AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT

THE IMPACT OF DIGITAL ENTREPRENEURSHP ON FIRM PERFORMANCE: MEDIATING ROLE OF ORGANISATIONAL AGILITY AND MODERATING EFFECT OF DIGITAL LITERACY

BY

EBENEZER ABOAGYE

(8211380035)

THIS THESIS IS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES AT AKENTEN APPIAH-MENKA UNIVERSITY OF SKILLS TRAINING AND ENTREPRENEURIAL DEVELOPMENT AS PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE MASTER OF PHILOSOPHY DEGREE IN BUSINESS MANAGEMENT.

NOVEMBER, 2023

DECLARATIONS

Candidate's Declaration

I hereby declare that this thesis is the result of my own original work and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Name: Ebenezer Aboagye

Signature: …… Date: ……..

Supervisors' Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the Akenten Appiah-Menka University of Skills Training and Entrepreneurial Development.

Principal Supervisor's Name: Dr. Gideon Jojo Amos

Signature: ……. Date: ……....

Co-Supervisor's Name: Freeman Mensah

Signature: …….. Date: …….

ACKNOWLEDGEMENTS

My gratitude for my Lord and Saviour, Jesus Christ, whose kindness and grace have helped me throughout my academic career, is overflowing. I've experienced His unwavering power and encouragement, which has allowed me to succeed in all I've attempted.

Furthermore, I would like to express my gratitude to my supervisor, Dr. Gideon Amos Jojo, for all of his assistance, advice, and support throughout the study project.

In addition, I would like to thank the families of Dr. Richard Asiedu, Rev. Augustine Arthur Norman, Mr. Cerdick Ofori Anto, Rev. Benjamin and Mrs. Lydia Otoo for their several kinds of encouragement and support in making this work a reality.

My dear wife Phinoria Doris Aboagye, my children Cyrus and Onwanwani, and I are all grateful for your support and sacrifices.

In addition, I would like to thank all respondents and executives from the various companies I contacted for their time in completing this study.

Finally, I want to sincerely thank the authors of all the publications I have read and referenced while conducting my research.

DEDICATION

This work is dedicated to my wife, Phinoria Doris Aboagye, and my children, Cyrus and Onwawani Aboagye, as well as my mother, Mary Addobea Aboagye, whose memory will always be treasured.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

ABSTRACT

Due to shifting consumer behaviour, rising internet usage, and advancements in technology, digital business has grown significantly in recent years. It provides individuals with the opportunity to turn their ideas into profitable businesses, upending existing marketplaces and promoting the digital economy. Organisations must embrace digital business practices, which include focusing on meeting customer needs as efficiently as possible and consistently and responsibly utilising digital technology in operations that change business models generally and organisational structures, organisational culture, processes, and products. Thus, the goal of this research was to investigate, through controlled samples, how digital entrepreneurship affects firm Performance. The researcher examine how digital entrepreneurship directly affects business performance in addition to the mediating and moderating functions that organisational agility and organisational digital literacy play. Based on previously published literature, the researcher developed three hypotheses and a conceptual framework to guide the investigation. This work adheres to positivist epistemology. The study collected data online using a structured questionnaire and a comparative technique using a quantitative research design. Research data came from 240 middle and senior managers in various sectors in Ghana. The collected data was retrieved from Google Forms and then imported into Microsoft Excel. Following that, it was put into SPSS version 28 for primary analysis, and Amos was used to do SEM analysis. The study's findings showed a statistically significant and positive relationship between digital entrepreneurship and business performance. Furthermore, it has been established that organisational agility completely mediates the relationship between digital entrepreneurship and business performance. The researcher was surprised to find that the degree of organisational digital literacy had no bearing on the strength of the correlation between digital entrepreneurship and firm performance. Based on these findings, it is recommended that firms invest in enhancing their organizational agility and digital literacy to maximize the benefits of digital entrepreneurship. Training programs and supportive digital infrastructures should be prioritized to empower employees and strengthen the overall performance within the company. The study recommends that Future research could investigate the role of other organizational factors in moderating the relationship between digital entrepreneurship and firm performance and also on the viability of digital firms in Ghana.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

The main aim of this study to examine how digital entrepreneurship affects organizational performance as well the role organizational agility in mediating this relationship, and how organisational digital literacy moderates such a relationship. This chapter focuses on the background to the study, statement of problem, Research aim and objectives, research questions, significance of the study, belief methodology, and scope of the study, Limitations of the study and the structure of the study.

1.1 Background of the Study

In order to make new ideas, products, and value additions lucrative for the market, entrepreneurs must first discover possibilities and then address problems that certain customers and clients are facing. The global economy in which we currently live is increasingly dependent on digital technologies. This technology, which has emerged as one of the main business drivers of our day, has an impact on every aspect of life (Tapscott, D. (2023). It has altered the way businesses generate and exchange value, engage with customers, manage their operations, and trade products and services (Frederiksen et al., 2017). This development has forced entrepreneurs and business owners to stop relying solely on traditional business knowledge and instead adopt and build resilient businesses by leveraging the advantages of digital technologies in delivering competitive business models via the internet and other ICT technologies (Thiel et al., 2017). This has created a need for digital entrepreneurship in Ghana's business landscape.

Digital entrepreneurship is the process of leveraging technology to identify opportunities, create new things, and contribute value in the online market. It gives entrepreneurs the ability to grow their companies swiftly, connect with customers anywhere in the world, and transcend national boundaries. Typical examples of digital entrepreneurship include e-commerce websites, online marketplaces, digital marketing agencies, software-as-a-service (SaaS) providers, mobile app developers, and online learning platforms (Sahut et al., 2021).

Additionally, it highlights the use of digital platforms and technology in the development, innovation, and management of new or existing businesses. It involves using digital technologies like social media, e-commerce platforms, and data analytics to identify gaps in the market, engage with customers, and deliver value (https://www.firstrepublic.com/insights-education/what-is-a-digital-entrepreneur).
By utilising data analytics and CRM software, business owners may obtain insightful knowledge about their target market and tailor their products to suit individual client requirements. This makes it possible for digital entrepreneurship to provide more individualized experiences and improved client engagement. (https://www.businessnewsdaily.com/15918-how-to-use-crm-analytics.html).

According to Brynjolfsson and McAfee (2014), digitally equipped businesses are more likely than their traditional counterparts to achieve rapid growth and generate higher profits. To develop a novel and competitive company model, digital technology is required. However, digital technology alone cannot help a company increase its market share or improve its overall performance. It requires that, with an emphasis on maximising customer satisfaction, contemporary digital technologies be consistently,

suitably led, and directedly integrated into the operations of evolving products, processes, organisational structure, organisational culture, and the entire business model. This implies that leading a digitally enabled company without possessing the know-how to effectively leverage these tools and quickly adjust to market shifts to satisfy customer demands could have a detrimental impact on the company's performance.

A company's ability to respond quickly and effectively to changes in its business environment is crucial in the digital age. This is because it makes it easier for businesses to absorb new ideas and technologies while also increasing their adaptability and speed. Worldwide variables like maximum reach to clients across all global market sectors, ease of information access, and worldwide workforce flexibility have a huge impact on the shift in corporate management structure. (Avital et al., 2017; Mehdi et al., 2018). This combination is both preferable and necessary. Reaching every possible customer in the market is, in the grand scheme of things, the most enticing and exciting prospect for business owners and entrepreneurs. Because of this advantage, which is hard to ignore, competition is increasing swiftly. Access to organisational information through Industry 4.0 is transparent and free, saving money, time, and space.

Digitalization affects a company's structural, relational, and human capital in terms of employee behaviour, organisational culture, and knowledge management systems (Bejinaru & Iordache, 2011; Bratianu et al., 2020). In this sense, it seems sense to predict that digitization would result in more collaborative and effective work environments, faster information exchange, more professional growth, and even better decision-making. Therefore, in order for enterprises to adopt digital entrepreneurship, they need to have the skills, expertise, and understanding necessary to effectively use

digital technology. Increasing digital literacy within the business could be necessary to increase output, effectiveness, and creativity. It gives employees the ability to use technology to enhance workflow, promote effective teamwork, and make informed decisions. Organisational leaders should prioritise digital literacy initiatives in the digital age to empower employees and boost productivity inside the business. Examples of these initiatives include training programmes, resources, and a useful digital infrastructure.

1.2 Statement of the Problem

Industry 4.0, often known as the Fourth Industrial Revolution, aims to satisfy stakeholder demands by incorporating digitization into all facets of business operations. While companies in developed countries have profited immensely from digital entrepreneurship, just a small number of Ghanaian enterprises are taking advantage of these benefits and are giving this innovative concept of digital entrepreneurship some serious thought. Digital technologies play a part in creating a friendly and supportive environment in which new firms function. It has also helped to close the gap between established and emerging countries by boosting competitiveness, attracting additional investments, opening up new markets, and creating jobs (Kraus et al., 2019). While the transformative potential of digital entrepreneurship on firm performance is widely acknowledged, the specific mechanisms through which this impact occurs in the Ghanaian context remain underexplored. (Anim-Yeboah, 2020). Additionally, the roles of organizational agility and digital literacy, as potential mediators and moderators, respectively, demand focused investigation to comprehend their influence on the dynamics of digital entrepreneurship and subsequent organizational outcomes.

Ghana, as an emerging economy, is undergoing a digital revolution, emphasizing the need for businesses to adapt and harness the opportunities presented by digital entrepreneurship. However, the extent to which organizational agility mediates the relationship between digital entrepreneurship and firm performance in the Ghanaian business landscape, as well as how organizational digital literacy moderates these relationships, necessitates empirical scrutiny. This research seeks to address these critical gaps in the literature by examining the impact of digital entrepreneurship on firm performance in the Ghanaian context. Through a comprehensive exploration of the mediating role of organizational agility and the moderating influence of organizational digital literacy, this study aims to provide valuable insights for businesses, policymakers, and scholars navigating the digital transformation journey in Ghana.

1.3 Research Aim and Objectives

The main aim of this study is to explore the impact of Digital entrepreneurship on firm performance; The mediation effect of Organisational agility and the moderating role of Organisational digital literacy on such a relationship. This is to provide a sense of direction and focus to the researcher in terms of what he intends to achieve. These objectives are therefore broken down into;

1.3.1 General objective

The general objective of this thesis is to examine impact of digital entrepreneurship on firm performance, the mediating effect of organizational agility and the moderating effect of organizational digital literacy on the link between digital entrepreneurship and business performance.

1.3.2 Specific objectives

The specific objectives of this study are as follows:

1. Explore the impact of digital entrepreneurship Firm performance.
2. Investigate the mediating role of organizational agility in the relationship between digital entrepreneurship and Firm performance
3. Investigate the moderating role of digital literacy in the relationship between digital entrepreneurship and Firm performance.

1.4 Research Questions

To answer the research questions, this research aims to answer the following research questions:

1. What is the relationship between digital entrepreneurship and Firm Performance?
2. What is the mediating role of organizational agility in the relationship between digital entrepreneurship and Firm performance?
3. What is the moderating effect of digital literacy on the relationship between digital entrepreneurship and Firm performance?

1.5 Significance of the Study

Thanks to advancements in technology, increased internet coverage, and shifts in consumer behaviour, digital entrepreneurship has gained significant momentum in recent years. It provides individuals with the opportunity to turn their ideas into profitable businesses, upending existing marketplaces and promoting the digital economy. Businesses should embrace digital entrepreneurship as it enables them to leverage current digital technology while focusing on operational best practices that

transform entire business models, products, processes, organisational structures, organisational cultures, and organisational structures, meeting the needs of the client For example, many US and European businesses attribute their success to conducting the majority of their business online. The study's conclusions also provide insightful information for managers, corporate managers, and even business owners who need to evaluate their companies. Digital entrepreneurship can be utilised in Ghana and across Africa to meet customer demands.

Additionally, this study makes two important considerations. First and foremost, from a practical and managerial perspective, managers and owners of various businesses and other organisations in Ghana should take note of this study. The purpose of this is to provide business guidance on maximising the benefits of digital technologies. Theoretically, it also helps researchers examine how well digital entrepreneurship works in the corporate setting, the importance of operational agility, and strategies for attaining it. By acquiring the necessary theoretical framework, we can improve the digital literacy of our employees and extend it to other organisations in Ghana.

1.6 Brief Methodology

The management and senior staff of numerous digital businesses in Ghana, with an emphasis on Accra, the nation's capital, made up the study's sample. These respondents are representative of Ghana's several economic sectors. This study applies a quantitative research methodology to investigate the relationships between the different variable for the study. An online survey was used as the data collection tool for this study. One analytical technique utilised in the route analysis, the research's data analysis approach, is the structural equation model, or SEM. This model has been used to evaluate the proposed hypotheses, look at correlations, and provide evidence.

1.7 Scope of the Study

The present study investigates the operations of select Ghanaian enterprises that leverage digital technology in relation to digital entrepreneurship. This study explores the relationship that exists between digital entrepreneurship and performance, the moderating effect that digital literacy has on this relationship, and the mediating function that organisational agility plays in this relationship. The poll only included managers from these businesses' middle and senior levels.

1.8 Limitations of the Study

There are several issues with this study project. The first emphasis of this research was on enterprises located in the Greater Accra area of Ghana. Second, when the researcher asked some top managers to complete the questionnaire, it was a little difficult to acquire their consent. Consequently, the investigators faced difficulties in reaching the recommended sample size for the study. The researcher also had challenges retrieving every questionnaire that were sent to different companies for the respondents. This suggests that a number of respondents from the different companies delayed the researchers' process of collecting data.

1.9 Organization of the Study

This research is arranged in five chapters. Chapter 1 is an introduction that includes the background of the research, statement of the problem, general and specific objectives of the research, research questions, and importance of the research, scope, limitations, and research structure. Chapter 2 focuses on review of related literature. Chapter 3 describes methodology, including research philosophy, approach, design, research strategy, population and sampling, data collection tools, validity and reliability, and

data analysis techniques. Chapter 4 also covers data presentation, analysis, and discussion of results. Chapter 5 reviews the entire study and research project with a summary, conclusion, and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The objectives of this study are to examine how digital entrepreneurship affects organisational performance, how organisational agility mediates this relationship, and how organisational digital literacy moderates this relationship. This chapter reviews the main research questions and pertinent literature. We will also talk about the opinions of authors who contribute to this topic from a theoretical and empirical standpoint. These statistics provide support for research. This review covers the conceptual framework, organisational agility, definitions of digital entrepreneurship and its forms, theoretical underpinnings of the study, effects of digital entrepreneurship on firm and organisational performance, and the moderating role of organisational digital literacy in these relationships.

2. 1. Theoretical Background

This study's theoretical underpinnings include the dynamic capacities theory (Teece and Pisano, 1994) and the resource-based view (RBV) hypothesis created by Jay Barney. Resource theory (Barney, 1991) and dynamic resource theory (Teece and Pisano, 1994) help explain the connections between digital entrepreneurship, organisational agility, digital literacy, and corporate success. Resource-based theorists refer to the accumulation of material and immaterial assets, such as management, knowledge, and information, as resources and capabilities (Idris et al., 2022). Resources include all of a company's readily available assets, competencies, business procedures, business features, information, and expertise, according to Barney (1991). It's a corporate management strategy that helps companies make and implement plans to

increase productivity and efficiency. Success is one of its elements. Though it is one of the company's assets, it is unique in a few ways.

McDuke (2005) asserts that capacity is an industry-specific, immutable resource that increases the value of the business's other readily available resources. Research indicates that a firm's competitive advantage and performance are significantly influenced by its resources (Barney, 1991; Rommelt, 1991).

Teece et al. (1997, p. 516) describe dynamic capabilities as "the power of organisations and managers to integrate, create, and adapt internal and external capabilities in response to a changing environment." "A dynamic capability is the ability to act or adapt." Helfat et al. (2007). In a similar vein, Theis et al. (1997) assert that prosperous companies create fresh chances for internalisation as well as external chances for integrating and improving strategy responses. Action capability is described as "a taught and continuous pattern of organisational integration that efficiently builds and adapts business processes for re-engineering goals" by Zulu and Winter (2002), p. 14 (340).

Strategic ability serves three main functions, according to Treece et al. (1997). Two of them include recognising constant change and being able to identify new opportunities and risks as they arise. Identifying new products, processes, and services and turning them into profitable businesses requires the ability to manage and reallocate resources as well as the capability to improve processes in response to technological and economic advancements (Teece, 2012, 2018). Because of this, companies are better able to manage and capitalise on business opportunities in a dynamic environment by coordinating and modifying the resources at their disposal (Teece, 2018).

By demonstrating the ability to recognise the need for change, come up with workable solutions, and apply lessons gained to produce novel and creative forms of communication, it offers the business a competitive edge in terms of independence and innovation (Zollo and Winter, 2002).

Furthermore, businesses must deploy their dynamic talents, like organisational agility and digital entrepreneurship, to increase business performance in an environment that is constantly out of balance (Teece et al., 2016; Jantunen et al., 2018). Thus, the study proposed a high positive association between organisational agility, digital literacy, digital entrepreneurship, and firm success based on the theoretical foundations of resource-based theory and dynamic capacity theory.

2.2 Digital Entrepreneurship

"Digital entrepreneurship" refers to a kind of entrepreneurship that uses digital technology and the Internet to find, create, and take advantage of chances for innovation, economic growth, and value creation. Digital entrepreneurs use technology to launch and expand their businesses, usually focusing on scalability, efficiency, and worldwide reach. Digital entrepreneur businesses are internet businesses that do not require physical location investments in order to sell goods and services. Digital business models cover a wide range of platforms, including turnkey solutions, e-commerce, blogs, YouTube channels, and online education. The concept of digital marketing clarifies how business practises evolve in tandem with the ways that digital technology is transforming people's lives and businesses. "Digital entrepreneurship" refers to tactics, education, and business expansion.

Zhao (2021) highlights that digital entrepreneurship is a consequence of technological advancements, specifically the Internet and information and communication technology (ICT). This form of entrepreneurship involves digitally modifying resources, offerings, or critical business elements. It is characterized by the active pursuit of opportunities through the use of digital media and ICT.

According to Zhao (2021), digital entrepreneurship is defined as "finding possibilities based on the use of digital media and other information and communication technology." This encompasses the entire process of starting, growing, and managing a company within the digital sphere. The tools involved in this process include the internet, social media, mobile devices, and various digital technologies. Building upon this definition, Siva Vineela (2018) specifies that digital entrepreneurship is conducted through digital platforms, utilizing channels such as cloud solutions, mobile, social media, and big data. These platforms enable new strategies for resource pooling, product and service redesign, and deployment through common technology and open standards.

Entrepreneurs and company owners, according to Davidson & Vaast (2010), are keenly aware of and are actively utilizing the opportunities provided by the digital economy. Digital enterprises, as identified by Rouse (2011), leverage ICT applications such as Wi-Fi, hotspots, AI software, and social media websites for internal and external operations. Despite expertise in digital technology, executives find it challenging to comprehend the creative logic driving organizations like Google, Facebook, and Apple (Remane et al., 2017). Nevertheless, these new digital enterprises have successfully overturned existing power structures, particularly in the media and retail sectors (Veit et al., 2014).

Zhao and Collier (2016) define digital entrepreneurship as a process that not only creates new ventures benefiting society and the economy but also enhances business acumen. This involves building a customer and stakeholder base, showcasing the broader impact of digital entrepreneurship on various facets of the business landscape.

2.3 Organizational Agility

Entrepreneurs, as highlighted by Zhao (2021), leverage digital technology to establish competitive business models through the Internet and other ICT technologies. This strategic adoption of technology enables the construction of flexible and resilient organizations. Such flexibility positions businesses to be more adaptive and responsive to changes in markets and sectors. Organizational agility becomes a key differentiator in the fast-paced business environment of the twenty-first century (Ravichandran, 2018).

Ravichandran (2018) asserts that in the current business landscape, organizational agility is crucial for reacting and adjusting quickly. Organizations that lack agility run the risk of losing market share and overall quality due to operational errors. The significance of organizational agility is further emphasized by the evolving nature of markets and the need for businesses to swiftly adapt to changing conditions. The literature provides various perspectives on the definition of organizational agility. According to McCarthy et al. (2010), it involves recognizing the significance of the organization's environment and seizing opportunities. Qin and Nembhard (2010) describe it as the capacity to thrive in a constantly changing competitive environment, adapt swiftly to market changes, and deliver customer-satisfying goods and services.

Ketchen and Hult (2007) characterize organizational agility as having a "nature that is dynamic and adaptable." This resonates with the idea that agility involves not just

reacting to change but also proactively identifying and capitalizing on opportunities. Liu and Yang (2019) contribute to the discussion by defining organizational agility as the basic ability of a firm to identify opportunities, threats, and changes in the business environment and respond quickly to these developments. Roberts and Grover (2012) elaborate on this by defining organizational agility as the extent to which a firm considers consumers as potential sources of innovation and competition and responds swiftly.

Tallon and Pinson (2011) emphasize a company's capacity to readily, rapidly, and easily detect and respond to opportunities and problems in its environment as synonymous with organizational agility. This aligns with the idea that agility goes beyond simple adaptation; it involves proactive engagement with the business environment.

Zhang et al. (2022) contribute a nuanced perspective, defining organizational agility as the process of organizational understanding and response. This emphasizes the dynamic and iterative nature of agility, where understanding the environment is intrinsically linked to the ability to respond effectively.

Puriwat and Honsopon (2021) add that organizational agility is the ability of a company to continuously adjust to changing circumstances and introduce new products to the market. This highlights the continuous and innovative aspect of agility in response to the dynamic business landscape. Expanding on the multifaceted nature of organizational agility, Tallon and Pinson (2011) highlight a company's capacity to readily, rapidly, and easily detect and respond to opportunities and problems in its environment as synonymous with organizational agility. This underscores the proactive and responsive nature of agility in addressing challenges and seizing opportunities.

Furthermore, Zhang et al. (2022) contribute to the understanding of organizational agility by defining it as the process of organizational understanding and response. This suggests that agility is an ongoing, dynamic process that involves not only recognizing changes in the environment but also responding effectively to those changes. The ability to understand and adjust to a changing environment, as emphasized by Roberts & Grover (2012), becomes a critical component of organizational agility.

Priono et al. (2020) bring attention to the complexity of the concept of organizational agility, emphasizing its potential correlations with performance. This complexity suggests that organizational agility is not a one-size-fits-all concept but rather interacts with various factors that influence overall organizational performance.

Vinod et al. (2012) define organizational agility as a set of competencies supporting a company's expansion and success in a dynamic and rapidly changing business environment. This perspective emphasizes the proactive capabilities that contribute to a company's ability to thrive in an evolving market.

Building on this idea, Teece et al. (2016) define organizational agility as the organization's capacity to deploy resources efficiently and effectively to generate value. This definition highlights the strategic aspect of agility, linking it directly to the organization's ability to create value and retain or acquire lucrative ventures based on internal and external conditions.

Van Oosterhout et al. (2006) contribute a perspective emphasizing the role of organizational agility in developing and adapting knowledge frameworks. This capability allows organizations to successfully compete in unexpected and unpredictable circumstances. The use of information becomes a strategic tool for

creating transformation strategies, enabling businesses to adapt and thrive in dynamic environments.

Tallon and Pinson (2011) reiterate the importance of internal business processes in enhancing organizational agility. Businesses that effectively utilize their internal processes are better equipped to adjust to changes in the dynamics of business demands. This connection suggests that agility is not solely dependent on external factors but also relies on the internal mechanisms and processes within an organization. It therefore suggested by this study that, the diverse perspectives on organizational agility provide a comprehensive understanding of its dimensions, complexities, and implications. The ability to detect and respond to environmental changes, coupled with competencies, resource deployment, knowledge frameworks, and strategic use of information, collectively shape the dynamic nature of organizational agility within the context of digital entrepreneurship.

2.4 organizational Digital Literacy

Smith, A. N. (2019) provides a comprehensive definition of digital literacy as not only an individual's but also an organization's ability to effectively use technology and digital tools to accomplish tasks, handle complex assignments, and meet organizational goals. This broader perspective encompasses the abilities, dispositions, and knowledge needed to navigate and utilize digital resources effectively. Digital literacy, therefore, extends beyond individual capabilities to the collective competency of the organization. Acknowledging that different divisions and individuals within large businesses may possess varying degrees of digital expertise, organizations can leverage digital literacy assessments to identify gaps in operations, evaluate readiness for new technology, and pinpoint areas where employee training needs strengthening. Cascio and Montealegre

(2016) highlight that digital technologies such as Organizational Productivity suites, mobile devices, and collaborative platforms are becoming standard tools in enterprises, emphasizing the growing importance of digital literacy. While there is a growing understanding of the importance of workers' digital skills for maximizing the benefits of the digital workplace, empirical research on the connection between workers' digital abilities, performance, and technology adoption is limited. This presents an opportunity for further investigation into the tangible impacts of digital literacy on organizational productivity.

Studies by Dordi (2015) and Abedin et al. (2012) suggest that increasing the degree of digital literacy among employees enhances their ability to use digital technology effectively. Digitally literate employees can investigate possibilities, adapt to novel circumstances, learn from previous errors, and devise innovative ways to integrate technology into routine organizational duties. This not only improves efficiency but also fosters a culture of continuous improvement.

Dordi et al. (2019) emphasize that enhancing workers' digital literacy enables them to capitalize on financial opportunities associated with digital technology. Managers, by analyzing the current level of digital literacy, can strategically improve the organization's overall digital literacy and prepare employees for the challenges of the digital revolution. This approach contributes to winning over the "hearts and minds" of employees, giving organizations a competitive edge.

While many studies have focused solely on employees' digital literacy, Eden et al. (2019) highlight the importance of organizational factors. Interactions with other employees within the business contribute significantly to enhancing an individual's ability and understanding of digital technologies. Therefore, the organizational

component of digital literacy is essential for developing a solid cultural basis that empowers employees to drive positive changes. Eden et al. (2019) underscore the necessity for businesses to foster a consistent digital workforce, emphasizing the need for new skills and a change in the workforce to navigate the evolving digital landscape successfully. It is worth noting that digital literacy, when approached as both an individual and organizational capability, plays a pivotal role in enhancing productivity, fostering innovation, and preparing organizations for the challenges and opportunities of the digital era.

2.4.1 Component of Organizational Literacy

Hiller Spiers, a professor at North Carolina State University, divides digital information into three elements:

Finding and consuming digital content: Digitally savvy employees ask critical questions about the online content they encounter. They question ideas, lifestyles and values that may or may not be represented in context.

Content creation: Digital literacy also includes content creation. In addition to content users, employees also learn to be content creators. They create content and other media such as tweets, podcasts, videos, emails and blogs.

Communication: Collaborating and exchanging ideas with others is the foundation of digital literacy.

2.5 Firm Performance

Recent literature (Akbar et al., 2021; Qureshi et al., 2021; Akbar et al., 2021b) reflects a growing interest in the concept of corporate performance, acknowledging that defining success in contemporary business is a multifaceted challenge. Scholars and

practitioners grapple with the various dimensions that contribute to a company's success. The notion of corporate performance is complex, with opinions often varying on the metrics or statistics used (Caste & Tudor, 2013). Performance can be both objectively and subjectively measured, as highlighted by (Anggadwita & Mustafid 2014). Quantitative assessments include factors such as profitability, market share, production level, efficiency, financial results, productivity, revenue dynamics, cost, liquidity, and client count. Qualitative performance evaluations encompass goals attained, client satisfaction, leadership style, and staff behavior (Anggadwita & Mustafid, 2014).

Certain research emphasizes the significance of both financial and non-financial components in assessing organizational success (Han and Hoon, 2019; Qureshital, 2021). Corporate leaders often rely on criteria such as annual sales, profit margin, growth, and return on investment to gauge financial success (Combs et al., 2006; Rajan et al., 2007). Non-financial characteristics of successful organizations include high employee satisfaction, advanced technology adoption, perceived value, customer satisfaction, and quick response times (Aziz et al., 2017; Fantazi et al., 2017).

Kaniabi and Devi (2012) define operational efficiency as a measure of a business's financial assets, encompassing sales, revenue growth, profit-to-sales ratios, and sales-to-investment ratios.

Abukar et al. (2019) succinctly define organizational success as the "fulfillment of corporate goals." Sinambala (2012) adds that organizational effectiveness is the overall performance of an organization, continually evolving to meet the needs of different groups.

Mona et al. (2020) view organizational performance as the extent to which a group performs all tasks necessary to fulfill the goals and vision of the organization.

Laitinen (2002, p. 66) defines corporate performance as "the ability to achieve outcomes based on long-term advantages tied to organizational, business, or company goals."

Hasan and Khajeh (2018) highlight that organizational performance is the actual achievements or outcomes of an organization measured in terms of targets, goals, and results.

Berberoglu (2018) describes organizational performance as the collective performance of individuals, contrasting with Contu's (2020) definition of organizational efficacy in business operations, applying specialized knowledge, financial resources, and human resources.

Dibrell et al. (2014) and Falciola et al. (2020) contribute further definitions of business success based on financial performance (return on equity, return on assets, and return on investment) and non-financial performance (competition and customer happiness).

This study will therefore focus on a diverse range of perspectives on corporate performance, considering various dimensions, metrics, and components that contribute to the overall success of an organization.

2.6 Conceptual Framework and Hypothesis Development

The following conceptual framework and assumptions were developed and expected to direct this investigation based on the analysis of pertinent theories and the core ideas of the research (see Figure 1).

According to the framework, digital entrepreneurship may enhance corporate performance both directly and indirectly by fostering organisational adaptability.

Additionally, the framework implies that having employees with digital literacy might improve the connection between corporate success and digital entrepreneurship.

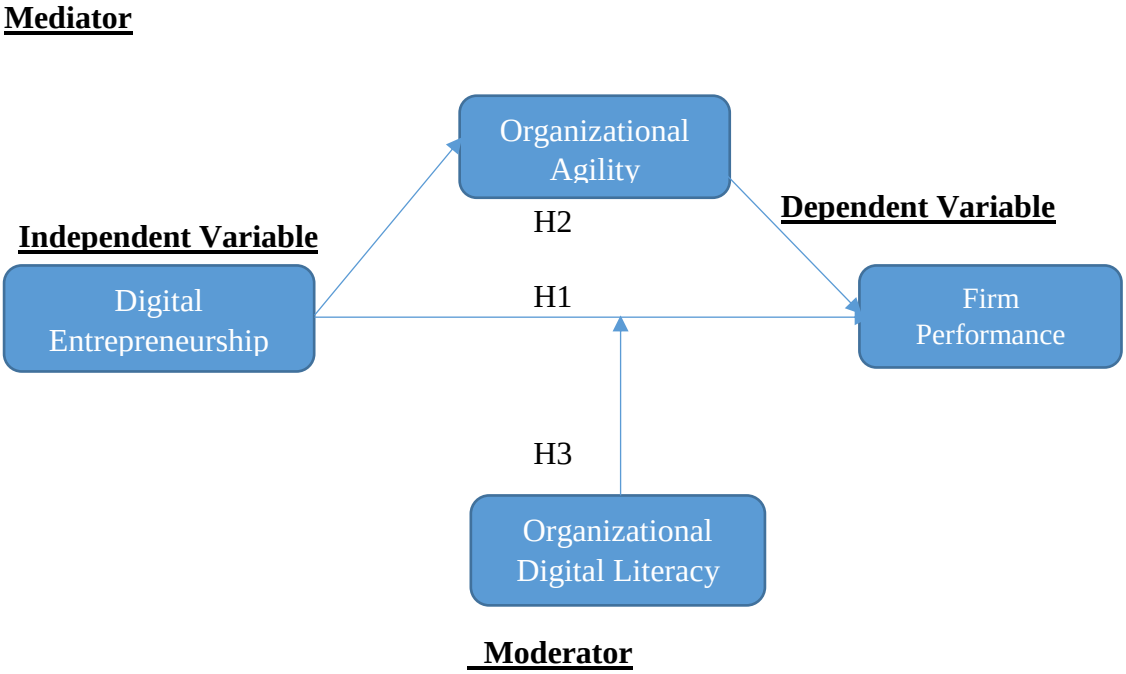

Figure 2.1: Conceptual Framework

2.7 The impact of digital entrepreneurship on the performance of businesses

Technology plays a crucial role in the long-term viability and expansion of organizations (Fowwe, 2017). Bodhiart and Pramodyati (2018) emphasize that various innovations are intricately linked to different aspects of business performance. Previous studies have consistently demonstrated a significant relationship between Small and Medium-sized Enterprises (SMEs) performance and innovation (Centobelli et al., 2019; Chege and Wang, 2020; Meshal, 2018). Both monetary and non-monetary indicators can be employed to showcase the influence of innovation on a company's performance (Mashal, 2018). These indicators encompass areas such as connectivity, communication, marketing, competitiveness, economic access, and export performance

(Radzi et al., 2017; Adam et al., 2017; Anwar, 2018; Conto et al., 2016; Abdu and Jibir, 2018). Managers and business owners leveraging digital processes, as highlighted by Love (2016), Prange and Pinho (2017), and Ciabuschi (2017), enhance the competitiveness of their companies (Ferreira et al., 2018). In the context of digital entrepreneurship, innovation in technology is fundamental to product development and value creation (Fawzi et al., 2022).

Guo et al. (2021) assert that digital transformation has a positive impact on the performance of businesses. Leveraging digital technologies enables businesses to save costs, increase productivity, and foster successful innovation for improved outcomes. However, it's important to acknowledge that some critics, such as Karabulut (2015), argue that innovation can impede a company's growth and may have potential negative effects, leading to unchecked corporate expansion and environmental damage (Lafort, 2011). Despite concerns and controversies, the prevailing body of research consistently demonstrates a positive and direct relationship between innovation, especially in the context of digital entrepreneurship, and corporate performance. Based on this literature, the first hypothesis for this study is stated as follows:

H1: Digital entrepreneurship has a positive and direct effect on business performance.

2.8 The Mediating Effects of Organizational Agility

Organisational agility is recognized as crucial for enhancing corporate performance, providing companies with the capacity to develop and apply knowledge frameworks effectively in challenging and unpredictable situations (Van Oosterhout, 2006). Utilizing current information, businesses can enhance internal processes, increase flexibility, and respond more swiftly to market developments.

Komkale (2016) emphasizes the use of organisational agility as a tactic to gain a competitive advantage. In a dynamic market influenced by technology, sustainability, and competition, the ability to adjust to shifting conditions is essential for long-term prosperity. Strategic agility, according to the author, is a means to gain and maintain a competitive edge.

Ashrafi et al. (2019) establish a strong relationship between strategic agility and change, asserting that a company's capacity for strategic agility determines its performance and adaptation capabilities.

Dose and Kossonen (2010) define organisational agility as a result of combining resource flexibility, leadership coherence, and strategic sensitivity. These three essential characteristics underpin organisational restructuring and contribute to increased adaptability.

Guinan et al. (2019) highlight the impact of embracing change as a component of a company's strategy, influencing internal operations, policy, and competitiveness. Competitive advantage is associated with efficiency and adaptability, indicating a connection between increased competitiveness and sustainable development.

Lee et al. (2020) find that organisational agility acts as a mediator, ensuring that e-commerce abilities have a positive impact on business performance. This suggests that the adaptability and responsiveness inherent in organisational agility play a crucial role in translating digital capabilities into tangible business outcomes.

Segara-Navarro et al. (2015) emphasize that organisational agility facilitates the finding and retrieval of information by firms, enabling them to enhance their offerings or

respond to the emergence of new competitors. Digital entrepreneurship enhances organisational agility by fostering the development of digital platforms. These platforms fortify an organization's ability to identify and respond to changes in its surroundings, enabling quick adaptation to changes in the business environment (Sambamurthy et al., 2003). Considering the interconnectedness of digital entrepreneurship, organisational agility, and business performance, the various literature points towards the mediation role of organisational agility. Based on this, the second hypothesis for the investigation is developed:

H2: Organizational agility mediates the relationship between digital entrepreneurship and business performance.

2.9 The Moderation Effect of Organizational Digital Literacy

Dordy (2015) defines "employee digital literacy" as the set of skills, knowledge, and competencies possessed by individuals or members of a social group when utilizing digital technology. This goes beyond the classical literacy concept and encompasses a broader set of abilities, including reading, writing, and employing digital resources in various contexts (Littlejohn et al., 2012). An analysis of the impact of e-learning on corporate performance should consider personal digital literacy as a facilitator of e-learning utilization (Mohammadyari et al., 2014). Employee digital literacy emerges as a crucial dynamic competency for organizations undergoing digital transformation (Viall, 2019; Warner and Weger, 2019). The success of digital transformation depends on factors such as the digital literacy of employees and senior management, along with both hard and soft components within the company. Recent research highlights that one of the significant obstacles to innovation and digital transformation is the need to update digital literacy and align the employee experience with current industrial processes

(Kane et al., 2019; Dery et al., 2017). Enterprise system integration, as outlined by Matrani et al. (2013), involves strategic advantages such as the fusion of critical information and technology, emphasizing the importance of skills and capability development.

In the context of Industry 4.0, organizations aiming to effectively leverage technological advancements must establish protocols and practices ensuring that all staff members possess the digital skills necessary to operate a variety of technical tools (Viall, 2019). The proficiency of the workforce in using online tools for communication, content creation, and customer interaction becomes a pivotal factor in determining the success of organizations in the digital era.

Matrani et al. (2013) suggest that an organization's success in adopting industry 4.0 technologies is contingent upon the digital literacy of its workforce. The study indicates that organizations with proficient digital literacy throughout their workforce are more likely to succeed in their digital transformation initiatives, leading to improved business performance. Based on the preceding research, the third research hypothesis for this study is developed:

H3: Organizational digital literacy moderates the relationship between digital entrepreneurship and business performance. The more digitally literate an organization is, the more important and positive the relationship will be.

2.10 Empirical Review

2.10.1 Digital Entrepreneurship and Business Performance

Several empirical studies have substantiated the positive relationship between digital entrepreneurship and business performance (Steininger, 2019; Baierl et al., 2019). A

study conducted by Bodhiart and Pramodyati (2018) found that organizations leveraging digital technologies for entrepreneurial activities experienced enhanced financial outcomes, including increased revenue and profit margins. Additionally, research by Saunila (2014) demonstrated a strong connection between digital innovation and various facets of business performance, such as market share, competitiveness, and export performance.

2.10.2 Organizational Agility as a Mediator

Empirical evidence supporting the mediating role of organizational agility in the relationship between digital entrepreneurship and business performance has been documented (Baierl et al., 2019). Lee et al. (2020) conducted a study illustrating how organizational agility serves as a mediator, ensuring that e-commerce skills derived from digital entrepreneurship positively impact business performance. This research highlights the crucial role of agility in translating digital initiatives into tangible performance outcomes.

2.10.3 Organizational Digital Literacy as a Moderator

Research findings emphasize the moderating role of organizational digital literacy in influencing the relationship between digital entrepreneurship and business performance. Matrani et al. (2013) suggest that an organization's success in adopting industry 4.0 technologies is contingent upon the digital literacy of its workforce. The study indicates that organizations with proficient digital literacy throughout their workforce are more likely to succeed in their digital transformation initiatives, leading to improved business performance.

2.10.4 Empirical Support for the Conceptual Framework

The conceptual framework proposed in this literature review finds empirical support in studies conducted by Ashrafi et al. (2019) and Guinan et al. (2019). These studies affirm that organizational agility, derived from digital entrepreneurship, is essential for adapting to dynamic market conditions and ensuring sustained competitive advantage.

2.11 Chapter Summary

This chapter presents a comprehensive and expert analysis of the relevant literature on the core concepts of the study, along with a discussion of the writers' perspectives on the issue from both an empirical and theoretical perspective. This review covers the conceptual frameworks, organisational agility, digital literacy, definitions and types of digital entrepreneurship, theoretical foundations of the study, and the consequences of digital entrepreneurship on organisational performance. Additionally, I have concentrated on issues such as the mediating function of organisational agility in the relationship between digital entrepreneurship and firm success, as well as the moderating impact of organisational digital literacy in this regard. Based on the claims made in earlier research, the current study developed a conceptual framework to test, validate, and forecast three hypotheses in total.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

The aim of this research is to examine the relationship between digital entrepreneurship and organisational performance, the moderating role that organisational digital literacy plays, and the mediating role that organisational agility plays. This chapter includes a detailed discussion of the research methodology employed for this study. Research methodology refers to the entire process of conducting research to address the research challenge and objectives. Levy (2017) defines research methodology as a set of ideas and procedures that make up a plan for doing research. This plan integrates various research components into a thorough blueprint that describes how a specific research experiment will be carried out. The methodology employed in this study covers the population and sample, sampling techniques, data collection tools, data analysis, research philosophy, strategy, design, and ethical considerations.

3.1 Research Philosophy

According to Saunders, Lewis, and Thornhill (2016), research philosophy is a set of beliefs and thoughts regarding the development of knowledge. The thought process you choose will affect how your research is conducted and how you ask your questions. (Creswell, 2009). Based on the research aims and objectives, this research will follow the research tradition of post-positivism philosophy. Post positivism is associated with carefully planned and planned data collection procedures (surveys, questionnaire, etc.) that include facts that can be measured and evaluated (Saunders et al. 2016). The claims of post positivist theorists are based on four basic principles: (1) determinism, which is, thinking leads to thinking; (2) reductionism, which focuses

on some variables; (3) accurate analysis and measurement of differences; and (4) testing theories of continuous improvement (Slife and Williams, 1995, cited in Creswell and Crewell, 2018). The post-positivists' deterministic concept holds that it is (possibly) what causes decisions or outcomes (Creswell & Kluwell, 2018).

According to Phillips and Burbules (2000), post positivism is based on testing and collecting data to challenge or support ideas, but not on proving them (Leavy, 2017). According to the post positivist worldview, the universe is governed by laws or theories that need to be tested, checked and improved in order to be understood (Creswell and Creswell, 2018, p. 47). According to Creswell and Creswell (2018), in the post positivist worldview, researchers start with a theory, collect data that supports or refutes the theory, and then make further evaluation by making the necessary corrections. The justifications for choosing post-positivism as the research paradigm for this study is that, this research philosophy is best suited for "what" inquiries. For example, in this study "what is the relationship between digital entrepreneurship influence business performances?" Post-positivism is also the preferred philosophical viewpoint for quantitative research. (Creswell and Clark (2018). All things considered, post-positivism is a research ideology that is useful when answering "what" types of questions with quantitative research methods.

3.2 Research approach

According to Saunders et al. (2016), the research technique is the second layer of the research onion and is classified into three basic forms: abductive, deductive, and inductive. The study employed a deductive research approach to address its research concerns. As stated by Creswell (2014), assumption analysis is a step in the deductive method's hypothesis testing procedure under the study’s research philosophy, only the

deductive technique is compatible with achieving the stated goals. Sekaran and Bougie (2016) emphasized that positivist theory must be congruent with the deductive approach. Saunders et al. (2016) state that while assembling data to evaluate assertions or theories connected to a recognised theory, a deductive technique is employed. Therefore, in the pursuit of this study's objectives, the deductive research approach emerged as the most suitable methodological choice, providing a structured and systematic means to test and validate hypotheses within the established theoretical framework.

3.3 Research Design

A study design, in the words of Creswell (2014), is a comprehensive approach that encompasses a range of options, from general hypotheses to particular methods for collecting and assessing data. The choice of research design is influenced by several factors, including the history of the studied topic, the researcher's philosophical position, the research question, the selected research methodology, and the data source. The study used a quantitative research methodology to examine the relationships among the pertinent variables. Quantitative research is the act of assessing hypotheses by looking at the correlations between variables (Creswell, 2014). The degree of connection (or relationship) between two or more variables or sets of scores is measured and characterized using correlation statistics, according to Creswell (2012). The justification for using the quantitative research design to test the relationship between digital entrepreneurship, firm performance, organisational agility, and organisational digital literacy is that it has been used by most of the studies found in literature on digital entrepreneurship and firm performance Centobelli et al. (2019); Chege and Wang (2020); Meshal (2018); Mashal (2018); Radzi et al. (2017); Adam et al. (2017);

Anwar (2018); Conto et al. (2016); Abdu and Jibir (2018); Love (2016); Prange and Pinho (2017); Ciabuschi (2017); Fawzi et al. (2022); Guo et al. (2021). Quantitative research is usually associated with post positivist research philosophy and deductive research approach (Saunders et al., 2016, p. 46). Also, most of the well-known research methodology books writers recommend the use of quantitative research to test the relationship between variables (Creswell & Clark Plano, 2018; Creswell & Crewell, 2018; Leavy, 2017) Saunders et al. 2016).

3.4 Research Strategy

According to Saunders et al. (2016), some of the tactics that make up the fourth layer of the research process are surveys, ethnography, ethnography, grounded theory, action research, narrative research, and archival research. The research strategy is critical to achieving the study's objectives and addressing the research questions (Sakaran and Bogi, 2016). The choice of research technique is influenced by various factors, including the study topic, objective, philosophical underpinning, scope of current knowledge, time constraints, and accessibility to supplemental resources (Easterby-Smith et al. 2015). An online questionnaire survey has been selected as the research method for the study. A survey research "provides a quantitative or numeric depiction of trends, attitudes, or opinions of a group by investigating a sample of that population," according to Creswell & Crewell (2018, p. 48). In exploratory and descriptive research using a deductive method, survey strategy is frequently used (Creswell, 2009). The use of questionnaires is typically used in the survey approach to collect a lot of data from a sizable population. The survey data was collected through a structured online questionnaire from some selected 240 senior and middle managers of firms using digital tools in their operations in Greater Accra, Ghana were conveniently selected.

3.5 Population and Sample

3.5.1 Population

The term "population" refers to the entire set of items from which a sample is taken, according to Saunders et al. (2016). Levy (2017, p. 76) provides a similar definition of "a population as a set of goods about which a claim is made." Furthermore, the authors explicitly state that the set of characteristics from which a sample is drawn is included in the population under study. According to Mugenda & Mugenda (2003), the population is defined as "any group of people, situations, or items that share quantitative features and to whom the outcomes of a target population are applied." The term "research population" refers to the group of items, individuals, or organisations that make up the study topic or from which a sample may be drawn for examination (Patton, 2002).

According to Creswell (2014), a population is a group of objects that may be the focus of future claims. According to Mungenda et al. (ibid.), a target population is a representative group of real or imagined individuals, events, or artefacts to which the researcher wishes to apply the study's conclusions. A subset of the research population was selected because the entire group was too large to effectively analyse. The term "target population," sometimes known as "target community," refers to the collection of people, events, or artefacts that the intervention is intended to investigate and draw conclusions from (Barnsbee et al., 2018). Businesses in Accra, Ghana's metropolitan area that use digital tools and offer all or some of their goods and services online make up the study's target demographic.

3.5.2 Sample Selection

Saunders et al. (2016) point out that gathering research data from the entire population is impractical. As a result, selecting a sample and compiling data from that smaller population is advocated. Saunders et al. (2016) define a sample as a subset of the larger population that accurately represents the entire group, enabling researchers to gain a comprehensive understanding of the population as a whole. Based on the researchers' own discretion and suggestions from previous research, a convenience sample of 300 high-level and middle-level managers from 25 companies using digital technology were selected for this study (Memon et al., 2020).

Convenience sampling is a non-probability sampling method in which participants are chosen for the sample solely on the basis of their accessibility to the researcher as a source of information. Also known as "accidental sampling" or "haphazard sampling," this type of sampling involves obtaining data from community members who are willing and easily accessible for research. Convenience sampling is often selected because it is quick, simple, and inexpensive. Potential participants in this sampling technique are often easy to contact if they express interest in taking part in the study. A total of two hundred and fifty middle- and upper-level managers from twenty-five different companies were selected as respondents for this study.

3.6 Data Collection Techniques

Liddy and Ormerod (2016) define a data collecting instrument as a device used to gather data from study participants. The primary tool for data collection in this study was a questionnaire. A questionnaire is one of the most popular methods of data collection because it enables researchers to have a wider audience than do interviews (Saunders et al., 2009). A questionnaire is also referred to as the survey instrument (Leavy, 2017).

According to Leedy and Ormrod (2016), a structured questionnaire is a document that contains a list of questions that the researcher wants to ask the respondents. According to Creswell (2014), a questionnaire is an instrument used in the design of a survey that is answered by participants in a study and returned to the investigator. The author further claimed that respondents make decisions on issues and include basic personal or demographic information. Clear, understandable, and, highly specific language was used to construct the questionnaire and made be easy for the respondents to understand and for the researcher to easily process the data (Ruel et al., 2016). The questions for the key variables on the questionnaire were structured using the 5-point Likert scale format (with 5= Strongly Agree and 1= Strongly disagree). Only closed-ended questions were used because it is the most widely used survey research instrument. The quantitative data were collected through both online questionnaires created with google form and hard copy questionnaires from 300 Senior and middle level managers of companies that operate the businesses in Accra that run their operations using digital tool. The respondents were asked to rank and evaluate a set of attributes related to business performance, digital entrepreneurship, organizational agility, and digital literacy in terms of relevance. See Appendix A.

3.7 Data Collection Procedures

The questionnaires was sent personally to the selected organisations via email and social media platforms and face-to-face at their offices. The questionnaire was sent with an introductory letter a participation invitation letter. This helped the potential participants to understand the purpose of the research and also gave them the freedom to decide to participate in the research voluntarily or opt out. Out of 300 questionnaires administered to the companies or their representatives who agreed to participate in the

research either via email or WhatsApp and in-person distribution of printed questionnaires by the researcher, 240 copies were returned, representing a very good response rate of 84%, which means there was no concern for response error (Nulty, 2008). The questionnaire was in two parts, A and B. Part A focused on the respondent's profile while part B was on the main constructs of the study. The respondent demographic data include gender, educational level, position, industry, number of years in business and number of employees. Regarding the variables data, the respondents were required to express their degree of agreement or disagreement with statements about each of them on a 5-point Likert-type scale. One week after the administration of the questionnaire, follow-ups were made by the investigator purposely to retrieve completed questionnaires from participating organizations and also remind those respondents who received the questionnaire via WhatsApp platform and email to respond to it.

3.8 Validity and Reliability

3.8.1 Validity

Validity, according to Saunders et al. (2016), is the degree to which a study accurately portrays or evaluates the specific idea that the researcher is attempting to measure. According to Quinlan et al. (2016), statements derived from validation observation procedures are factually accurate. Researchers must develop incredibly thorough operational definitions in order to achieve construct validity (Fallon, 2016). When addressing questionnaire validity, researchers frequently refer to content validity, criterion-related validity, and construct validity, according to Saunders et al. (2016) (p. 450). According to Saunders et al. (2016), content validity is "the amount to which a measurement tool (in this example, survey questions) adequately covers the study

subject." In order to verify the validity of the questionnaire, all of the questions from earlier studies that were published in reputable academic publications had to be changed.

3.8.2 Reliability

The degree to which an instrument yields consistent results when used repeatedly with the same participants under the same conditions is known as reliability, according to Leidy (2014). Another name for it is measurement consistency. Another way to define dependability is the consistency of survey questions and other instruments used for gathering data (Saunders et al., 2016; Bryan, 2012). A reliable tool is one that produces consistent measurements across time and among different instrument objects and is unbiased (i.e., error-free) (Sakaran & Bogey, 2016). Although there are a few methods for evaluating the internal consistency of data collection instruments, Cronbach's alpha is the most widely used method (Saunders et al., 2016). Thus, Cronbach's alpha and composite reliability (CR) were employed in this study to assess the reliability of the research questionnaire. In order to collect the Details needed to address the research inquiries and achieve the study's goals, closed-ended questions were used (Pallant, 2013). It should be 0.7 or greater for the individual consistency reliability. The Cronbach Alpha values were all around 0.9. These measurements demonstrate the internal consistency and dependability of the structures under investigation in this study.

3.9 Data Analysis Techniques

The primary data analysis method in this work is route analysis, which makes use of the structural equation modelling (SEM) tool. This model has been successfully used

to look into connections, test theories, and provide evidence in support of the proposed hypothesis. SEM is useful because it can determine a construct's dimensions and assess the degree of correlation or influence between variables and their dimensions simultaneously (Ferdinand, 2014). Pearson correlation and Amos structural equation modelling (SEM) were the two primary statistical tests utilized to evaluate the hypotheses. The data analysis followed the two-step procedure outlined by Anderson and Gerbing (1988). Initially, the concept validity and reliability of the measurement model were assessed using through Amos factor analysis (EFA) and confirmatory factor analysis (CFA). Next, the assumptions were evaluated using Amos structural equation modelling (SEM).

3.10 Ethical Considerations

Throughout the study, the researcher maintained participant confidentiality and behaved morally. An ethical consideration is the degree to which researchers assume a concealed status or research participants' identities are disclosed (Saunders et al. 2012). Participants in this survey, including companies and individuals, were anonymous, and all opinions are kept confidential. Nothing has changed with the data. Additionally, respondents were offered the choice to take part in the study voluntarily and free from the researcher's coercion.

3.11 Chapter Summary

This chapter delves into the fundamental aspects of adopting a research approach, encompassing research philosophy, research strategies, research approaches, and methods for streamlining the research process. The overarching research philosophy employed in this study is pragmatism, which serves as the foundation for the underlying

assumptions pertaining to the general research methodology. The chapter elaborates on appropriate research approaches, research strategies, study selection, research objectives, research questions, and the methods used to investigate the hypotheses. Additionally, strategies for determining populations, samples, and sample sizes are outlined. Furthermore, the chapter provides insights into data collection tools, ethical considerations, and data analysis methods.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

The aim of this study is to examine the impact of digital entrepreneurship on business performance, moderating role that organisational digital literacy has in the relationship between digital entrepreneurship and performance inside a company, as well as the mediating role that organisational agility has on this relationship. This chapter presents and discusses the research findings. The study's results are presented in three sections: descriptive analysis of respondent characteristics, descriptive analysis of responses, and SEM analysis. Descriptive data analysis was utilized to gather respondents' responses to the conditions of individual study variables. The outcomes of these responses were employed to determine the respondents' trend regarding each of the variable conditions under investigation. Structural equation modelling (SEM) data analysis tools were utilized in this research.

4.1 Presentation of Data

To quantify the variables and determine the respondents' level of agreement with various themes, a 5-point Likert scale was employed. Before implementing the data gathering tool, a pre-test was conducted to ensure the questionnaire design was accurate. A link to an online survey created using Google Forms was distributed to 300 respondents, and between June 25 and July 15, 2023, 240 copies of the survey were returned. Response errors are not a reason for concern, as this shows a response rate of above 80% (Nolti, 2008). Following the initial screening, all 240 replicates were retained for data entry and additional analysis.

Each notion was operationalized using a 5-point Likert scale, which was based on previously published research. After a thorough evaluation of the literature and preliminary interviews for the test, a number of items were modified. In order to provide feedback on survey questions that needed to be clarified and improved in terms of form and organisation, organisation personnel and researchers took part in a pre-test. The questionnaire was then slightly altered to reduce the possibility of measurement error.

4.2 Profile of the Respondent

The demographic information of the respondents was acquired in order to gain a better understanding of the sample group. 33.8% of the sample consisted of female respondents, while 66.2% of the respondents were male. Over half of the respondents (61.3%) had a bachelor's degree, while 23.7% had a master's degree. Fifteen percent of the others possessed a PhD or a certificate. Respondents were overwhelmingly CEOs (45.0%). Of these, thirty.0% were MDs and twenty.0% were HODs. Five percent of them had launched their own companies. Of the respondents, the manufacturing (21.0%) and education (22.5%) sectors employed the most people, with 27.5% working in the media and advertising industry. The remaining 19.5% was split between the marketing and distribution (16.3%) and health (12.5%) sectors.

Furthermore, when asked how long their organisation had been in existence, more than half (62.5%) of the respondents had been in the business for one to five years, according to the data. 26.3% of the companies had been in operation for six to ten years, while 11.3% had been in operation for more than 10 years.

Lastly, the results on the number of workers employed by the various companies revealed that 71.3% of them had fewer than 50 workers, suggesting that small and medium-sized businesses comprise the majority of the study's participating organisations.

Table 4.1: Respondents Demographic Profile

Variables	Category	Frequency	Percent
Gender	Male	159	66.2
	Female	81	33.8
	Total	**240**	**100**
Education	Degree	147	61.3
	Diploma	18	7.5
	Masters	57	23.8
	PhD	18	7.5
	Total	**240**	**100**
Position	CEO	108	45.0
	FOUNDER	12	5.0
	HOD	48	20.0
	MD	72	30.0
	Total	**240**	**100**
Industry	Marketing and Distribution	39	16.3
	Education	54	22.5
	Health	30	12.5
	Manufacturing	51	21.3
	Media and Advertising	66	27.5
	Total	**240**	**100**
Number of years in Business	0-5	150	62.5
	11-15	15	6.3
	15-20	12	5.0
	6-10	63	26.3
	Total	**240**	**100**
Number of Employees	101-150	12	5.0
	51-100	51	21.3
	Above200	6	2.5
	Less than 50	171	71.3
	Total	**240**	**100**

4.3 Descriptive Analysis

To improve comprehension of the sample group, the demographic data of the respondents was gathered. There were 66.2% of male respondents and 33.8% of female respondents in the sample. A bachelor's degree was held by more than half of the respondents (61.3%), while a master's degree was held by 23.7%. Of the others, fifteen percent held a diploma or a PhD. CEOs made up the majority of respondents (45.0%). Twenty.0% of these were HODs and thirty.0% were MDs. Of them, 5% had started their own businesses. The largest employment sectors among the respondents were manufacturing (21.0%) and education (22.5%), with 27.5% of workers employed in the media and advertising sector. The remaining 19.5% was divided between the health (12.5%) and marketing and distribution (16.3%) industries.

Moreover, the data indicates that when asked how long their organisation had been in operation, over half (62.5%) of the respondents had been in the industry for one to five years. Of the enterprises, 11.3% had been in business for more than ten years, while 26.3% had been operating for six to ten years.

Finally, the data about the number of employees at each company showed that 71.3% of them employed fewer than 50 people, indicating that small and medium-sized enterprises make up the majority of the study's participating companies.

Table 4.2: Normality Assessment

Variable	N	Min.	Max.	Mean	Std. Deviation	Skewness	Kurtosis
DigEnt	240	5.00	25.00	18.6750	5.38192	-1.170	0.735
OrDigLi	240	3.00	15.00	10.6250	2.94457	-0.936	0.421
FrimP	240	5.00	25.00	18.7125	5.00090	-1.140	1.013
OA	240	4.00	20.00	14.9750	4.04879	-1.369	1.535

4.3.1 Exploratory Factor Analysis (EFA)

Before conducting CFA and SEM analyzes using Amos 28, we conducted exploratory factor analysis (EFA) on various combinations of all 18 observed variables, examining all problematic items (Maskey et al., 2018). I extracted the various factors link digital entrepreneurship, organizational agility, organizational digital literacy, and company performance using SPSS version 28. (2018), An item is problematic as an indicator of loading below the cutoff value of 0.5 and cross-loading (item loadings with loadings greater than 0.4 on two factors were considered cross-loading items). The preliminary results of EFA showed that the ODL3 item had a loading of less than 0.5 and two factors had a cross-loading with a loading of more than 0.4. Therefore, it was removed, and EFA was run again. A final EFA was performed on the remaining 17 items using maximum likelihood (ML) with promax rotation with Kaiser Normalization to extract the four underlying factors of the items (see Table 4.3). The final exploratory factor analysis (EFA) results showed a Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of 0.937, indicating that the sample size was sufficient for factor analysis. Bartlett's test of sphericity was also significant (approximate chi-square = 4587.056, degrees of freedom = 136, $p < 0.001$), suggesting that the data were suitable for factor

analysis. Four factors were extracted, with values ranging from 0.574 to 11.184. These values indicated that the factors were meaningful and that the sample data were adequate and sufficient for further analyses such as structural equation modeling (SEM) (Tabachnick & Fidell 2013; Pallant, 2016).

Moreover, as Table 4.3 illustrates, the EFA findings showed that digital entrepreneurship, organisational agility, and digital literacy collectively explained roughly 78.67% of the variance in business performance. This suggests that these three factors can be used to somewhat predict the firm's performance.

Table 4.3: Factor Model and Reliability Measures

Factors	**DE**	**OA**	**ODL**	**FP**	**Extraction**
Eigenvalue	11.184	0.911	0.705	0.574	-
% Variance explained	65.789	5.356	4.153	3.375	-
Cumulative %	65.789	71.145	75.299	78.673	-
DE1	0.991				0.818
DE2	0.821				0.809
DE3	0.905				0.887
DE4	0.688				0.824
DE5	0.714				0.812
OA1			0.693		0.769
OA2			0.806		0.826
OA3			0.592		0.743
OA4			0.899		0.855
ODL1				0.735	0.715
ODL2				0.869	0.781
ODL4				0.588	0.673
FP1		0.793			0.705
FP2		0.681			0.764
FP3		0.886			0.632
FP4		0.837			0.843
FP5		0.854			0.781
KMO and Bartlett's Test					
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.			0.937		
Bartlett's Test of Sphericity		Approx. Ch-Square	4587.056		
		Df	136		
		Sig.	0.000		

4.3.2 Evaluation of the Measurement Model

To evaluate the prediction ability of the measurement model, confirmatory factor analysis (CFA) was employed. Cronbach's alpha, composite reliability, index reliability, average variance extracted (AVE), and square root of AVE were used to evaluate the model's reliability, convergent validity, and discriminant validity (see Table 4.4). Heseler et al. (2015) state that every latent variable in this table has composite reliability (CR) and Cronbach's alpha values that are higher than the acceptable level of 0.7. In a similar vein, the results show that all 18 items loaded highly on their respective factors and had factor loadings more than the minimum of 0.5. Furthermore, the results showed that the AVE values of each factor were higher than the recommended cut-off value of 0.5, indicating good convergent validity (Hair et al., 2010; Malhotra and Dash, 2011). Furthermore, it is not necessary to be concerned about discriminant validity because the square root of the AVE value is greater than the correlation between the related constructs (Hair et al., 2010).

Table 4.4: Factor Model and Validity Measures

	CR	AVE	A	DE	OA	ODL	FP
DE	0.917	0.692	0.957	**0.832**			
OA	0.839	0.572	0.937	.769**	**0.756**		
ODL	0.780	0.547	0.871	.727**	.674**	**0.740**	
FP	0.907	0.661	0.939	.749**	.786**	.727**	**0.813**

Significance of Correlations: * p < 0.050, ** p < 0.010, & ***p < 0.001

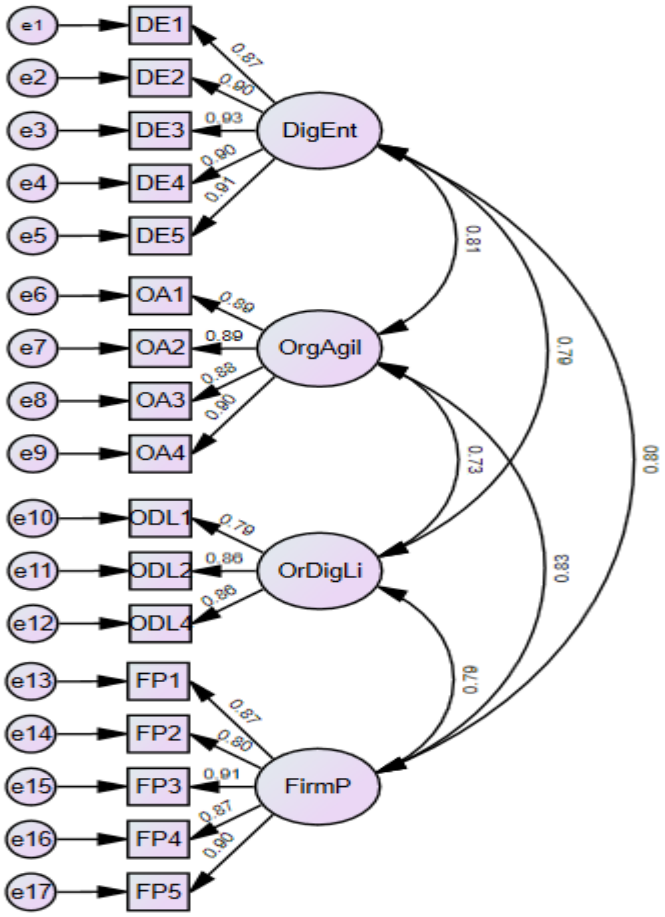

Figure 4.1: Confirmatory Factor Analysis (Measurement model)

4.3.3 Test of Structural Model and Hypothesis

The results of the structural modeling showed that the model fits the data well (see Figure 4.2). The model fit results are as follows: CMIN/df = 2.715, CFI = 0.929, GFI = 0.838, RMR = 0.047, TLI = 0.913, RMSEA = 0.060, and AGFI = 0.858. SEM results presented in Table 4 show that there is a positive and significant direct relationship between digital entrepreneurship and company performance (β = 0.357, p-value = 0.000). Therefore, H1 is supported.

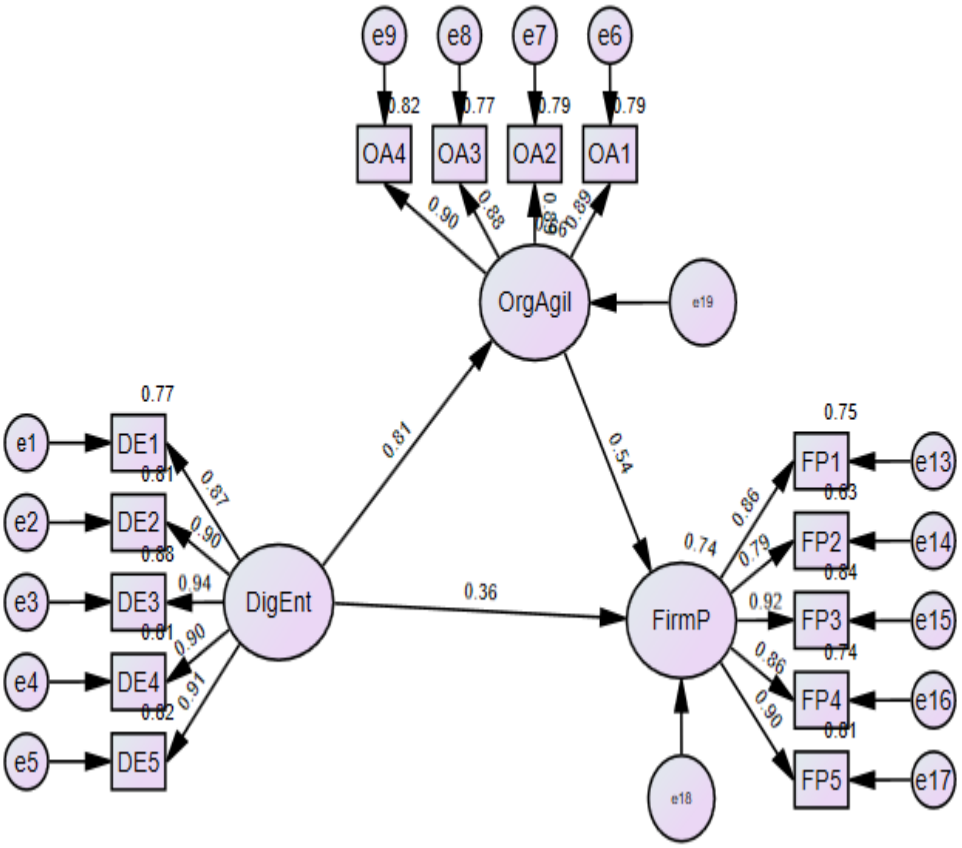

Figure 4.2: Research Model with Standardized Path Coefficients

4.3.4 The Mediating Effects

The bootstrapping results support the mediating role of organizational agility in the relationship between digital entrepreneurship and firm performance. Specifically, the indirect effect of digital entrepreneurship on firm performance through organizational agility is significant ($\beta = 0.441$, $p < 0.050$), with a 95% confidence interval ranging from 0.266 to 0.586. These findings indicate that organizational agility fully mediates the relationship between digital entrepreneurship and firm performance, providing support for H2.

Table 4.5: Direct and Indirect Effects

Direct Path	Unstandardized Estimate	Standard Errors (S.E)	Critical Ratio (C.R.)	P-Value	Standardized Estimate	Interpretation
DigEnt --> OrgAgil	0.777	0.052	15.022	***	0.811	Supported
DigEnt --> FrmP	0.329	0.069	4.788	***	0.357	Supported
OrgAgil --> FirmP	0.523	0.075	7.008	***	0.544	Supported
Indirect Path	**Unstandardized Estimate**	**Lower**	**Upper**	**P-Value**	**Standardized Estimate**	**Interpretation**
DigEnt --> OrgAgil --> FirmP	0.406	0.266	0.586	0.001	0.441	Supported
Significance of Correlations: † p < 0.100, * p < 0.050, ** p < 0.010, & ***p < 0.001						

4.3.4 Moderating Effects

Hayes (2022) states that causal systems with at least one moderating variable W that modifies the link between an antecedent variable (X) and an outcome variable (Y) are said to exhibit moderation.

Moderator variables (W) reflect the conditions or factors that impact X's effect and how it impacts Y (Hayes, 2022).

Fairchild and McQuillin (2010) assert that moderators have the power to alter results in ways that are opposite to those that raise or decrease. This indicates that the amount of each other variable in the analysis determines how one variable affects the other. The study's hypothesis is that there would be a stronger positive association between the predictor variable (digital entrepreneurship) and the outcome variable (firm performance), X, the higher the level of organisational or moderator digital literacy W. The procedures we used to complete the relaxation analysis were as follows: In order to prevent multicollinearity and aid in comprehension, we first display the values of each of the four variables. Standardisation was applied to IV, DV, moderating variables, and interaction factors. The standard independent variable (digital entrepreneurship) and the standard moderator variable (organisational digital literacy) were then multiplied to determine the interaction variable. SPSS Statistics Version 28 was used for the first two steps. The ultimate phase involved employing IBM Amos version 28 to execute the moderating influence of organisational digital literacy on the impact of digital entrepreneurship on company performance (refer to Figure 4.3 and Table 4.6). The following model fit results demonstrate a satisfactory match of the model to the data: RMSEA = 0.052, TLI = 0.922, CMIN/df = 2.385, CFI = 0.920, GFI = 0.975, RMR = 0.053, and AGFI = 0.919.

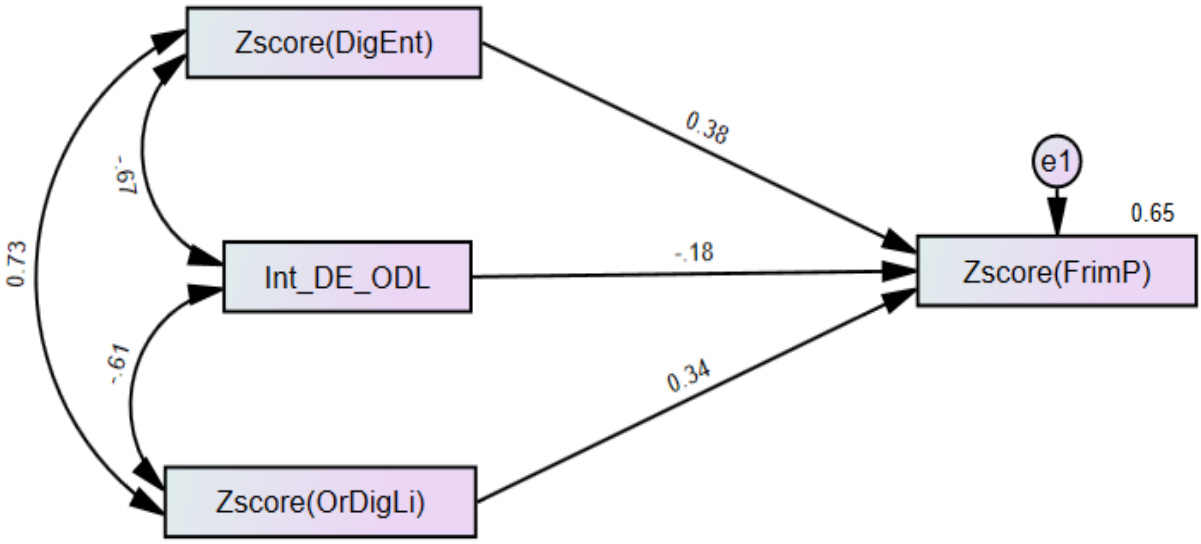

Figure 4.3: The Moderation Analysis Results

Table 4.6: Moderating Effect

	Path		Unstandardized Estimate	Standardized Estimate	S.E.	C.R.	P
ZDigEnt	--->	ZFrimP	0.380	0.380	0.061	6.181	***
Int_DE_ODL	--->	ZFrimP	-0.116	-0.180	0.034	-3.400	***
ZOrDigLi	--->	ZFrimP	0.342	0.342	0.058	5.940	***

The findings show that there is a statistically significant positive relationship between digital entrepreneurship and business success (β = 0.380, S.E. = 0.061, C.R. = 6.181, P < 0.05). This indicates that the likelihood of reaching a critical ratio with an absolute value greater than 6.181 is extremely low. Stated differently, at the 0.05 level (two tails), the regression weight of digital entrepreneurship in predicting business performance differs significantly from zero. Likewise, a statistically significant positive correlation (β = 0.342, S.E. = 0.058, C.R. = 5.940, p < 0.05) has been observed between organisational digital literacy and company performance. Accordingly, the regression

weight of an organization's digital literacy in forecasting firm performance is equal to zero at the 0.000 level (two tails), indicating that the likelihood of attaining a critical ratio of up to 5.940 is at an absolute value of 0.000. Ultimately, the findings demonstrated a statistically significant interaction impact between the interaction variable (Int_DE_ODL) and firm performance (ZFrimP) (β = -0.118, S.E. = 0.034, C.R. = -3.4000, $p<0.05$). Still, the outcome is unfavourable. Based on these results, H3 is partially supported even though there appears to be a negative moderating effect of organisational digital literacy on the positive link between digital entrepreneurship and firm success.

4.4 Discussion of Results

In this section, the research findings are discussed in light of the related literature presented earlier in this chapter**.**

4.4.1 Digital Entrepreneurship and Firm Performance

Partial least squares structural equation modelling (SEM) was employed to evaluate the relationship between firm performance and digital entrepreneurship. The findings demonstrated that digital entrepreneurship has a favourable and statistically significant impact on business performance. The correlation between the expansion of digital business and improved corporate performance is demonstrated by the beta value of β = 0.357 (p-value = 0.000). This result is consistent with the findings of Ferreira et al. (2018), who hypothesised that adopting digital procedures by managers and entrepreneurs has a significant and positive influence on raising the competitiveness (performance) of enterprises. Moreover, Guo et al. (2021) acknowledge that digital transformation leads to improved performance inside a company. Consequently,

companies using digital technologies see reduced costs, more effective operations, successful innovation, and enhanced performance.

4.4.2 Mediation Role of Organizational Agility

The second research question sought to ascertain whether organisational agility mediates the relationship between digital entrepreneurship and business performance. Our findings demonstrate that organisational agility acts as a complete mediating factor in the relationship between digital entrepreneurship and company success. This result is in line with earlier empirical research (Lee et al., 2020), which suggests that organisational agility acts as a mediator between the advantages of e-business skills and enhancing business success. Organisational agility makes it easier to find and gather relevant information, which companies can use to produce high-quality products and services or respond to the arrival of new competitors (Segara-Navarro et al., 2015).

4.4.3 Moderation effect of Digital Literacy

Examining the moderating role of organisational digital literacy on the association between digital entrepreneurship and business performance was the aim of the last research question. The impact was negative even if the results did not show a moderating role for organisational digital literacy. As a result, H3 has some support. These results imply that organisational digital literacy is still valuable even if it has no direct bearing on the beneficial effects of digital entrepreneurship on firm performance. Higher organisational digital literacy levels may make an organisation more capable of interpreting and utilising digital technologies, which could enhance performance in other domains.

4.5 Chapter Summary

The analysis's findings are presented in this chapter, along with a discussion of how they relate to the literature and research topics. The study's conclusions demonstrated a statistically significant and positive correlation between digital entrepreneurship and business performance. Additionally, this study discovered that the association between digital entrepreneurship and company success is mediated by organisational agility. These findings demonstrated the support for both H1 and H2. The results of this investigation, however, indicate that the relationship between performance and digital entrepreneurship is negatively impacted by organisational digital literacy. H3 is therefore only partially supported. A summary of the results, conclusions, and suggestions based on the results are given in the following chapter.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

The aim of this study is to examine the impact of digital entrepreneurship on business performance; moderating role that organisational digital literacy has in the relationship between digital entrepreneurship and performance inside a company, as well as the mediating role that organisational agility has on this relationship. This last chapter offers an overview of the study as well as a synopsis of the research project. First of all, it provides an overview of the research and insights into the full body of study. Second, it reviews the most important findings and theoretical advancements before illuminating their managerial and practical uses. The researcher concludes by outlining the limitations of this study and making recommendations for future research projects. A comprehensive review of relevant literature was conducted in Chapter 2 for all research objectives, main topics, and theoretical premises of the research. Based on the relevant literature that was located, three hypothesis and a conceptual model were developed and tested. Chapter 3 outlines the methodological considerations of the study. This research was guided by the research philosophy of positivism. The research design included a comparative technique using a quantitative research paradigm and an online structured questionnaire to collect data. Research data was collected from 240 middle and senior managers in various sectors in Ghana. Email and WhatsApp were used in combination to distribute the survey. Data was collected using Google Forms and then loaded into several analytic programmes, including Microsoft Excel, SPSS v28, Amos and SEM. The procedure for formulating and assessing hypotheses in light of the analytical techniques used in the research is explained in the fourth chapter. Before using the data for regression and mediation investigations, an evaluation of its

normal distribution, reliability, convergent, and discriminant validity was done. In Chapter 4, the results of the study are discussed in relation to the relevant literature that is discussed in that chapter.

5.1 Summary of Findings

In this section, the main findings and their results are presented.

5.1.1 Digital Entrepreneurship and Business Performance

This study successfully demonstrates through statistical analysis that digital entrepreneurship greatly enhances firm performance, hence fulfilling its initial objective. Consequently, this study concludes that digital entrepreneurship and firm performance have a positive and statistically significant link. The first aim of the research project's findings indicates that companies and entrepreneurs who use digital business practises are more likely to enjoy increases in growth, profitability, and competitiveness than those who do not. The study's conclusions suggest that companies should make every effort to integrate digital business models into their operational and strategic objectives.

5.1.2 Mediation Role of Organizational Agility

This study demonstrated how organisational agility functions as a mediator in the relationship between corporate success and digital entrepreneurship. Therefore, businesses need to stay up to date with the newest technological breakthroughs and market trends in order to effectively reap the benefits of digital technology in their operations. Businesses that stay abreast of emerging technologies and industry shifts can quickly adapt and stay competitive. This is particularly important in today's rapidly changing business environment, when businesses need to be prepared to respond fast to both new opportunities and threats. Maintaining organisational agility helps

businesses ensure they can reap the benefits of all that digital entrepreneurship has to offer. The study's findings suggest that companies should support training and development programmes to provide employees with the skills and knowledge needed to be flexible. Additionally, businesses should promote an atmosphere that encourages innovation and experimentation. By fostering an agile culture, organisations can foster a work climate where people are comfortable taking risks and trying new things. This will help companies keep ahead of the curve and preserve their competitive advantage. In summary, this research provides valuable insights into the role that organisational agility plays in digital entrepreneurship. By appreciating the importance of agility, businesses can ensure they are in a good position to gain from the digital transition.

5.1.3 Moderation Role of Digital Literacy

The third objective of this study was to investigate how organisational digital literacy moderates the relationship between digital entrepreneurship and business performance. Nonetheless, the findings demonstrated that organisational digital literacy does not significantly affect the relationship between digital entrepreneurship and firm performance. Similarly, the findings support the hypothesis to some extent since they indicate that organisational digital literacy has a negative impact even though it does not significantly reduce the relationship between digital entrepreneurship and performance. These results demonstrate that, whereas organisational digital literacy may have a direct impact on company performance, the relationship between digital entrepreneurship and firm performance does not change when digital literacy is present. The phrase "organisational digital literacy" refers to the knowledge, skills, and understanding of digital technology and how an organisation uses them. Organisations must be able to operate effectively in the digital age in order to recognise and seize

digital possibilities, adapt to new technologies, and satisfy changing customer demands. Even though this study suggests that organisational digital literacy has no effect on the relationship between digital entrepreneurship and firm performance, it is still essential for business success. Businesses with a high level of organisational digital literacy are better at implementing digital strategies, developing innovative products and services, and attracting and retaining top talent.

In summary, this study provides this study provides valuable insights into the role of organizational digital literacy in digital entrepreneurship. While organizational digital literacy does not directly affect the relationship between digital entrepreneurship and company performance, it is still a critical factor for firm Performance in the digital age.

5.2 Research Implication

This study's implications are assessed in terms of their theoretical and practical contributions. Theoretically, this research contributes to the expanding body of knowledge on digital business, organizational agility, organizational digital literacy, and organizational performance, which aligns with the UN's call for responsible industry, innovation, and infrastructure. In line with Sustainable Development Goal 9. This study stream helped address the research gap in the literature examining the relationship between digital entrepreneurship and the Ghanaian context. Another novel contribution of this study is that previous reviewed studies have only focused on the direct relationship between digital entrepreneurship and firm performance, organizational agility, digital literacy, or firm performance. Unlike many studies, this study investigates mediation role of organisational agility and moderation effect of organisational digital literacy on the relationship between digital business and company performance.

To address these identified gaps in the existing literature, this study examines the mediating effect of organizational agility on the relationship between digital entrepreneurship and firm performance and the moderating effect of organizational digital literacy on this relationship.

Theoretically, this study also contributes to resource-based view (RBV) theory and dynamic capabilities theory by confirming the significant impact of digital entrepreneurship on firm performance. Furthermore, the ability of organizations and their management teams to integrate, build, and reconfigure internal and external capabilities to adapt to rapidly changing environments leads to improved performance, both financial and non-financial.

In addition, this research has made a significant practical contribution to the field of the business environment, particularly in the era of the fourth industrial revolution (Industry 4.0). Businesses in developed countries are increasingly operating in digital environments, and the ability to adapt and use digital technologies for business purposes is critical to continued success in Ghana. The findings suggest that managers and organizations should consider implementing and integrating digital business into their overall strategic plans. Digital marketing has been statistically proven to reliably improve business performance, so it is essential to create a clear digital strategy that aligns with your company's goals and ensures that your efforts are properly targeted and aligned.

Similarly, entrepreneurs and business organizations must be agile by remaining aware of new technologies, market trends, changing products, processes, organizational structures, organizational cultures, and overall business models. They should be

responsive to trends in the industries in which they operate and focus on optimally responding to consumer needs to effectively leverage digital technology in the business environment.

These findings fundamentally demonstrate that to successfully introduce digital entrepreneurship in the Ghanaian business environment, companies should invest in training and developing the digital skills of their employees. This includes understanding new technologies, data analysis, and digital marketing techniques. This is because, even though this study has not confirmed a direct impact, digital literacy and skills are valuable assets for improving a company's performance in a digital business environment.

5.3 Limitations and Future Research Directions

This study aims to investigate the relationship between digital entrepreneurship and company performance in Ghana. The limited scope of this study's inclusion of businesses in the Greater Accra Region would restrict how broadly relevant its findings can be. Nonetheless, the results of the study may be useful to companies in other sectors in Ghana. Moreover, the sample consisted of just 240 senior and middle managers from various industries in Ghana; however, this number could be expanded in future studies. Despite various limitations, the study provides valuable insights into the relationship among firm performance, digital entrepreneurship, and organisational digital literacy. In light of these limitations and the research's conclusions, the following recommendations for additional study are made:

Future research could investigate the role of other organizational factors in moderating the relationship between digital entrepreneurship and firm performance.

The study concludes by recommending that further research could also be done on the viability of digital firms in Ghana.

5.4 Conclusion

In this study, every proposed research question and hypothesis was satisfactorily addressed. Based on its quantitative results, this study suggests that any firm's ultimate goal should be prolonged corporate performance , both financially and non-financially. It serves as the cornerstone of sustainability and progress. This study indicates that digital entrepreneurship is one of the key elements determining greater performance in the current industrial revolution and digital economy. For businesses aiming to improve performance, utilising digital technology and utilising digitization in their operations is crucial to developing adaptable corporations.

In addition, the success of a digital business can be negatively impacted by a lack of expertise or an inability to quickly adapt to changes in the market while using these technologies to meet customer expectations.

Company owners must effectively negotiate, manage, and integrate modern digital technologies into operations that modify products, processes, organisational structures, organisational culture, and overall company models, all while putting an emphasis on efficiently meeting consumer needs.

REFERENCES

Abdu, M., & Jibir, A. (2018). Determinants of firms innovation in Nigeria. *Kasetsart Journal of Social Sciences, 39*(3), 448-456.

Abedin, B., Daneshgar, F., & D'Ambra, J. (2012). Do non-task interactions matter? The relationship between the non-task sociability of computer-assisted collaborative learning and learning outcomes. *British Journal of Educational Technology, 43*(3), 385–397.

Akbar, A. (2021). Do frequent management changes affect company performance? Insights from China. Insights from China (July 27, 2021). Akbar, A., Jiang, X., Fareed, Z., and Akbar, M., 291-298.

Al Khajeh, E.H. (2018). The influence of leadership styles on organizational performance. *Journal of Human Resources Management Research*, 2018, 1–10

Anderson, J., & Gerbing, D.W. (1988). Structural Equation Modeling in Practice: An Overview and Recommended Two-Step Approach File: ///C:/Users/jgarcru .desktop-taiu816/Desktop/dutchconference/paper mediaciónmodera da/papers/Anderson & Gerbing, 1988.pdf *Psychological Bulletin, 103*(3), 411–423.

Anggadwita, G., & Mustafid, Q. Y. (2014). Identification of factors influencing the performance of small medium enterprises (SMEs). *Procedia-Social and Behavioral Sciences, 115*, 415-423.

Anim-Yeboah, S., Boateng, R., Awuni Kolog, E., Owusu, A., & Bedi, I. (2020). Digital entrepreneurship in business enterprises: A systematic review. In *Responsible Design, Implementation and Use of Information and Communication Technology: 19th IFIP WG 6.11 Conference on e-Business, e-Services, and e-*

Society, I3E 2020, Skukuza, South Africa, April 6–8, 2020, Proceedings, Part I 19 (pp. 192-203). Springer International Publishing.

Arbab, A. M., & Mahdi, M. O. S. (2018) Human resource management practices and organizational excellence in public organizations. *Polish Journal of Management Studies, 18.*

Baierl, R., Behrens, J., & Brem, A. (2019). Digital entrepreneurship. *Springer.*

Barigozzi, F., Tedeschi, P. (2019). On the credibility of ethical banking. *Journal of Economic Behavior & Organization*, *166*, 381-402.

Barney, J. (1991). Fixed resources and sustainable competitive advantage. *Journal of Management, 17*(1), 99–120.

Barnsbee, L., Barnett, A.G., Halton, K., & Nghiem, S. (2018). Cost effectiveness. Mechanical Circulatory and Respiratory Support, January, 749–772. https://doi.org/10.1016/B978-0-12-810491-0.00024-2

Beck, R., Avital, M., Rossi, M., & Thatcher, J. B. (2017). Blockchain technology in business and information systems research. *Business & Information Systems Engineering*, *59*, 381-384.

Bejinaru, R. (2021). Key issues of tranzition to digital entrepreneurship. In *Proceedings of the International Conference on Business Excellence 15*(1), 91-101.

Berberoglu, A. (2018) The impact of organizational climate on organizational commitment and perceived organizational performance: E*mpirical Evidence from Public Hospitals BMC Health Services Research, 18*(1), 1–9.

Bratianu, C., Hadad, S., & Bejinaru, R. (2020). A paradigm shift in business education: *A Competency-Based Approach Sustainability*, *12*(4), 1348

Bratianu, C., Stanescu, D.F., & Mocanu, R. (2021, December). The mediating role of knowledge management between academic management and business

education. *In Proceedings of the International Conference on Business Excellence 15*(1), 102–112.

Bryman, A. (2012). Social Research Methods (4th ed.). Oxford University Press, Business models. *Business & Information Systems Engineering, 6*(1), 45-53.

Brynjolfsson, E., & McAfee, A. (2014). *The second machine age: Work, progress, and prosperity in a time of brilliant technologies*. WW Norton & Company.

Cascio, W. F., & Montealegre, R. (2016). How technology is changing work and organizations. *Annual Review of Organizational Psychology and Organizational Behavior*, *3*, 349-375.

Combs, J., Liu, Y., Hall, A., & Ketchen, D. (2006). How much do high-performance workflows matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology, 59*(3), 501–528,

Conţu, E. G. (2020). Organizational performance: theoretical and practical approaches; study students' ideas. *In Proceedings of the International Conference on Business Excellence 14*(1), 398–406.

Coste & Tudor, (2013). Andreea-Ioana Coste, Adriana Tiron Tudor (2013) Service performance: between measurement and information in the public sector, Procedia: *Social and Behavioral Sciences, 92*, 215-219.

Craig, J.B., & Neubaum, D.O. (2014) Linking the formal process of strategic planning, planning flexibility, and innovation to firm performance. *Journal of Business Research,* 67(9), 2000–2007.

Creswell, J. W. (2009). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (3rd ed.). Sage Publications, Inc.

Creswell, J. W. (2012). Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (4th ed.). Pearson Education, Inc.

Creswell, J. W. (2014). *Research design: qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications, Inc.

Creswell, J.W., & Creswell, J.D. (2018). Research design: qualitative, quantitative, and mixed methods approaches (5th edn). SAGE Publications, Inc. 2455. https://doi.org/10.1017/CBO9781107415324.004

Creswell, J.W., & Clark Plano, V.L. (2018). Designing and Conducting Mixed Methods Research (3rd Ed.). SAGE Publications, Inc.

Davidson, E., & Vaast, E. (2010). Digital business and its socio-material enactment In 2010, the 43rd Hawaii International Conference on Systems Sciences, 1–10.

Dery, K., Sebastian, I. M., & van der Meulen, N. (2017). The digital workplace is key to digital innovation. *MIS Quarterly Executive*, *16*(2).

Doz, Y.L., & Kosonen, M. (2010). Introducing Strategic Agility: *A Leadership Program to Accelerate Business Model Renewal Long Range Planning*, *43*(2-3), 370–382.

Easterby-Smith, M., Thorpe, R., & Jackson, P.R. (2015) Management and business research (5th ed.) SAGE Publications, Inc.

Eden, R., Burton-Jones, A., Casey, V., & Draheim, M. (2019). Digital transformation requires workforce transformation. *MIS Quarterly Executive*, *18*(1), 1-17.

Esposito, V. J., & Lee, J. (1983). A comparison of normality tests based on the sample size and distribution of kurtosis. *Journal of Statistical Computation and Simulation, 17*(2), 97-102.

Fairchild, A.J., & McQuillin, S.D. (2010). Evaluating mediation and moderation effects in school psychology: presentation of methods and overview of current practice. *Journal of School Psychology*, *48*(1), 53–84.

Falciola et al., Falciola, J., Jansen, M., & Rollo, V. (2020). Defining firm competitiveness: A multidimensional framework. *World Development, 129*, 104857.

Fallon, M. (2016) Writing quantitative research in the social and behavioral sciences. Sense Publishers.

Fantazy, K.A., Kumar, V., & Kumar, U. (2010). Supply management practices and performance in the Canadian hospitality industry. *International Journal of Hospitality Management, 29*(4), 685–693.

Fauzi, T.H., Harits, B., R Deni Muhammad Danial, D.M.D., & Kokom Komariah, K.K. (2022). Adaptive strategy for external environmental effects in digital business from the perspective of strategic management. *Academic Journal of Interdisciplinary Studies*, www.richtmann.org, *9*(3), 38–45.

Foss, N. J. (2005). Scientific Progress in Strategic Management: The case of the Resource-based view.

Frederiksen, D. L., & Brem, A. (2017). How do entrepreneurs think they create value? A scientific reflection of Eric Ries' Lean Startup approach. *International Entrepreneurship and Management Journal*, *13*, 169-189.

George, D., & Mallery, P. (2010). SPSS for Windows Step by Step: A Simple Guide and Reference, (13th ed.). Pearson Education.

Graviter, D., & Wallenau, G. (2014). Basics of Social Statistics. Pearson Education.

Gregory Vial (2019). Understanding Digital Transformation: *A Review and Research Agenda of the Strategic Information Systems Review*.

Guo, L., & Xu, L. (2021). The effects of digital transformation on firm performance: *Evidence from the Chinese Manufacturing Sector Sustainability, 13*(22), 12844.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate Data Analysis, (7th ed.) Pearson Education.

Han, J. H., Kang, S., Oh, I. S., Kehoe, R. R., & Lepak, D. P. (2019). The goldilocks effect of strategic human resource management? Optimizing the benefits of a high-performance work system through the dual alignment of vertical and horizontal fit. *Academy of Management Journal, 62*(5), 1388-1412.

Han, Yousueng, and Hong, Sounman (2019). The effect of accountability on organizational performance in the US federal government: The moderating role of autonomy. *Review of Public Personnel Administration, 39,* 3-23

Hayes, A.F. (2015) Index and test of linearly controlled mediation Multivariate Behavioral Research, 50(1), 1–22.

Helfat, C.E., & Peteraf, M.A. (2009). Understanding dynamic capabilities: progress along the developmental path. *Strategic Organization, 7*(1), 91–102.

Henseler, J., Ringle, C.M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Sciences*, 43(1), 115–135.

https://www.firstrepublic.com/insights-education/what-is-a-digitalentrepreneur. Accessed 10/8/23.

https://www.businessnewsdaily.com/15918-how-to-use-crm-analytics.html. Accessed 10/8/23.

Iddris, F., Mensah, P.O., Asiedu, R., & Mensah, H.K. (2022). Students' innovation capabilities in virtual team projects: lessons from the era of the COVID-19 pandemic. *International Journal of Innovation Science.*

Jantunen, A., Tarkiainen, A., Chari, S., & Oghazi, P. (2018). Dynamic capabilities, operational change, and performance outcomes in the media industry. *Journal of Business Research*, 89, 251-257.

Kamyabi, Y., & Devi, S. (2012). The impact of advisory services on Iranian SME performance: An empirical investigation of the role of professional accountants. *South African Journal of Business Management, 43*(2), 61-72.

Kane, G. (2019). The technology fallacy: the real key to digital transformation is people. *Research and Technology Management*, *62*(6), 44–49.

Ketchen Jr., D.J., & Hult, G.T.M. (2007) Bridging Organization Theory and Supply Chain Management: *The Case of Best Value Supply Chains Journal of Operations Management, 25*(2), 573-580.

Kraus, S., Roig-Tierno, N., & Bouncken, R. B. (2019). Digital innovation and venturing: an introduction into the digitalization of entrepreneurship. *Review of Managerial Science*, *13*(3), 519-528.

Kumkale, İ. (2016). Organization's tool for creating competitive advantage: strategic agility. *Balkan and Near Eastern Journal of Social Sciences*, *2*(3), 118-124.

Laitinen, E.K. (2002). A dynamic performance measurement system: evidence from small Finnish technology companies. *Scandinavian Journal of Management*, *18*(1), 65–99.

Leavy, P. (2017) Research design: quantitative, qualitative, mixed methods, arts, and community-based participatory research Guilford Press.

Leedy, P.D., & Ormrod, J.E. (2016) Practical research: planning and design (11th ed.), Pearson.

Li, Lei; Lin, Jiabao; Turel, Ophir; Liu, Peng; Luo, Xin (Robert) (2020). The impact of e-business capabilities on agricultural firm profits: the mediating role of

organizational agility Industrial Management & Data Systems, 120 (7), 1265–1286. doi:10.1108/IMDS-08-2019-0421.

Littlejohn, A., Beetham, H., & McGill, L. (2012). Learning at the digital frontier: A review of digital literacies in theory and practice. *Journal of Computer Assisted Learning*, *28*(6), 547-556.

Lu, Y., & K. (Ram) Ramamurthy (2011). Understanding the Link Between Information Technology Capability and Organizational Agility: A*n Empirical Examination MIS Quarterly*, 931–954.

Malhotra, N. K., & Dash, S. (2011). Marketing Research: *An Applied Orientation*, (6th ed.). Pearson Education.

Marsh, E. (2021). Understanding the impact of digital literacy on employees' intentions to continue working in the digital workplace and their individual performance In Research Proceedings on Digital Transformation, Organizational Changes, and the Impact of Remote Work (1638–1659) IGI Global.

Maskey, R., Fei, J., & Nguyen, H. O. (2018). Use of exploratory factor analysis in maritime research. *The Asian journal of shipping and logistics*, *34*(2), 91-111.

Mathrani, S., Mathrani, A., & Viehland, D. (2013). Using enterprise systems to realize digital business strategies. *Journal of Enterprise Information Management*, *26*(4), 363-386.

McCarthy, I.P., Lawrence, T.B., Wixted, B., & Gordon, B.R. (2010). A multidimensional conceptualization of environmental velocity. *Academy of Management Review*, *35*(4), 604-626.

Memon, M. A., Ting, H., Cheah, J. H., Thurasamy, R., Chuah, F., & Cham, T. H. (2020). *Journal of Applied Structural Equation Modeling*.

Mohammadyari, S., & Singh, H. (2015). Understanding the impact of e-learning on individual performance: The role of digital literacy Computers and Education, 82, 11–25.

Mona, V., & Subagja, I.K. (2020). The Effect of Transformational Leadership Style and Organizational Culture on Organizational Performance with Emotional Intelligence as a Mediating Variable: A Case Study in Jatimelati Bekasi Village Office. *International Journal of Business and Social Science* Research, *1*(1), 17–27.

Muganda, N., & Pillay, K. (2013). Forms of power, politics, and leadership in an asynchronous virtual project environment: an exploratory analysis in South Africa. *International Journal of Management Projects in Business*, *6*(3), 457–484. https://doi.org/10.1108/IJMPB-11-2011-0075.

Mugenda, O., & Mugenda, A. (2003). Research methods Qualitative and quantitative approaches. Nairobi Acts Press.

Nulty, D.D. (2008). Adequacy of response rates to online and paper surveys: What can be done? *Assessment & Evaluation in Higher Education*, *33*(3), 301–314

Pallant, J. (2016). SPSS Survival Manual: A Step-by-Step Guide for the Social Sciences, 6th Edition. Routledge.

Phillips, D.C., & Burbules, N.C. (2000). Postpositivism and pedagogical research Lanham: Rowman & Littlefield Publishers.

Podsakoff, P.M., MacKenzie, S.B., & Podsakoff, N.P. (2016) Recommendations for creating better definitions of terms in the organizational, behavioral, and social sciences. *Organizational Research Methods*, *19*(2), 159–203.

Priyono, A., Idris, F., & Abdul Halim Lim, S.B. (2020). Achieving ambidexterity in internationalization: An analysis of how SMEs cope with the tension between

organizational agility and efficiency *Journal of Open Innovation: Technology, Market, and Complexity*, 6(4), 188.

Puriwat, W., & Hoonsopon, D. (2021). Cultivating product innovation performance through creativity: the impact of organizational agility and flexibility under technological turbulence. *Journal of Manufacturing Technology Management*.

Qin, R., & Nembhard, D. A. (2010). Workforce agility for stochastically diffused conditions—A real options perspective. *International Journal of Production Economics, 125*(2), 324-334.

Quinlan, A. E., Berbés-Blázquez, M., Haider, L. J., & Peterson, G. D. (2016). Measuring and assessing resilience: broadening understanding through multiple disciplinary perspectives. *Journal of Applied Ecology*, *53*(3), 677–687. https://doi.org/10.1111/1365-2664.12550.

Qureshi, M. A., Akbar, M., Akbar, A., & Poulova, P. (2021). Do ESG endeavors assist firms in achieving superior financial performance? A case of 100 best corporate citizens. *Sage Open*, *11*(2), 21582440211021598.

Qureshi, M. I., Khan, N., Raza, H., Imran, A., & Ismail, F. (2021). Digital technologies in education 4.0. Does it enhance the effectiveness of learning?

Ravichandran, T. (2018). Exploring the relationships between IT competence, innovation capacity and organizational agility. *The Journal of Strategic Information Systems*, *27*(1), 22-42.

Remane, G., Hanelt, A., Nickerson, R. C., & Kolbe, L. M. (2017). Discovering digital business models in traditional industries. *Journal of Business Strategy*.

Roberts, N., & Grover, V. (2012). Leveraging information technology infrastructure to facilitate a firm's customer agility and competitive activity: An empirical investigation. *Journal of management information systems*, 231-269.

Rouse, M. (2011). Digital enterprise. Available at: https://searchcio.techtarget.com/definetion/Digitalenterprise (accessed 3 June. 2023).

Rumelt, R. P. (1991). How much does industry matter? *Strategic Management Journal*, *12*(3), 167-185.

Sahut, J. M., Iandoli, L., & Teulon, F. (2021). The age of digital entrepreneurship. *Small Business Economics*, *56*, 1159-1169.

Sambamurthy, V., Bharadwaj, A., & Grover, V. (2003). Shaping agility through digital options: Reconceptualizing the role of information technology in contemporary firms. *MIS Quarterly*, *27*(2), 237–263.

Saunders, M., Lewis, P. and Thornhill, A. (2012). Research Methods for Business Students (6th ed.). In *Qualitative Market Research: An International Journal 3*(4). Pearson Education Limited. https://doi.org/1 0.1108/qmr.20 00.3.4.215.2

Saunders, M., Lewis, P. & Thornhill, A. (2016). *Research Methods for Business Students* (7th ed.). Pearson Education Limited.

Sekaran, U. & Bougie, R. (2016). *Research methods for business : a skill-building approach* (7th ed.). John Wiley & Sons Ltd. https://doi.org/10.1007/978-94-007-07535_102084.

Shim, J. P., Avital, M., Dennis, A. R., Rossi, M., Sørensen, C., & French, A. (2019). The transformative effect of the internet of things on business and society. *Communications of the Association for Information Systems*, *44*(1), 5

Smith, B., & Magnani, J. W. (2019). New technologies, new disparities: the intersection of electronic health and digital health literacy. *International Journal of Cardiology*, *292*, 280-282.

Steininger, D. M. (2019). Linking information systems and entrepreneurship: A review and agenda for IT-associated and digital entrepreneurship research. *Information Systems Journal*, *29*(2), 363-407.

Tabachnick, B. G., & Fidell, L. S. (2013). Using Multivariate Statistics. Pearson Education.

Tallon, P. P., & Pinsonneault, A. (2011). Competing perspectives on the link between strategic information technology alignment and organizational agility: insights from a mediation model. *MIS Quarterly*, 463-486.

Tapscott, D. (2023). Marketing in the Digital. *i in the sky: Visions of the Information Future*, 9.

Teece, D. J. (2018). Business models and dynamic capabilities. *Long Range Planning, 51*(1), 40-49.

Teece, D. J., Pisano G., & Shuen A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal, 18*(7), 509–533.

Teece, D., & Pisano, G. (2003). The dynamic capabilities of firms. In Handbook on knowledge management (pp. 195-213). Springer, Berlin, Heidelberg.

Teece, D., Peteraf, M., & Leih, S. (2016). Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy. *California Management Review, 58*(4), 13-35.

Van Oosterhout, M., Waarts, E., & Van Hillegersberg, J. (2006). Change factors requiring agility and implications for IT. *European Journal of Information Systems*, *15*(2), 132-145.

Veit, D., Clemons, E., Benlian, A., Buxmann, P., Hess, T., Kundisch, D., ... & Spann, M. (2014). Business models. *Business & Information Systems Engineering*, *6*(1), 45-53.

Vineela, G.S. (2018). Digital business. Research Scholar, 441-448.

Vinodh, S., & Aravindraj, S. (2012). Agility evaluation using the IF–THEN approach. *International Journal of Production Research*, *50*(24), 7100-7109.

Warner, K.S., & Wäger, M. (2019). Building Dynamic Capabilities for Digital Transformation: An Ongoing Process of Strategic Renewal. *Long Range Planning*, *52*(3), 326-349.

Zhang, M., Wang, Y., & Olya, H. (2022). Shaping Social Media Analysis in the Pursuit of Organizational Agility: A Real Possibilities Theory Perspective. *Tourism Management, 88, 104415*.

Zhao, Y. (2021). Examining digital entrepreneurship: The goal of optimization of transformation path normal education in China. *Frontiers in Psychology, 12*, 766498.

Zimon, G. (2018). The influence of group purchasing organizations on the financial situation of Polish SMEs. *Oeconomia Copernicana, 9*(1), 87-104.

Zollo, M., & Winter, S.G. (2002). Intentional learning and the development of dynamic capabilities. *Organization Science, 13*(3), 339-351.

APPENDIX I

QUESTIONNAIRE

Dear Sir/Madam

The aim of the survey or questionnaire is to examine the impact of digital business on business performance, the mediating role of organizational agility, and the moderating effect of digital literacy. This research is in partial fulfillment of the requirements for the Master of Philosophy degree in Business Management

I would like to invite you to participate in this research. All information is strictly confidential and will be used for academic proposals only. I greatly appreciate your cooperation. Thank you.

Sincerely,

Ebenezer Aboagye

SECTION A: Demographics

Please tick as applicable

1. Gender: Male [ ] Female [ ]
2. Educational Level: Diploma [ ] Degree [ ] Maters [ ] PhD [ ]
3. Position: CEO [ ] FOUNDER [ ] HOD [ ] MD [ ]
4. Industry: Manufacturing [ ] Education [ ] Health [ ] Marketing and distribution[ ] Media and advertising [ ]
5. Number of years in Business 1-5 [ ] 6-10 [ ] 10-15[ ] Above 15[ ]
6. Number of Employees less 50 [ ] 50-100 [ ] 100-150[ ] Above 200[ ]

SECTION B: **Digital entrepreneurship**

Please indicate the extent to which you agree with the following statement with regards to digital entrepreneurship. Respond using the Likert scale of **1= Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree**

CODE	Digital entrepreneurship	1	2	3	4	5
DE1	We have introduced new products or services using digital platforms					
DE2	We are focused on improving our performance through digital tool					
DE3	Customers easily access our products or services and make payments using our online platforms					
DE4	We normally use feedback from our social media platform to make changes to our operations					
DE5	Most of our operations are carried out using computer aid programmes.					

SECTION C: Organizational Agility

Please indicate the extent to which you agree with the following statement with regards to digital entrepreneurship. Respond using the Likert scale of **1= Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree**

CODE	Organizational Agility: our organization has systems and technology that;	1	2	3	4	5
OA1	Makes organizational information accessible to all employees					
OA2	Provides information helping our employees respond to changes					
OA3	Are integrated amongst different department or units					
OA4	Are appropriate to our needs and allow us to be competitive in the marketplace					

SECTION D: Organisational Digital literacy

Please indicate the extent to which you agree with the following statement with regards to digital entrepreneurship. Respond using the Likert scale of **1= Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree**

CODE	Organisational digital literacy	1	2	3	4	5
ODL1	In my organization, all employees can add comments to blogs, web pages by observing 'netiquette' and appropriating social conventions for online communication					
ODL2	Employees can create online contents for different audience					
ODL3	Employees can interact easily with others online using blogs, social networking site, video etc					
ODL4	Digital lessons and training are made available to all employees					

SECTION E: **Firm Performance**

Please indicate the extent to which you agree with the following statement with regards to digital entrepreneurship. Respond using the Likert scale of **1= Strongly disagree, 2=Disagree, 3=Neutral, 4=Agree and 5= Strongly Agree**

CODE	Firm Performance	1	2	3	4	5
FP1	Our organization is achieving the desired profit target. (Quality of service and product)					
FP2	We have being delivering new products and services based on market change					
FP3	There is an increase in our firm competitiveness over the years					
FP4	There is an exponential growth in our in our business and income level					
FP5	There an Improved customer satisfaction with managing change					