li, X. and Li, H. (2016) 'R&D subsidies and business R&D: Evidence from high-tech manufacturing firms in Jiangsu', *China Economic Review*, 41, pp. 1–22. Available at: <https://doi.org/10.1016/J.CHIECO.2016.08.003>.
- Madrid, H.P. *et al.* (2018) 'A Finer Grained Approach to Psychological Capital and Work Performance', *Journal of Business and Psychology*, 33(4), pp. 461–477. Available at: <https://doi.org/10.1007/S10869-017-9503-Z>.
- Middlebrooks, A. (2015) 'Introduction-Entrepreneurial leadership across contexts', *Journal of Leadership Studies*, 8(4), pp. 27–29. Available at: <https://doi.org/10.1002/JLS.21349>.
- Oyemomi, O. *et al.* (2019) 'How cultural impact on knowledge sharing contributes to organizational performance: Using the fsQCA approach', *Journal of Business Research*, 94, pp. 313–319. Available at: <https://doi.org/10.1016/J.JBUSRES.2018.02.027>.
- Parikh, C., Maddulety, K. and Meadows, C.J. (2020) 'Improving creative ability of base of pyramid (BOP) students in India', *Thinking Skills and Creativity*, 36. Available at: <https://doi.org/10.1016/j.tsc.2020.100652>.
- Renko, M. *et al.* (2015) 'Understanding and Measuring Entrepreneurial Leadership Style', *Journal of Small Business Management*, 53(1), pp. 54–74. Available at: <https://doi.org/10.1111/JSBM.12086>.
- Sánchez-Sellero, P., Martínez, J.R.- and García-Vázquez, J.M. (2013) 'Innovation as a Driver of Absorptive Capacity from Foreign Direct Investment in Spanish Manufacturing Firms',

Procedia - Social and Behavioral Sciences, 75, pp. 236–245. Available at: <https://doi.org/10.1016/j.sbspro.2013.04.027>.

Searcy, C. (2017) ‘Multi-stakeholder initiatives in sustainable supply chains: Putting sustainability performance in context’, *Elementa*, 5. Available at: <https://doi.org/10.1525/ELEMENTA.262/112468/MULTI-STAKEHOLDER-INITIATIVES-IN-SUSTAINABLE>.

Shahzad, K. *et al.* (2016) ‘Integrating knowledge management (KM) strategies and processes to enhance organizational creativity and performance: An empirical investigation’, *Journal of Modelling in Management*, 11(1), pp. 154–179. Available at: <https://doi.org/10.1108/JM2-07-2014-0061>.

Slater, S.F., Mohr, J.J. and Sengupta, S. (2014) ‘Radical Product Innovation Capability: Literature Review, Synthesis, and Illustrative Research Propositions’, *Journal of Product Innovation Management*, 31(3), pp. 552–566. Available at: <https://doi.org/10.1111/JPIM.12113>.

Sundram, V.P.K. *et al.* (2018) ‘The effect of supply chain information management and information system infrastructure: The mediating role of supply chain integration towards manufacturing performance in Malaysia’, *Journal of Enterprise Information Management*, 31(5), pp. 751–770. Available at: <https://doi.org/10.1108/JEIM-06-2017-0084/FULL/HTML>.

Tarofder, A.K. *et al.* (2019) ‘Competitive advantages through IT-enabled supply chain management (SCM) context’, *Polish Journal of Management Studies*, 19(1), pp. 464–474. Available at: <https://doi.org/10.17512/PJMS.2019.19.1.35>.

Tse, Y.K. *et al.* (2016) 'Embracing supply chain agility: an investigation in the electronics industry', *Supply Chain Management*, 21(1), pp. 140–156. Available at: <https://doi.org/10.1108/SCM-06-2015-0237/FULL/XML>.

Tukamuhabwa, B.R. *et al.* (2015) 'Supply chain resilience: Definition, review and theoretical foundations for further study', *International Journal of Production Research*, 53(18), pp. 5592–5623. Available at: <https://doi.org/10.1080/00207543.2015.1037934>.

Um, J. (2017) 'Improving supply chain flexibility and agility through variety management', *International Journal of Logistics Management*, 28(2), pp. 464–487. Available at: <https://doi.org/10.1108/IJLM-07-2015-0113/FULL/HTML>.

Ur Rehman, S., Bhatti, A. and Chaudhry, N.I. (2019) 'Mediating effect of innovative culture and organizational learning between leadership styles at third-order and organizational performance in Malaysian SMEs', *Journal of Global Entrepreneurship Research*, 9(1). Available at: <https://doi.org/10.1186/s40497-019-0159-1>.

Vally, Z. *et al.* (2019) 'Examining the effects of creativity training on creative production, creative self-efficacy, and neuro-executive functioning', *Thinking Skills and Creativity*, 31, pp. 70–78. Available at: <https://doi.org/10.1016/j.tsc.2018.11.003>.

Walker, R.M., Damanpour, F. and Devece, C.A. (2011) 'Management innovation and organizational performance: The mediating effect of performance management', *Journal of Public Administration Research and Theory*, 21(2), pp. 367–386. Available at: <https://doi.org/10.1093/jopart/muq043>.

Weaver, K.M. (2015) 'Product Innovation and Entrepreneurship', *Wiley Encyclopedia of Management*, pp. 1–5. Available at: <https://doi.org/10.1002/9781118785317.WEOM030080>.

West, J. and Bogers, M. (2014) ‘Leveraging external sources of innovation: A review of research on open innovation’, *Journal of Product Innovation Management*, 31(4), pp. 814–831. Available at: <https://doi.org/10.1111/JPIM.12125>.

Yeomans, M. *et al.* (2020) ‘Conversational receptiveness: Improving engagement with opposing views’, *Organizational Behavior and Human Decision Processes*, 160, pp. 131–148. Available at: <https://doi.org/10.1016/J.OBHDP.2020.03.011>.

Yeşil, S., Koska, A. and Büyükbeşe, T. (2013) ‘Knowledge Sharing Process, Innovation Capability and Innovation Performance: An Empirical Study’, *Procedia - Social and Behavioral Sciences*, 75, pp. 217–225. Available at: <https://doi.org/10.1016/j.sbspro.2013.04.025>.

Zheng, T. *et al.* (2021) ‘The applications of Industry 4.0 technologies in manufacturing context: a systematic literature review’, *International Journal of Production Research*, 59(6), pp. 1922–1954. Available at: <https://doi.org/10.1080/00207543.2020.1824085>.

Zhou, K.Z. and Wu, F. (2010) ‘Technological capability, strategic flexibility, and product innovation’, *Strategic Management Journal*, 31(5), pp. 547–561. Available at: <https://doi.org/10.1002/SMJ.830>.

Zhou, Q. *et al.* (2022) ‘Value co-creation in the multinational technology standard alliance: a case study from emerging economies’, *Industrial Management and Data Systems*, ahead-of-print(ahead-of-print). Available at: <https://doi.org/10.1108/IMDS-12-2021-0782/FULL/XML>.

APPENDIX

SURVEY QUESTIONNAIRE

I am a postgraduate student at Kumasi's Kwame Nkrumah University of Science and Technology's Department of Supply Chain and Information Systems. This survey instrument was designed to aid me in studying the following topic **ORGANIZATIONAL CREATIVITY, INNOVATION AND FIRM PERFORMANCE, THE MODERATING ROLE OF NETWORK TIES**. Any information you provide will be used exclusively for academic purposes and will be kept strictly confidential.

SECTION A: RESPONDENT'S PROFILE

Kindly pick all that pertains to the following questions by checking (✓).

1. Gender of respondents ☐ Male ☐ Female
2. Age (years) ☐ 29 and below ☐ 30 to 40 ☐ 40 to 49 ☐ 50 or more
3. Education level ☐ Professional Cert ☐ diploma/HND ☐ 1st Degree ☐ Masters or more
4. Working of experience ☐ 0-5years ☐ 6-10years ☐ 11-15years ☐ above 15years
5. Managerial level ☐ Supervisor ☐ line manager ☐ Top level
6. Position within the organisation: Supply chain manager ☐ logistics manager ☐ Quality Control ☐ Others ☐

SECTION B: ORGANIZATIONAL CREATIVITY

On a scale of 1 to 7 (strongly disagree to strongly agree), rate your firm's data analytics practices on the following criteria:

Strongly agree	Disagree	Somehow disagree	Indifferent/Not sure	Somehow agree	Agree	Strongly agree	
1	2	3	4	5	6	7	
Our company has produced many novel and useful ideas (services/products).	1	2	3	4	5	6	7
Our company fosters an environment that is conducive to our own ability to produce novel and useful ideas (services/products).	1	2	3	4	5	6	7
Our company spends much time for producing novel and useful ideas (services/products).	1	2	3	4	5	6	7
Our company considers producing novel and useful ideas (services/products) as important activities.	1	2	3	4	5	6	7
Our company actively produces novel and useful ideas (services/products).	1	2	3	4	5	6	7
We often have fresh approaches to problems	1	2	3	4	5	6	7
We have a unique perspective to solving problems							
We usually generate unprecedented solutions to problems							
Our solution to problems is often different from traditional ways of solving problems							

Source: (Sue-Chan & Hempel, 2016)

SECTION D: FIRM PERFORMANCE

On a scale of 1 to 7 (strongly disagree to strongly agree), rate your firm's performance during the last three years on the following criteria:

Strongly agree	Disagree	Somehow disagree	Indifferent/Not sure	Somehow agree	Agree	Strongly agree				
1	2	3	4	5	6	7				
Compared with key competitors, our company is more successful.				1	2	3	4	5	6	7
Compared with key competitors, our company has a greater market share.				1	2	3	4	5	6	7
Compared with key competitors, our company is growing faster.				1	2	3	4	5	6	7
Compared with key competitors, our company is more profitable.				1	2	3	4	5	6	7
Compared with key competitors, our company is more innovative				1	2	3	4	5	6	7

Source: Raza Sultani , (2016)



SECTION D: Organizational Innovation

Kindly use a scale of 1= “not at all” to 7= “to a largest extent” to provide responses to the items in the table below:

Organizational Innovation	Not at All To a Largest Extent						
	1	2	3	4	5	6	7
We update our business processes (technical, administrative, production, channels of distribution) more often than our main competitors							
-We innovate more often with respect to our business processes than our key target market competitors	1	2	3	4	5	6	7
-The rate at which we innovate our business processes exceeds industry norms	1	2	3	4	5	6	7
-Competitors undertake business process innovations less often than we do	1	2	3	4	5	6	7
-Our company has produced more new products/services for our target markets than our key target market competitors during the past five years	1	2	3	4	5	6	7
-On average, each year we introduce more new products /services in our target markets than our key target market competitors	1	2	3	4	5	6	7

Atuahene-Gima & Li, 2004

SECTION D: Network Ties

Kindly use a scale of 1= “not at all” to 7= “to a largest extent” to provide responses to the items in the table below:

Network Ties	Not at All To a Largest Extent						
Our firm has developed and utilized business networking relationships.	1	2	3	4	5	6	7
Our firm has a strong relationship with key financial institutions for overdrafts and secured credit lines	1	2	3	4	5	6	7
Our firm has consolidated key players in the industry to improve competitiveness	1	2	3	4	5	6	7
Our firm has developed and utilized political networking relationships	1	2	3	4	5	6	7
Our firm has developed and utilized political networking, for the 6-years	1	2	3	4	5	6	7

Acquaah, 2012