INTELLECTUAL CAPITAL, INCOME DIVERSIFICATION AND FINANCIAL PERFORMANCE OF COMMERCIAL BANKS IN KENYA

BY

PETER NDERITU GITHAIGA

A THESIS SUBMITTED TO THE SCHOOL OF BUSINESS AND ECONOMICS IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS MANAGEMENT (FINANCE OPTION)

MOI UNIVERSITY

2020

DECLARATION

I declare that this thesis is my original work and has not been presented to any other institution. No part of this thesis may be reproduced without the prior or express permission of the author and/or Moi University.

Signature……..Date……
……

Peter Nderitu Githaiga
Reg. No: SBE/DPHIL/BM/0037/15

Declaration by the Supervisors

This thesis is submitted for examination with our approval as supervisors

Signature……..Date……
……

Dr. Josephat Cheboi,

Department of Accounting and Finance,

Moi University,

Eldoret.

Signature……..Date……

Dr. Joyce Komen,

Department of Management Science,

Moi University,

Eldoret.

DEDICATION

I dedicate this work to all scholars who thirst and yearn for knowledge expecting to make the world a better place for future generations. And of course, the dedication would not be complete without thanking my wife, friend, and life partner Muthoni Kaburi and our two lovely children Wanjira and Martin, who made the journey possible and bearable. Special recognition to my dad Githaiga Kimathi, a man I am always proud of, three decades after his demise. Thanks, mom Wanjira Githaiga, the matriarch of the Githaigas'. To my brother Kimathi Githaiga, I celebrate your sacrifice towards my education posthumously. To my other siblings Wanjiku Githaiga, Karimi Githaiga, and Wanjiru Githaiga, we have always remained united against all the odds and emerged victoriously. Indeed, God saw us through.

ACKNOWLEDGMENT

I sincerely acknowledge and thank my supervisors Dr. Josephat Cheboi and Dr. Joyce Komen, for their guidance and inestimable efforts to write this thesis. Special appreciation to Moi University for your generosity. You walked with me side by side until the end of my academic journey as evidenced by the various honors. I'm also indebted for offering me an excellent opportunity to serve you and humanity. Above all, glory to the Almighty God for the gift of life, good health, knowledge, and resources without which this journey would have been in vain.

ABSTRACT

In an era of knowledge-based economies, intellectual capital has gained prominence as a critical financial performance driver. However, extant literature shows that the effect of intellectual capital on financial performance is unclear. Whereas theoretical assertions argue that firms can leverage on knowledge based resources through diversification, empirical evidence in the existing literature is limited. Thus, guided by the modern portfolio theory, the resource-based view theory, and the dynamic capabilities theory, this study sought to examine whether income diversification mediates the relationship between intellectual capital and financial performance of Kenyan commercial banks. Specifically, the study examined the effect of; human capital, process capital, innovation capital, and customer capital on Kenyan commercial banks' financial performance. The study also examined the mediating effect of income diversification on the relationship between human capital, process capital, innovation capital, customer capital, and commercial banks' financial performance in Kenya. The study adopted a longitudinal and explanatory research design since it sought to establish causal relationships between the research variables using panel data analysis. The target population consisted of the 42 commercial banks in Kenya, and data was for the period 2008 -2017. Data was extracted from the individual bank's audited annual reports and the Central Bank of Kenya's yearly reports. The data were analyzed through descriptive and inferential statistics. The study found that human capital ($\beta=0.377$, $\rho<0.05$), process capital ($\beta=0.119$, $\rho<0.05$), innovation capital ($\beta=0.077$, $\rho<0.05$), customer capital ($\beta=0.379$, $\rho<0.05$), and income diversification ($\beta=0.130$, $\rho<0.05$) had a positive and significant effect on the financial performance of commercial banks in Kenya. Further, the study found that income diversification mediated the relationship between human capital ($\beta=0.068$, $\rho<0.05$), process capital ($\beta=0.048$, $\rho<0.05$), innovation capital ($\beta=0.027$, $\rho<0.05$), customer capital ($\beta=0.068$, $\rho<0.05$), and financial performance. This study's findings are supported by the resource-based view theory, emphasizing the importance of knowledge-based resources to firm performance. The portfolio theory that posits income diversification improves banks' financial performance. The study concluded that intellectual capital had a positive and significant effect on Kenya's commercial banks' financial performance. Further, the research established that income diversification partially mediated the impact of intellectual capital on commercial banks' financial performance, making a novel contribution to the existing literature. The study recommends that regulators relax laws limiting the extent to which banks can engage in revenue diversification, allowing banks to reap the benefits of optimal income diversification. Additionally, the study proposes mandatory disclosure of intellectual capital. The study recommends that banks consider income diversification to cushion against interest income volatility and exploit knowledge resources for managerial implications.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

CBK	Central Bank of Kenya
CC	Customer Capital
CEO	Chief Executive Officer
EVA	Economic Value Added
FA	Firm Age
FS	Firm Size
HC	Human Capital
HHI	Herfindahl Hirschman Index
IAS	International Accounting Standard
IC	Innovation Capital
ICT	Information Communication Technology
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
INDIV	Income Diversification
ISO	International Organization for Standardization
IT	Information Technology
JIT	Just-In-Time
LS	Lending Strategy
MNCs	Multinational Corporation
MPT	Modern Portfolio Theory
MVA	Market Value Added
NIM	Net Interest Margin
PC	Process Capital
R&D	Research and Development
RBV	Resource Based View

ROA	Return on Assets
ROE	Return on Equity
ROI	Return on Investment
ROS	Return on Sales
SGA	Selling, General and Administrative Expenses
TQM	Total Quality Management
VAIC	Value Added Intellectual Capital.
VRIN	Valuable, Rare, Inimitable and Non-Substitutable

OPERATIONAL DEFINITION OF TERMS

Competitive Advantage: is the ability to earn returns on investment consistently above the average for the industry (Porter, 1985).

Customer capital: knowledge embedded in the marketing channels and customer relationships that an organization develops through the course of conducting business (Örnek & Ayas, 2015; Inkinen, 2015; Danai *et al.,* 2018).

Financial performance: is the degree to which a firm is able to achieve strong ROA and profitability (Hong *et al.,* 2012). Some dimensions of this variable include profitability, return on assets, growth and return on equity (Naz *et al.,* 2016)

Human Capital: The stock of accumulated knowledge that originates from employees' skills, attitudes, and intellectual agility (Roos *et al.,* 1997)

Income Diversification: is the expansion into non-lending activities that generates noninterest income (Gurbuz *et al.,* 2013; Ebrahim & Hasan, 2008).

Innovation capital: refers to the capacity and ability to innovate, considering the requisite skills, knowledge, competencies, and capabilities are accessible to exploit market opportunities for competitive advantage (lynch *et al.,* 2010).

Intellectual Capital: Denotes the accumulated stock of knowledge and capabilities about the firms that produces competitive advantages and superior performance (Eisfeldt & Papanikolaou, 2013; Lev *et al.,* 2009).

Process capital: Denotes core processes, techniques, procedures, and programs that implement and enhance the delivery of goods and services. Indicators include efficiency and effectiveness in production (Carpinetti *et al.,* 2003; Hung, 2006).

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Firms are vehicles through which diverse socioeconomic goals are pursued. According to Friedman' (1970) shareholders' theory, a firm's primary goal is to maximize shareholders' wealth. Conversely, the stakeholders' theory conjectures that firms pursue diverse objectives that benefit a wider society consisting of customers, employees, suppliers, and shareholders, to mention a few (Freeman, 1984; Donaldson & Preston, 1995). Thus, the proponents of shareholders' theory emphasize financial objectives; supporters of the stakeholders' views advocate for financial and non-financial goals (Santos & Brito, 2012; Richard, Devinney, Yip, & Johnson, 2009). Despite the theoretical conflict, there is a consensus that shareholders have a superior claim over other stakeholders, implying that financial performance overrides non-financial performance (Margolis & Walsh 2003, Smith & Rönnegard, 2016; Sachs & Rühli, 2011).

Financial performance shows the extent economic objectives have been realized, and the firm's overall financial health (Naz *et al.,* 2016). Generally, financial performance measures are classified as accounting-based, survival-based, market-based, and economic value-based (Maditinos, Sevic, & Theriou, 2005; Lindow, 2013). However, the conservative indicators are return on assets, return on equity, and net profit (Olweny & Shipho, 2011; Ho & Saunders, 1981). The importance of financial performance cannot be overemphasized. Researchers claim that financial performance affects managerial decisions. Specifically; equity investment (Olweny & Shipho, 2011), dividend policies (Rehman & Takumi, 2012; Gill, Biger, & Tibrewala, 2010), managerial compensation (Bennett, Bettis, Gopalan, & Milbourn, 2017; Gittleman &

Pierce, 2015), working capital (Bobáková, 2003), R&D investment (Tyagi, Nauriyal, & Gulati, 2018), stock pricing (Hao, Jin, & Zhang, 2011) and capital structure (Deesomsak**,** Paudyal, & Pescetto, 2004; Ghosh, 2017). The financial performance of commercial banks is critical to not only bank managers and shareholders but also the regulators due to the intersection between bank credit and macro-economic factors: economic growth (Tongurai &Vithessonthi, 2018; Balcilar, Gupta, Lee, & Olasehinde-Williams, 2018), job creation (Toms, Wilson, & Wright, 2019, Cai, Song, Ma, Dong, & Xu, 2018; Khan & Anuar, 2018;), equality (Beck, Demirgüç-Kunt, & Levine, 2007; Dwyer, 2018), poverty alleviation (Honohan, 2004; Wahid, 1994; Abdin, 2016), education (Sun & Yannelis, 2016), agriculture (Ogbechie, Kelikume, & Ikpesu, 2016), investments (Sufian & Chong, 2008). Moreover, monetary policies are transmitted through the banking system (Valla, Saes-Escorbiac, & Tiesset, 2006).

Despite the crucial role of the banking sector, commercial banks continue to grapple with declining financial performance (IMF, 2017), which can be explained by rising non-performing loans, stringent regulations, and competition (Gololo, 2018; Dimitrios & Mike, 2016; Psillaki & Mamatzakis, 2017). Recently, three commercial banks (Dubai Bank, Imperial Bank, and Chase Bank) collapsed in Kenya due to poor financial performance (CBK, 2017). Additionally, the introduction of interest capping, limiting the lending rate at 4 percent above the Central Bank of Kenya base lending rate, in 2016, has further worsened banks' financial performance. Olaka (2017) mentioned that interest capping had created a fertile ground for informal lending and a noticeable decline in individual borrowing, which has crowded out credit to the private sector. Interestingly, amid the previously mentioned challenges, several banks reported exceptional financial; for instance, in 2017, Citibank N.A Kenya recorded a return on

assets of(ROA) 6.49% on assets valued at 98.2 billion compared with Kenya Commercial Bank's ROA of 4.94% on assets base of Ksh 555.6 billion (CBK, 2017).

In the twenty-first century, knowledge-based resources are considered the key drivers of financial performance (Peteraf, 1993; Wernerfelt, 1984; Barney, 1991). Moreover, researchers claim that knowledge resources have replaced physical assets as sources of competitive advantage (Drucker, 1993; Clarke & Gholamshahi, 2018; Mahdi, Nassar, & Almsafir, 2019). Conventionally, a firm stock of knowledge resources is referred to as intellectual capital (Mahoney & Kor, 2015; Grant, 1996). Intellectual capital denotes the accumulated stock of knowledge and capabilities specific to a firm that creates and delivers superior performance (Eisfeldt & Papanikolaou, 2013; Lev, Radhakrishnan, & Zhang, 2009). The constituent elements of intellectual capital are human capital, organizational capital, and customer (relational) capital (Edvinsson & Malone, 1997; Abualoush, Masa' deh, Bataineh, & Alrowwad., 2018; Sardo, Serrasqueiro, & Alves, 2018; Abhayawansa, Aleksanyan, & Cuganesan, 2018). Human capital is the individual knowledge stock of an organization as represented by its employees (Bontis, Chua Chong Keow, & Richardson, 2000; Roos, Edvinsson, & Dragonetti, 1997; Bontis, 1998). Maditinos, Chatzoudes, Tsairidis, & Theriou (2011) views human capital as the "brainpower of the employee inside the company." Organizational capital is an agglomeration of; technologies, business practices, processes, designs, incentive, and compensation system that enable firms to extract value from a given level of physical inputs (Lev &Radhakrishnan, 2005; Acquaah, 2003; Gort, Grabowski, & McGuckin, 1985; Penrose, 1959; Prescott & Visscher, 1980). The constituent elements of organizational capital are process capital and innovation capital (Edvinsson & Malone, 1997; Skandia, 1996). Process capital refers to techniques and processes that create and support the delivery of goods and services (Luthy, 1998; Barua, Konana, Whinston, &

Yin, 2004; Kohlbacher, 2010; Wang & Chang, 2005). Innovation capital denotes firm resources that help create, regeneration, and commercialize new knowledge (Kijek, 2012; Brennan & Connell, 2000; Yang & Kang, 2008; Jen Huang & Liu, 2005, Bharadwaj, Bharadwaj, & Konsynski, 1999). Customer capital consists of knowledge embedded in an organization's marketing networks and customer relationships, which amass from business activities (Bontis, Chua Chong Keow, & Richardson, 2000; Hendricks, Singhal, & Stratman, 2007; Örnek & Ayas, 2015; Inkinen, 2015; Danai, Ghezavat, & Ardakani, 2018).

Despite the vital link between knowledge-based resources and organizational outcomes, the impact of intellectual capital on financial performance is contentious (Kamukama, Ahiauzu, & Ntayi, 2010; Uwuigbe, U., & Uadiale, 2011; Tseng & Goo, 2005; Mondal & Ghosh, 2012; Clarke, Seng, & Whiting, 2011). Since knowledge-based resources are inert, general purposes and firms operate in a highly unstable environment, firms require capabilities to utilize, manage, integrate and reconfigure knowledge resources for improved financial performance (Teece, Pisano, & Shuen, 1997; Nelson, 1991; Priem & Butler, 2001; Matsusaka, 2001; Hitt & Ireland, 1986). Moreover, studies claim that high financial performance emanates from matching the firm's capabilities to market opportunities (Chang, 1996; Carnes, Chirico, Hitt, & Pisano, 2017; Feng, Morgan, & Rego, 2017). Similarly, studies have also revealed that firms can leverage their knowledge resources through diversification (Chung, Kim, & Kang, 2019; Chandler, 1962; Fisch & Schmeisser, 2020).

Diversification can take different forms; however, for banking institutions, income diversification is the most common due to banking activities' regulatory restrictions. According to Minot (2006), income diversification is the increase the number of sources of income or the balance between the different sources of revenue. For operational

purposes, income diversification is expanding into non-lending activities that generate noninterest income (Gurbuz, Yanik, & Ayturk, 2013; Gamra & Plihon, 2011; Ebrahim & Hasan, 2008). Empirical studies show that income diversification leads to improved financial performance (Moudud-Ul-Huq, Ashraf, Gupta, & Zheng, 2018; Sanya & Wolfe, 2011) and lower banks risks (Krapl, 2015). Researchers also claim income diversification influences a firm's internal capital market efficiency (Shih, Wu, & Yang, 2018), economies of scale (Beccalli, Anolli, & Borello, 2015), optimal resource utilization (Alhassan & Tetteh, 2017). Yet some studies associate non-lending activities with cross-subsidization (Lepetit, Nys, Rous, & Tarazi, 2008), lower bank margins (Mujeri & Younus, 2009), and enhanced market power (Ovi, Perera, & Colombage, 2014). Presently, noninterest accounts for 15-30% of banks operating income (Saunders, Schmid, & Walter, 2016).

In line with aforesaid, and cognizant of many challenges affecting the lending business, banks should shift their focus towards income diversification and intellectual capital for competitive advantage and improved financial performance.

1.2 Commercial Banks in Kenya

Commercial banks are as old as money and date back to 9000BC when grain-money, food, and cattle-money were used (Bank & Davies, 2002). In Kenya, commercial banks' journey can be traceable to the colonial era that saw the formation of the East African Protectorate in 1865 and Kenya's last declaration as a British colony in 1920. The National Bank of India pioneer Kenya banking sector in 1896, Standard Bank of South Africa joined in 1910, and Barclays Bank in 1916. The Central Bank of Kenya, established in 1966, serves as the government banker and the banking sector regulator. Presently there are 43 commercial banks and one mortgage finance company, and in total, these banks have over 1,541 branches across the country.

Kenya's Vision 2030 envisages a vibrant, efficient, stable, and inclusive financial sector that will improve households' financial access (Government of Kenya, 2007). Vision 2030 is consistent with Global Sustainable Development Goals that advocate for robust and regulated financial markets as a precondition for reducing global inequalities. The impact of the banking sector on the Kenyan economy cannot be underestimated. In 2017, the sector's total asset base was Ksh 4.1 trillion, equity Ksh 600 billion, gross pretax profit Ksh 148 billion, and loan portfolio of Ksh 2.7 trillion compared to Kenya's national budget 2016/17 of Ksh 2.3 trillion (CBK, 2017).

Notably, there has been a progressive transformation in the banking industry over the last two decades, as shown by improved financial inclusivity, financial innovation, growth in deposits, and the sector's resilience to global economic meltdown (CBK, 2016). A survey conducted by CBK (2016) showed that in Kenya, financial inclusivity stands at 82.6 percent. Additionally, the study reported increased use of mobile banking relative to conventional banking.

Despite the expanded financial inclusion, the sector faces many challenges that have adversely affected interest income (Alhassan & Tetteh, 2017; Bettis & Hitt, 1995). In Kenya, the Banking Amendment Act (2016) that introduced interest rates capping has further deteriorated financial performance, as shown by the sector's pre-interest capping return on assets of 2.9 % (2015) and post interest capping ROA of 2.7% (2017). Moreover, financial liberalization and deregulation, which has seen the entry of telecommunication companies into the banking sector, have triggered unprecedented banks shift to noninterest income,

1.3 Statement of the Problem

Commercial banks' financial performance is of great concern to the managers and the policy-maker since the banking sector plays a vital role in the financial system. However, globally, over one-third of banks are grappling with poor financial performance (IMF, 2017). For these banks, financial performance has been constrained by bank-specific impediments such as high operating costs, low operating efficiency, and high nonperforming loans. These challenges have been exacerbated financial liberalization and deregulation, which has led to financial fragility and stiff competition (IMF, 2014). For instance, in 2017, the Kenyan banking sector's financial performance declined by 9.6 %, which was attributed to a higher income decrease compared to a marginal reduction in expenses (CBK, 2017).

Despite the overall low financial performance, a few commercial banks reported remarkable performance. For instance, Citibank N.A Kenya, with net assets of Ksh 98,232 billion, recorded a return of 6.49% return compared with 4.94%, which Kenya Commercial Bank earned on its net assets Ksh 555,630 billion (CBK, 2017). Proponents of the resource-based view and the knowledge-based view theories attribute the difference in performance among firms to intangible assets such as intellectual capital (IC), particularly in today’s era of information knowledge-based economies (Eisfeldt & Papanikolaou, 2013; Lev *et al.*, 2009; Clarke & Gholamshahi, 2018; Drucker, 1993). This is so particularly to knowledge-intensive service organizations like highly innovative banks and less dependent on physical assets. Although the impact of intellectual capital on firm financial performance has been examined extensively, extant literature shows mixed findings. Some studies suggest a positive relationship (Felício, Couto, & Caiado, 2014; Mention & Bontis, 2013). In contrast, other claims negative causation (Amadieu & Viviani, 2010; Smriti & Das, 2017) and no relationship

(Maditinos *et al.*, 2011. Yet, a few studies claim an indirect effect (Chang & Wang, 2005; Francis, Mani, & Wu, 2015). Moreover, the specific means through which intellectual capital affects a firm's performance is under-researched.

Competitive advantage and superior financial performance is a combination of firm-specific resource and business opportunities, implying that mere possession of intellectual capital does not automatically lead to improved financial performance (Barkat & Beh, 2018; Sheng, 2019). Thus, a firm must deploy its strategic resources through competitive market strategies for improved financial performance (Hsu & Wang, 2012; Kianto, Ritala, Spender, & Vanhala, 2014). In the same line, some scholars have argued that firms diversify to new products and markets to leverage their intangible resources for competitive advantage and profit (Mittal & Nihar, 2018; Castaldi & Giarratana, 2014; Boadi, 2018; Lee, Cheng & Chong, 2016). Arguably, there is an essential link between IC, diversification, and performance, which has not been addressed by the existing literature. From this perspective and considering the declining interest-based revenue, this study sought to fill the literature gap by investigating whether income diversification is a path through intellectual capital that affects banks' financial performance.

Specifically, this study sought to investigate whether income diversification mediates the relationship between intellectual capital and commercial banks' financial performance in Kenya. Unlike many previous studies that focused on developed and emerging economies, this study focuses on Kenya, which is considered a developing country. Further, Kenya is also viewed as having one of the most innovative and vibrant banking sectors in Sub-Saharan Africa (Carletti *et al.,* 2018; Kasekende & Nikolaidou, 2018; Muthinja & Chipeta, 2018).

1.4 Objectives of the Study

1.4.1 General objective of the Study

The general objective of the study was to investigate the effect of intellectual capital on financial performance and the mediating role of income diversification among commercial banks in Kenya.

1.4.2 Specific objectives

The specific objectives of the study were to;

1. Investigate the effect of human capital on financial performance of commercial banks in Kenya.

2. Evaluate the effect of process capital on financial performance of commercial banks in Kenya.

3. Determine the effect of innovation capital on financial performance of commercial banks in Kenya.

4. Estimate the effect of customer capital on financial performance of commercial banks in Kenya.

5. (a) Examine whether income diversification mediates the relationship between human capital and financial performance of commercial banks in Kenya.

   (b) Evaluate whether income diversification mediates the relationship between process capital and financial performance of commercial banks in Kenya.

(c) Assess whether income diversification mediates the relationship between innovation capital and financial performance of commercial banks in Kenya.

(d) Determine whether income diversification mediates the relationship between customer capital and financial performance of commercial banks in Kenya.

6. Examine the effect of income diversification on financial performance of commercial banks in Kenya.

1.5 Research Hypothesis

This study sought to address the following pertinent research hypotheses;

H_{01}: Human capital has no significant effect on financial performance of commercial banks in Kenya.

H_{02}: Process capital has no significant effect on financial performance of commercial banks in Kenya.

H_{03}: Innovation capital has no significant effect on financial performance of commercial banks in Kenya.

H_{04}: Customer capital has no significant effect on financial performance of commercial banks in Kenya.

H_{05a}: Income diversification does not significantly mediate the relationship between human capital and financial performance.

H_{05b}: Income diversification does not significantly mediate the relationship between process capital and financial performance.

H_{05c}: Income diversification does not significantly mediate the relationship between innovation capital and financial performance of commercial banks in Kenya.

H_{05d}: Income diversification does not significantly mediate the relationship between customer capital and financial performance of commercial banks in Kenya.

H_{06}: Income diversification has no significant effect on financial performance of commercial banks in Kenya.

1.6 Significance of the Study

This study's main objective was to investigate whether income diversification mediates the effect of intellectual capital on the financial performance of commercial banks in Kenya. Therefore, the study's findings are essential to diverse stakeholders considering the vital role of commercial banks in an economy.

First, the findings assist policymakers in formulating regulatory and structural actions that can create a robust banking sector that will not only promote financial inclusivity and bank profitability but economic growth. Second, intellectual capital, income diversification, and financial performance are of strategic importance to profit-making entities—consequently, the findings aid strategy formulation and execution. Moreover, managerial incentives hinge on prudent utilization of organization resources and capabilities to maximize shareholders' value. Third, shareholders and potential investors now understand the intrinsic value of knowledge resources, rarely disclosed in conventional financial reports. Thus, the findings inform future decisions on managerial contracts, business processes, takeovers, and mergers. Finally, the results

expand the existing knowledge on intellectual capital, income diversification, and financial performance and perhaps create a fertile ground for future studies.

1.7 Scope of the Study

The study was carried out in Kenya, located in East Africa and is considered a developing country with a Gross Domestic Product of $ 190.970 billion, a population of 52.2 million people, and an area of 580,367 square kilometers. The unit of analysis was all the licensed commercial banks in Kenya that were operational between 2008 and 2017. As of 2017, Kenya had 43 bank institutions (42 commercial banks and 1 Mortgage Company), of which one was under statutory management, and two were under receivership. The period 2008 -2017 was suitable since the Kenyan-banking sector saw significant regulatory and institutional transformations attributed to the Economic Recovery Strategies (2004), the Sacco Societies Act (2008), the Microfinance Act (2006), and the Vision 2030 (2008).

The study's philosophical foundation is positivism, suggesting that there is an external reality and that universal laws or laws of nature, which apply at all, govern events and occurrences times and in all places. Data was secondary and quantitative, and it was extracted from individual bank's annual financial reports and the Central Bank of Kenya's supervisory yearly reports.

1.8 Chapter Summary

This chapter introduces the study by discussing the conceptual and contextual background of the study. The main concepts used in the study, financial performance, intellectual capital, and income diversification, are also mirrored through. Further, the chapter discusses the statement of the problem, the research objectives, and the

hypotheses. The next chapter presents a review of both empirical and theoretical literature that grounds the study.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter discusses the research variables, namely intellectual capital, income diversification, and financial performance. The chapter further examines theories suggesting the relationship between the research variables. Additionally, the section reviews previous empirical studies related to this study and finally presents its conceptual framework.

2.1 The Concept of Financial Performance

The meaning of performance depends on the phenomenon in question and the attributes it exhibits. Oxford English Dictionary defines performance as "the accomplishment, execution, carrying out and working out of anything ordered or undertaken." Tangen (2005) view performances as an umbrella term of excellence and includes profitability and productivity and other non-cost factors such as quality, speed, delivery, and flexibility.

Performance is at the heart of managerial functions since it establishes the underlying relationship between firm resources and outcomes (Catasús, Ersson, Gröjer, & Yang Wallentin, 2007). Drucker (1954) asserts that "what gets measured, gets managed." In both theory and practice, firm performance is categorized as either non-financial or financial (Ittner & Larcker, 1998). The non-financial performance focuses on non-economic outcomes such as product quality, employee satisfaction, customer satisfaction, and managerial capability (Ibrahim & Lloyd, 2011; Banker & Mashruwala, 2007; Ittner & Larcker, 1998). Financial performance is an indicator of a firm's financial health over a given period (Naz *et al.*, 2016). As stated by Venkatraman and Ramanujam (1986), financial performance reflects the fulfillment of the firm's

economic goals, such as profitability, sales growth, shareholder wealth, and earnings per share. Correspondingly, Mwangi, and Muringu (2015), financial performance is a measure of an organization's revenues, profits, and appreciations in value, as evidenced by the rise in the entity's share price. In a similar line, Hong *et al.,* (2012) assert that financial performance is the degree to which a firm can achieve a strong ROA and profitability. For operational purposes, this study views financial performance as the extent an organization has realized its economic objectives against a predetermined standard.

Previous studies claim that financial performance influences firms' strategic choices. For instance, managerial compensation (Gittleman & Pierce, 2015), dividend payout (Kanwal & Hameed, 2017; Kajola *et al.,* 2015; Rafindadi & Bello, 2019), corporate borrowing (Yazdanfar & Öhman, 2015), mergers and acquisitions (Dilshad, 2013). Moreover, financial performance metrics is usually used to compare organizations and assess their behaviors over time (Holmberg, 2000)

In the context of commercial banks, Bikker (2010) argues that the quality and price of financial instruments depends on a bank's ability to generate sufficient future earnings. Moreover, Olalekan and Adeyinka (2013) posit that banks' financial performance affects their capital adequacy. Some of the determinants of bank financial performance include; diversification (Saunders *et al.,* 2016), capital adequacy (Athanasoglou, Brissimis, & Delis 2008), size (Jara-Bertin, Arias Moya, & Rodriguez Perales, 2014), ownership (Havranek & Irsova, 2013; lee & Kim, 2013), institutional quality (Kutan, Ozsoz, & Rengifo, 2012), market quality (Sun, Mohamad, & Ariff, 2017), nonperforming loans (Daly & Frikha, 2015), corporate governance (Bhagat & Bolton, 2008). Collectively, these factors can be categorized into; firm-specific, market-related, and macroeconomic.

Financial performance is grounded on various models; that suggest how firms should reconcile stakeholders' expectations have validated the propositions of stakeholders' theory. One of the celebrated financial performance models is the Kaplan and Norton (1996) Balanced Scorecard. The authors wrote, "The Balanced Scorecard translates mission and strategy into objectives and measures." The balanced scorecard is organized into four different perspectives: financial the customer, internal business process, and learning and growth. The financial perspective focuses on financial objectives, such as profitability as an organization bottom-line. The customer perspective entails identifying customers' needs, devising how to fulfill them, and measuring performance using customer-centered metrics such as customer satisfaction, customer retention, and customer acquisition. Internal business processes answer the question of what the firm should excel in to deliver value to customers besides meeting other stakeholders' expectations. The learning and growth perspective centers on building an innovative organizational infrastructure that supports long-term growth and improvement through continuous improvement, innovation, and creativity (Kaplan & Norton, 1996).

Studies have used the Balanced Scorecard Model to explain how intellectual capital contributes to financial performance by matching the various intellectual capital components with their comparative perspectives (Wu, 2005). To be precise: financial (financial performance), the customer (customer capital), internal business process (process capital), and learning and growth (human and innovation capital). Mirroring intellectual capital components on the Balanced Scorecard perspectives indicates that these components are interrelated and complementary.

Fitzgerald and Moon's Building Block Model (1996) is a service organization's performance management model. The model postulates that managers should set

progressive performance management frameworks that link firm objectives, employees' goals, and motivation. The model has three blocks comprising of dimensions, standards, and rewards. Dimensions denote performance outcomes such as quality, profitability, innovation, flexibility, and customer satisfaction. Standards entail assigning goals to individuals responsible for attaining them, determining the attainability of those goals, and agreeing on a fair and equitable assessment method. Rewards encompass employees' motivation, clarity of dreams, and ensuring employees control their responsibilities.

Another model that focuses on organizational performance is the Value Chain Model (Porter, 1985). A value chain is a set of activities that a firm operating in a given industry must undertake to deliver value for competitive advantage—the model groups firms' activities into primary and secondary. The primary activities consist of inbound logistics, operations, and outbound logistics, marketing, and sales and service, whereas secondary activities include procurement, human resource management, technological development, and infrastructure (Porter, 1985).

Due to financial intermediation's uniqueness, the CAMEL (capital adequacy, asset quality, management capacity, earnings ability, and liquidity) model usually assesses bank performance (Desta, 2016; Nazir, 2010; Roman & Şargu, 2013). According to Kabir and Dey (2012), the strength of CAMEL lies in its reliability and comprehensiveness. Users of this model include financial system regulators, banks, savings and cooperative societies, insurance, microfinance institutions, and collective investment schemes (Shukla, 2015; Gilbert, Meyer, & Vaughan, 2000; Nurazi & Evans, 2005).

2.2 Concept of Intellectual Capital

As the world transit from production-based economies to knowledge-based economies, researchers claim that firms must focus on intellectual capital for competitive advantage and superior performance (Brooking, 1996, Bontis *et al.*, 2000; Itami, 1987). Quinn (1992) stated, “ideas and intellect, not physical assets, built great companies. Most successful corporations are intelligent enterprises that can create value for their customers from intellectual resources.” Moreover, Hall (2001) mentioned that the value of intangible assets was about one-half to two-thirds of U.S. listed corporations' total market value. The term “intellectual capital” was coined by Galbraith (1969), who viewed intellectual capital as an ideological process comprising intellectual processes, which implies behaviors that require the brain's application. Meihami, Varmaghani, and Meihami (2014) postulate that intellectual capital is a combination of firm resources devoid of physical tangibility. Besides, Roos *et al.* (1997) assert that intellectual capital denotes relationships with customers, innovations, company infrastructure, knowledge, and workforce skills.

The sub construct elements of intellectual capital, as argued in earlier studies, include human capital, organizational capital, and customer (relational) capital (Attar, Kang, & Sohaib, 2019; Nazari & Herremans, 2007; Bontis, Ciambotti, Palazzi, & Sgro 2018; Miroshnychenko, 2013; Edvinsson & Malone, 1997)

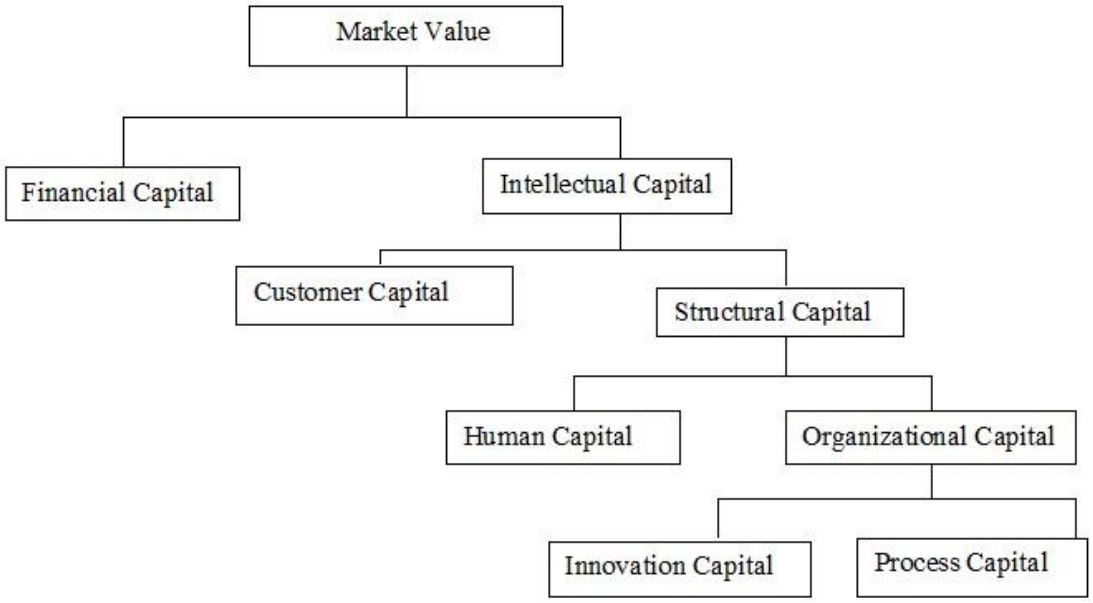

Figure 2.1 Edvinsson and Malone's taxonomy of intellectual capital (1997).

Carnall and By (2014) suggest that intellectual capital resources are difficult to accumulate, have multiple simultaneous usages and serve both as inputs and outputs of business processes implying that they are strategic as claimed by the resource-based view. Similarly, Gallego and Rodríguez (2005) opine that intellectual capital assets are intangible, results from economic transactions, create future income, and useful in the long-term. Previous studies claim that intellectual capital influences firm competitiveness and financial performance (Clarke *et al.*, 2011).

Researchers argue that intellectual capital improves: firm efficiency (Tronconi & Marzetti, 2012), optimal investment decision (Attig & Cleary, 2014), return on assets (Yang & Kang, 2008; Shrader & Siegel, 2007), innovativeness (Francis *et al.*, 2015), productivity and firm value (Ramirez & Hachiya, 2006) and stock prices (Lev *et al.*, 2009).

2.2.1 Human Capital

Human capital is the central dimension of intellectual capital (Bontis, 2001; Edvinsson & Malone, 1997). Halim (2010) views human capital as "what a single employee brings into value-adding processes, consisting of professional competence, social competence, employee motivation, and leadership ability." Sveiby (1997) states that human capital is the capacity of employees to act in varied situations in a manner that create both tangible and intangible assets. Reichenberg and Andreassen (2018) claim that human capital embodies an organization's workforce's knowledge, competencies, and abilities. Besides, Thomas, Smith, and Diez (2013) define human capital as people, their skills, and their performance. Davenport and Prusak (1998) suggest that human capital signifies intangible resources of abilities, effort, and time that workers bring and invest in their work.

According to the Roos *et al.,* (1997) human capital denotes employees' competencies, attitudes, and intellectual agility. Competencies symbolize employees' skills, experiences, and skills. Attitudes characterize employees' capability and willingness to deploy their skills and abilities as measured by the level of motivation, work-related behaviours, and leadership. Intellectual agility represents the ability of employees to innovate and transform ideas into valuable goods and services. Indicators of intellectual agility include innovation, the extent of diversification, superior imitation, adaptability, and packaging.

Human capital plays a critical role in generating ideas and knowledge besides complementing other intellectual capital (Han, Han, & Brass, 2014). An organization's survival depends on its workforce's ability to generate and implement innovative ideas to meet customer satisfaction. Human capital is the sole source of a firm's innovation and strategic renewal (Bontis, 2001; Nieves & Quintana, 2018; Kato, Okamuro, &

Honjo, 2015). Stewart (1997) posits that human capital significantly influences product innovation, service innovation, and process innovation. Besides, Bontis *et al.,* (2018) mentioned that a firm's knowledge exists in human capital. Studies have also linked investment in human capital with improved employee performance and higher firm performance (Becker 2009; Bapna, Langer, Mehra, Gopal, & Gupta, 2013; Jones, Kalmi, & Kauhanen, 2012). Moreover, training and development aim to improve employees' knowledge and absorptive capacity, enhancing their capabilities and commitment to the organization, eventually improving performance.

Considering the importance of human capital, organizations invest massive resources on employee programs such as recruitment, training, and development to equip its human resources with firm-specific skills and capabilities for competitive advantage and superior performance. Moreover, the link between organization learning, employee training, work environment, and firm performance is widely cited in extant literature (Greve, 2003; Molina & Ortega, 2003; Child, 1972).

At the macro-level, studies show that human capital accounts for over three-quarters of developed nations' wealth(Becky, 2009). Thus, human capital is a necessary ingredient for economic development (Gennaioli, La Porta, Lopez-de-Silanes, & Shleifer,2012; Eggoh, Houeninvo, & Sossou., 2015) and sustainable development (Fraumani & Liu, 2019; Odugbesan & Rjoub, 2019). Li, Loyalka, Rozelle, & Wu (2017), Lee and Lee (2016) and Pelinescu (2015) mentioned that a country's level of economic growth depends on the extent of investment in human capital development. Still, studies show that human capital fosters innovations and diffusion of technologies, thus increasing productivity (Romer, 1990; Funke & Strulik, 2000). Studies have demonstrated empirically that human capital nurtures all other forms of knowledge resources

(Benevene, Kong, Lucchesi, & Cortini., 2019; Bratianu, 2018; McDowell, Peake, Coder, & Harris, 2018).

In summary, human capital is essential both at the micro and macro level due to its influence on various outcomes, thus of strategic significance. The study conjectures that human capital is a source of competitive advantage hence influences firm performance.

2.2.2 Innovation Capital

Researchers argue that a firm's innovative capacity is a source of competitive advantage (D'Este, 2002; Aziz & Samad, 2016; Brem, Maier, & Wimschneider, 2016). Similarly, with intensified globalization and competition, there is widespread recognition of innovation capital as critical to economic growth (Jen Huang & Liu, 2005). Organizational innovativeness refers to the capacity and ability to innovate, considering that the requisite skills, knowledge, competencies, and capabilities are available to exploit market opportunities profitably (Lynch, Walsh, & Harrington, 2010).

Extant literature shows varied definitions of innovative capital. Brennan and Connell (2000) assert that innovation creates success in the future and includes intellectual assets and intellectual property. Marr *et al.,* (2004) opines that innovation capital represents drivers of innovative products and processes. According to Lentjushenkova and Lapina (2014), innovation capital denotes a firm's internal functions that show an organization's ability to innovate products and processes. Kijek (2012) views innovation capital as "a bundle of firm's resources/assets that render complementary services in the process of new knowledge (innovation) creation and commercialization." Zawislak, Cherubini Alves, Tello-Gamarra, Barbieux, and Reichert (2012) conceptualized innovation capital from its constituent capabilities that

initiate and manage organizational renewal and development. Innovative capabilities comprise of technological development, operations, management, and transactions.

Indicators of an organization's innovative capacity include new products, new processes, inimitable supply chains, and new organizational forms (Burns & Stalker, 1961; Porter, 1990). Various antecedents of organizational innovativeness include: appear in literature; market orientation, learning orientation and learning orientation (Hult, Hurley, & Knight, 2004), specialization, functional differentiation, professionalism, centralization, managerial attitude toward change, technical knowledge resources, administrative intensity, slack resources, and external and internal communication (Damanpour, 1991), firm size (Vossen & Nooteboom, 1996; Kleinknecht & Mohnen, 2002), size, technological opportunities, and factor intensity (Lööf & Heshmati, 2006). Conceptually, organizations' innovation capabilities constitute innovation capital.

Studies show that innovation capital positively impacts firm productivity and value (Yang & Kang, 2008; Van Auken, Madrid-Guijarro, & Garcia-Perez-de-Lema, 2008). Congruent with the resource-based view, Yalcinkaya, Calantone, & Griffith (2007) conjecture that innovation capabilities enable an organization to exploit market opportunities for competitive advantage. Innovation capital creates organization knowledge that is an enabler of continuous improvement, lean management, and organizational change.

Innovative organizations are more profitable, flexible, and adaptable to market pressure besides enjoying a high market power and competitive advantage (Van Auken *et al.*, 2008; Zahra, Ireland, & Hitt, 2000; Keizer, Dijkstra, & Halman, 2002; Kemp, Folkeringa, Jong, & Wubben, 2003). the empirical literature also suggests that several

factors mediate the relationship between innovation capital and firm performance: firm age, type of innovation, and cultural factors (Rosenbusch, Brinckmann, & Bausch, 2011), fit size, and customer capital (Rubera & Kirca, 2012).

2.2.3 Process Capital

Edvinsson and Malone (1997), who developed the conservative taxonomy of intellectual capital, coined the term process capital. The concept of process capital appears scant in the literature despite being an integral element of intellectual capital. Through a meta-analysis, Matthies (2014) found that the word process capital appeared in 245 papers, out of which only 39 studies were relevant. Process capital has attracted several definitions, as demonstrated in extant literature.

Castillo (2016) states that process capital refers to procedures, practices, and activities that promote the delivery of value creation. Shang and Wu (2013) view process capital as "the practical knowledge on operations, techniques, and procedures that lead to efficiencies in producing goods and services." Matthies (2014) contend that process capital is "institutionalized knowledge and the competencies necessary for efficient value creation from the perspective of organizational infrastructure." Hsu and Fang (2009) suggest that process capital is "workflow, operation processes, specific methods, business development plans, information technology systems, and cooperative culture." Luthy (1998) asserts that process capital "includes the techniques, procedures, and programs that implement and enhance the delivery of goods and services."

Process capital aims at aligning people, systems, and strategies to corporate objectives (Carpinetti, Buosi, & Gerolamo, 2003; Hung, 2006). Further, the quantity and quality of corporate outcomes depend on an organization's processes' efficiency and effectiveness. Imai (1986) and Kilmann (1995) aver that process determines results,

and the best way to improve an organization's outcomes is to improve the process. In summative form, the focus of process capital is on organizational values, work processes, information systems, employee programs, and procedures that convert inputs into outputs.

To survive volatile environments, firms should focus on internal business processes that create and deliver value to their customers. Shang and Lin (2010) mentioned that firms should develop, renew and reconfigure process capital as the environment evolves to build a distinct, practical, and operational structure that supports the attainment of critical objectives (Moustaghfir, 2009). The process capital dimension requires that a firm invest in information technology infrastructure, total quality management projects, process redesign initiative, and process integration to meet customer expectations for competitive advantage (Shang & Wu, 2013).

Previous studies show that process capital influences customer satisfaction, service quality, cost structure, and organizational financial performance (Kohlbacher, 2010; Hinterhuber, 1995; Hammer, 2007). Various business process models have attempted to explain the relationship between process capital and firm performance.

One of the widely cited process management models is the Value Chain Model (Porter, 1985). The model illustrates how business processes can be a source of sustained competitive advantage. A value chain is a set of organization activities that create value and competitive advantage. According to Porter (1985), organizations' activities are either primary or support. Primary activities (inbound logistics, operations, outbound logistics, marketing, and sales, and service) create, maintain, and support products' production and delivery. In contrast, secondary activities (procurement, human

resource, technology development, and infrastructure) complement the primary activities.

Hammer's (2007) Process Enterprise Maturity Model suggests that superior performance is a function of process enablers and capabilities. Process enablers include design, performers, owners, infrastructures, and metrics. Design entails process specifications and plans implementation. Performers are persons who carry out plans, skills, and knowledge; owners are managers charged will supervision and delivery of process results. Infrastructure is the collection of organizational and managerial information systems.

Hammer's (2007) model has four organizational capabilities that complement process enablers comprising leadership, culture, expertise, and governance. Leadership denotes managerial support towards the establishment of firm processes. Organizational culture is the foundation of cooperation, individual accountability, and readiness to changes. Expertise or skills and methodology represent process redesign. Governance is the firm's mechanism of dealing with complex projects and changes. This model emphasizes the need to evaluate process capital enablers and capabilities for firm efficiency and effectiveness.

The Eight Tracks for Transformation by Kilmann (1995) is a model that exemplifies the significance of process capital to organizational performance. The eight tracks are grouped into systems and process tracks. System tracks include culture, skills, teams, and strategy-structure and reward systems. The system tracks' role is eliminating formal and informal internal barriers to production by ensuring resources are available to employees.

Process tracks consist of a gradual process, radical process, and learning process. The gradual process entails regular training on core processes and process improvement. The radical process comprises organization restructuring and integrating technologies, whereas radical processes center on learning and cross-border exchanges. The eight tracks enable a firm to align through process improvement initiatives such as total quality management, customer relationships management, supply chain management, and lean production, in turn, improved performance (Kilmann, 1995).

In summary, the value of process capital revolves around the firm's ability to synchronize internal technologies, processes, and procedures into a system that anticipates customers' needs then translate the requirements into goods and service for competitive advantage (Reinartz, Krafft, & Hoyer,2004; Mithas, Krishnan, & Fornell,2005; Wang, Chen, & Chen, 2012).

2.2.4 Customer Capital

Customer capital signifies knowledge embedded in marketing channels and customer relationships that firms develop in doing business (Bontis, 1998). Liu and Lin (2007) claim that customer capital connotes value generated through customer relationships. Besides, Anderson, Fornell, and Lehmann (1994) argue that customer capital as a long-term capital outlay that aligns organizational structures, processes, resources, and performance measures with customers' expectations. According to Kamakura, Mittal, De Rosa, and Mazzon (2002), customer drivers are; market intelligence, technology, and human capital. In the last two decades, researchers have extended customer capital to relational capital to capture an organization's relationships with suppliers, employees, competitors, and government (Bontis, 1998; Roos & Roos, 1997).

With increased competition and evolving customer needs, firms are increasingly becoming customer-centric for competitive advantage and survival. Liu and Lin (2007) assert that customer capital thrives on knowledge management systems that capture market expectations then deliver goods and services that meet customers' expectations. As a result, organizations are gradually moving from product and brand orientation to customer orientation and relationship management (Reinartz *et al.,* 2004).

Empirical studies show that customer capital investments improve performance and enhance firm survival (Bin Shaari, bin Md Isa, & Khalique, 2018). Moreover, Anderson *et al.,* (1994) claim that customer satisfaction leads to profitability from customer loyalty, price stability, reduced marketing cost, and brand reputation. Danai *et al.,* (2018) and Arvan, Omidvar, and Ghodsi (2016) mentioned that customer capital influences a firm's bottom-line through enhanced customer loyalty, higher customer retention, and increased market share.

The dimensions of customer capital cited in the literature include market share, customer databases, customer-based services, intelligent customers' perspectives, marketing intensity, service quality, and customer loyalty (Liu, Luo, & Shi 2002; Chen, Zhu, & Yuan Xie, 2004; Kamakura *et al.*, 2002).. Additionally, there exist different management models that attempt to estimate the intrinsic value of customer capital. Kaplan and Norton (1996) use the "core measure gap" index to evaluate a firm's customer capital value. The index comprises market share, customer acquisition, customer retention, customer satisfaction, and customer profitability. Similarly, Edvinsson and Malone (1997) proposed the five-measurement valuation model for customer model that encompasses customer type, customer duration, customer role, and customer support, and customer success. Suffice to say, the pointers of customer capital are the various dimensions of customer satisfaction. Moreover, Chang and Tseng

(2005) contend that a firm's customer capital is the product of its relationship marketing activities.

Recent studies show that customer capital is highly dependent on other sub-constructs on intellectual capital, specifically; human capital, process capital, and innovation capital (Wang & Chang, 2005; Liu & Lin 2007). Furthermore, customer satisfaction and market position are indicators of firm performance. Thus, customer capital is the product of a firm's investment in human capital, internal processes, and innovation.

2.3 Concept of Income Diversification

Generally, diversification is a multi-disciplinary concept owing to its widespread application in various disciplines. Ramanujam and Varadarajan (1989) view diversification as entry into a new activity line through internal business development or acquisition. As stated by Gort (1962), "diversification is the entry into industries where few firms account for a large proportion of total output and sales." Similarly, Ansoff (1957) claims that "Diversification is usually associated with a change in the characteristics of a company's product line and market, in contrast to market penetration, market development, and product development which represent other types of change in product-market structure." Mercieca, Schaeck, and Wolfe (2007) conjectures that bank diversification signifies new financial products, expansion of the business line, geographical expansion, or a blend of geographical and product development.

In this study, the term diversification is limited to income diversification by banks. Income diversification refers to the increase in the share of the fee, net trading profits, and other noninterest income within the net operating income (Gurbuz *et al.*, 2013). Moreover, Ebrahim and Hasan (2008) view income diversification as an expansion into

new income-earning financial services save for traditional intermediation services. In principle, income diversification is a strategy where banks expand their business from lending activities towards non-lending activities such as investment banking, trading, and insurance (Busch & Kick, 2009).

According to Mujeri and Younus (2009), banks can widen and stabilize their income base by engaging in advisory, asset management services, and sale of insurance and mutual fund products, payment products, electronic bill payments, and credit sale cards. Borrowing from portfolio theory, noninterest income and interest income are uncorrelated. Thus, income diversification leads to income stability. Presently, noninterest revenue accounts for about 30% of banks' total operating revenue (Kiweu, 2012; DeYoung & Rice, 2004).

From a practical perspective, the banks' revenue model is predominantly intermediation based since banks generate revenue by attracting time and demand deposits from households and firms, then repackaging such deposits into loans and other forms of advances that earn interest (Craigwell & Maxwell, 2009). Studies show that interest income has been adversely affected by competition from nonbanking entities (offering banking services), the outburst of financial innovations and regulatory pressure, forcing banks to engage in non-lending activities for survival (DeYoung & Rice, 2004).

Income diversification earns noninterest income that consists of fee and non-fee incomes. Fee income is earned from activities such as; loan processing, bill discounting, letters of credit and guarantee, account keeping, service, and management (Lepetit *et al.,* 2008; DeYoung & Roland, 2001). at the same time, non-fee income arises from foreign exchange transactions, investment in government and corporate securities,

rental premises owned by the bank, and gains from the sale of premises (Rushdi & Tennant, 2003).

Despite the unprecedented appetite for non-lending activities, the debate on whether income diversification improves financial performance continues to widen. Studies have shown that income diversification improves bank performance (Jen Huang & Cheng 2006; Hakimi, Hamdi, & Djelassi, 2012) and reduces risk exposure (Abedifar, Molyneux, & Tarazi, 2014; Calmès & Théoret, 2015). In the same line of research, several studies have also linked non-lending activities to lowers banks spread), increased market power, and enhances firm productivity (Alhassan & Tetteh, 2017; (Ovi *et al.,* 2014; Mujeri & Younus, 2009; Kannan, Narain, & Ghosh, 2001).

Conversely, studies argue that income diversification reduces profitability besides exposing banks to income volatility (DeYoung & Roland, 2001; Stiroh, 2004; Delpachitra & Lester 2013; Chen, Huang, & Zhang, 2017; Demirgüç-Kunt & Huizinga, 2009). Surprisingly, there exist studies that suggest income diversification does not affect bank performance; inferring banks should focus on traditional activities (Hahm, 2008).

There are several explanations for the endless debate around income diversification and bank performance causality (DeYoung & Rice, 2004). First, interest income is earned from relationship-based activities with high switching costs compared to fee-based transactions. Relationship-based transactions are occasionally one-off, implying that the benefits of diversification are short-term. Second, non-lending activities affect operating leverage and financial leverage, reducing potential gains from income diversification. Third, cross-subsidization and cross-selling the individual effect of income diversification might be invisible (Lepetit *et al.,* 2008). Fourth, income

diversification is likely to breed lazy banks (Kumhof & Tanner, 2005; Hauner & Kumar, 2006; Hauner, 2009).

Despite the widening debate on the magnitude and direction of the income diversification and financial performance relationship, there seems to be a consensus that income diversification affects bank performance.

2.4 Theoretical Underpinning

Modern portfolio theory (Markowitz, 1952), Resource-Based View (Wernerfelt, 1984), and Dynamic Capabilities Theory (Penrose, 1959; Teece *et al.*, 1997) are the theoretical foundations of this study.

2.4.1 Modern Portfolio Theory

The theoretical foundation of income diversification is the modern portfolio theory, which was advanced by Harry Markowitz (1952) in his seminal paper "*Portfolio Selection*." The theory claims that a risk-averse investor can maximize returns by holding a well-diversified portfolio of uncorrelated securities for a given risk level. The portfolio selection process embroils a dichotomy between desired high-expected returns and undesired variance from expected returns (Markowitz, 1952). Carroll and Stater (2008) aver that selecting an optimal portfolio involves the assumption of risks that maximize expected returns or relinquishing some returns to minimize variance.

Markowitz (1952) claims that asset with the imperfectly correlated return; the risk of that portfolio, measured by the portfolio's beta, is lower than the aggregate risk. Investors are ready to assume additional risks for extra returns. MPT is based on several assumptions, which include investors are rational, information is readily available and free, and investors have homogeneous expectations and existence of a risk-free borrowing and lending rate (Markowitz, 1952).

Consistent with the modern portfolio theory, banks can reduce income volatility and improve their overall financial performance by engaging in a range of income-generating activities such as vestment banking, advisory, brokerage, and underwriting (Saunders *et al.*, 2016; Matthies, 2014). Valverde and Fernandez (2007) opine that income diversification improves banks operating income and market power. Besides, non-lending activities offset declining interest income occasioned by competition in the lending business (DeYoung & Rice, 2004). Lang and Stulz (1990), Rumelt (1974) found that under-performing firms have a high propensity to diversify than profitable ones. Besides, Iqbal (2007), focusing on Islamic banking, concluded that diversification of financial services and products reduce the volatility of returns and risk of displacement for incomplete markets

Additionally, researchers claim that income diversification improves financial intermediation through a reduced information gap between depositors and borrowers (Sanya & Wolfe, 2011). Depositors delegate the task of monitoring lending agreements to financial intermediaries since intermediaries have a cost advantage in gathering information. Additionally, the intermediary through cross-selling absorbs any undesirable impact of information asymmetry. Correspondingly, Williamson (1986) observed that banks could cushion depositors from any possible losses arising from delegated monitoring by engaging in nontraditional activities. Moreover, Allen (1988) and Ho and Saunders (1981) opine that by offering various non-lending services, banks stimulate lending activities through reduced interest margins attributed to cross elasticity of demand among products.

Chiorazzo, Milani, and Salvini (2008) observed that non-lending activities led to economies of scale and scope owing to shared production in the delivery of related financial services. Furthermore, Landskroner, Ruthenberg, and Zaken (2005)

conjecture that income diversification improves bank revenue and operational efficiency, especially where the scale and scope of operations expand. Thus, income diversification leads to stable earnings (Fang & Lelyveld, 2014; Schoenmaker & Wagner, 2011; Berger, Hasan, & Zhou, 2010).

Castaldi and Giarratana (2014) and Matsusaka (2001) assert that diversification leverages the utilization and preservation of firms' knowledge resources. Implying that income diversification is a strategy through which banks create value from intellectual capital for competitive advantage.

Save for firms, at the macroeconomic level; portfolio theory has been used to justify tax diversification. White (1983) and Agostino (2004) used the approach to explain why governments should collect revenue from varied taxes from averting revenue volatility. Studies have also shown that income diversification influences rural household livelihood, smoothened consumption, poverty reduction, improved infrastructure, and income distribution (Duc & Waibel, 2009; Ersado, 2006; Schwarze & Zeller, 2005).

Bank can also mitigate agency problems by engaging in non-lending activities. Stulz (1990) noted that diversification across businesses and projects promotes a firm's internal capital market efficiency by averting excess resources underinvestment. An efficient internal capital market lessens agency costs of managerial discretion, improves the certainty of cash flows, and maximizes shareholders' wealth (Berger & Eli, 1995; Liebeskind, 2000). Penrose (1959) stated that "the final products produced by a firm at any given time merely represent one of several ways in which the organization could be using its internal resources… and once new products are added, new types of specialized resources may be required at other stages of production or distribution, and a new series of advantages from further specialization in different directions may

become obtainable." Given this, a firm's competitive advantage and superior performance not only arise from the possession of strategic resources but also from innovatively finding new and better ways of using the existing resources. Thus, through income diversification, banks optimize the use of intellectual capital resources. The relevance of the modern portfolio theory to this study is twofold. First, the theory shows that there is a causal relationship between income diversification and firm performance. Two, the theory suggests that income diversification mediates the relationship between intellectual capital and financial performance.

2.4.2 Resource-Based View

Penrose (1959) first introduced the resource-based view in her book "*The Theory of the Growth of the Firm"*. The theory examines how firms create sustainable competitive advantage through the management and deployment of internal resources. The work of Penrose (1959) is essential for several reasons. First, it provides a link between resources, capabilities, and competitive advantage. Second, it appreciates that competitive advantage rarely emanates from the possession of resources, but prudent and innovative exploitation of such resources. This assertion is an extension of RBV, as argued by proponents of dynamic capabilities (Teece *et al.,* 1997). Third, it acknowledges the importance of managerial abilities in creating and converting organizational resources and capabilities into products. Finally, the author mentioned that a firm's rate and direction of growth resulted from managerial skills and excess resources. Several scholars (Wernerfelt, 1984; Prahalad & Hamel, 1990; Barney, 1991) later refined the resource-based view theory. The theory posits that superior performance stems from firm resources. According to Barney (1991), firm resources are "all assets, capabilities, organization processes, firm's attributes, information, knowledge, etc. controlled by a firm that enables the firm to conceive and implement

strategies to improve its efficiency and effectiveness." Although firm resources are tangible and intangible, intensified globalization, and competition focus on intangible resources (Reed, Lubatkin, & Srinivasan, 2006).

Knowledge resources are of strategic importance to a firm since they are the sole drivers of sustained superior performance and competitiveness (Pan & Scarbrough, 1999). Proponents of resources-based view theory claim that intangible resources are gradually surpassing traditional production factors, land, labor, and financial capital as sources of competitive advantage (Grant, 1991; Ricceri, 2008).

Drucker (1993) stated, "Knowledge is the only meaningful resource today. The traditional 'factors of production' - land (i.e., natural resources), labour, and capital - have not disappeared." Nevertheless, they have become secondary. They can be obtained and obtained easily, provided there is knowledge. And knowledge in this new meaning is knowledge as a utility, knowledge as the means to get social and economic results." Additionally, Reed *et al.* (2006) argue that firms' physical resources are universal and easily imitable.

However, not all forms of firm resources are a source of competitive advantages. The resources must be valuable, rare, imperfectly imitable, and non-substitutable (Barney, 1991). The author further claims that resources are valuable if they enable a firm to exploit an opportunity or neutralize a threat. Rarity implies that resources are not accessible to present and future competitors of a firm. Inimitability infers that resources are difficult to copy or reproduce. Resources are non-substitutable if there are no strategically equivalent substitutes. Moreover, the theory conjectures that a firm is a bundle of interrelated tangible and intangible that creates value (Ojala & Laatikainen, 2019; Plank & Doblinger, 2018; Hillman, Withers, & Collins, 2009).

RBV is associated with different organizational outcomes. Ma (1999) noted that firm performance disparities arise from variances in firms' resources such as knowledge, competencies, and capabilities. Firms that have attained competitive advantage have a higher economic value than competitors do (Barney, 1991). Likewise, Prahalad and Hamel (1990) observed that competitive advantage emanated from goods and services that create a unique customer experience. With time, tangible assets no longer create a sustained competitive edge, and priorities have now shifted to knowledge resources (Abbas, 2019; Lin, Lee, & Hung, 2006).

Knowledge resources comprise skills, abilities, competencies, and processes that collectively constitute intellectual capital (Kabir, 2019; Jalilian, Salamzadeh, Saeidpour, & Daraei, 2012; Dai & de Vries, 2018). Marr, Schiuma, and Neely (2004) postulate that intellectual capital denotes intangible resources that yield long-term competitive advantage. According to Edvinsson and Malone (1997), intellectual capital comprises human capital, process capital, innovation capital, and customer capital. The said elements of intellectual capital are firm-specific, untradeable, valuable, and support competitive advantage and long-term growth (Pöyhönen, 2004). Firms' investments in these elements improve firm performance (Azis & Basri, 2019; Barkat & Beh, 2018).

Therefore, in an era of knowledge-based economies characterized by unprecedented growth in financial technologies, banks must utilize their knowledge resources optimally for competitive advantage and superior performance (Bontis, 1998; Guthrie, 2001; Zhou & Fink, 2003; Chase, 1997). Srivastava (2001) says that "… in a knowledge-based economy, intellectual capital, especially the power and product of the human mind, is the supreme source of competitive advantage" supports this argument. Thus, by investing in employee training, process improvement, innovation, and

customer relationship, firms build superior sustainable performance (Zéghal & Maaloul, 2010).

Consequently, banks should leverage their intellectual capital resources and capabilities towards activities where they gain competitive advantage relatives to competitors irrespective of size and geographical location (Kolachi & Shah, 2013). For banks, in particular, venturing into nonlending businesses is a potential source of synergies and economies of scale. In conclusion, this study hypothesizes that intellectual capital as a firm-specific resource significantly influences firm financial performance.

2.4.3 Dynamic Capabilities Theory

The original propositions of dynamic capabilities theory can be traced to Schumpeter (1934) work titled '*The Theory of Economic Development*' that noted the importance of innovation and entrepreneurship to market competitiveness and economic development. Equally, Penrose (1952) in "*The Theory of Growth of the Firm*" observed that competitive advantage emanates from how the firm utilizes resources rather than mere possession. Another significant work in the development of dynamic capabilities theory is Nelson and Winter's (1982) "*An Evolutionary Theory of Economic Change*" that noted how routines, procedures, and processes shape or hinder an organization's growth or ability to confront environmental dynamic. According to literature, dynamic capabilities theory was first published in Teece and Pisano's work (1994).

Teece *et al.*, (1997) advanced the concept of dynamic capabilities in their paper "*Dynamic Capabilities and Strategic Management*," where they sought to explain how firms utilize internal resources, in an unstable environment, for competitive advantage. The authors wrote, "... our view of the firm is somewhat richer than the standard resource-based view ... it is not only the bundle of resources that matter, but the

mechanisms by which firms learn and accumulate new skills and capabilities, and the forces that limit the rate and direction of this process." The dynamic capabilities theory's central proposition was why once-successful companies collapsed or declined as the environment changed (Harreld, O'Reilly III, & Tushman, 2007).

According to Teece *et al.,* (1997), firms operating in a highly turbulent environment must be capable of responding swiftly and innovatively by renewing, reconfiguring, and redeploying internal and external resources for competitive advantage. For clarity, the authors defined dynamic capabilities as "the firm's ability to integrate, build, and reconfigure internal and external competencies to address rapidly changing environments." Later on, Wang and Ahmed (2007) defined dynamic capabilities as "a firm's behavioural orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, upgrade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage."

Proponents of dynamic capabilities theory contend that capabilities are built, not procured, entrenched in the firm, and path-dependent (Zollo & Winter 2002; Eisenhardt & Martin, 2000). Previous studies grouped capabilities into reconfiguration, leveraging, learning, and creative integration (Teece *et al.,* 1997; Ambrosini & Bowman, 2009).

The resource-based view holds that a firm's competitive advantage emanates from the possession of valuable, rare, inimitable, and non-substitutable resources (Wernerfelt, 1984). Despite its widespread acceptance and importance in strategic management, RBV fails to explain why some firms though endowed with strategic resources, cannot sustain competitive advantage in a turbulent environment (Eisenhardt & Martin, 2000).

Again, RBV focuses on the long-term competitive advantage from a fixed resource base, thus overlooking short-term growth opportunities.

Dynamic capabilities theory seeks to remedy the previously mentioned limitations of the resource-based view theory by demonstrating how firms can create, reconfigure, and deploy resources in a highly unstable environment for competitive advantage and sustained financial performance. Dynamic capabilities theory accentuates the evolutionary nature of firm resources and capabilities; therefore, an extension of RBV (Eisenhardt & Martin 2000; Wang & Ahmed, 2007). Fundamentally, dynamic capabilities theory sheds light on how firms can refresh their resources to match changing circumstances (Ambrosini & Bowman, 2009).

In a rapidly changing market environment, firms gain competitive advantage by strategically deploying their strategic assets to business opportunities. That is, developing competitive market strategies that best match the firm's resource profile. Thus, with the stiff competition and declining interest income streams, banks should diversify into nontraditional financial services to amass market power and enjoy economies of scale or pursues. Besides, unrelated diversification can also result in financial economies from restructuring assets (Hitt *et al.,* 2011).

Contrary to the resource-based view's propositions, that competitive advantage arises from a firm's stock of intellectual resources; modern-day managers are more concerned with the path through which knowledge-based resources influences organization performance (Hsu and Wang, 2012). Ambrosini & Bowman (2009) opine that a firm's ability to develop and deploy capabilities depends on: managerial behaviors, the complementariness of knowledge-based resources, social capital, and adaptability to external factors. While Wu, Lin, and Hsu (2007) assert that strategic management

encompasses adapting, integrating, and reconfiguring an organization's internal and external resources to match an evolving environment.

Therefore, for competitiveness and long-term survival, firms should concentrate on organizational learning to nurture combinative capabilities that facilitate the exploitation of intellectual capital resources and synergies (Kogut & Zander, 1992; Wu *et al.,* 2007). From this line of argument, it emerges that superior financial performance is a product of the best match of firm resources, strategies, and market opportunities. Specifically, organizations should continually invest in human capital in ways competitors cannot imitate; preserving customer capital; firms should focus on building customer relationships; otherwise, customer relationships will decay. Also, firms should invest in innovation for renewal and reconfiguration of congruent competencies with the external environment.

In conclusion, dynamic capabilities theory has been used in this study to demonstrate that income diversification mediates the relationship between intellectual capital and financial performance.

2.5 Empirical Review

This section gives a detailed analysis of earlier studies emphasizing the context, measurement of variables, and the findings.

2.5.1 Determinants of Commercial Banks Financial Performance

What drives bank performance continues to elicit a lot of interest among scholars, practitioners, and regulators since commercial bank plays a critical role in economic growth. Athanasoglou *et al.,* (2008) investigated determinants of bank performance in the Greek banking sector between 1985 and 2001. The study found that financial performance determinants were both bank-specific (capital, credit risk, productivity,

ownership, and expenses management) and macroeconomic (inflation and business cycles).

Alpera and Anbar (2011) investigated factors that influenced the financial performance of Turkish banks. The study considered a sample of 10 commercial banks and panel data for 2002-2010. ROA and ROE were the measures of performance. The study found that income diversification had a positive and statistically significant effect on performance. Further, the study found that the size of the loan portfolio had a negative effect on performance. The rest of the controls consisting of GDP growth rate, inflation bank liquidity, deposit volume, capital adequacy, and net interest income, did not affect bank performance.

Demirgüç-Kunt & Huizinga (1999) examined the determinant of bank performance using bank-level data from 80 countries. The study considered panel data for the period 1988 -1995. The findings revealed that foreign ownership, capitalization, financial structure, size, concentration ratio, inflation, and interest rates had a positive influence, whereas bank reserves and noninterest income had a negative effect.

Bashir (2001) studied factors influencing the financial performance of commercial banks in the Middle East. The study used a sample of 140 Islamic banks drawn from eight countries in the Middle East. The results of this study showed that bank size, leverage, loans, short term funding, overhead, and ownership had a positive impact on performance.

Naceur and Goaied (2008) assessed the determinants of bank performance in Tunisia. The study considered a sample of 10 deposit banks for years 1980-20004. The study found that bank capital, overheads, and stock market development positively affected performance, while economic growth did not.

Gul, Irshad, & Zaman (2011) investigated the determinants of bank performance in Pakistan. The hypothesis was tested using panel data from a sample of 15 banks for the period 2005-09. ROA, ROE, and NIMs measured performance. The results of this study indicated that high equity capital, assets base, loan portfolio, deposits, economic growth, inflation, and stock market capitalization had a positive impact on bank performance.

Guru, Staunton, & Balashanmugam (2002) examined factors that influence performance among Malaysian banks. The study considered a sample of 32 commercial banks and panel data for 1985-98. The results show that cost management, current account, loan portfolio, investment in securities, inflation, and market interest rate supported bank performance. Additionally, the findings indicated that high capital and reserves weakened performance.

2.5.2 Human Capital and Financial Performance

Proponents of the firm's resource-based view postulate that investment in human capital improves firm financial performance (Becker, 2009; Asefa & Huang, 1994; Khalique, Bontis, Abdul Nassir bin Shaari, & Hassan Md Isa, 2015). This assertion has been subjected to extensive empirical studies, both at the micro and macro level (Sahari, Nichol, & Yusof, 2019; Ulrich & Kryscynski, 2015) though extant literature shows mixed findings.

Seleim, Ashour, & Bontis (2007) carried out a study on 38 software companies, out of a population of 107 companies that constitute the Software Industry Chamber of Egypt's membership, to investigate the relationship between human capital and financial performance. Financial performance was measured as the ratio of export sales to total sales. In contrast, the human capital was measured as the number of qualified

developers, training hours per developer, and years of experience. The study found that human capital had a positive and significant effect on financial performance. Additionally, the study noted that human capital influenced firm innovativeness.

Through a meta-analysis of 66 studies, Crook, Todd, Combs, Woehr, & Ketchen Jr (2011) examined the link between human capital and financial performance and found that human capital positively and significantly affected financial performance. Further, the findings revealed that firm-specific factors, path dependency, and operational issues moderated the relationship.

Bae and Lawler (2000) conducted a study to establish the relationship between human capital and financial performance. The authors considered a sample of 40 Korean firms and primary data collected using 142 questionnaires administered to employees and non-managers of the selected firms. Their findings results revealed that human capital had a positive and significant effect on financial performance.

Khalique *et al.* (2015) researched the effect of human capital on SMEs' financial performance. The researchers used a sample of 106 SMEs and employed primary data that was collected through 247 questionnaires. The study concluded that human capital did not affect financial performance.

Shaw, Park, and Kim (2013) researched the relationship between human capital investment, human capital loss, and financial performance. The author focused on 900 Korean firms in 2005. The study measured human capital loss as the natural log of the total number of full-time employees who had quit in the past year, divided by the total number of full-time employees. Human capital investment was measured as firms' expenditure on training, pay level, benefit level, job security, procedural justice and selective staffing. The two proxies of financial performance were ROA and the natural

log of profit. This study's findings were that human capital loss adversely affected firm performance, while human capital investment improved financial performance. Further, the study mentioned that human capital loss was more detrimental to firms with high human capital investments than those with low human capital investments.

Wright, McCormick, Sherman, and McMahan (1999) undertook a study on human capital and financial performance of petrochemical refinery companies in the U.S. Data was collected through questionnaires administered to 65 human resources managers. The respondents were asked to describe whether a refinery used diverse employee selection, training, appraisal, and compensation, and involvement techniques in managing operators. The proxies for financial performance were annual profit growth and annual sales growth for 1988 - 1993. The results showed that, apart from employee training, which negatively affected performance, human resource practices did not affect firm performance. After moderating employee selection, compensation, appraisal systems, and a highly participative system, the results proved positive. These findings confirmed the interrelatedness and complementarily of human capital practices.

Shrader and Siegel (2007) conducted a study on human capital and financial performance. The sample comprised of 198 U.S. listed technology-based new ventures and panel data for 1988-1993. Financial performance was measured by ROI, ROS, and ROA, while human capital was operationalized as managerial experience. The study found an insignificant positive relationship between human capital and financial performance.

Smriti and Das (2017) examined the human capital and financial performance causation. The study used a panel dataset of 121 pharmaceutical and drug companies listed in the Bombay stock exchange for 2005-2016. Human capital was measured as

the firms' total annual salaries and wages. The proxies of financial performance were market capitalization to book value, ROA, and total revenue ratio to book value. The study found that human capital had a negative effect on financial performance.

Hitt, Bierman, Shimizu, & Kochhar (2001) investigated the effect of human capital on financial performance among professional firms in the U.S. The hypothesis was tested using 252 observations drawn from 93 top law firms and panel data for 1987 - 1991. The proxies of human capital were the quality of the law school attended and the total experience of the focal firms' partners. Financial performance was measured as the ratio of net income to total firm revenue. The researcher found that an early investment in human capital had a negative effect on financial performance; however, financial performance improved progressively over time as firms increased their investment in human capital, signifying path dependency. Additionally, this study established that human capital moderated the relationship between a firm's diversification strategy and financial performance.

Firer and Mitchell Williams (2003) studied the effect of human capital on financial performance. The study used a sample of 75 South African publicly traded companies and secondary data for the year 2001. Financial performance was conceptualized in three dimensions: profitability, productivity, and market valuation. The VAIC model was used to measure human capital. The findings of this study indicated that human capital had a negative effect on financial performance. The study further noted that any attempt to improve financial performance through physical assets destroyed the value created by intangible assets.

Felício *et al.*, (2014) investigated the relationship between human capital, social capital, and financial performance on a sample of 199 Portuguese SMEs and primary

data. Human capital was measured using four indicators: managerial ability, knowledge, experience, professional proficiency, and cognitive ability. The proxies of financial performance were growth in sales, profits, and market share. The findings of this study revealed that human capital had a positive and significant effect on financial performance.

Carpenter, Sanders, and Gregersen (2001) investigated human capital's effect on financial performance with data collected from 245 Multinational Corporations (MNCs). Human capital was measured as the number of years a CEO reported as having worked in foreign assignments. Financial performance was measured as return on assets (ROA) and total stock market return. The findings of this study revealed that human capital had a positive and significant influence on financial performance.

Veltri and Silvestri (2011) investigated the impact of human capital and structural capital on financial performance using a sample of 64 financial sector companies listed on the Italian Stock Exchange and panel dataset of 2006-2008. Human capital was measured as Human Capital Efficiency (HCE). The study found that human capital did not affect firm performance. However, after introducing an interaction term of human capital and structural capital, human capital positively and significantly affected financial performance. These findings highlighted the complementariness and interrelatedness of intellectual capital components. Similar results were reported by Wang and Chang (2005).

A study by Kor and Mahoney (2005) examined the impact of human capital on financial performance. The study focused on 60 American technology-based entrepreneurial firms and panel data for 1990-1995. Human capital was conceptualized as top management firm-specific experience; the number of years a manager worked in a firm,

while the proxy of financial performance was Tobin's q. The study found that human capital had a negative effect on financial performance.

Wang and Chang (2005) examined the relationship between human capital and financial performance. The study considered a sample consisting of IT firms Listed in Taiwan Stock Exchange and data for the period 1997 - 2001. Financial performance was measured as ROA and ROE. Human capital was measured using several proxies: the number of employees, the number of employees with advanced educational backgrounds, and employees with an average education degree. This study's findings indicated that human capital had an indirect effect on financial performance through innovation capital, process capital, and customer capital. Based on the aforementioned empirical literature, it is apparent that the relationship between human capital and financial performance is unclear and requires further scrutiny. Additionally, most of these studies were conducted in developed and emerging economies, thus necessitating examining this relationship in developing economies.

2.5.3 Process Capital and Financial Performance

Process capital is an organization's vertebrae that consist of technologies, customer relationship systems, and processes that create and deliver goods and services (Edvinsson & Malone, 1997). Moustaghfir (2009) avers that process capital symbolizes an organization's unique infrastructure that facilitates the realization of corporate goals.

In response to changing customer expectations and shortened product lifecycles, firms are committing enormous resources on various elements of process capital; ICT infrastructure, quality management systems, JIT systems, business process re-

engineering, suggesting firms are gradually becoming process-oriented (Shang & Wu, 2013; Kohlbacher, 2010)

Studies associate process capital with cost reduction, improved quality, increased customer satisfaction, and shortened response time (Hinterhuber, 1995). Despite the critical role-played by process capital in enhancing efficiency and effectiveness in using firm resources, whether process capital improves financial performance remains debatable.

Chiu and Chen (2017) assessed the association between process capital and financial performance using a sample of biotechnology and pharmaceutical firms listed on the Taiwanese Stock Exchange. Data was for the years 2007-2013, which yielded 825 observations. Financial performance was measured as ROA and ROE; while process capital proxies were management fee ratio, fixed assets turnover, total assets turnover, and management fee per person. This study's findings showed that process capital had a positive, though insignificant, effect on financial performance.

Wei Kiong Ting & Hooi Lean (2009) did a study to examine the process capital and financial performance causality with a sample of 20 Malaysian financial institutions and panel data for the period 1999 - 2007. Financial performance was measured as ROA, while process capital was operationalized as structural capital. The study found that process capital had a negative effect on financial performance.

Shang and Wu (2013) carried out a study to determine the impact of process capital on financial performance. The sample consisted of 522 listed Taiwanese companies. Primary data was collected through questionnaires that were administered to 522 managers. Process capital was measured as the ratio of process inputs to process outputs where process input was administrative expenses while process output was profits per

employee (earnings/number of employees). The proxies of financial performance were return on assets and growth in sales. The findings of this study indicated that process capital had a positive and significant impact on financial performance.

Wang and Chang (2005) evaluated the connection between process capital and financial performance on a sample of 131 Taiwanese IT firms and panel datasets for 1997- 2001. Process capital was measured as productivity per employee (net sales / total number of the employees), value-added per employee (net income after tax/total number of employees), organizational stability (employees' average work years/corporation age), current capital turnover (net sales/average current assets) and administrative expense ratio (administrative expense/net sales). Financial performance was measured as return on assets (net income after tax/average total assets), adjusted return on assets (operating income/average total assets), return on stockholders' equity (operating income/average common stockholders' equity), and adjusted return on stockholders' equity (operating income less interest expense/average common stockholders' equity). The study found that process capital had a positive and significant effect on financial performance.

Wang (2008) investigated the impact of process capital on financial performance. The study considered a sample of 1,926 S&P 500 listed electronic companies and data for 1996 -2005. Process capital was measured as the ratio of SG&A to sales, and SG&A to employees, while financial performance was operationalized as share price. The results of this study showed that process capital had a positive effect on financial performance.

Liang and Lin (2008) undertook a study to assess the impact of process capital on financial performance over its lifecycles. The study divided a firm lifecycle into growth, maturity, and stagnation. Data was extracted from 261 Taiwanese listed IT companies for the period 1998 to 2003. Process capital was measured by; the ratio of net sales to

average current assets and administrative expenses to the number of staff. Financial performance was measured as the ratio of market value to book value. This study's findings indicated that process capital was more pronounced at the growth stage and lower at the maturity stage, signifying the depletion of knowledge resources as claimed by the dynamic capabilities theory (Teece *et al.*, 1997).

Cheng, Lin, Hsiao, & Lin (2008) investigated whether process capital impacted firm financial performance. A sample of 56 health care companies, and panel data for years 2001-2004 was considered. The proxies of process capital were net sales ratio to fixed assets, the proportion of net sales to total assets, and net sales ratio to account receivable. Firm performance was measured as the difference between firm market and book value. The results showed process capital had a negative effect on financial performance.

2.5.4 Innovation Capital and Financial Performance

With increasing emphasis on knowledge, organizations view innovation capital as an essential driver of sustained competitive advantage and superior performance (Kijek, 2012). According to Santarelli and Tran (2016), firms that are well-endowed with technological and innovation resources are likely to record improved performance if they exploit their innovative capabilities through diversification.

The significance of innovation capital to firm financial performance is widely discussed in extant literature. Edvinsson and Malone (1997) aver that innovation capital and process capital constitute the firm vertebral. Innovation capital denotes a new product, a new process, or a new organizational attribute (Wu, Chen, & Jiao, 2015; Damanpour, 1991; Kimberly, 1981). Besides, Chen *et al.* (2004) claim that innovation capital is the fiber that holds intellectual capital components as one whole.

The link between innovation and firm financial performance continues to elicit a lot of interest, as shown by extant literature. Using a sample of 312 high-technology manufacturing and 204 low technology manufacturing Taiwanese firms, Yang and Kang (2008), examined the relationship between innovation capital and organization financial performance. Innovation capital was measured as R&D/SALES and R&D per employee. Tobin's q and ROA were proxies of firm financial performance. The study found that innovation capital had a positive and significant impact on firm performance.

Yuliya, Yury, and Alexander (2018) investigated the link between innovation capital and firm value in the same line. Data for the period 2006-2014 was drawn from American, Indian, and Russian stock markets. Innovation capital was measured as ratio R & D expenses to sales, R & D per employee, revenue from new products, and revenue from modified products. The proxy of firm value was the cost of equity. The results showed that innovation capital had a negative effect on U.S. firms and a positive effect on Indian and Russian firms. The mixed results were attributed to firm-specific inefficiencies, the presence of a natural rate of innovation, and uncertainty in firms' innovative undertakings.

A study by Lin *et al.,* (2006) examined the relationship between R&D intensity (a measure of innovation capital) and financial performance. A sample of 258 U.S. firms and data for 1985-99 was used. The study measured innovation capital as R&D intensity while Tobin's q was a proxy of financial performance. The findings indicated that R&D had a negative and significant effect on financial performance.

Kijek (2014) sought to establish whether innovation capital had an impact on firm value. A sample of 1,000 companies in the EU and data for 2010 was considered. Firm

performance was measured as market capitalization, while innovation capital was measured as R&D expenditure. The findings confirmed that innovation capital had a positive and significant effect on firm value.

Van Auken *et al.,* (2008) examined 9,337 Spanish manufacturing SMEs to establish the relationship between innovation and firm performance. Data was collected through questionnaires. The performance was measured as the firm's effectiveness in human relations, internal processes, open systems, and rational goal approach. Innovation was decomposed into product innovation, processes innovation, systems, and managerial innovation. The findings of this study revealed that innovation capital improved firm performance.

Waterson *et al.,* (1999) examined the effect of modern manufacturing practices on performance. The study used a sample of 564 companies, UK-based manufacturing firms employing over 150 people. Manufacturing practices were operationalized as team-based working, manufacturing cells, supply chain, collaborating, learning culture, empowerment, business process reengineering, total quality management, and integrated computer-based technology. Performance was measured using several proxies that comprised of; quality, cost, customer responsiveness, and growth. The results of this study were mixed. Some companies experienced improved performance while in others, it declined. Further scrutiny revealed that the decline was due to innovative manufacturing practices' incongruities with other organizations' practices and systems.

Yeh-Yun Lin and Yi-Ching Chen (2007) assessed the effect of innovation on performance using a sample of 877 Taiwanese manufacturing and Service firms. Data was collected through questionnaires. Innovation capital was decomposed into

technological innovation, marketing innovation, administrative innovation, and strategic innovation, while technological innovation comprised product, service, and process innovations. Marketing innovation consisted of new brands and the extension of new markets, whereas administrative innovations encompassed changes or improvements in organizational structures and administrative processes. Strategic innovation embodied alliances with competitors and suppliers, and performance was measured as company sales. The study found a weak positive link between innovation capital and performance. Notably, only administrative innovation significantly affected performance, implying a firm innovation strategy should be integrative and holistic.

Quo, Wang, and Shou (2004) examined the relationship between R&D and financial performance. The focus was public, state, and privately-owned software firms in China. Data was collected through 324 questionnaires. Financial performance was measured as the ratio of profit to sales (ROS) and the logarithm of average sales income per capita. Two proxies of R&D were R&D intensity and R&D personnel to the total number of employees. The study found that innovation capital had a negative and significant effect on financial performance.

Drawing data from 13,638 Spanish manufacturing firms, Hervas-Oliver, Sempere-Ripoll, and Boronat-Moll (2014) examined the link between innovation and firm performance. Performance was measured using several proxies consisting of cost reduction, flexibility, and capacity improvement. Whereas, internal R&D expenses and external R&D expenses were used as proxies of innovation. The study found that production innovation did not affect performance. Further analysis was conducted by interacting production innovation with organizational innovation and technological innovation. The interaction results were positive and significant, emphasizing the

interdependence and complementariness of firm innovativeness. The implications of this study were similar to those of Lin and Chen (2007).

Mank and Nystrom (2001) studied the link between R&D expenditure and shareholders' value. The study considered a sample of 718 U.S listed firms for the period 1992-1997. The proxy of R&D was R&D intensity, while shareholders' value was measured as dividends payouts and share price. The study found a negative relationship between R&D and shareholders' value. These findings revealed that an over-investment in research and development destroyed firm wealth; hence, firms should not surpass R & D outlay's optimal level.

Using a sample of 2412 Finnish firms, Saunila (2014) explored the relationship between innovation capabilities and financial performance. Data was collected through 750 questionnaires. The proxies of innovation capital included leadership culture, ideation, work climate, wellbeing, know-how development, regeneration, external knowledge, and individual activity. Performance was measured through productivity and quality indicators. The findings illustrated that innovation capabilities had a positive and significant effect on financial performance and efficiency.

Jen Huang and Liu (2005) sought to establish whether investments in innovation capital and information technology capital had a relationship with firm performance. The study used a sample of 1,000 Taiwanese companies. ROA and ROS were used as proxies of firm performance. R&D intensity and IT intensity were the measures of innovation capital and IT capital, respectively. R & D intensity was measured as R & D expenditures/net sales revenue, whereas IT intensity was measured as IT expenditures/net sales revenue. The results showed that innovation capital had a positive effect on performance. Besides, if R&D investment exceeds optimal levels,

then the effects are unfavorable. The impact of IT investment in performance was positive though insignificant. Also, the interaction of IT capital and innovation capital had a positive impact on performance. These findings highlight the need for firms to integrate their IT infrastructure and R&D initiatives for competitive advantage.

Bharadwaj *et al.,* (1999) considered a sample of 631 American firms and panel data between 1989-93 to establish the link between information technology (IT) investment and firm performance. IT investment was measured as the ratio of IT investment to net sales. Firm performance was measured using Tobin's q. The study found that IT had a positive impact on firm performance. Market share and advertisement were used as control variables, and both had a positive effect on performance.

Wang and Chang (2005) examined the relationship between innovation capital and firm performance. The study considered a sample of listed IT firms in Taiwan where data for the period 1997- 2001. Performance was measured as ROA and ROE. Innovation capital was measured as R & D density, income per R & D expense, number of R & D employees, R & D employee ratio, and patent fee. The results revealed that innovation capital had a positive and significant effect on performance.

Chan, Martin, & Kensinger (1990) examined the relationship between corporate R&D and share value among 95 firms in the U.S. divided into high technology and low technology. Data was for the period 1979-85. R&D was measured as R&D intensity while share value was the average stock price. The study found that R & D had a positive effect on high technology firms and negatively affected low technology firms. High technology firms enjoyed synergies and economies of innovation. Besides, they had more financial resources to invest in R&D.

Using panel data for the period from 2006-2010 and a sample of 6,231 German firms, Crass and Peters (2014) examined the effect of intangible assets on firm productivity. The study measured innovation as R&D expenditure, design, licenses, and patent stock, while productivity as the efficiency of capital, labour, and materials. The study found that innovation had a positive and significant impact on firm performance.

2.5.5 Customer Capital and Financial Performance

Customers are among the most important stakeholders because they buy goods and services, thus directly affecting a firm's revenue (Roos *et al.*, 1997). Bontis and Fitz-enz (2002) contend that customer capital is the primary driver of corporate performance. According to Khalique *et al.*, (2011), customer capital symbolizes relationships that a firm creates with its customers. Similarly, Bontis *et al.*, (2000) view customer capital is an organization's knowledge embedded in marketing channels and customer relationships created in the business. The various tenets of customer capital include customer loyalty, customer satisfaction, and market share, brand equity, customer retention, customer acquisition, and strategic alliance (Shih, Chang, & Lin, 2010; Seetharaman, Lock Teng Low, & Saravanan, 2004). Theoretically, customer capital is viewed as an essential driver of firm financial performance; extant literature shows mixed results.

Mention and Bontis (2013) conducted a study to establish the relationship between intellectual capital and financial performance. Questionnaires were used to collect data from a population of 213 banks registered in Luxembourg and Belgium. The study considered three intellectual capital elements: human capital, structural capital, and customer (relational) capital. The questionnaire consisted of 71 items: 20 measured human capital, 16 structural capital, 25 relational capital (customer capital), and 10 for performance. ROE, cost/income ratio, liquidity, net profit, and leadership measured

performance. The dimensions of customer capital captured in the questionnaire included: customer satisfaction, customer loyalty, and market share. The study's findings indicate that customer capital had a positive impact on financial performance. The results further stressed the importance of customer orientation, customer interaction, and loyalty as innovation drivers.

Voss and Voss (2008) assessed the effect of customer retention strategies on firm financial performance. The study focused on Theatre Communications Group (TCG), one of the largest nonprofit making service organizations in the United States. Data was collected through questionnaires sent to 129 theater managers. Financial performance was measured as the revenue ratio, operating income, and expenses to the theaters' annual seating capacity. Simultaneously, the customer retention strategy was conceptualized as relational contracts measured as the revenue earned from a subscribers' repurchases of a play package divided by the theaters' annual seating capacity. The findings of the study indicated that customer retention strategy has a negative effect on financial performance. The study concluded that customer retention strategy was anchored on innovation and competitor learning in a highly competitive environment, which enhanced firm performance. In a low competition environment, customer retention focused on closer relationships with customer and adaptive learning.

Szymanski, Bharadwaj, and Varadarajan (1993) conducted a meta-analysis of existing studies on the market share-profit relationship. Forty-eight studies were reviewed, and on average, market share had a positive effect on profitability. Montgomery and Wernerfelt (1988) analyzed the association between market share, industry effects, and firm value. The study considered six major brewing companies in the U.S., and data was for the period 1969- 1979. The findings show that increased market share led to value destruction. The study concluded that significant market share changes ought to

be supported by a comparative resource position and favourable industry condition to increase firm value.

Hergert (1984) studied the relationship between market share (customer capital) and firm financial performance. A sample of 5,400 businesses from 76 industries and data for the period 1978-1980 was considered. The proxy of profitability was ROA, while the market share was the ratio of business unit sales to total business sales. The results indicate that out of the 76 industries, the relationship between market share and profitability; 21 exhibited positive and significant, 30 positive and not insignificant, 20 negative and insignificant; while 5 reported a negative and significant relationship. These results confirmed the complex nature of the market share and firm profitability relationship. Accordingly, the study noted that firms aiming at increasing their market share should first consider the cost and benefit of large market shares.

Ittner and Larcker (1998) carried out a study to examine whether customer satisfaction affected firm performance and stock markets. The study used a sample of 2,491 drawn from U.S. telecommunications firms. The study found that customer satisfaction had a positive effect on performance. Similarly, Banker, Potter, and Srinivasan (2000), who used panel data drawn from 18 hotels, found that customer satisfaction positively and significantly affected performance.

Chiu and Chen (2017) assessed the association between customer capital and corporate financial performance using a sample of biotechnology and pharmaceutical firms listed on the Taiwanese Stock Exchange. The study focused on the period 2007 to 2013 that yielded 825 observations. The corporate performance was measured as ROA and ROE. The proxies of customer capital were sales expense rate, product acceptance rate, and operating income growth. The study found that all customer capital measures had a

negative and significant effect on firm performance. The study concluded that the value of intellectual capital sub-constructs differed from industry to industry and that innovation capital was more critical to biotechnology and pharmaceutical firms.

Edvardsson, Johnson, Gustafsson, & Strandvik (2000) examined the relationship between customer loyalty, satisfaction, and performance. The study used two samples comprising of 61 product-based firms and 71 service-based firms. Data was for the period 1995-1996. The study found that customer satisfaction had a positive effect on both service and product firms. Conversely, the impact of customer loyalty was favourable for service firms and unfavorable for product firms. These findings implied that product loyalty is embedded in the product, while service loyalty is earned.

Sofian, Tayles, & Pike (2006) investigated the effect of intellectual capital on organization financial performance. The study used a sample of listed Malaysian firms considered as possessing high intellectual capital. The companies were drawn from four sectors viewed as highly dependent on intellectual capital: technology, finance, consumer products, trading, and services. Data was collected through survey questionnaires sent via email to accountants and finance managers working in the selected companies. Performance was measured as growth in profits, share price, growth in sales, and leadership. Simultaneously, customer capital was operationalized as customers' loyalty, market orientation, customer care, target marketing, and customer feedback. The findings revealed that firms with high customer capital record superior financial performance.

Using a sample of 312 high-technology manufacturing firms and 204 low technology manufacturing Taiwanese firms, Yang and Kang (2008) assessed the relationship between innovation capital and customer capital on financial performance. Customer

capital was measured as the number of main customers (number of customers whose share in sales above 10%), advertising expense (advertising expenses), marketing expense (marketing expense/net sales). In contrast, financial performance was measured by Tobin's q and ROA. This study's findings revealed that the impact of customer capital on firm performance was positive, significant on low technology firms, and insignificant on high technology firms. The study observed that low-technology businesses depended more heavily on external resources such as surveys to increase the possibility of more successful new product entries. At the same time, high technology firms focused on internal resources such as R&D to create innovation capital.

Wang and Chang (2005) studied the relationship between customer capital and firm financial performance in Taiwan. The study considered a sample consisting of all listed IT industry firms with panel data from 1997-2001. Performance was measured as ROA and ROE while customer capital was measured as the growth in sales, advertising expenses ratio, acceptance ratio, and concentration. The results of this study found that customer capital had a positive and significant effect on financial performance.

Hendricks *et al.,* (2007) examined the link between customer relationship management and firm financial performance using a sample of 406 American firms and panel data for 1995-1999. The proxy of CRM was the actual investment in CRM, while ROA and ROS measured firm performance. The study found that CRM has no significant effect on financial performance due to a lack of organizational capabilities to implement and manage CRM.

Cheng *et al.,* (2008) assessed the association between customer capital and firm financial performance. The study used 224 observations drawn from 56 health care

companies for the period between 2001 and 2004. Customer capital was measured as the ratio of; sales of major five customers to sales, sales of the largest customer to the sale, SGA expense to total operating expenses, and SG&A expense to sales while the market value of common equity was the proxy of performance. The study reported that customer capital had a positive impact on firm value.

Ittner and Larcker (1998) examined the customer satisfaction-financial performance nexus using data drawn from 73 retail bank branches in the U.S. Six performance proxies were considered revenues, expenses, margins, return on sales, retail customers, and business and professional customers. Customer satisfaction was measured as the customer satisfaction index that consisted of 20 items. The findings of this study showed that customer satisfaction levels had an indirect effect on financial performance. Besides, performance improved after a given threshold of satisfaction was reached and diminished if it exceeded.

Hong-kit Yim, Anderson, and Swaminathan (2004) sought to establish the association between CRM and performance. The study considered a sample of 215 firms in Hong Kong. Data was collected through the use of questionnaires sent directly to firm managers. The four dimensions of CRM focused on key customers, customer knowledge management, organization of CRM, and incorporation of CRM-based technologies. The proxies of firm performance were customer satisfaction, customer retention, and sales growth. The study found that firms should not only invest in CRM technologies, but they also improved customer loyalty to enhance their financial performance.

Chen *et al.,* (2004) examined the association between components of intellectual capital and business performance in China. Data was collected through 31

questionnaires which were administered to 31 corporations. Customer capital metrics were the construction of sale channels, customer loyalty indices, customer satisfaction, customer complaint, customer outflow, and customer relationships. ROA and the firm's growth were the proxies of financial performance. The results affirmed that customer capital had a favourable effect on firm financial performance. Besides, human capital, innovation capital, and process capital were found to have a positive influence on performance.

Anderson *et al.*, (1994) sought to establish the relationship between customer satisfaction, market share, and firm performance. The study focused on 73 U.S. firms, and data were obtained from the National Quality Research Center, University of Michigan. The study found that, in the short run, customer satisfaction has no significant effect on financial performance. These results suggested that building customer capital was a long-term investment that entailed redesigning an organization's processes, developing resources and capabilities, formulating performance measures, and designing an organizational structure for delivering value to customers.

Greenwood, Prakash, and Deephouse (2005) investigated the relationship between reputation, diversification, and firm performance. The study sampled 100 U.S-based accounting firm and used longitudinal data for the period between 1991 and 2000. The study found that a firm reputation is likely to influence its diversification strategy. Besides, the success of diversification by services organizations was dependent on whether the clients considered it legitimate. Additionally, the study observed that diversified and highly reputable firms had more customers, lower marketing costs, and higher customer retention due to higher switching costs.

Theoretically, customer capital is the final output derived from all components of intellectual capital. Accordingly, an organization's success in utilizing its human capital, process capital, and innovation capital determines customer capital value. From an empirical standpoint, innovative product efficiency in marketing and distribution leads to customer satisfaction and superior performance.

2.5.6 Income Diversification and Financial Performance

Extant literature depicts a growing debate on income diversification and financial performance causality. Ismail, Hanif, Choudhary, and Nisar (2015) examined this relationship in Pakistan's banking sector using a panel of 14 banks for the period between 2006 and 2013. Income diversification was measured using the HHI. ROA and ROE were utilized as proxies for financial performance. The findings confirm that income diversification has a positive and significant effect on financial performance. All control variables; bank size, financial leverage, quality of lending, and growth in banks total assets, had a positive impact on performance

Kim, Hwang, and Burgers (1993) considered a sample of 125 multinationals to investigate the relationship between diversification into global markets and firm profitability. The findings claim that shows cross-border diversification has a positive effect on a firm's risk and return profile. The study further observed that highly profitable firms were active in international markets. The study attributed the improved financial performance to learning opportunities, economies of scale, and cost advantage that characterize global markets.

Rumelt (1974) assessed the relationship between income diversification and profitability (financial performance) using a sample of 273 listed firms in the United States with panel data between 1949 and 1974. Profitability was measured as return on

investment, while diversification was measured as the related-core ratio (revenue attributed to its largest group somehow related business). The findings of this study demonstrate that diversification improves profitability owing to economies of scale from shared factors of production and overall firm efficiency.

Gurbuz *et al.* (2013) conducted a Turkish banking sector study to examine the link between income diversification and financial performance. The study used a sample of 26 banks and panel data for the period 2005 and 2011. Financial performance was measured as risks adjusted ROA and ROE, whereas HHI measured income diversification. Several control variables were used, namely; bank size, financial leverage, central bank interest policies, bank's lending strategy, ownership, and global crisis were all found as having a positive and significant effect on financial performance.

Chiorazzo *et al.,* (2008) explored the association between income diversification and bank performance in the Italian banking sector. The study considered a sample of 85 commercial banks with panel data from 1993 to 2003. Diversification was measured using HHI, while risk-adjusted ROA and ROE were the two proxies of financial performance. The findings of this study show that income diversification increases risk-adjusted returns. The study controlled for bank size, growth in assets, financial risk, lending strategy, loan quality, ownership, geographic diversification, and all had a positive effect on performance.

Baele, De Jonghe, and Vander Vennet (2007) studied whether bank diversification affects stock markets. The study used a data set of 255 banks, drawn from 17 European countries, from 1989 - 2004. Bank diversification was measured as the ratio of noninterest income to total operating income, while noise adjusted Tobin's q was a

proxy of financial performance. The control variable used comprised operational efficiency, quality of loan portfolio, bank capital, and bank size. This study's findings demonstrate that diversification has a positive and significant effect on banks' financial performance.

Elsa *et al.*, (2006) examined the anatomy of bank diversification. The authors used a sample of 380 listed European banks and 1,917 observations for 1996 - 2003. The Herfindahl-Hirschman Index was used to measure revenue diversification. Financial performance was measured as the ratio of market value to book value—the study controlled for bank size, growth, and vertical integration. The study found that income diversification improved bank profitability.

Sanya and Wolfe (2010) used a panel dataset of 226 listed banks across 11 emerging economies to examine the relationship between revenue diversification and financial performance. Revenue diversification was measured using the Herfindahl Hirschman Index (HHI). The proxies of financial performance were Z-score, risk-adjusted returns on equity, and risk-adjusted returns on assets. The study controlled for bank size, asset portfolio, financial leverage, inflation, and bank profitability. The study found a positive relationship between diversification and performance. Besides, the study noted that fee-based activities had a higher explanatory power compared to other non-interest incomes.

DeYoung and Rice (2004) examined income diversification and performance causality. The study considered a sample of 4,712 U.S. commercial banks and data from 1989-2001. Income diversification was measured as the ratio of noninterest income-to-assets. ROE and Sharpe ratios were used as proxies of financial performance. The study controlled for bank characteristics, market conditions, and technological advancements.

The results show income diversification is associated with higher though unstable profits. Noninterest income worsens risk-return tradeoff. Risk-return tradeoff improved during earlier years for average banks and declined later, suggesting that income diversification is undesirable. Additionally, well-managed banks were characterized by lower noninterest income. Also, banks with well-established customer relationship systems and financial technology had higher noninterest income.

Lepetit *et al.,* (2008) analyzed the relationship between bank income structure and risk. The study considered 734 European commercial and cooperative banks drawn from 14 European countries and panel data from 1996 - 2002. Income diversification was measured as the ratio of net noninterest income to net operating income, while the proxy of performance was insolvency. The control variables consisted of the firm's loan portfolio, size, portability, and leverage and bank capital. The findings indicate that nonlending activities expose banks to a higher level of risk and income volatilities. Conversely, trading income was favourable to bank risk.

Cornett *et al., (*2006) used a sample of 134 bank mergers involving publicly and non-publicly traded banks, the period 1990-2000 found that income diversification not only improved performance but also had a cost-cutting effect. Diversification was measured using several indicators: noninterest expense to noninterest revenue, noninterest expenses to net operating income and noninterest income to total asset. The constructs of performance were ROA, ROE, and net interest margin. The control variables were capital adequacy, bank size, and loan portfolio, operating efficiency, solvency, and growth.

Considering a sample of 8,000 companies drawn from 35 countries, Fauver, Houston, and Naranjo (2003) investigated the value of corporate industrial and international

diversification. The findings of this study showed that diversification had a negative effect on performance. Additionally, capital market development and regulatory environment had a significant moderating effect. For instance, firms operating in developed capital markets reported a diversification discount, while those from underdeveloped financial markets showed a premium.

A study by Berry (1971) examined the association between diversification and corporate growth. The study focused on 460 U.S. corporations and data for the period 1960 - 1985. Corporate growth was measured as an increase in the number of plant facilities and products. Diversification was measured using the HHI. The findings confirmed that diversification had a positive and significant effect on corporate growth.

Existing literature has established a relationship between diversification and managerial entrenchment. Amihud and Lev (1981) studied 309 American firms, and data from 1961-1970, and found that fear of losing jobs and professional reputation may prompt managers to diversify. Poor performance threatens CEOs' tenure (Shleifer & Vishny, 1989). Managers may opt to diversify to improve firm performance because their compensation is usually based on performance. The study further noted that manager controlled firms were more diversified than owner-controlled ones. Similarly, Rose and Shepard (1994), who considered a sample on 558 CEOs, and panel data from 1985 to 1990, found that CEOs of diversified firms earned between 10% -12% higher than managers of focused firms.

Shleifer& Vishny (1989) posit that CEOs will make manager-specific investments to avoid replacement. Therefore, poor performance pushes management to diversify into a business line where his skills and experiences have a comparative advantage. Managers may diversify through the acquisition of firms with overpriced shares to

protect their job. An alternative strategy is discounted divestitures of underperforming business lines to avoid hiring replacements.

Based on a sample of 933 firms U.S. firms and data from 1984-1992, Denis, Denis, and Sarin (1997) examined the relationship between agency problem, equity ownership, and corporate diversification. The study found that outside block holders' managerial equity ownership and equity ownership had a negative effect on diversification. The study contends that external corporate monitoring, financial distress, and executive turnover favored specialization over-diversification. The existence of managerial motives in diversification has also been cited in extant literature (Jensen, 1986; Stulz, 1990; May, 1995; Morck, Shleifer, & Vishny, 1990). Nevertheless, some researchers claim that diversification destroys firm value and weaken its competitiveness (Montgomery, 1985; Eije & Jin, 2016; Fauver *et al.,* 2003).

Extant literature has pointed out varied factors that might mediate the income diversification-financial performance relationship. For instance, industry factors (Purkayastha, Manolova, & Edelman, 2012; Ansoff, 1957), internal capital efficiency (Datta, Rajagopalan, & Rasheed, 1991; Marlin, Lamont, & Geiger, 2004; Williamson, 1975; Myers & Majluf, 1984)

Similarly, Hoskisson and Hitt (1990) conducted a meta-analysis of existing studies on diversification and performance. The study found that the direction and magnitude of the relationship between diversification and performance depended on managerial incentives, firm resources, type of diversification (related or unrelated), and corporate governance. Santarelli and Tran (2016) advise that firms should maintain an optimal balance between diversification and core activities to enjoy a diversification premium. Similarly, Berger *et al.,* (2010), Farjoun (1994), Robins and Wiersema (1995) observed

that compared to unrelated diversification, related diversification leads to superior performance because of synergies and economies from sharing resources such as human capital and technology. From the same viewpoint, Vincent, Bharadwaj, and Challagalla (2004) conducted a meta-analysis of 83 studies between 1980 and 2003. The study concluded that diversification improved superior performance if mediated by innovation.

Some reasons for conflicting research findings on income diversification and firm performance include firm and industry factors, kind of diversification, institutional environment, and macroeconomic factors (Rumelt, 1982; Christensen & Montgomery, 1981; Chakrabarti, Singh, & Mahmood, 2007; Campa & Kedia, 2002).

From an empirical perspective, related diversification positively influences firm performance because of economies of scale and synergies. Again banking regulations limit bank diversification to activities related to or connected to lending. Hence, the study hypothesizes that income diversification improves banks' financial performance.

2.5.7 Intellectual Capital and Income Diversification

Antecedents of diversification include risk management, utilization of idle resources, evolving customers' needs, economies of scale, efficient internal capital market, and improved financial performance (Hoskisson and Hitt, 1990). Studies view knowledge resources as the foundation of diversification (Gort *et al.*, 1985; Lippman & Rumelt, 1982; Nelson & Winter, 1982; Gagnon, 1999; Matsusaka, 2001)

Penrose (1959) mentioned that where an opportunity to exploit existing resources in new businesses exists, such as an opportunity to transfer knowledge among businesses, a firm should diversify. Also, Chandler (1962) said that "the common denominator of structure and strategy has been the application of the enterprise's resources to market

demand… of these resources, trained personnel with manufacturing, marketing, and engineering, scientific and managerial skills often become even more valuable than warehouses, plants, offices, and other physical factors." The previously mentioned statement emphasizes that possession of unique firm resources is the basis of corporate diversification.

While resource-based view theory and portfolio theory hypothesizes that income diversification improves a firm's financial performance; agency theory maintains that income diversification lowers performance (Jensen, 1986; Jensen & Meckling, 1976; Markowitz, 1952). Firm's core capabilities are the sole known source of competitive advantage and superior performance (Barney, 1991; Cabrer-Borras & Serrano-Domingo, 2007; Fallah & Ibrahim, 2004).

According to agency theory, the managerial incentives to diversify include power, prestige, and compensations linked to managing big firms (Jensen 1986; Jensen & Murphy 1990). Additionally, Amihud and Lev (1981) postulate that management may initiate diversification for job security by avoiding the threats associated with external capital monitoring. Besides, Jensen (1986) observed that free cash flows enable the self-seeking manager to evade external monitoring.

Internal capital market efficiency is a probable reason for diversification (Williamson, 1975). Undiversified firms are highly dependent on external capital than diversified ones. External capital markets have a high transaction and monitor costs compared to internal capital that allows for in-house capital mobility. Due to the high monitoring costs inherent to external markets, managers are likely to engage in opportunistic behaviour. However, through internal controls, a corporate manager can monitor

divisional managers' performance and take the necessary action, which guarantees the efficient allocation of firm resources.

The relationship between related and unrelated diversification on firm performance is widely discussed in the extant literature. According to Neffke & Henning (2013), the ability to transfer competencies across industries and create synergies influences the choice of diversification strategy. As stated by Silverman (2003), the direction of diversification depends on several factors. First, the range of possible business opportunities where the firm's current core competencies and resources can be applied. Second, the proposed market's transaction cost, considering resources required to exploit the new opportunity against available capabilities. Finally, how significant and sustainable the competitive advantage is over a prolonged period.

The choice between related and unrelated diversification and its effect on performance has elicited a lot of research interest. Piscitello (2000) claim that firms diversify in a logical and systematic pattern giving preference to related products and existing technologies. Penrose (1959) and Chatterjee and Wernerfelt (1991) noted that firms diversify into businesses related to their primary activities and processes to leverage idle resources for competitive advantages. Thus, an organization's profile of intangible resources influences the choice between related and unrelated diversification. Weiss (2016) found that both related and unrelated diversification had a positive effect on performance, though the impact was only significant for related diversification and tested this assertion empirically. Boschma (2017), who studied regional diversification, reported similar findings.

2.5.7.1 Human Capital and Income Diversification

Human capital significantly influences organizational outcomes and strategic decisions (Ulrich, Brockbank, Yeung, & Lake, 1995; Wright, McMahan, & McWilliams, 1994). Studies indicate that firms that match diversification strategies with their current human capital profile improve financial performance (Farjoun, 1994, 1998; Hitt *et al.*, 2001). Neffke and Henning (2013) investigated the association between human capital (employees' skill relatedness) and Swedish firms' diversification. The study considered a sample of 415 industries. The results demonstrate that firms were more likely to diversify into sectors of similar human capital portfolios. In the same line, Kurdyś-Kujawska *et al.* (2015)researched factors that determine Poland's income diversification. The study used primary data collected through 256 questionnaires. This study's findings show that human capital, as measured by the farmers' education, had a negative statistically significant effect on income diversification. Additionally, the study concluded that less-educated farmers had a higher appetite for risk, therefore, engaged more in income diversification, implying that low quality of human capital leads to increased income diversification in the agricultural sector.

A study by Tihanyi, Ellstrand, Daily, and Dalton (2000) examined whether top management team human capital impacted diversification. The study used a sample of 126 U.S. electronics electronic firms and a panel dataset for the period 1986-88. The findings indicated that managerial characteristics such as age, higher average tenure, education, experience, and heterogeneity of tenure positively affect diversification.

Using a sample of 105 large law firms in the U.S., Kor and Leblebici (2005) conducted a study to determine human capital's effect on firm diversification. Diversification was measured using the Herfindahl index. The proxy of human capital was the number of

associates a firm employs per partner. The findings of this study revealed that human capital had a positive and significant effect on diversification

Farjoun (1994) used a sample of 12,781 firms operating in the U.S. to examine the relationship between human capital and diversification. Human capital was measured using expertise profiles and expertise similarity matrix. While diversification was measured through the entropy index. The study found that companies diversified into industries related to their human resource expertise profiles. These findings inferred that human capital had a positive effect on diversification.

Sherer (1995) examined the relationship between human capital and diversification using data drawn from 312 large law firms in 1991. Human capital was measured as the number of associates divided by the number of partners. Diversification was measured using the Herfindahl index of dispersion. The findings confirm that firms with high human capital engaged in extensive diversification; these firms enjoyed scale economies besides being able to compete based on price and variety of services. This study implies that investment in human capital has an indirect effect on financial performance through diversification economies.

Chang (1996) studied the relationship between human capital, diversification, and corporate restructuring entry, exit, and economic performance. The study considered a sample of 772 listed American manufacturing firms and Panel data from 1981-1989. Human capital was measured as human resource profile that was split into four categories, human resource groups: managerial, engineering, scientific, and marketing. Berry's Herfindahl was used as the measure for diversification. The study found that firms entered into businesses of similar human resource profiles. Further, firms were more likely to divest businesses of different profiles.

Hitt *et al.,* (2001) examined the moderating effects of human capital on strategy and performance. The study considered a sample of 93 top U.S. law firms and panel data for the period 1987-1991. Diversification was decomposed into service and geographical, and both were measured using the Herfindahl Index. The proxies of human capital were the law school's quality attended by partners and partners' experience. The proxy of firm performance was the ratio of net income to total firm revenue. The study found that human capital had a positive effect on service and geographical diversification. Human capital and diversification interaction had a positive impact on firm performance.

Adeola and Evans (2017) examined the link between human capital and income diversification at the national level. Nigeria's major component of gross domestic product is oil and panel data for years 1981 - 2014 drawn from the World Bank Development Indicator. The measure of diversification was the proportion of gross domestic product not generated from oil. The proxy for human capital was government spending on education. The study found that human capital had a positive and significant effect on income diversification.

Palacios-Huerta (2001) carried out a study to establish the relationship between human capital and diversification. The study used a sample of 2880 firms drawn from the U.S., U.K, Japan, and Germany while data was 1964 – 1996. The findings showed that human capital had a positive and significant influence on diversification strategy.

2.5.7.2 Process Capital and Income Diversification

Process capital denotes structures and processes that create a competitive advantage. The organizational structure represents all the people, positions, procedures, processes, culture, and all other elements that form the organization (Kavale, 2012). Internal

business processes have a significant effect on the choice of diversification strategies. Researchers argue that firms that diversify to related businesses aim at exploiting synergies arising from shared operations, whereas unrelated diversification leads to economies of scale in management and information processing (Wrigley, 1970; Bettis, 1981). Moreover, a study by Chong, Wang, Tan, and Cheong (2017) revealed that firms prefer to diversify along the supply chain to protect themselves against economic downturns. Consequently, banks can enjoy economies of scale and cross-subsidization by diversifying into nonlending. However, the literature on process capital and income diversification is still evolving.

One of the critical dimensions of process capital is the organizational structure. The connection between organizational structure and diversification can also be traced to Alfred Chandler (1990) celebrated quote that "structure follows strategy." A firm's organizational structure ensures that all pieces and units work in harmony for competitive advantage.

Organizational structure is an essential dimension of process capital. Thus, some studies have examined the association between organizational structure and firm diversification. Klein and Saidenbergz (2010) considered a sample of 367 holding companies in the U.S., and the panel dataset for 1990-1994 reported similar results. The study found that the firm's market value increased as the number of subsidiaries under the holding companies reduced, suggesting managerial inefficiencies in large organizations, which implies that an organization's structure influences corporate diversification. Additionally, the findings indicate that holding companies with many subsidiaries are less profitable. The organization structure and diversification causality were also examined by Markides and Williamson (1996), who used 457 questionnaires that were sent to Chief Executive Officers of companies that were classified as:

incorporated in the United States, belonging to a SIC code from 0 through 40 (i.e., no service firms), and have 1988 sales above $400. The study found that, both in the short-run and long-run, the benefits of diversification hinge on whether the firm's organizational structures allow for the free mobility of existing strategic assets and competencies across divisions.

Another critical element of process capital is managerial capabilities, which demonstrate the current and future strategic processes that might trigger income diversification (Matthies, 2014; Yildirim & Allen, 2017). Hoechle, Schmid, Walter, and Yermack (2012) sought to examine whether poor corporate governance explains the diversification discount. The study considered a sample of 7,218 firms using panel data from 1992-2005. The findings show that sound corporate governance practices positively impact corporate diversification—also, high CEO shareholdings and more directors who are independent increase corporate diversification premiums. In the same line, Kim & Kogut (1996) studied a sample of 176 semiconductor-manufacturing firms found that organizational capabilities in technology-supported diversification. The study concluded that diversification was the outcome of a firm's deliberate decision to acquire knowledge to adapt and exploit market opportunities. Correspondingly, Shin's (2009) research that considered all firms in the Compustat database and panel data for 1995-1999 shows that firms' information technology system leverages diversification benefits.

The findings further claim that IT systems have a positive and significant effect on related diversification. The study concluded that IT facilitates information sharing and coordination of marketing and managerial expertise. Prior and Solà (2000) examined the relationship between firm process efficiency and diversification. The study considered a sample of 70 diversified and 62 specialized hospitals and data for years

1987-92. The measure for efficiency was the ration of inputs-outputs. The findings indicate that diversified firms enjoy higher productivity and cost-efficiency. The results of these studies suggest that process capital is essential for income diversification. Arguably, bank managers may engage in income diversification to utilize excess production capacity or for efficiency purposes.

2.5.7.3 Innovation Capital and Income Diversification

In modern economies, innovation capital is the critical determinant of diversification and competitive advantage (Asheim, Grillitsch, & Trippl, 2017). Innovative firms may use their innovative capabilities to differentiate their products within the same market or exploit such capability to enter new markets through diversification (Nonaka, 2008; Breschi, Lissoni, & Malerba, 2003). Similarly, firm pursuing a diversification strategy may elect to diversify by creating new knowledge to produce innovative products for the current market, or they can use prevailing knowledge to create or modify existing products for new markets (Rodríguez-Duarte, Sandulli, Minguela-Rata, & López-Sánchez, 2007; Damanpour & Wischnevsky, 2006; Deligianni, Voudouris, & Lioukas, 2014)

Bowonder and Miyake (1994) investigated global diversification and innovation using Hitachi Ltd as a case study. The findings of this study demonstrated that diversification influences a firm intrinsic competitive advantage. The study concluded that diversification is an enabler of multidisciplinary research, organization intelligence, technology fusion, and competence fusion. Moreover, a diversified firm had the requisite capabilities to create and exploit core competencies.

Cirera, Marin, and Markwald (2015) examined the relationship between firm innovation and export diversification. The study focused on 10,000 Brazilian firms

during the period 2000–2008. Firm innovation was measured as R&D expenditure, while the variable for diversification was computed using HHI. The study found that firms successful in export trade previously invested more in innovation and presently were accessible to technological resources.

Clark (2000) claims that diversification is a market strategy, and it is a product of internal capabilities and market opportunities. Rodríguez-Duarte *et al.* (2007) assessed the relationship between innovation capital and diversification. The study used a sample of 983 Spanish firms and panel data for the years 1995-2000. The results of this study showed that innovation has a positive and significant impact on diversification. The study explicitly concluded that innovation led to diversification, not vice versa. Besides, the study found that firms expanded into industries where they could utilize their innovation capabilities for competitive advantage.

Sugheir, Phan, and Hasan (2012) used panel data of 1990-2006 and found a positive relationship between innovation and diversification. The results also showed a negative relationship between innovation and a high level of unrelated diversification, implying that high levels of unrelated diversification destroyed firm value.

Baysinger and Hoskisson (1989) examined the relationship between diversification strategy and R & D intensity among 971 U.S. industrial corporations and panel data for 1980-1982. R&D intensity was measured as the ratio of R&D expenditure per $1,000 sales. The study collapsed diversification into related, unrelated, and total diversification using and measured through entropy index. The study found that the innovation-diversification relationship was negative and statistically significant.

Deligianni *et al.,* (2014) conducted a study on 530 Greek new ventures to examine the relationship between innovation and diversification and its direction. Data was

collected through structured questionnaires. The findings demonstrate a positive and significant between innovation and diversification. Besides, the study claims that the relationship between innovation and diversification is simultaneous and endogenous. The study found that innovation capabilities influenced the decision to enter into new markets since new ventures face numerous challenges, unlike mature firms. The findings emphasized the interdependence of firm resources.

Bettis (1981) investigated a sample of 31 related-constrained firms, 24 related-linked firms, and 25 unrelated firms and found related companies outperformed unrelated. Further analysis established that R&D expenditure, capital intensity, and advertisement had a positive and significant explanatory power. Related-linked firms were focused on differentiation and segmentation.

Using a sample of 678 American firms and panel data for the period 1981-1985, Chatterjee, and Wernerfelt (1991), found a strong association between R&D investment and more related diversification. Diversification was measured using Herfindahl measure while innovation capital was measured as R&D expenses/sale

MacDonald (1985) studied the association between R&D and diversification. The study considered 67 U.S firms and data from 1963-1977. R&D was measured by R&D expense, while diversification data were obtained from the Census Enterprise Statistic. The findings showed that R&D had a positive and significant effect on diversification.

Gupta (1990) studied the association between technological intensity, related, and unrelated diversification. The study used a sample of 66 companies drawn from chemical and electronics industries and panel data for 1982-1986. Technology intensity was measured R&D intensity (natural log of average absolute R&D expenditures). Diversification was measured using an entropy approach. The findings indicate that

technological intensity has a positive and significant effect on related diversification. Further, the connection between technological intensity and unrelated diversification was both negative and insignificant.

Wuebker and Klein (2017) studied the impact of diversification on innovation using a sample drawn from Compustat for the period 1980-1999. The finding of this study showed that diversification had a negative influence on innovation. The study noted that inefficiencies in firms' internal capital markets reduced R&D investment

2.5.7.4 Customer Capital and Income Diversification

Though the literature on customer capital and income diversification is scanty, previous studies have examined the association between customer capital dimensions and diversification. Using a sample of 678 American firms with panel data from 1981-1985, Chatterjee, and Wernerfelt (1991), found a strong association between customer capital and diversification. Diversification was measured using the Herfindahl index while customer capital was measured as advertisement expenses/sale

Kim (2010) examined the relationship between international diversification and global brand value. The study used a sample of 56 companies and data for the period between 2001 and 2006. Diversification was measured as the ratio of foreign sales to total sales. A commercial brand equity metric measured brand value. The study found that global brand value had a positive and significant effect on international diversification. This implies that higher global brand value results in increased diversification of international operations.

Castaldi and Giarratana (2014) examined the relationship between diversification, customer capital in knowledge-intensive Service Firms. The study used a sample of 77 large firms in the U.S. The data set was between 2000-2009. Diversification was

measured using the Herfindahl index. Customer capital is measured as brand breadth, the number of classes the trademark was assigned. The study found that brand reputation in a particular market segment niche was likely to affect the product's reception in another market segment.

Riganelli, Marchini, Polenzani, and Martino (2018) examined the relationship between brand extension and diversification among SMEs. Data were collected using structured questionnaires administered to 232 respondents. The study found that a loyal consumer would also buy a firm’s product extension. The findings suggested that it would be easier for a firm to diversify by expanding the existing product line.

Narasimhan and Kim (2002) used a sample of 623 manufacturing organizations drawn from Korea (244) and Japan (379) to investigate the relationship between supply chain integration, diversification, and performance. Data was collected using questionnaires. The supply chain was measured from three dimensions; integration with suppliers, integration with customers, and internal integration across the supply chain. Diversification was decomposed into product diversification and international diversification. The findings suggest that diversifiers with advanced supply chain reported superior performance. The study also concluded that the interaction between diversification and supply chain integration had a multiplier effect on the performance.

Denis and Depelteau (1985) examined the association between market knowledge, diversification, and export expansion. The study used a sample of 331 SME registered in Quebec, Canada. Data was the period 1970 -1975. Three proxies measured market knowledge; the number of means of distribution used to penetrate foreign markets, time spent in foreign trade fairs, and the number of public and private export information services was regularly used. The proxy of diversification was the percentage of exports.

The results of the study indicate that market knowledge has a positive and significant effect on diversification.

Nguyen, Skully, and Perera (2012) investigated the link between bank market power and income diversification using a sample of 153 banks drawn from Indonesia, Malaysia, Philippines, Thailand, and Vietnam and data for 1998-2008. The study found that banks with high market power were specialized while those with lower market diversified into non-lending activities. The explanation for this was that banks with a high market power had vital market intelligence that bridged information asymmetry, consequently fewer incentives for income diversification. Moreover, effective customer relationships assure future lending above the marginal cost.

2.6 The Mediating Role of Income Diversification

Studies suggest that firms can leverage their resources through diversification, particularly knowledge-based assets (Markides, 1992; Hoskisson & Hitt, 1990; Chatterjee & Wernerfelt, 1991; Nelson & Winter, 1982; Farjoun, 1994). Additionally, empirical studies indicate that firms prefer diversifying into related industries (business) to take advantage of the common usage of resources like human capital and technology (Farjoun, 1994; Farjoun, 1998; Kor & Leblebici, 2005; Silverman, 2003).

Other determinants of diversification include poor performance (Rumelt, 1974; Chang & Thomas, 1989; Grant, Jammine, & Thomas 1988; Matsusaka, 2001; Miles & Miles & Cameron, 1982); firm maturity (Leontiades, 1986), risk (Grant, 1996; Lewellen, 1971); and technological advancement and deregulation (Huang & Chen, 2006).

Extant literature posits that diversification leads to superior financial performance and reduce risks (Huang & Chen, 2006; Saunders *et al.,* 2016; Gurbuz *et al*., 2013; Calmes & Liu, 2009; Lepetit *et al.,* 2008). Equally, Porter (1985) postulates that the marginal

cost of offering related services using the existing resources and infrastructure is minimal, and the benefits are substantial. Besides the direct effect, studies show diversification has an indirect impact on financial performance. A diversified firm has an efficient internal capital market since managers can avoid external market imperfections (Lang & Stulz, 1994; Stulz, 1990; Klein & Lien, 2009). According to Foss and Christensen (2001) and Teece and Pisano (1994) diversification, has a spillover effect on firm performance as an investment in one industry can stimulate the value of resources in a related industry.

Given the previously mentioned, income diversification appears as a path through which intellectual capital can be leveraged to improve financial performance

2.6.1 Human Capital and Financial Performance

Carpenter *et al.*, (2001) examined the relationship between international diversification and human capital. The study considered a sample of 256 firms drawn from Standard and Poor 500. The study results showed that diversification impacted the managerial experience acquired through management development programs, coordination, and control of complex businesses and information coordination. According to Roth (1995), diversification equips managers with a greater array of skills such as adaptability, information processing, and teamwork vital to firm performance. The author further claims that managerial experience and other organizational core competencies and capabilities created a competitive advantage.

Daud, Awoyemi, and Omotayo (2018) examined the relationship between human capital and income diversification among crop farmers in Nigeria. The study used primary data, which was collected through questionnaires. Income diversification was measured using the Herfindahl index, whereas the proxy of human capital was the level

of education. The study found that highly educated farmers had diversified income compared to less educated farmers since they were more accessible to credit and other productive resources

Tihanyi *et al.,* (2000) investigated whether top management team composition impacted firm diversification strategy. The study used 126 U.S electronics electronic firms for the period 1986-88. Among other things, the study found that diversification equipped top management with an experience that guided the firm in venturing into new markets.

Kor and Leblebici (2005) considered a sample of 105 large law firms in the U.S. to investigate the link between human capital strategies, diversification, and performance. The study found that diversification enables a firm to use its human resources. Presumably, a strategic fit between firms' human capital portfolio and business strategy led to competitive advantage and superior performance.

Hitt *et al.,* (2001) examined the link between human capital diversification strategy and performance using a sample of 100 largest law firms in the U.S and data over 1987-1991. The main findings were that through diversification, firms could leverage their human capital for competitive advantage. Professional firms diversified their service range to assign jobs to partners based on their expertise, which improved firm reputation and performance.

Besides, diversification led to increased efficiency and economies of scale.

Neffke and Henning (2013) examined the link between skill relatedness and firm diversification in Sweden. The study used a sample of 415 industries and 280,000 individuals who changed jobs every year. Data was for the period 2004-2007. This

study's findings showed that firms were more likely to diversify into industries with skills related to their core businesses. Firms preferred related diversification because it supported the creation and maintenance of a cycle of discoveries through cooperation. Equally, researcher content that related diversification stimulates firms to create knowledge for competitive advantage (Nonaka, Toyama, & Nagata, 2000; Nooteboom, 1999)

Tate and Yang (2016) examined the relationship between human factors in the acquisition, cross-industry labour mobility, and corporate diversification. The sample consisted of 4,000 diversifying acquisitions drawn from the U.S. Census Bureau's Longitudinal Business Database for 1995-2007. The study found that diversification improved labour productivity due to the deployment of skills and idle human capital across businesses. Similarly, improved productivity is attributable to employees' self-induced training in anticipation of the job change (Carmichael & MacLeod, 1993).

Rose and Shepard (1994) assessed the link between firm diversification, CEO compensation, and managerial ability. The study used a panel data set of 1505 observations from 480 CEOs from 403 and years running from 1985-1990. Among other findings, the study found that diversification led to increased CEO pay. As firms became more complex with increased diversification, they placed a higher value on managerial abilities by hiring new CEOs with superior skills, though at higher pay than the incumbent. (Ntim., Lindop, Thomas, Abdou, & Opong, 2017; Alves *et al.,* 2016; Core *et al.,* 1999; Gomez-Mejia, 1992)

Krishnan, Miller, and Judge (1997) investigated whether diversification and top management team complementarity influenced firm performance**.** A sample of 147 acquisitions over 1986-88 was used. The study found that functional differences among

managers (complementarity) had a positive effect on post-acquisition performance. Firms reap from diverse top management team backgrounds and experiences. Besides, complementarity leads to lower top management team turnovers, consequently, organization stability.

Fukui and Ushijima (2007) examined the connection between diversification, performance, and organization restructuring amongst the 142 largest Japanese manufacturing firms from 1973-98. The study found that the quest to leverage human resources guided corporate restructuring among Japanese firms. Moreover, Odagiri (1994) affirms that firms diversify to leverage human capital accumulated in core activities.

Farjoun (1998) studied whether skill-relatedness affected firm performance using data drawn from 158 large diversified U.S. manufacturing firms. The study results showed that diversification into skill-related businesses supported continuous organizational learning, innovation, and transfer of knowledge between businesses, leading to cost efficiencies and product differentiation.

A study by Coff (2002) sought to evaluate the association between human capital, shared expertise, and corporate acquisitions. The sample consisted of 324 acquisitions for years and panel data for 1988-1989. The study observed that though a strategic resource, human capital is not tradable due to market imperfection, thus a justification why firms acquire capital-intensive human businesses for competitive advantage. The acquisition of capital-intensive human firms creates value through synergetic transfer and sharing of knowledge between business lines.

2.6.2 Process Capital and Financial Performance

Klein and Saidenberg (2000) investigated the link between diversification, organizational performance, and efficiency. A sample of 412 Multi-Bank Holding Companies was used. Data was for the period 1990 - 1994. The study found that diversified banks are less exposed to credit risks, held little capital, and engaged in more lending than specialized banks. The findings are attributed to the efficiency of the internal capital market in allocating resources. However, diversified firms did not exhibit superior financial performance, which could have been due to organizational factors such as structure and bureaucracies.

Morgan and Samolyk (2003) evaluated the relationship between diversification, bank portfolio choice, and performance. A sample of all commercial banks in the U.S. was considered. Data was for the period running from 1994-2001 that yielded 6738 observations. The results claim that diversification expanded banks' lending capacity. However, there was no change in bank financial performance or a reduction in portfolio risk. Some of the probable explanations were competition, risk exposure, and the challenge of managing a bigger firm.

Hughes, Mester, and Moon (2001) assessed 190 public-traded firms in the U.S. to understand whether scale economies in banking were real or imagined. The study found that increased diversification led to more economies of scale. This was due to cross-selling, shared monitoring, expanded market mix, and input utilization.

Curi, Lozano-Vivas, and Zelenyuk (2015) examined the relationship between foreign bank diversification, efficiency, and performance. Quarterly financial data for the period 1995-2009 was obtained from Luxembourg Central Bank (BCL). Diversification was measured using HHI while efficiency as the ratio of deposits to loans and advances.

Diversification had a negative effect on technical efficiency and more adverse during the financial crisis. Thus, diversified banks suffered a diversification discount. Besides, focused banks reported higher profits and cost-efficiency. The study concluded that organizational structure had a significant moderating effect on diversification and efficiency.

Schoar (2002) examined the relationship between corporate diversification and firm productivity using a sample of 43 U.S. plants and data for the years 1989. Firm productivity was measured as total firm productivity, capital, labour, and material using linear Cobb-Douglas production function. Diversification was measured using the Herfindahl index. The study found diversified firms were approximately 7% more productive than undiversified ones. However, diversified firms reported a discount relative to the stock prices a phenomenon. Schoar (2002) concluded that the observed diversification discounts could be due to two reasons. First, diversification might lead to the acquisition of new plants, which lowers the existing plant's productivity. This concept was referred to as the "new toy effect' where managers pay more attention to new process and products at the expense of existing ones. Second, the management and employees are likely to misappropriate diversification gains by increasing their wages and remunerations at the expense of shareholders. Denis *et al.* (1997) and Rajan, Servaes, and Zingales (2000) explained that diversification discounts are caused by agency conflicts and the power struggle between existing and new segments.

2.6.3 Innovation Capital and Financial Performance

Studies argue that innovation capital allows organizations to adapt to a turbulent environment that, in turn, is a source of competitive advantage and superior performance (Coccia, 2017; Aziz & Samad, 2016; Han, Kim, & Srivastava, 1998).

Contrariwise, some scholars contend that innovation is an expensive and risky affair (Markham & Griffin, 1998).

Almeida and Phene (2004) examined how international diversification and host country factors influence innovative capacity. The study used a sample of 374 subsidiaries drawn U.S. semi-conductor industry with panel data for 1980 and 1990. The findings revealed that diversification influences innovation owing to the cross-fertilization of knowledge since a subsidiary acquires knowledge from the MNC and firms located in the host country. Lu and Hsu (2018) submit that cross-fertilization of technologies is a source of competitive advantage.

Suzuki and Kodama (2004) investigated firm diversification-innovation nexus. Two Japanese firms and data for the period 1965-99 were used. The study found that diversification was a recipe for continuous knowledge accumulation in multiple innovations, thus benefiting firms from cross-fertilization and other synergetic effects, including economies of scale and sales growth.

Lee and Pati (2017) examined the association between corporate diversification, technology innovation, and firm performance. A sample of 198 leading technology-oriented MNC drawn from the U.S., Japan, and the EU was used. The results of their study confirmed that diversification enhanced investment in R&D and patents. Due to the unpredictability and complexity of the operating environment, diversified firms engaged more in product redesigns and process improvements.

Hitt, Hoskisson, & Kim (1997) assessed the link between international diversification, innovation, and firm performance. A sample of 295 U.S. firms and data from 1988 to 1990 was analyzed. The study found that diversification mediated the innovation-performance relationship in several ways. First, a diversified firm earns more resources

that can be channeled to R&D. Second, diversified firms are open to varied ideas because they operate in multiple markets. These ideas can lead to new products and processes. Third, with increased business complexities arising from diversification, firms can develop managerial capabilities. Finally, diversified firms must innovate to develop and sustain their competitive advantage. These findings similar to those of Bettis and Hitt (1995) and Kotabe (1990)

2.6.4 Customer Capital and Financial Performance

Few studies have examined the mediating role of income diversification on the customer capital and financial performance relationship. However, existing literature has pointed at a probable relationship between the variables. A study by Hsu and Liu (2008) on a sample of 124 Taiwan manufacturing firms revealed that customer capital affects income diversification. By leveraging current competencies to serve multiple customers, firms benefit in several ways; collect market intelligence, strengthen relationships with customers, improve manufacturing capabilities, and enhance the brand, economies of distribution, equity, and strong market power. Besides, Kim and Singal (1993) suggest that a firm can gain market power through diversification.

Montgomery (1985) examined the relationship between diversification, market power, and financial performance. A sample of 128 firms was drawn from Fortune 500 with panel data from 1972-77. The study found that highly diversified firms had less market power compared to less diversified firms. Arguably, the success of diversification was independent of firms' competitive position in its primary market. Further, the study noted that diversified firms enjoyed cost efficiencies from technical and market relatedness, leading to improved financial performance.

Hughes and Oughton (1993) investigated the diversification and financial performance association. The study considered a sample of 418 UK manufacturing firms and data of the year 1979. The results showed that diversification positively affected the multi-market contract, implying that diversification was a source of market power and monopolistic tendencies that influenced firm performance. Conversely, diversification had a negative impact on profit signaling inefficiencies (Edwards, 1955; Meeks, 1977).

Abedifar *et al.* (2014) investigated the impact of income diversification activities on lending activities performance. The study used quarterly financial data of 8,287 U.S. commercial banks from 2003 to 2010. The study found that non-lending activities cross-subsidized lending, thus affecting the value of the franchise. The study concluded that banks that focused on enhancing client relationships through diversification could quickly improve their loan portfolio quality, ultimately improving financial performance.

Maudos and Solís (2009) examined the determinants of noninterest income in the Mexican banking sector. The study used a sample of 43 banks from 1993 to 2005. The study found that cross-subsidization between lending and non-lending activities. Highly diversified firms were characterized by increased market power and lower intermediation margins. Valverde and Fernández (2007), Lepetit *et al.,* (2008) reported similar results. In conclusion, income diversification increases a bank market power, lowers interest spread, and ultimately improves firm performance.

2.7 Control Variables

To isolate the impact of intellectual capital and income diversification on banks' financial performance, three control variables (firm size, firm age, and lending strategy) were incorporated into the regression models. Studies claim that a bank’s size is

associated with organizational complexity making it difficult to manage efficiently, which adversely affects financial performance. Conversely, larger banks may have better risk management and diversification opportunities; on the other hand, small banks are more flexible in their operations (Amidu & Wolfe, 2013).

The creation and diffusion of intellectual capital are evolutionary (Ling, 2013). Thus, older banks have a higher stock of intellectual capital than younger ones. Similarly, older banks are likely to have more incentive for income diversification because of product obsolescence and resource advantage. Conversely, firm age is associated with managerial problems, and other challenges related to time, such as structural inertia, hinder strategic change and flexibility.

Banks that diversify based on strategy may shun non-interest income, make more loans, and grow more rapidly irrespective of loans' profitability to other earning assets (Stiroh & Rumble 2006; Sanya & Wolfe, 2010).

2.8 Conceptual framework

A conceptual framework is a visual demonstration of the relationship between the research variables. Financial performance is the dependent variable, while intellectual capital the predictor variable. Intellectual capital has been decomposed into human capital, process capital, innovation capital, and customer capital. Income diversification is the mediating variable while the control variables comprise of; firm size, firm age, and firm lending strategy. The conceptual framework is illustrated below (figure 2.2)

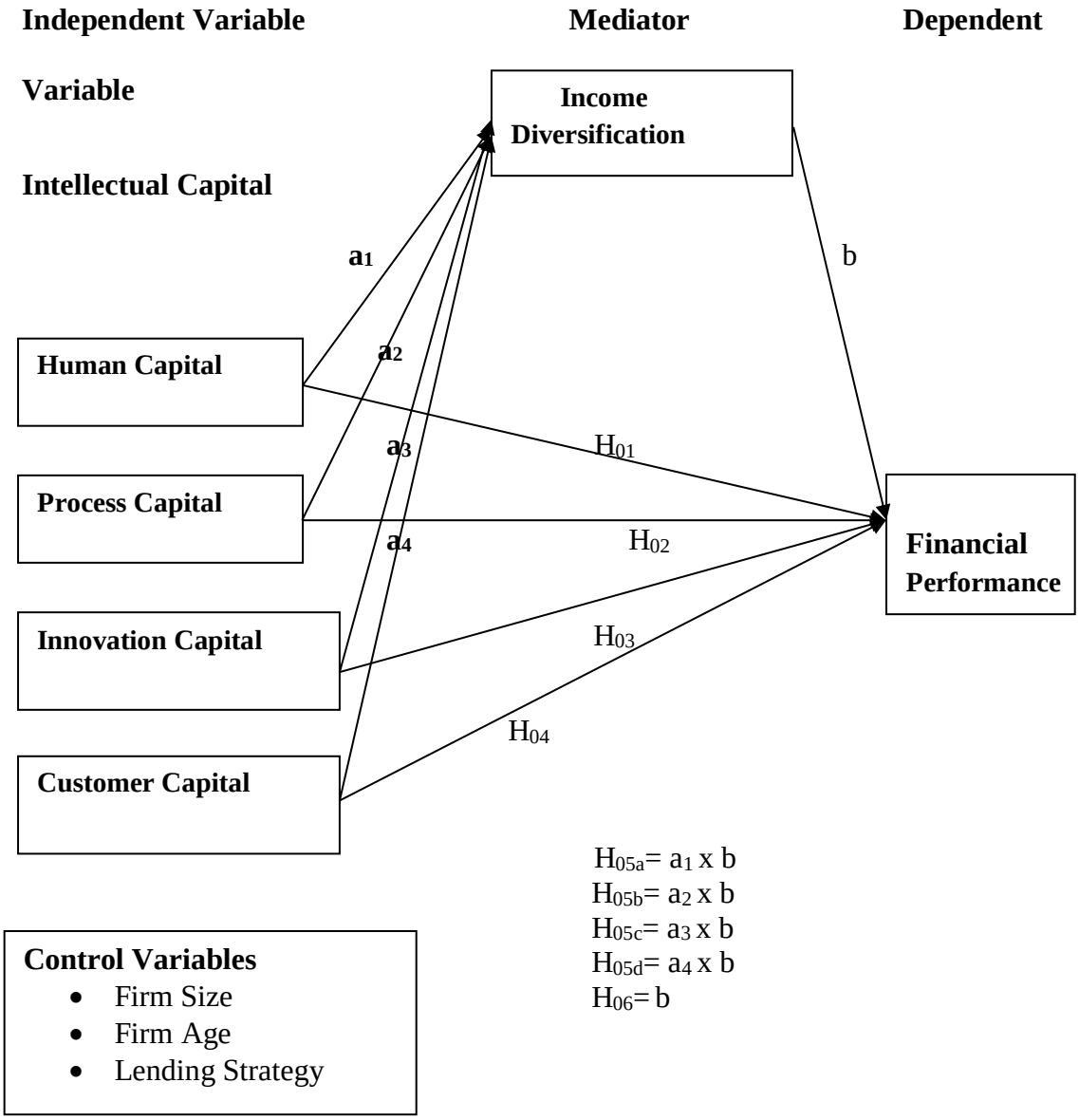

Figure 2.2 Conceptual framework
Source: Author 2019

2.9 Chapter Summary

This chapter discussed the salient aspects of the research variables; intellectual capital, income diversification, and financial performance. Further, the chapter presented the critical theories used in the study; resource-based view theory, dynamics capability theory, and the modern portfolio theory. Although the resource-based view claims that intellectual capital is a crucial determinant of financial performance in an era of knowledge-based economies, the empirical literature revealed mixed findings. Based

on the dynamic capability theory's theoretical perspectives and the modern portfolio theory, this study sought to fill the gap by showing that intellectual capital indirectly affects financial performance through income diversification. By engaging in nonlending activities, commercial banks can exploit and deploy their intellectual capital assets for competitive advantage and improved financial performance. The hypothesized relationship between intellectual capital, income diversification, and financial performance has also been presented in the previous section by using a conceptual framework.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

Research methodology means the theory of how research should be undertaken. This section gives an overview of the research design, target population, sampling techniques, model specification, and measurement of the variables, data collection, data analysis, and ethical consideration.

3.1 Research Paradigm

A research paradigm is the basic set of beliefs or worldview that guides research action or an investigation (Johnson & Christensen, 2008). Dammak (2015) avers that a research paradigm is a conceptual lens through which a researcher determines methodological aspects of research, including how data is analyzed. According to Bhattacherjee (2012), the two popular research paradigms are positivism and post-positivism. The positivism paradigm postulates that experimentation, observation, and reason based on experience are the basis for understanding human behaviour (Bhattacherjee, 2012; Comte, 1856). Positivism seeks to establish causal relationships through deductive reasoning. The basic tenets of positivism comprise hypotheses formulation, measurement, hypotheses testing, and inferences (Kivunja & Kuyini, 2017).

Post-positivism postulates that one can make reasonable conclusions on a phenomenon by combining empirical interpretations with logical reasoning. Besides, post-positivism claims that researchers can understand individuals' behaviours through sharing and working directly with the subjects to understand the world around them (Phillips & Burbules, 2000). Additionally, positivism assumes that quantitative methods are insufficient to generate valid empirical evidence and a theoretically relevant

interpretation of this evidence (Adam, 2014). Thus, this study was grounded on the positivism paradigm since it aims at establishing the causal-effect relationships between intellectual capital, income diversification, and financial performance. Additionally, the study used scientific methods and techniques to investigate social phenomena

3.2 Research Design

Research design denotes methods and procedures for collecting and analyzing the needed information comprising sampling methodologies, data collection techniques, data analysis, and cost schedules. According to Singh (2006), research design "is a mapping strategy. It is essentially a statement of the object of the inquiry and the strategies for collecting the evidence, analyzing the evidence, and reporting the findings" The elements of research design include sampling procedures, research strategies, tools and techniques for collecting the evidence, analyzing the data and reporting the findings. Singh (2006) further claims that research design should be accurate, relevant, reliable, unbiased, and free from confounding effects.

This research is both longitudinal and explanatory. A longitudinal study uses continuous or repeated measures to follow specific individuals over an extended period (Caruana, Roman, Hernández-Sánchez, & Solli, 2015). The justification of a longitudinal design is that the panel data set for the period between 2008 and 2017 were analyzed to test the research hypothesis.

Explanatory studies seek to establish causal relationships between research variables, with the main emphasis being to study a problem to explain the relationship between variables (Saunders *et al.,* 2011; Robson 2002). Additionally, descriptive studies aim to develop or test a theory by identifying causal relationships that explain the change in a variable. The choice of an explanatory research design is because; this study sought

to clarify the relationship between intellectual capital, income diversification, and financial performance.

3.3 Target Population

Lavrakas (2008) defines a population as "strictly a finite collection of the units from which information is sought in the survey, with the additional specification." Simply put, a target population is a collection of individuals or elements about which generalizations and inferences are made. Further, a target population should be defined, considering the content, units, extent, and temporal measures.

The study population consisted of all commercial banks in Kenya. In this context, a bank is a "company licensed by the Central bank of Kenya, under the Banking Act cap 487 to operate as a banking institution". According to the Central Bank of Kenya, there are 43 banking institutions, 42 commercial banks, and one mortgage finance company (CBK, 2017). The inclusion and exclusion criterion was based on whether the bank was in operation from 2008 to 2017. As of 2017, three banks, namely Chase Bank (K) Limited and Imperial Bank Limited, were under receivership while Charterhouse Bank Limited was under statutory management. In the same year, CBK licensed two additional banks that are Dubai Islamic Bank Kenya Ltd and Mayfair Bank Ltd (CBK, 2017)

3.4 Data Collection

The data collected was secondary and quantitative. Quantitative data consist of sets of observed or measured variables (Tharenou, Donohue, & Cooper, 2007). Similarly, quantitative data is a representation of a phenomenon by assigning numbers in an ordered and meaningful way (Zikmund, Babin, Carr, & Griffin, 2013). Generally, quantitative data is in the form of numbers and figures on which mathematical or

statistical analysis and manipulation is the basis of making inferences. In this study, all the variables were represented and measured numerically.

Secondary data refers to other researchers' or entities' information or facts before the current study. Similarly, Tharenou *et al.,* (2007) posit that secondary data "is data have not been collected for the study's purpose." Though secondary data is historical, it is considered unbiased, therefore, reliable. The data used in this study was extracted from the individual bank's audited annual reports and the Central Bank of Kenya's bank supervision yearly reports. The specific data items included revenue, staff costs, administrative expenses, R & D investment, market share, assets, loans, bank age, and employee number. The variables were log-transformed for uniformity in measurement, simplification of data, and linearity. A data collection schedule aided the data collection process. A data collection schedule is an instrument that aid in the collection of confidential information. Therefore, the study used the collection schedule as a checklist to ensure the extraction of all relevant data, besides it aided in the conversion of measurements.

3.5 Measurement of Research Variables

Research variables ought to be measurable to enable hypotheses testing, making inferences, and drawing conclusions. Measurement entails the operationalization of research variables. Sekaran and Bougie (2016) define the operationalization of concepts as "operationally defining a concept to render it measurable is done by looking at the behavioral dimensions, facets, or properties denoted by the concept. These are then translated into observable and measurable elements so as to develop an index of measurement of the concept". Operationalization thus entails reducing research

variables into their respective empirical measurements. The study operation operationalized the variables as follows.

3.5.1 Financial Performance

The duo goals of economic entities are maximizing shareholders' wealth and survival through prudent utilization of assets. Thus, financial performance was measured as the return on assets (ROA), which is the ratio of a firm's earnings (before tax) to total assets. ROA shows the extent to which a firm is utilizing its assets. A high ROA means that the firm utilizes its assets efficiently for value (Gul, Irshad, & Zaman, 2011; Shaw *et al.*, 2013; Chiu & Chen, 2017; Van Vu, Tran, Van Nguyen, & Lim, 2018). Thus, a high return on assets is a sign of solid financial and operational performance. ROA is computed as shown below

$$\text{Return on Assets (ROA)} = \frac{\text{Profits before tax}}{\text{Firm total assets}}$$

3.5.2 Intellectual Capital

Previous studies have used different approaches to measure intellectual capital and its dimensions. These approaches include pooled valuation and component-by-component evaluation (Luthy, 1998). The pooled approach uses the VAIC™ model.

Value Added Intellectual Capital (VAIC™) was developed by Ante Pulic (Pulic, 2000). VAIC™ measures the total efficiency of a company and its intellectual capital efficiency. The three efficiencies that constitute VAIC™ are human capital efficiency, structural capital efficiency, and capital employed efficiency. VAIC™ has several shortcomings. First, it fails to measure process capital, innovation capital, and customer capital separately; instead, the three constructs form structural capital (Ståhle, Ståhle, & Aho, 2011; Meles, Porzio, Sampagnaro, & Verdoliva, 2016; Nazari & Herremans,

2007). Second, VAIC^{TM} measures efficiency in using human capital and structural capital, not their absolute values (Zéghal & Maaloul, 2010). Component by component approach is usually preferred since it allows customized measurement of the various intellectual capital dimensions considering that firms are heterogeneous (Eisfeldt & Papanikolaou,2013; Lev & Radhakrishnan, 2005; Li *et al.*, 2017). Thus, this study adopted the component-by-component approach in measuring intellectual capital's various dimensions, as discussed in the following subsections.

3.5.2.1 Human Capital

According to Kannan and Aulbur (2004), human capital is "the accumulated value of investments in employee training, competence, and future." Thus, human capital measures should capture a firm's human resources' present and future economic value. Unlike previous studies (Seleim, 2007; Bae & Lawler, 2000; Khalique *et al.*, 2015; Wright *et al.*, 1999) that measured human capital qualitatively, this study used a quantitative measure. In their study, Wang and Chang (2005) proposed several measures of human capital: employees' level of education, the number of employees, the average year of service, the average age of employees, and the total payroll expenses as a percentage of the net sales.

This study measured human capital as the average annual expenditure on employees (Shaw *et al.*, 2013; Smriti & Das, 2017; Yu, Wang, & Chang, 2015; Scafarto, Ricci, & Scafarto, 2016; Chu, Hsiung, Huang, & Yang, 2008). Employee expenditures consist of salaries, wages, training costs, pension, and other employee benefits (Pulic, 2000; Ståhle *et al.*, 2011). This measure is justified on the following grounds. First, from a strategic view, any expenditure on employees is not an expense than investment because human capital plays a critical role in value creation (Young, Su, Fang, & Fang, 2009; Pucar, 2012; Al-Musali & Ku Ismail, 2016). Second, the extent of a firm's

expenditure in its employees is an indicator of its human resources (Hahn, 2009). The more a firm spends on its human capital, the more the investment contributes to value creation and financial performance (Banghøj, Gabrielsen, Petersen, & Plenborg, 2010; Jalbert, Furumo, & Jalbert, 2010; Banker *et al.,* 2000; Gerhart Minkoff, & Olsen, 1995). Third, the nature of disclosures in published financial reports; specifically, IAS and IFRS do not oblige firms to disclose their employees' level of education and experience. In the context of this study, human capital was measured as shown below

$$\text{Human Capital} = \frac{\text{Annual employee (staff) expenses}}{\text{Total number of employees}}$$

3.5.2.2 Innovation Capital

Innovation capital includes patents, copyrights, trademarks, and knowhow (Hsu&Fang, 2009; Joia, 2000; Van Buren, 2002). A firm's R & D expenditure is widely used as the standard measure of innovation capital (Koroglu & Eceral, 2015; Romijn & Albaladejo, 2002; Gamal, Salah, & Elrayyes, 2011). Wang and Chang (2005) measured innovation capital as R&D intensity and income per R&D. Liebowitz and Suen (2000) proposed several innovation capital measures that include; number/value of patents or software, training expenses/employee, R & D resources/total resources, and the average age of companies patent. Chen *et al.,* (2004) used the ratio of R&D assets to total sales. Cheng *et al.,* (2008) measured innovation capital as R&D expenses/sale x 100. Research and development assets denotes an organization's expenditure on activities aimed at developing products or processes, discovering new knowledge, application of new research findings, development of new product and process designs, designing and testing prototypes, and designing new technology

Further, IAS 38, an accounting standard that guides entities on treating research and development costs, requires that entities charge all research cost to expenses. Also, paragraph 57 provides the capitalization of development costs only after the technical and commercial feasibility of the asset for sale or use has been established. Hence an entity must intend to complete the intangible asset and either uses it or sells it and demonstrates how asset will generate future economic benefits. The standard practice used by commercial banks is to report development costs on innovation as intangible assets.

Additionally, scholar also argues that the main components of innovation expenditure in service industries are on the acquisition of knowledge, technical assistance through consultancy, designing and testing of new services and processes, purchase and development of software, and training of IT experts (Evangelista, Sandven, Sirilli, & Smith, 1998; Sirilli & Evangelista, 1998). In a similar line, Pradhan (2003) conjectures that firms with superior intangible assets such as trademarks, brand names, copyrights, and consumer loyalty are likely to invest more in R&D since brand reputation necessitates a prudent investment of incomes generated from innovative activities. Equally, an investment in R&D assets such as software and ICT components is essentially an investment in innovation capital (Corrado, Haskel, Jona-Lasinio, & Iommi, 2012; Jibril, Kaltenbrunner, & Kesidou, 2018). Moreover, Crass and Peters (2014) claim that innovation capital is a collection of R&D, design & licenses, patent stock, and software. The ratio of R&D assets to total assets has been used in previous studies as a measure of firm innovation (Chibani, Henchiri, & Kefi, 2019; Rathnayake, Kassi, Louembé, Sun, & Ding, 2019). Thus, the study operationalized innovation capital as the ratio R & D assets (less accumulated amortization and accumulated impairment) to total assets. The measure is shown below

$$\text{Innovation Capital} = \frac{\text{R\&D assets}}{Total\ assets}$$

3.5.2.3 Process Capital

Process capital is an organization's backbone comprising key technologies, core processes, and systems that create and deliver value. Process capital is conceptualized as critical internal processes that improve efficiency and create value that includes quality management, managerial capabilities, strategy execution, response, and process improvement (Shang & Wu, 2013; Wang & Chang, 2005; Hung, 2006; Bukh, Larsen, & Mouritsen, 2001).

Some previous studies measured process capital as managerial capability, computed as the capitalized total executive compensations (Namvar, Fathian, Gholamin, & Akhavan, 2012; Yildirim & Allen, 2017). While Liebowitz and Suen (2000) measured process capital as; the ratio of administrative expenses to the number of employees, administrative expenses to total revenue, and IT expenses to administrative costs. Wang and Chang (2005) used several process capital proxies that included productivity per, value-added per employee, operating expenses to sales ratio, current capital turnover, current assets, and plant assets turnover.

However, some of the process capital measures overlap or conflict with proxies of other dimensions of intellectual capital. For example, Wang and Chang (2005) estimates of process capital (productivity per employee, managerial capabilities, and value-added per employee) are measures of human capital (Bontis & Fitz-Enz, 2002; Liebowitz & Suen, 2000). Similarly, Jen Huang and Liu (2005) and Wang and Chang (2005) operationalized process capital as IT expenses, which is a measure of innovation capital (Liebowitz & Suen, 2000).

Chen *et al.*, (2008) and Wang and Chang (2005) measured process capital as plant assets turnover measured as net sales/average plant assets. Interestingly, this proxy is related to measures of financial performance, such as return on assets. Because of this, this study used Liebowitz and Suen (2000), the ratio of administrative expenses to the total income. The measure is illustrated below;

$$\text{Process Capital (PC)} = \frac{\text{Administrative expenses}}{\text{Total income}}$$

3.5.2.4 Customer Capital

According to van Buren (1999), customer capital's key indicators are customer satisfaction, customer retention, product and service quality, the average duration of a customer relationship, and repeat orders. The author proposes elective measures: market growth, customer needs met, marketing effectiveness, annual sales per customer, market share, average customer size, and five largest customers as a percentage of revenues, days spent visiting customers, support expense per customer, and image-enhancing customers as a percentage of revenue. A study by Lou, Chang, Wei, and Sun (2008) argues that customer capital can be measured from six dimensions: basic marketing capability (ability to identify the customers' needs, the ability to serve the customers, marketing communication and customer information), market development capability (ability to develop new customers and enter a market of high potential), market intensity (customer profiles, market share, and trading intensity), customers' response (customer satisfaction, complaints and loyalty), brand equity (brand/company awareness, the price premium, and the perceived quality) and channel coordination (channel intensity and the cooperativeness of distribution channels). Similarly, Liebowitz and Suen (2000) suggest several customer capital measures that include customers per employee, annual sales per customer, and market share. Wang

and Chang (2005) measured customer capital as the number of main customers, growth in sales, advertising expenses, marketing expense ratio to sales, acceptance rate, and customer concentration. At the same time, Hung and Chang (2006) propose measures such as market share, market growth, number of customers, customer loyalty, and average customer size. In the same line, Duffy (2000) avers that the commonly used customer capital measures include the number of customers, annual sales per customer, customer satisfaction level, percentage market share, number of sales staff per customer. This study adopted market share as the measure of customer capital. The Central Bank of Kenya used a weighted composite index comprising assets, deposits, capital, and the number of deposit accounts and loan accounts to compute a bank's market share (CBK, 2014). Therefore, the CBK's composite market share index is a more comprehensive measure of a bank's customer capital.

$$\text{Customer Capital (CC)} = \text{CBK Composite Market Share Index}$$

3.5.3 Income Diversification

A bank's operating income comprises of interest income generated from lending activities and noninterest income earned from non-lending activities. These two revenue streams are usually used to construct the Herfindahl-Hirschman Index (HHI) of income specialization (Jouida, 2018; Nepali, 2018; Thomas, 2002; Stiroh & Rumble, 2006). The HHI is computed as shown below.

$$HHI = \left[\left\{\left(\frac{NIN}{NETOP}\right)^2 + \left(\frac{NET}{NETOP}\right)^2\right\}\right]$$

Where;

NIN: is the non-interest income

NET: is the net interest income

NETOP: is net operating revenue, which equals to non-interest income (NIN) plus net-interest income (NET). As the HHI rises, the bank becomes more specialized and less diversified, HHI varies between 0 and 1.00 (Stiroh & Rumble, 2006; Gurbuz *et al.*, 2013; Mercieca *et al.*, 2007).

Therefore, the study measures income diversification as:

$$\text{Income Diversification (INDIV)} = 1 - \left[\left\{\left(\frac{NIN}{NETOP}\right)^2 + \left(\frac{NET}{NETOP}\right)^2\right\}\right]$$

3.5.4 Control Variables

The study controlled for factors that are likely to affect the endogenous variable to rule out alternative explanations and enhance the exogenous variable's predictive power and the mediator. Specifically, the control variable comprised of;

i) There is a consensus in the empirical literature that firm age affects performance (Lei & Chen, 2019; Loderer & Waelchli, 2010). Firm age was measured as the number of years since incorporation (Ilaboya & Ohiokha, 2016; Aziz & Samad, 2016).

$$\text{Firm Age} = \text{Number of years since incorporation}$$

ii) Firm size was measured as the natural logarithm of banks' total assets (Wan & Zhang, 2018; Pucheta-Martínez & Bel-Oms, 2019; Chiorazzo *et al.*, 2008). Large banks have more resources and opportunities for diversification compared to smaller banks.

$$\text{Firm Size} = \text{Natural logarithm of total assets}$$

iii) Lending Strategy is denoted as the ratio of loans to total assets (Edirisuriya, Gunasekarage, & Dempsey, 2015; Gurbuz *et al.*, 2013; Buch *et al.*, 2019).

This variable controls for the effect of lending strategy on risk-adjusted bank performance

$$\text{Lending Strategy} = \frac{\text{Total Loans and Advance}}{\text{Total Assets}}$$

3.6 Model Specification

The study used panel data for the period 2008 -2017. Several regression models were used since the study's main objective was to investigate the mediation effect of income diversification on the intellectual capital and financial performance relationship. The choice between fixed-effect regression and random-effect estimation technique was based on the Hausman test results. The first model tested the impact of the control variables on financial performance, while the second regression sought to test the effect of intellectual capital on financial performance. The third regression analysis was used to test the mediating effect of income diversification. The econometric models are illustrated below.

$$FP_{it} = \beta_0 + \beta_1 FA_{it} + \beta_2 FS_{it} + \beta_3 LS_{it} + \varepsilon_{it} \ldots\ldots Model\ 1$$

Second, testing the direct effect by regressing financial performance on; human capital, process capital, innovation capital, customer capital and the control variables as indicated below (*path c*)

$$FP_{it} = \beta_0 + \beta_1 HC_{it} + \beta_2 PC_{it} + \beta_3 IC_{it} + \beta_4 CC_{it} + \beta_5 FA_{it} + \beta_6 FS_{it} + \beta_7 LS_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Model\ 2$$

Third, regressing the mediator variable (income diversification) on the predictor variables (human capital, process capital, innovation capital and customer capital) and the controls to establish *path a.*

$$INDIV_{it} = \beta_0 + \beta_1 HC_{it} + \beta_2 PC_{it} + \beta_3 IC_{it} + \beta_4 CC_{it} + \beta_5 FA_{it} + \beta_6 FS_{it} + \beta_7 LS_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Model\ 3$$

Fourth, a regression of the dependent variable on the predictor variables while controlling for the mediator variable and the controls to test for the mediation effect (*path b*).

$$FP_{it} = \beta_0 + \beta_1 HC_{it} + \beta_2 PC_{it} + \beta_3 IC_{it} + \beta_4 CC_{it} + \beta_5 INDIV_{it} + \beta_6 FA_{it} + \beta_7 FS_{it} + \beta_8 LS_{it} + \varepsilon_{it} \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots Model\ 4$$

Where

FPit is the financial performance in period "*t*" for the cross-sectional unit "*i*"

HC_{it} is the human capital in period "*t*" for the cross-sectional unit "*i*"

PC_{it} is the process capital in period "*t*" for the cross-sectional unit "*i*"

IC_{it} is the innovation capital in period "*t*" for the cross-sectional unit "*i*"

CC_{it} is the customer capital in period "*t*" for the cross-sectional unit "*i*"

$INDIV_{it}$ is the income diversification in period "*t*" for the cross-sectional unit "*i*"

FA_{it} is the firm age in period "*t*" for the cross-sectional unit "*i*"

FS_{it} is the firm size in period "*t*" for the cross-sectional unit "*i*"

LS_{it} is the lending strategy in period "*t*" for the cross-sectional unit "*i*"

ε_{it} = error term

β_0 is the intercept.

$\beta_1, \beta_2, \beta_3, \beta_4,$ *and* β_5 are the beta-coefficients

"i" is the cross-section units (31 banks)

"*t*" is the period (2008 to 2017)

3.7 Diagnostic Tests

Regression diagnostic tests are techniques for exploring problems inherent to regression analysis and determining whether certain assumptions appear reasonable (Fox, 1991). Regression models have several assumptions that must hold before data analysis. These assumptions include linearity, multivariate normality, multicollinearity, and homoscedasticity (Hayes, 2018).

3.7.1 Linearity Test

Regression models assume a linear relationship between the dependent variable and the independent variable. If the assumptions of linearity are violated, the interpretation of the regression coefficient will be rendered futile. The premise of linearity was tested through augmented component-plus-residual plots. The relationship was not linear; therefore, the variables were log-transformed.

3.7.2 Normality Test

Regression models assume multivariate normality implying that residuals are normally distributed. Non-normality can influence sampling variance. The normality assumption assures that the ρ-values for the t-tests and F-test will be valid. The study used the Jarque-Bera, and Shapiro Wilk tests to test for normality. The null hypothesis for the test is normality, implying that the ρ-value is lower than the Prob> chi(2) for normality.

3.7.3 Multicollinearity Test

Multicollinearity means that independent variables are positively correlated with each other. Multicollinearity affects accuracy in estimating the standard error of regression coefficients. Variance Inflation Factor (VIF) was used to test multicollinearity. According to VIF, multicollinearity is present if the values are greater than 10. The

remedies for severe multicollinearity include first differencing, dropping one variable, increasing the sample size, or pooling the data (Gujarati, 2012).

3.7.4 Homoscedasticity Test

Homoskedasticity assumes that the variance of error terms is similar across the values of the independent variable. The variance of the error term should be constant. Heteroskedasticity affects the validity of inference, the statistical power of hypothesis tests, and the accuracy of the regression coefficients' accuracy intervals. The study conducted several heteroskedasticity tests that comprised the Breusch-Pagan/Cook, the Cameron and Trivedi's test, and the White general test. The null hypothesis of these tests is homoskedasticity, whereas the alternative hypothesis is heteroskedasticity.

3.7.5 Autocorrelation Test

According to Gujarati (2012), autocorrelation is "correlation between members of a series of observations ordered in time." The presence of autocorrelation renders the estimated values of t, F, and $\chi 2$ incorrect. Tests for autocorrelation in panel data include the Baltagi-Wu test, the Durbin Watson test, and the Breusch-Godfrey test. Drukker (2003) contends that these tests have numerous specification assumptions such as individual-effects, need for non-stochastic regressors, and inability to work in the presence of heteroscedasticity. The study used the Wooldridge test that as it is not affected by the said limitations besides being capable of dealing with unbalanced panel data and with and without gaps in the observations (Drukker, 2003).

3.7.6 Stationarity Test

A fundamental assumption of regression analysis is that the time series data is stationary. Stationarity is the probability that time series variables do not change over time. Nonstationary leads to spurious regression relationships and the validity of t-test

and F-tests. Stationary infers that the mean, variance, and auto-covariance are time-invariant. The study conducted several unit root tests that included Levin- Lin Chu, Breitung, and Im-Pesaran-Shin. If the data is not stationary, the conventional cure is de-trending the time series using first differences

3.7.7 Hausman Test

The choice between fixed effect and random effect regression depends on the results of the Hausman test. Fixed effect regression allows one to control for time-invariant unobserved individual effects correlated with the observed independent variables. The fixed-effect model assumes that any time-invariant characteristics are unique to an individual, hence not associated with other individuals' characteristics. The random-effect assumes that the variation across entities is random and uncorrelated with the predictor or the independent variables (Greene, 2003).

Hausman test has two hypotheses; the null hypothesis where the preferred model is random-effect and the alternative supporting fixed-effect. If ρ-value <0.05, the null hypothesis is rejected; hence the fixed-effect model should be used; otherwise, the random-effect model.

3.8 Test of Mediation Effect

According to Hayes (2018), the purpose of mediation analysis is to establish the extent to which some putative causal variable (X) influences some outcome (Y) through one or more mediator variables (M). This study sought to establish the mediating role of income diversification on intellectual capital and financial performance relationship. The steps followed in testing for mediation are as follows;

Step 1: Testing the relationship between the predictor variable and the mediator (path a). Hence, the mediator is regressed on the predictor variables, as shown below.

$$M = i_m + a_1X_1 + a_2X_2 + \ldots + a_kX_k + \varepsilon_m \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{path a}$$

Step 2: Testing for the mediation effect by regressing the dependent variable on the predictor variable while controlling for the mediator (*path b*).

$$Y = i_{y*} + C`_1X_1 + C`_2X_2 + \ldots + C`_kX_k + \beta M + \varepsilon_{y*} \ldots\ldots\ldots\ldots\ldots\ldots\text{path b}$$

Step 3: Test for total direct effect by regressing the dependent variable on the predictor variable, which is equal to path *a* multiplied by path *b* (Hayes, 2018)

$$Y = i_y + C_1X_1 + C_2X_2 + \ldots + C_kX_k + \varepsilon_y \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\text{path c}$$

Step 4: Establishing the significance of the mediation coefficients c'_1, c'_2, *and* c'_3 to c'_k. These coefficients are computed by multiplying the beta coefficients in the path *a* (step 1) with the mediator's beta coefficient (β) in path *b*. The significance of the calculated beta coefficient c`(ab) was tested using the Preacher and Hayes's Sobel test online calculator (Zhao, Lynch Jr, & Chen, 2010)

3.9 Data Analysis

Data analysis is the application of reasoning to understand the data, and it encompasses looking for consistent patterns and summarizing important details discovered in the investigation. Data analysis was preceded by data entry, data cleaning, and converting the raw data into the various proxies measuring the research variables. Data were analyzed through descriptive and inferential statistics. Descriptive statistics aimed to summarize the data into mean, minimum and maximum values, and standard deviation. The study used Pearson's pairwise correlation to estimate the direction and magnitude of the research variables. The study's hypotheses were tested by interpreting the beta coefficients and ρ-values of multivariate regression estimation equations. The Hausman test results guided the choice between the fixed effect regression and the random effect regression. Further, the study used STATA version 13 to run the estimation equations.

3.10 Ethical Consideration

Ethical considerations focus on data collection, respondents' privacy, and the use of the data collected. This study posed few, if any, ethical concerns due to the following reasons. First, the study used published financial reports; thus, neither questionnaires nor respondents were required to collect data. Second, the data was publicly available on the banks' websites and CBK bank supervisory reports implying there was no infringement of intellectual rights. Moreover, CBK requires that banks upload their financial statements on their website to ensure easy access by the public and investors.

3.11 Chapter Summary

This chapter presented the methodology used in the study. The positivist paradigm guided the study. The study adopted a longitudinal and explanatory design since the data was time series, and the objective of the study was to establish the causal-effect relationship between the variables. The target population was all the 42 commercial banks in Kenya, and the inclusion/exclusion criterion was based on whether the bank was in operation over the entire study period. Data was extracted from the individual bank's annual reports and the Central Bank of Kenya Bank Supervision Annual Reports over the period 2008-2017. The study used the component-by-component model to operationalize intellectual capital; the individual components of intellectual capital were considered the independent variables. The proxy for financial performance was return on asset (ROA), while the Herfindahl-Hirschman Index measured income diversification. The study controlled firm age, firm size, and lending strategy to account for variation in financial performance that might be wrongly attributed to intellectual capital and income diversification. Before the analysis, the data was log-transformed. Several panel data diagnostic tests: unit root, normality, multicollinearity, autocorrelation, and homoskedasticity, were performed to ensure that the data was

suitable for regression analysis. The data were analyzed using STATA version 13, and the Hausman test guided the choice of fixed effect or random effect. The next section presents the findings of the study and the interpretation.

CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

The previous chapter highlighted the rationalization and justification for adopting the various statistical techniques and data analysis procedures. This chapter presents the results from all those procedures and analyses. The findings are presented in five key sections; descriptive statistics, diagnostic tests, correlation analysis, hypotheses testing, and mediation results.

4.2 Descriptive Statistics

The descriptive statistics for the untransformed data are presented in Table 4.1. The mean financial performance, measured by return on asset, was 0.026 (minimum= -0.096 and maximum = 0.077; standard deviation = 0.018). The mean human capital, was 2.112 (minimum= 0.846 and maximum = 9.692; standard deviation = 0.819). Further, process capital had a mean of 0.528 (minimum= 0.116 and maximum = 0.984; standard deviation = 0.174). While the mean value of innovation capital was 0.006 (minimum= 0.002 and maximum = 0.035; standard deviation = 0.006). Besides, the average customer capital was at a 3.09 (minimum= 0.002 and maximum = 20.620; standard deviation = 4.600). Income diversification had a mean value of 0.401 (minimum= 0.001 and maximum = 0.512; standard deviation = 0.092), inferring moderate level of diversification. Firm age had a mean of 34.819 years, taking 2017 as the reference point (minimum= 1.000 and maximum = 121.00; standard deviation = 29.220), the mean firm size was 17.371 (minimum= 14.643 and maximum = 15.761; standard deviation = 1.306). The mean lending strategy was 0.574 (minimum=0.019 and maximum = 0.864; standard deviation = 0.122)

Table 4.1 Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	310	0.026	0.018	-0.096	0.077
HC	310	2.112	0.819	0.846	9.692
CC	310	3.089	4.660	-2.350	20.620
IC	310	0.006	0.005	0.003	0.036
PC	310	0.528	0.174	0.116	0.984
INDIV	310	0.401	0.092	0.001	0.512
FA	310	34.819	29.220	1.000	121.00
FS	310	17.371	1.306	14.643	20.136
LS	310	0.574	0.122	0.019	0.864

Source: Author 2019

4.3 Robustness Checks

Prior to selecting which panel regression model to use, and to eliminate spurious regression problems some robustness tests were carried out, such as a normality tests, multicollinearity, unit root test, test for heteroscedasticity , autocorrelation test, and specification error test

4.3.1 Normality Tests

Skewness/Kurtosis shows the number of observations (308) and the probability of skewness, which is 0.0221, implying that skewness is not asymptotically normally distributed (ρ-value of skewness < 0.05). Furthermore, Pr (Kurtosis) indicates that kurtosis is asymptotically distributed (ρ-value of kurtosis > 0.05).

Finally, the joint Prob> chi (2) is 0.0619 > 0.05; thus, the skewness/kurtosis test results for normality are not conclusive and sufficient evidence for rejecting the null hypothesis.

Table 4.2 Skewness/Kurtosis tests for normality

Skewness/Kurtosis tests for normality					
			-------	Joint	------
Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	chi2(2)	Prob>chi2
Myresiduals	308	0.0221	0.5735	5.57	0.0619

Source: Author 2019

To confirm normality two additional tests of were done; Jarque-Bera and Shapiro Wilk tests of normality. For the Jarque-Bera Test, if the ρ-value is lower than the Pro>Chi (2) value the null hypothesis cannot be rejected implying that the residuals are normally distributed. As per table 4.3, the null hypothesis cannot be rejected (*Prob> chi (2) = 0.0682 > 0.05*). The implication is that there is no violation of the normal distribution assumption of error terms as the residuals are normal.

Table 4.3 Jarque-Bera normality test

Jarque-Bera	normality test: 5.37 Chi(2)	0.0682
Jarque-Bera	test for Ho: normality:	

Source: Author 2019

The null hypothesis of the Shapiro-Wilk test is that the residuals are normally distributed. The results of the Shapiro Wilk test are shown in Table 4.4. Since the ρ-value (0.0519) is larger than 0.05, the hypothesis of normality cannot be rejected.

Table 4.4 Shapiro Wilk Normality Test

Variable	**Obs**	**W**	**V**	**Z**	**Prob>z**
Myresiduals	308	0.98636	2.976	2.563	0.0519

Source: Author 2019

4.3.2 Multicollinearity

Multicollinearity means that two or more of the independent variables are highly correlated. Multicollinearity can have damaging effects on the results of multiple regressions. Statistically, multicollinearity is present when correlation coefficients are above 0.9 (Hair, 2006; Saunders, Lewis, & Thornhill, 2009), 0.8 (Garson, 2013; Gujarati, 2012), and 0.7 (Sekaran & Bougie, 2010). Variance inflation factor (VIF) is an additional method of testing multicollinearity. Multicollinearity is present if the VIF

value is higher than 10 (Gujarati, 2012). The results of the VIF test are shown in Table 4.5. The values range between 1.09 and 4.59; which, are less than 10, implying the research variables do not suffer from multicollinearity.

Table 4.5 Multicollinearity

Variable	VIF	1/VIF
CC	4.59	0.217800
FS	4.40	0.227117
INDIV	1.72	0.580833
FA	1.58	0.632699
HC	1.50	0.665527
PC	1.45	0.691438
IC	1.34	0.744540
LS	1.09	0.915166
Mean VIF	2.21	

Source: Author 2019

4.3.3 Unit root test

Econometric models produce non-sensible or spurious regression results if data is non-stationary (Gujarati, 2012). Non-stationary data refers to a data series that does not have a constant mean, variance, and auto-covariance at various lags over time (Hossain & Hossain, 2015).

Though recent, it is increasingly becoming essential to check stationarity in panel data (Maddala & Wu, 1999). Testing for stationarity means that the mean and variance of variables are time-invariant. In economics and finance, time related or seasonal shocks of one period may strongly influence subsequent periods. This study applied Levin- Lin Chu, Breitung, and Im-Pesaran-Shin. The following hypotheses were considered in conducting the unit root test.

Null hypothesis (Ho): Panel data contains unit root [non-stationary].

The alternative hypothesis (Ha): Panel data is stationary.

Looking at the *p*- values in Table 4.6, the null hypothesis can be rejected at all conventional significance levels for all the study variables, which means that there is no unit root in our data. Accordingly, the means and variances of the data are not time-dependent; hence, regression analysis can produce meaningful results (Gujarati, 2012).

Table 4.6 : Results of unit root test

	Levin-Lin-Chu	**Breitung**	**Im-Pesaran-Shin**
ROA	-8.58	-3.26	-1.63
p value	0.00	0.00	0.01
HC	-20.89	0.99	-1.81
p value	0.00	0.04	0.04
PC	-27.23	-3.39	-1.51
p value	0.00	0.00	0.07
IC	-12.03	-2.12	-1.51
p value	0.00	0.02	0.07
CC	-4.74	-0.12	1.65
pvalue	0.00	0.00	0.95
INDIV	-32.76	-4.75	9.01
p value	0.00	0.00	0.00
FA	2.42	10.68	-1.74
p value	0.02	0.00	0.04
FS	-14.87	-0.63	-1.21
p value	0.00	0.05	0.01
LS	-4.48	-0.63	-2.64
p value	0.00	0.02	0.00

Source: Author 2019

4.3.4 Test for Heteroskedasticity

The Breusch-Pagan/ Cook-Weisberg test, the White's test and Cameron & Trivedi's decomposition of IM-test were used to test for heteroskedasticity, and the results are presented in Table 4.7, 4.8 and 4.9. The test uses a cluster-robust standard error estimator to control heteroskedasticity. Using this robust standard error estimator

(cluster), the study assumed that observations should be independent across clusters (Gould & Rogers, 1994). The findings in Table 4.7 indicated that the Chi2 (1) value was *153.910 and ρ-value of 0.060*, revealing that the null hypothesis was not rejected. Thus, the assumption of constant variance was not violated.

Table 4.7 Breusch-Pagan / Cook-Weisberg Test for Heteroscedasticity

Ho: **Homoskedasticity**

Variables: Myresiduals	
chi2(1) =	153.910
Prob > chi2 =	0.060

Source: Author 2019

Using the White test, and the findings presented in Table 4.7, the *Prob > Chi2 = 0.057*, implying that the null hypothesis was not rejected implying that the assumption of homoskedasticity was not violated.

Table 4.8 White's Test for heteroscedasticity

White's	test for Ho:	Homoscedasticity	
	against Ha:	unrestricted heteroscedasticity	
	chi2(44)		72.15
	Prob > chi2		0.057

Source: Author 2019

Table 4.9 shows that the probability value of the chi-square statistic is less than 0.05. Therefore, the null hypothesis of constant variance cannot be rejected at a 5% level of significance.

Table 4.9 Cameron & Trivedi's decomposition of IM-test

Source	**chi2**	**Df**	**P**
Heteroskedasticity	72.15	44	0.057
Skewness	13.59	8	0.0931
Kurtosis	1.73	1	0.1887
Total	87.47	53	0.002

Source: Author 2019

4.3.5 Autocorrelation Test

Several tests can be conducted to ascertain autocorrelation: Wooldridge**,** Durbin Watson, and Breusch-Godfrey. However, Drukker (2003) argues that the results of most of these tests are only valid if the underlying specification assumptions; for instance, individual affects types and need for non-stochastic regressors hold besides their inability to work where heteroscedasticity is present. As a result, Drukker (2003) recommends Wooldridge (2002), which he says is immune from such limitations. Besides, the test can deal with unbalanced panel data with and without gaps in the observations. The *ρ-values* in Table 4.10 indicate that the null hypothesis cannot be rejected at a 5% significance level. Therefore, there is no autocorrelation in the data.

Table 4.10 Wooldridge test for autocorrelation in panel data

Ho:	No	first-order autocorrelation
	F(	1, 30) = 0.910
		Prob > F = 0.3478

Source: Author 2019

4.4.6 Specification Error Test

Table 4.11 highlights the results of the Ramsey RESET test. From the findings in the table, the probability values of the computed statistics in the Ramsey RESET test are more than the threshold value of 0.05; implying the model does not seem to be misspecified.

Table 4.11 Ramsey RESET (test using powers of the fitted values of FP)

Ho:	model has no omitted	Variables
	F(3, 296) =	11.97
	Prob > F =	0.08

Source: Author 2019

4.4 Correlation Analysis

Correlation analysis shows the nature and magnitude of the relationship between research variables. The coefficients of the correlation analysis are presented in a matrix,

as shown in Table 4.12. Pearson pairwise correlation results in the table show that human capital and financial performance are positively correlated (*r= 0.598; ρ< 0.05*). The table further shows that process capital and financial performance were positively correlated (*r = 0.472; ρ< 0.*05). Also, the correlation results indicated that innovation capital and financial performance had a positive correlation (*r = 0.345; ρ< 0.05*)

Further, the correlation between customer capital and financial performance was strong and positive (*r =0 .713; ρ< 0.05*). Besides, income diversification and financial performance had a strong and positive correlation (r = 0.699; ρ< 0.05). In addition, firm age was positively related to financial performance (r=0.339; p < 0.05). The output also shows that firm size was positively correlated to financial performance (r = 0.4981; ρ< 0.05. Finally, lending strategy and financial performance had a weak negative correlation (r = -0.122; ρ< 0.05).

Table 4.12 Results of Pairwise Correlation Analysis

	ROA	HC	PC	IC	CC	INDI	FA	FS	LS
ROA	1.0000								
HC	0.5976*	1.0000							
PC	0.4716*	0.3989*	1.0000						
IC	0.3449*	0.2538*	0.2562*	1.0000					
CC	0.7132*	0.4057*	0.2426*	0.2548*	1.0000				
INDIV	0.6992*	0.4278*	0.4486*	0.3535*	0.4557*	1.0000			
FA	-0.3399*	-0.3573*	0.0969	0.0435	-0.5231*	0.1957*	1.0000		
FS	0.4981*	0.3283*	0.1470*	0.3297*	0.5501*	0.3020*	0.5438*	1.0000	
LS	-0.1235*	-0.0728	0.1546*	0.0469	-0.1211*	-0.1071	-0.0579	0.0394	1.000

* Correlation is significant at the 0.05 level (2-tailed).

Source: Author 2019

4.5 Testing the Effect of the Control Variables

Before investigating the effect of the predictor variables on the dependent variable, the study examined the impact of the control variables, firm size, firm age, and the lending

strategy, on commercial banks' financial performance. The results of the Hausman test (*chi2 (3) = 11.8 and Prob >chi2= 0.0079< 0.05*), as shown presented in Appendix I, supported the use of the fixed-effect regression model. Table 4.13 shows that firm size positively and significantly affects financial performance (β*= 0.486,* ρ*<0.05*). In contrast, firm age (β*= -0.504,* ρ*<0.05*), and lending strategy (β*= -0.355,* ρ*<0.05*) had a negative effect on the financial performance of commercial banks in Kenya.

Table 4.13 Regression results for control variables

		Number of obs		=	310	
Fixed-effects (within) regression		Number of groups		=	31	
Group variable: firm		Obs per group: min		=	10	
R-sq: within = 0.1124		Avg		=	10	
between = 0.1097		Max		=	10	
overall = 0.0899		F(3,276)		=	11.65	
corr(u_i, Xb) = -0.4653		Prob > F		=	0.000	
ROA	**Coef.**	**Std. Err.**	**t**	**P>t**	**[95% Conf.**	**Interval]**
FA	-0.504	0. 193	-2.61	0.009	-0.884	-0.124
FS	0.486	0.094	5.17	0.003	0.300	0.671
LS	-0.355	0.136	-2.61	0.010	-0.623	-0.087
_cons	-4.665	0.598	-7.80	0.001	--5.842	-3.488
sigma_u	0.269					
sigma_e	0. 281					
Rho	0.478	(fraction of variance due to u_i)				

F test that all u_i=0: F(30, 276) = 4.09 Prob > F = 0.0000

4.6 Testing the Direct Effect

Testing the direct effect entails examining the influence of the predictor variables (human capital, process capital, innovation capital, and customer capital) on the dependent variable (financial performance). The regression results of the direct effect for both the random effect model and the fixed effect model are shown in Table 4.14 and Table 4.15, respectively.

4.6.1 Results of the Random Effect Regression

The random effect model estimates the coefficients based on the assumption that the individual or group effects are uncorrelated with other independent variables. The

regression results for the random model are as illustrated in Table 4.14. The random model shows that intellectual capital (human capital, process capital, customer capital, innovation capital, and firm size) explained 69.35% variation in financial performance. From the table, human capital had a positive and significant effect on financial performance ($\beta= 0.377, \rho<0.05$). With one unit increase in human capital, financial performance increased by *0.377* units.

Similarly, process capital had a positive and significant effect on financial performance ($\beta= 0.119, \rho<0.05$). Therefore, a one percent increase in process capital caused an 11.9% improvement in financial performance. The model also revealed that innovation capital had a positive and significant effect on financial performance ($\beta= 0.077, \rho<0.05$), implying that a unit increase in innovation capital improved financial performance by 0.077 units. Also, customer capital had a positive and significant effect on financial performance ($\beta= 0.329, \rho<0.05$). Noticeably, a one percent increase in customer capital enhanced financial performance by 32.9%.

Table 4.14 Financial Performance on Intellectual Capital -Random Effect

Random-effects GLS regression	Number of obs	=	310
	Number of groups	=	31
Group variable: firm	Obs per group: min	=	10
R-sq: within = 0.6935	Avg	=	10
between = 0.7628	Max	=	10
overall = 0.7093	Wald chi2(7)	=	685.94
corr(u_i, X) = 0 (assumed)	Prob > chi2	=	0.000

ROA	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
HC	0.377	0.044	8.52	0.000	0.290	0.463
PC	0.119	0.201	5.81	0.000	0.079	0.160
IC	0.077	0.016	4.63	0.000	0.044	0.109
CC	0.379	0.028	13.18	0.000	0.322	0.435
FA	0.021	0.061	0.35	0.727	-0.098	0.141
FS	-0.210	0.048	-4.39	0.000	-0.304	-0.116
LS	-0.246	0.080	-3.03	0.002	-0.404	-0.087
_cons	-1.432	0.345	-4.14	0.000	-2.109	-0.755

sigma_u	0.111	
sigma_e	0.163	
Rho	0.319	(fraction of variance due to u_i)

Source: Author 2019

4.6.2 Results of the Fixed Effect Regression

The fixed-effect model considers each firm's independence or cross-sectional unit incorporated in the sample allowing the intercept varies for each company but still assumes that the slope of the coefficients is stable within the companies. Table 4.15 highlights the regression results for the fixed model. The findings indicate that intellectual capital explains 70.94 % variation in the financial performance of commercial banks. From the table, human capital had a positive and significant effect on firm financial performance ($\beta= 0.348, \rho<0.05$). Specifically, if human capital increased by one unit, financial performance improved by 0.348 units.

Moreover, the study found that process capital positively and significantly affected firm financial performance (*β= 0.111, ρ<0.05*). Consequently, a 1% increase in process capital contributed to an 11.1 % increase in firm financial performance. Besides, innovation capital had a positive and significant effect on firm financial performance (*β= 0.077, ρ<0.05*). One unit increases in innovation capital led to a 0.077 unit increase in firm financial performance. Additionally, the results showed that customer capital positively and significantly affected firm financial performance (*β= 0.466, ρ<0.05*). Specifically, one unit increase in customer capital caused financial performance to increase by 0.431 units. Firm age had a positive and significant effect on financial performance (*β= 0.337, ρ>0.05*). In contrast, firm size (*β= -0.207, ρ<0.05*) and lending strategy (*β= -0.258, ρ<0.05*) had a negative effect on bank financial performance.

Table 4.15 Financial Performance and Intellectual Capital- Fixed Effect

		Number of obs		=	310	
Fixed-effects (within) regression		Number of groups		=	31	
Group variable: firm		Obs per group: min		=	10	
R-sq: within = 0.7094		Avg		=	10	
between = 0.7130		Max		=	10	
overall = 0.6327		F(7,272)		=	94.87	
corr(u_i, Xb) = -0.7361		Prob > F		=	0.000	
ROA	**Coef.**	**Std. Err.**	**T**	**P>t**	**[95% Conf.**	**Interval]**
HC	0.348	0.047	7.39	0.000	0.255	0.441
PC	0.111	0.021	5.44	0.000	0.071	0.152
IC	0.076	0.017	4.40	0.000	0.042	0.110
CC	0.466	0.036	12.79	0.000	0.394	0.537
FS	0.337	0.118	2.84	0.005	0.103	0.570
FA	-0.207	0.065	-3.17	0.002	-0.336	-0.078
LS	-0.258	0.081	-3.71	0.002	-0.417	0.098
_cons	-1.795	0.390	-4.59	0.001	-2.565	-1.026
sigma_u	0.250					
sigma_e	0.163					
Rho	0.703	(fraction of variance due to u_i)				
F test that all u_i=0:	F(30, 272) =	6.35		Prob > F = 0.0000		

Source: Author 2019

4.7 Hausman test

Panel data is usually analyzed using either the fixed effect regression model or the random effect regression model. The results of the hausman test are usually used to determine the choice betwen the fixed effect model (FEM) and the random effect model (REM). The test examines whether the unique errors (u_i) are correlated with the regressors. The null hypothesis asserts that REM is efficient, while the alternative hypothesis shows that FEM is effective (Hausman, 1978). Rejecting the null (*ρ-value < 0.05*) implies that the fixed effect model is preferred (Green, 2008). Based on the results in Table 4.16, the null hypothesis could not be rejected (that the difference in coefficients not systematic) since the ρ- value= 0.0988 of the chi-square was greater than 0.05. Accordingly, the study used the random effect regression model to test direct hypotheses.

Table 4.16 Hausman Test: Direct Effect

	---- Coefficients ----			
	(b) Fe	(B) Re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
HC	.3481119	.3766963	-.0285843	.0162972
PC	.1114508	.1196937	-.0082429	.
IC	.0762276	.0765848	-.0003572	.0051627
CC	.4661359	.3790703	.0870656	.0223823
FS	.3368772	.0214024	.3154748	.1016389
FA	-.2072328	-.2103396	.0031069	.0445219
LS	-.2577253	-.2455312	-.0121941	.0072673

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg
Test: Ho: difference in coefficients not systematic
chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 12.05
Prob>chi2 = 0.0988
(V_b-V_B is not positive definite)

Source: Author 2019

4.8 Testing direct hypothesis

Hypothesis 1(Ho1) stated that *human capital has no significant effect on commercial banks' financial performance in Kenya*. The findings in Table 4.14 confirm that human capital had coefficients of the estimate, which was significant based on $\beta 1 = 0.377$ *and* ρ*-value*<0.05; the null hypothesis (H_{01}) was rejected. It was concluded that human capital had a positive and significant effect on financial performance. Further, a unit change in human capital led to a 0.377 unit change in financial performance. Crook *et al.,* (2011), Felício *et al.,* (2014), and Bae and Lawler (2000) reported similar findings. However, Wright *et al.,* (1999), who focused on oil refineries in the U.S, found that human capital did not affect financial performance, which can be explained by the fact that manufacturing and processing firms are primarily reliant on process capital. Smriti and Das (2017), Firer and Mitchell Williams (2003), and Kor and Mahoney (2005) found that human capital had a negative effect on organization performance.

Hypothesis 2(H_{02}) stated that; *process capital has no significant effect on commercial banks' financial performance in Kenya*. The findings in Table 4.14 indicate that process capital had a positive and significant impact on financial performance ($\beta 2 = 0.119, \rho < 0.05$); hence H_{02} is rejected and it is concluded that process capital has a significant influence on commercial bank financial performance. Empirically, a unit increase in process capital led to a 0.119 unit increase in financial performance. The findings are supported by empirical literature (Shang & Wu, 2013; Wang & Chang, 2005). However, Cheng *et al.,* (2008) reported a negative effect.

Hypothesis 3(H_{03}) stated that; *innovation capital had no significant effect on commercial banks' financial performance in Kenya*. The regression results in Table 4.14 illustrate that innovation capital positively and significantly impacted financial

performance ($\beta 3 = 0.077, \rho<0.05$); thus H_{03} is rejected. The results indicated that a one-unit increase in innovation capital caused a 0.07 unit increase in financial performance. These findings are supported by previous studies (Yang & Kang, 2008; Kijek, 2014; Saunila, 2014); though, conflict with Yuliya *et al.,* (2018), who found that innovation capital had a negative effect on financial performance.

Hypothesis 4(H_{04}) stated that; *customer capital has no significant effect on commercial banks' financial performance in Kenya*. As illustrated in Table 4.14, the regression output shows that customer capital had coefficients of estimate, which was significant basing on $\beta 4 = 0.379$ (ρ-*value* $= 0.000$, which is less than $\alpha = 0.000$, thus H_{04} was rejected. It was concluded that customer capital had a positive and significant effect on firm financial performance. The findings agree with previous studies (Casu, Dontis-Charitos, Staikouras, & Williams, 2016; Mention & Bontis, 2013; Örnek & Ayas, 2015; Yang & Kang, 2008; Wang & Chang, 2005). However, they conflict with Chiu and Chen (2017), who found a negative causality.

Hypothesis 6(Ho6) stated that; *income diversification has no significant effect on commercial banks' financial performance in Kenya*. This hypothesis was tested by regressing financial performance on intellectual capital while controlling for the income diversification, as shown in Table 4.18. Consistent with theory, the findings showed that income diversification positively and significantly affected financial performance ($\beta 5 = 0.130; \rho <0.05$). The empirical results suggested that a one percent change in income diversification led to a 13.0% change in firm financial performance. The findings coincided with those of Kim *et al.,* (1993), Rumelt (1974), Chiorazzo *et al.,* (2008), and Baele *et al.,* (2007). On the other hand, they conflict with DeYoung and Rice (2004), Lepetit *et al.,* (2008), and Fauver *et al.,* (2003), who reported a diversification discount. Nisar, Peng, Wang, and Ashraf (2018) found mixed results in

the same line. The variation in findings was attributed to contextual issues. The mentioned studies were conducted in developed and emerging countries with relatively advanced banking sectors, hence little diversification incentives.

4.9 Results of the Mediating Effect

4.9.1 Effect of Intellectual Capital on Income Diversification

Mediation involves determining the significance of the indirect effect of the predictor variable on the dependent variable through a mediator. The indirect effect is calculated as the product of *path a* and *path b (ab*); where path a is the regression of income diversification (mediator) on intellectual capital (predictor variables) and path b is the regression of financial performance (dependent variable) on intellectual capital, while controlling for income diversification. The fixed effect regression results of *path a* are shown in Table 4.17, the fixed effect regression model was selected based on the Hausman test illustrated in Appendix III (chi2 *(7) = 38.84; Prob>chi2 = 0.000*).

The findings in Table 4.17 shows that human capital had a coefficient of estimate that was significant as shown by $\beta_1 = 0.524$ and $\rho < 0.05$. Thus, human capital had a positive and significant effect on income diversification. This suggests that there is up to a *0.524* unit increase in income diversification for each unit increase in human capital. The result also showed that process capital had a coefficient of estimate which was significant basing on $\beta_2 = 0.371$ *and* ρ*-value = 0.00 <0.05*, implying process capital had a positive and significant effect on income diversification. This indicates that for each unit increase in process capital, there is 0.330 units increase in income diversification.

Further, the study found that innovation capital had a coefficient of estimate of $\beta_3 = 0.206$ and $\rho<0.05$ implying that innovation capital had a positive and significant effect on income diversification Empirically, a unit increase in innovation capital led to a

0.206 unit increase in income diversification. Besides, the study found that customer capital had coefficients of estimate which was significant basing on $\beta_4 = 0.524$ and ρ-*value = 0.00 < 0.05*, implying that customer capital has a significant effect on income diversification. The results suggest that customer capital is a key determinant of income diversification. As such, for every 1% increase in customer capital, there is also a 52.4 % increase in income diversification. Further, the study found that firm size ($\beta = 0.705$, $\rho < 0.05$), firm age ($\beta = -0.659$, $\rho < 0.05$) and lending strategy ($\beta = -0.639$, $\rho < 0.05$) had a significant effect on income diversification. In summary, the findings confirmed that intangible assets influence a bank's decision to diversify into non-lending activities and ultimately its performance. Therefore, banks should leverage their intellectual capital assets through income diversification for competitive advantage and superior performance.

Table 4.13 Income Diversification and Intellectual Capital

Fixed-effects (within) regression			Number of obs = 310			
Group variable: firm			Number of groups =31			
R-sq: within = 0.4429			Obs per group: min = 10			
between = 0.4055			Avg = 10			
overall = 0.3498			Max = 10			
			F(7,272) = 30.90			
corr(u_i, Xb) = -0.6321			Prob > F= 0.0000			
INDI	**Coef.**	**Std. Err.**	**t**	**p>|t|**	**[95% Conf.**	**Interval]**
HC	0.524	0.138	3.80	0.001	0.253	0.796
PC	0.371	0.061	6.18	0.000	0.253	0.489
IC	0.206	0.051	4.06	0.003	0.106	0.306
CC	0.524	0.106	4.91	0.000	0.314	0.734
FA	0.704	0.347	2.03	0.043	0.021	1.389
FS	-0.659	0.191	-3.44	0.001	-1.036	-0.282
LS	-0.639	0.241	-2.68	0.008	-1.037	-0.170
_cons	1.177	1.446	1.03	0.305	-1.076	3.431
sigma_u	0.384					
sigma_e	0.476					
Rho	0.394	(fraction of variance due to u_i)				

F test that all u_i=0: F(30, 272) = 2.52 Prob > F = 0.0001

Source: Author 2019

4.9.2 Intellectual Capital, Income Diversification and Financial Performance.

The key objective of the study was to investigate the effect of intellectual capital on financial performance and the mediating effect of income diversification. Three models were used to test for mediation. Model 1, shows the results of the regression of the mediator on the predictor variables. The purpose of this model is to establish the beta coefficients of path a (a_1, a_2, a_3 and a_4). Model 2, shows the output of the regression of the financial performance on the intellectual capital (human capital, process capital, innovation capital and customer capital) while controlling for the income diversification, which is meant to establish path b (the beta coefficient of *b*). The estimate model used is the fixed effect regression based on the results of the Hausman test, as shown in Appendix IV (*chi2 (8) = 39.92; Prob>chi2 = 0.0000*). Model 3 illustrates the computed coefficients of the indirect path *ab,* that is, the coefficients of a_1b, a_2b, a_3b *and* a_4b that were used to test hypothesis H_{5a} H_{5b}, H_{5c} *and* H_{5d} respectively. The criteria for determining the mediating effect was the significance of the beta coefficient *c` (a x b),* as argued by Zhao *et al.,* (2010*).* The coefficient was computed by multiplying the beta coefficients of Model 1 (*path a*) and the coefficient of the mediator, *b,* as shown in model 2. The significance of indirect path, *ab, was* tested using Preacher and Hayes's (2004) Sobel test calculator; using the beta coefficients and standard errors of model 1 and model 2.

H_{05a} *income diversification does not significantly mediate the relationship between human capital and financial performance of commercial banks in Kenya.*

Based on the results of the mediation presented in model 3 in Table 4.19, the coefficient for the indirect path, a_1b, is positive and significant ($\beta = 0.068$, $\rho < 0.05$) thus the null hypothesis was rejected and the alternative hypothesis accepted. The interpretation was

that income diversification had a positive and significant mediating effect on the relationship between human capital and financial performance of commercial banks in Kenya.

H_{05b} *income diversification does not significantly mediate the relationship between process capital and financial performance of commercial banks in Kenya*.

Model 3 in Table 4.19 shows that the indirect path, a_2b, had a positive and significant coefficient, ($\beta = 0.048,\ \rho<0.05$), hence the study rejected the null hypothesis and concluded that income diversification significantly mediated the relationship between process capital and financial performance of commercial banks in Kenya.

H_{05c} *income diversification does not significantly mediate the relationship between innovation capital and financial performance of commercial banks in Kenya*.

This hypothesis was tested against the results of the indirect path a_3b as shown in Model 3 in Table 4.19. Based on the findings ($\beta = 0.027,\ \rho<0.05$), the null hypothesis was rejected and the alternative hypothesis accepted. Thus, the study concluded that income diversification significantly mediated the relationship between innovation capital and financial performance of commercial banks in Kenya.

H_{05d} *income diversification does not significantly mediate the relationship between customer capital and financial performance of commercial banks in Kenya.*

The indirect path a_4b was used to test this hypothesis. The results in Model 3 in Table 4.19 ($\beta = 0.068$ *and* $\rho<0.05$) indicate that the null hypothesis was rejected; and the conclusion was that income diversification significantly mediated the effect of customer capital and financial performance.

Table 4.14 Financial Performance, Intellectual Capital and Income Diversification

	Number of obs	=	310
Fixed-effects (within) regression	Number of groups	=	31
Group variable: firm	Obs per group: min	=	10
R-sq: within = 0.7514	Avg	=	10
between = 0.7462	Max	=	10
overall = 0.6861	F(8,271)	=	102.4
corr(u_i, Xb) = -0.6893	Prob > F	=	0.00

ROA	**Coef.**	**Std. Err.**	**T**	**P>|t|**	**[95% Conf.**	**Interval]**
HC	0.280	0.045	6.25	0.000	0.192	0.368
PC	0.063	0.020	3.12	0.002	0.023	0.103
IC	0.049	0.016	2.99	0.003	0.017	0.082
CC	0.398	0.035	11.30	0.000	0.329	0.467
INDIV	0.130	0.019	6.77	0.000	0.092	0.168
FS	0.245	0.111	2.22	0.028	0.027	0.463
FA	-0.122	0.062	-1.97	0.050	-0.244	0.001
LS	-0.174	0.076	-2.29	0.023	-0.325	-0.024
_cons	-1.948	0.363	-5.37	0.000	-2.663	-1.234
sigma_u	0.216					
sigma_e	0.151					
rho	0.673	(fraction of variance due to u_i)				

F test that all u_i= F(30, 271) = 5.62 Prob > F = 0.0000

Source: Author 2019

Table4. 15 Summary Table for Mediation

Model 4 (*path c*)	**Model 1 (*path a*)**		**Model 2 (*path b*)**		**Model 3 (*a x b= c`*)**			
	B	**ρ>z**	**β**	**ρ>z β**	**β**	**ρ>z**		**ρ> z**
a_1	0.524	0.000	-	-	0.068	0.003	0.377	0.000
a_2	0.371	0.000	-	-	0.048	0.000	0.120	0.000
a_3	0.206	0.000	-	-	0.027	0.000	0.077	0.001
a_4	0.524	0.000	-	-	0.068	0.003	0.379	0.000
B	-	-	0.130	0.000	-	-	-	-
FS	0.705	0.043	-	-	0.092	0.049	0.021	0.727
FA	-0.659	0.001	-	-	-0.086	0.002	-0.210	0.000
LS	-0.639	0.008	-	-	-0.083	0.012	-0.246	0.002
-cons	2.089	0.093	-	-	-	-	-1.368	0.001
R^2	0.4429		0.7514				0.6935	
Hausman Prob>chi2 ρ>0.05	ρ<0.05			ρ<0.05				

Source: Author 2019

4.10 Chapter Summary

This chapter reports the results of the diagnostic tests, the descriptive statistics, correlation analysis, regression analysis, and mediation. The study applied Levin- Lin Chu, Breitung, and Im-Pesaran-Shin tests to check for stationarity on the balanced panel data. From *p*-values in Table 4.6, the null hypothesis was rejected at 5% significance level for all the variables, which means that there is no unit root in our data. The assumption of normal in regression analysis was tested through Jarque-Bera and Shapiro Wilk tests and the results confirmed that the data was normal. The Variance Inflation Factor test shown in Table 4.5, less than 10, implies that the research variables do not suffer from multicollinearity. Homoskedasticity was tested through Breusch-Pagan/Cook, Cameron and Trivedi and White tests, and the results that there was no heteroscedasticity in the data. The Wooldridge test ruled out the presence of autocorrelation. Based on the results presented in Table 4.13, the control variables had varied effects on financial performance; firm size had a positive effect, while firm age and lending strategy had a negative effect. The results of the random-effect analysis, Table 4.14, show that all the components of intellectual capital; human capital, process capital, innovation capital, and customer capital had a positive and significant effect on the financial performance of commercial banks in Kenya, at 5% level of significance. Similarly, all the predictor variables had a positive and significant effect on the mediator as shown in Table 4.18. Additionally, Table 4.19 indicates that income diversification significantly mediated the intellectual capital and financial performance. The next chapter provides an in-depth discussion of the findings, with special attention on the hypotheses.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter presents a summary of the findings and conclusions of the study. Further, the chapter presents the study's recommendations and future research areas based on the results.

5.1 Summary of Findings

This study was informed by the growing empirical debate on intellectual capital and financial performance causality; and the increased appetite for non-lending activities. Thus, the study's general objective was to investigate whether income diversification mediates the relationship between intellectual capital and financial performance of commercial banks in Kenya. The study established several findings, which are summarized as follows.

5.1.1 Effect of Human Capital on Financial Performance

The first specific objective was to investigate the effect of human capital on commercial banks' financial performance in Kenya. Human capital was measured as the average employee expenditures. The fixed effect regression results showed that human capital had a positive and statistically significant effect on financial performance ($\beta = 0.377;\ \rho < 0.05$). These findings are supported by earlier studies (Crook *et al.*, 2011; Shrader & Siegel, 2007; Seleim *et al.*, 2007); however, they contradict Smriti and Das (2017), who reported a negative relationship, which is attributed to contextual issues. Smriti and Das (2017) focused on pharmaceutical firms that are more reliant on process capital and innovation capital than service organizations, such as banks, which depend on human capital and customer capital.

Human capital is at the heart of firm innovation and renewal (Dakhli & De Clercq, 2004; Benhabib & Spiegel, 2005), thus a key determinant of financial performance, mainly to service organizations where competition is based on innovation and customer-centric product offerings. From the same perspective, human capital indirectly affects financial performance through process capital and innovation capital (Wang & Chang, 2005). Moreover, by investing in human capital, firms respond quickly to changing customer expectations for competitive advantage (Noe, Hollenbeck, & Wright, 2017; Chicu, del Mar Pàmies, Ryan, & Cross, 2019; Gabriel, Cheshin, Moran, & van Kleef, 2016). Given these findings, bank managers should allocate more resources in developing their human capital for improved financial performance.

5.1.2 Effect of Process Capital on Financial Performance

The second objective sought to evaluate the effect of process capital on commercial banks' financial performance in Kenya. Conceptually, process capital denotes core business processes that create and deliver value to customers.

The study found that process capital had a positive and significant effect on commercial banks' financial performance ($\beta = 0.119, \rho < 0.05$). These findings were concurrent with Cheng (2008) but contrasted Wang and Chang (2005), who found that process capital had an indirect effect on performance through customer capital. The deviation from Wang and Chang (2005) is attributed to measurement issues; the authors measured process capital using several proxies such as value-added per employee and productivity per employee, which are essentially proxies of human capital. Conversely, this study measured process capital from a process approach, efficiency in financial intermediation.

The positive effect of process capital on financial performance is cost efficiencies, flexibility, and expanded production capacity emanating from the increased use of Kenyan commercial banks' financial technologies. That is the adoption of mobile banking, agency banking, online banking, and credit information sharing, which has eased access to banking services and improved appraisal and monitoring of borrowers. Given these findings, banks are likely to improve their financial performance by being more process-oriented. Process orientation entails process innovations, quality management, and the use of integrative technologies.

5.1.3 Effect of Innovation Capital on Financial Performance

The third object sought to determine the effect of innovation capital on commercial banks' financial performance in Kenya. The study conceptualized innovation capital as R&D investment per employee. The quality of a firm's human capital is an indicator of its innovative position. Furthermore, human capital has an indirect effect on innovation capital, as argued in the literature (Chang & Wang, 2005).

The study found that innovation capital had a positive and significant effect on financial performance ($\beta= 0.077, \rho <0.05$), which is supported by earlier studies (Yang & Kang, 2008; Jen Huang & Liu, 2005; Hsiao, 2014). Recently, the Kenyan banking sector witnessed an outburst of financial innovation, especially mobile banking, which explains the positive link between innovation capital and financial performance. Kohli and Jaworski (1990) mentioned that firms operating in rapidly changing technologies should focus on innovation while those operating in a stable technology market should focus on customer capital for competitive advantage and superior performance.

Innovation capital enables firms to create firm-specific knowledge that delivers value to customers and survive in an unpredictable environment. The findings of this study

emphasize the importance of innovation capital as a driver of financial performance. Therefore, banks should continually develop innovative products and services that deliver value to their customers for long-term financial performance.

5.1.4 Effect of Customer Capital on Financial Performance

The fourth objective was to estimate the effect of customer capital on commercial banks' financial performance in Kenya. The proxy of customer capital was market share, composite of net assets, deposits, total shareholders' funds, number of loan accounts, and deposit accounts. Market share is an indicator of market competitiveness showing how well a firm is doing against its competitors. The study found that customer capital had a positive and significant effect on financial performance ($\beta = 0.379; \rho < 0.05$). The findings are supported by those of Yang and Kang (2008), Örnek and Ayas (2015), Gourio, and Rudanko (2014).

There were several probable explanations for the findings. First, banks are service organizations; therefore, invest more in customer relationship management. Second, an indirect effect of innovation capital from the usage of integrative banking technologies enables banks to offer a wide range of services leading to customer loyalty and high switching cost. Moreover, customer capital thrives on human capital, process capital, and innovation capital (Gourio & Rudanko, 2014; Urban *et al.,* 2017). Building customer capital necessitates a continuous and proactive disposition towards clients' satisfaction and loyalty. Thus, banks should integrate market intelligence and customers' perceptions to deliver services that build long-term customer loyalty, which will ultimately improve their financial performance. Equally, through the creative gathering of market intelligence, banks can anticipate future market expectations and build the right capabilities for long-term competitive advantage

5.2 Effect of Intellectual Capital on Income Diversification

The study investigated the association between intellectual capital and income diversification to determine the mediation effect. A firms' profile of knowledge-based resources influences the choice of its diversification strategy. Firms tend to diversify into related businesses or industries to benefit from economies of shared production and resource mobility. Through income diversification, banks can optimize the use of intangible resources, which otherwise would remain idle. The regression results of income diversification and the various components of intellectual capital and are discussed below.

5.2.1 Effect of Human Capital on Income Diversification

The study examined the relationship between human capital and income diversification. The findings showed that human capital had a positive and significant effect on income diversification ($\beta= 0.524, \rho<0.05$). The explanatory power of 52.4 % emphasizes the importance of employees' skills, knowledge, and attitudes to a firm diversification strategy. Chang (1996) found that firms diversified into businesses of related human resource profiles and divested businesses of different human resource profiles, support these findings. Similarly, Crook *et al.,* (2011) and Farjoun (1994) found that diversification enabled firms to exploit and preserve their excess and untradeable human capital. Furthermore, Human capital is the most superior among all other forms of intangible resources due to its mobility and ability of employees can improve their skills to conform to changing organizational needs

With the increased use of financial technologies in banking services, the importance of human capital is gradually declining; thus, non-lending activities offer banks an opportunity to use excess human capital instead of downsizing.

5.2.2 Effect of Process Capital on Income Diversification

The relationship between process capital and income diversification was also investigated and found as being positive and statistically significant ($\beta= 0.371;\ \rho <0.0.05$). The beta coefficient showed that a one percent change in process capital led to a 37.1 % change in income diversification. Wrigley (1970), Bettis (1981), and Chong *et al.,* (2017) support these findings. A firm's internal processes influence the choice and success of a diversification strategy. Firms diversify based on commonalities in production inputs, skills, and processes between the proposed business and current business. In banking firms, non-lending services are offered along with the normal lending services inferring noticeable gains from shared organizational infrastructure, processes, technologies, and managerial capabilities. Thus, income diversification leads to economies of scale in intermediation, cross-selling, and idle productive capacity, ultimately improving financial performance.

5.2.3 Effect of Innovation Capital on Income Diversification

The study further examined the effect of innovation capital on income diversification. The findings show that innovation capital positively and significantly impacted income diversification ($\beta=0.206,\ \rho<0.05$). Innovation capital supports the development of new products or modifications of existing ones as the basis of diversification. Consistent with these findings, Clark (2000) and Bettis (1981) found that innovation led to diversification and, in particular, related diversification. Similarly, Sugheir *et al.,* (2012) observed that unrelated diversification destroyed innovation's value. Conversely, Baysinger, and Hoskinsson (1989) reported a negative relationship attributable to contextual issues.

Modern banking technologies facilitate the provision of a range of services that cut across lending and non-lending. For instance, mobile money and application enable

bank customers' access services such as borrowing, cash withdrawals, payment of utility bills, buying of airtime, and making deposits. This alone explains why innovation capital supports non-lending activities, and the interaction is a source of competitive advantage.

Amidst revolutionary technologies and regulatory constraints, commercial banks should exploit their innovation capital by engaging in nonlending activities to lessen the effect of deteriorating interest income and competitive advantage. Additionally, banks should consider investing in complementary technologies for cross-business synergies.

5.2.4 Effect of Customer Capital on Income Diversification

The relationship between customer capital and income diversification was found as positive and significant ($\beta = 0.524, \rho<0.05$). Among the other four-predictor variables, customer capital showed the highest explanatory power, of 52.4%. These results suggest that customers' relationship, which banks created in the course of lending, determines the success of nonlending activities.

Corporate image and brand reputation are likely to affect future product offerings. DeYoung and Rice (2004) reported that banks keen on relationship banking are more likely to diversify into non-traditional activities. Furthermore, Gourio and Rudanko (2014) argue that it is cheaper to offer new products or services to existing customers due to the already established customer loyalty and distribution systems. Moreover, with the outburst of integrative financial technologies, banks can now offer banking and non-banking services simultaneously, thus leading to higher switching costs. Consequently, banks should consider expanding into non-traditional activities to utilize amassed customer capital and ultimately improve performance.

5.2.5 Effect of Income Diversification on Financial Performance

The study also examined the income diversification and financial performance nexus and found that the relationship was positive and statistically significant at a 95% confidence level ($\beta=0.130$ *and* $\rho<0.05$). One percent change in income diversification leads to a 13.0 % change in financial performance. Consistent with modern portfolio theory, this study argues that income diversification improves banks' financial performance, considering banks face declining interest income. These findings are supported by previous studies (Carroll & Stater, 2008; Elsas, Hackethal, & Holzhäuser, 2006; Chiorazzo *et al.,* 2008; Edirisuriya *et al.,* 2015), support the findings. Income diversification enables banks to broaden revenue streams, thus leading to income stability and organizational longevity. Income diversification is associated with efficient internal capital markets, economies of scale, cross-selling, and cross-subsidization that improve firm financial performance.

Accordingly, in an era of interest capping, high competition from non-banking entities, and unprecedented growth in financial innovation, banks should consider diversifying into nonlending businesses for competitive advantage and long-term profitability.

5.3 Mediating Effect of Income Diversification

The study tested mediation by determining the indirect path's significance, as suggested by Zhou *et al.,* (2010). The indirect path was computed as multiplying the beta coefficient of the path *a* with the mediator's beta coefficient in *path, b,* and the significance of the coefficient *ab* was tested using Preacher and Hayes's (2004) Sobel test calculator.

5.3.1 Human Capital and Financial Performance

The study began by investigating whether income diversification had a mediating effect on the relationship between human capital and financial performance. The results of

a_1b shown in Model 3 ($\beta= 0.068$ $\rho<0.05$) indicated that income diversification significantly mediated the relationship between human capital and financial performance, which can be explained by synergies emanating from leveraging human capital across lending and non-lending activities.

Also, the firm's redeployment lowers transaction costs of the external labour market, ultimately competitive advantage. According to Penrose (1959), idle employees, underutilized talents, accumulated experience, and new employees create pressures on an organization agitating for better use. Thus, by expanding into non-traditional activities, banks can utilize their human capital, thus averting the said challenges. Moreover, employees can learn and continuously improve their skills in anticipation of a job change besides their ability to transfer knowledge from one line of business to the other.

Consistent with the resource-based view, firms experience higher returns when they realize a strategic fit between their human capital and diversification strategy. Hence, income diversification accords banks an opportunity to leverage and use their human capital for competitive advantage.

5.3.2 Process Capital and Financial Performance

The study examined the mediating effect of income diversification on process capital and financial performance relationship of Commercial Banks in Kenya. The results of the mediation effect a_2b are shown in model 3 in Table 4.19 ($\beta=0.048$, ρ-$value=0.000<0.05$), which implies that income diversification had a significant mediating effect on the relationship between process capital and financial performance. While engaging in nonlending activities, banks gather additional private information on customer quality besides accessing a more comprehensive range of prospective

borrowers that improve financial intermediation quality. Besides, Klein and Saidenberg (2000) observed that banks engaging in income diversification had an efficient internal capital market, and they are likely to engage more in lending than focused ones

Moreover, the joint production of goods and delivery of services leads to economies of scale that boost the intermediation process. Furthermore, income diversification creates production efficiencies stemming from mutual transaction processing (Baek, 2004; D'Souza & Lai, 2003; Rogers, 1998). Similarly, Elsas *et al.,* (2010) say that banks with high operating leverage benefit from cost efficiencies emanating from related diversification. In summary, income diversification leverages internal business processes, thus creating requisite synergies for competitive advantage.

5.3.3 Innovation Capital and Financial Performance Relationship

The study also examined whether income diversification mediated the innovation capital and financial performance relationship. The results of the mediation effect, a_3b, are illustrated in Model 3 ($\beta=0.027;\ \rho<0.05$), confirmed that income diversification significantly mediated the relationship between innovation capital and financial performance.

Income diversification leads to a spillover effect from shared technological knowledge that lessens firms' exposure to R & D investment risks, encouraging more spending on R & D. Moreover, creating new businesses' new experiences leads to technological advancement that might trigger new services and products. Consistent with this argument, Hitt *et al.,* (1997) and Li *et al.,* (2012) noted that diversification facilitates the search and access to market intelligence and technologies that aid firm innovation. Innovations acquired externally and shared across businesses induce cross-fertilization, a precursor for organizational renewal. Miyazaki (1999) and Granstrand (1998)

observed that firms might be innovative, own superior technologies, but have disruptive products. Henderson and Clark (1990) christened this phenomenon as “lock-in-effect” or “competence traps.”

In banks' context, income diversification presents opportunities to engage in incongruent activities with a bank’s knowledge resource profile. Equally, income diversification exposes banks to competition that may trigger innovation to stay viable, thus avoiding restrictions imposed by the regulator that insulate them from competitive forces. Furthermore, firms operating in a broad range of markets ought to be more innovative to outshine competitors.

Income diversification offers banks an excellent opportunity to revamp themselves through new products and services for competitive advantage. Firm innovativeness is tactical, and it is easier to assimilate and use within the firm through diversification than trading it in the market. Hence, banks engaging in income diversification are likely to benefit from accelerated acquisition and application of technologies, ultimately improved financial performance

5.3.4 Customer Capital and Financial Performance Relationship

The study investigated whether income diversification mediated the customer capital and financial performance link. The results of the indirect effect a_4b presented in Model 3 ($\beta=0.068$ $\rho<0.05$), indicated that income diversification significantly mediated the effect of customer capital on financial performance.

There are varied explanations for why income diversification mediates the relationship between customer capital and financial performance. First, income diversification improves brand image through cross-selling and cross-subsidization, ultimately enhancing financial performance. Second, in the case of related diversification, firms

benefit from economies of scale in marketing and distribution by utilizing the existing organizational infrastructure to offer a range of products and services. Third, through income diversification, banks gather market intelligence that improves service quality and supports new products and services. Finally, firms offering an entire package of services to their customers will likely improve customer satisfaction and increase switching costs (Kuruzovich, Han, Koukova, Ravichandran, 2013).

5.4 Conclusion

The study developed a conceptual framework through an extensive literature review that aided the formulation of research hypotheses. The focus was on the mediation effect of income diversification on intellectual capital and financial performance relationship. The unit of analysis was commercial banks in Kenya. The data was extracted from the individual bank's annual financial data from the banks and the Central Bank of Kenya's annual supervisory reports.

Consistent with the resource-based view, the study found that all the dimensions of intellectual capital, human capital, process capital, innovation capital, and customer capital, had a positive and significant effect on financial performance. The random effect model predicted that intellectual capital explained 69.35% of the variability in financial performance. Noticeably, human capital 37.7% and customer capital, 37.9%, had the highest explanatory power on financial performance attributable to banking services' customer-centric nature.

Further, the study found that income diversification had a partial mediating effect on the relationship between all components of intellectual capital (human capital, process capital, innovation capital, customer capital) and financial performance. The results

suggested that income diversification optimize the development and application of intellectual capital resources.

In conclusion, though the study failed to provide enough evidence to support full mediation, the findings provide empirical evidence linking income diversification and intellectual capital to firm financial performance. Hence, the study is of importance to practitioners, scholars, and policymakers.

5.5 Recommendations

5.5.1 Managerial Implications

Unlike previous studies that focused on the direct effect of intellectual capital on financial performance, this study's sought to investigate whether income diversification mediates the relationship between intellectual capital and financial performance. This study's findings suggest that leveraging intellectual capital through non-lending activities improves banks' financial performance. Further, the study found that customer capital showed the highest explanatory power among all other intellectual capital components. Thus, bank managers are advised to pay closer attention to income diversification and customer relationships for enhanced bank performance. Conversely, innovation capital had the lowest explanatory power, implying that banks should increase their investments in firm-specific innovations bearing in mind that the sector is highly reliant on technology.

The partial mediation role of income diversification on intellectual capital and financial performance causality infers banks are yet to reap the most significant benefits of income diversification. Therefore, banks should maintain an ideal balance between lending and non-lending activities to facilitate firm resources' deployment besides protecting banks against interest income volatility.

5.5.2 Theoretical Implication

The study confirmed the tenets of the firm's resource-based view extensively applied in strategic management by profit and nonprofit making organizations. The general proposition of the theory is that competitive advantage emanates from firm resources that are valuable, rare, inimitable, and non-substitutable. The study found that all the intellectual capital (human capital, process capital, innovation capital, and customer capital) positively and significantly affected financial performance. Hence, the study confirms that all constituent elements of intellectual capital fit in the VRIN description. Unlike earlier studies, which focused on the direct effect, this study demonstrated that income diversification leverages intellectual capital utilization for sustained financial performance, considering that knowledge resources are inert, untradeable, and general-purpose.

Consequently, this study has a unique contribution by blending RBV and modern portfolio theory propositions by demonstrating that income diversification unleashes the value hidden in knowledge resources.

5.5.3 Policy Implication

Regulatory bodies limit the extent to which banking institutions can engage in income diversification through laws and regulations that define banking business. Specifically, banks are restricted to activities that either complement or are incidental to lending. Such a limitation might not be optimal going by the portfolio theory. Based on this study's findings, regulatory authorities should relax such regulations to allow banks to engage in the broader scope of activities to exploit intellectual capital and ultimately improve performance. Alternatively, the regulator can impose a diversification ceiling that is adequate to cushion banks from interest income volatility.

Conventional financial reporting rarely discloses intellectual capital assets, making it difficult for investors, shareholders, and the public to know the firm's intrinsic value. Surprisingly, knowledge-based resources explain the vast disparities between firms' market value and book value and performance differences among firms. Thus, the regulatory and financial reporting agencies must pass regulations on measurements, disclosure, and knowledge resources reporting, which benefit the shareholders, financial advisors, and potential investors. Besides, intellectual capital reporting would be beneficial during the listing of firms by securities exchanges.

5.5.3 Policy Implication

Regulatory bodies limit the extent to which banking institutions can engage in income diversification through laws and regulations that define banking business. Specifically, banks are restricted to activities that either complement or are incidental to lending. Such a limitation might not be optimal going by the portfolio theory. Based on the findings of this study, regulatory authorities should relax such regulations to allow banks to engage in a wider scope of activities to exploit intellectual capital and ultimately improved performance. Alternatively, the regulator can impose a diversification ceiling that is adequate to cushion banks from interest income volatility. Conventional financial reporting rarely discloses intellectual capital assets making it difficult for investors, shareholders and the public to know the intrinsic value of the firm. Surprisingly, knowledge-based resources explain the huge disparities between firms' market value and book value as well as performance differences among firms. Thus, it is important that the regulatory and financial reporting agencies pass regulations on measurements, disclosure, and reporting of knowledge resources. This will benefit the shareholders, financial advisors and potential investors in valuing the

firm. Besides, intellectual capital reporting would be beneficial during the listing of firms by securities exchanges.

5.6 Limitations of the Study and Suggestions for Future Research

This study focused on the banking sector, which is a service industry. Besides, banks maintain minimal tangible assets for liquidity purposes, thus highly dependent on intangible assets for competitive advantage. Given the previously mentioned, this study's findings might be difficult to replicate to other sectors of the economy, such as manufacturing firms that largely depend on tangible assets. Moreover, the study focused on commercial banks in a developing country. Thus the findings might be difficult to generalize in other countries due to country-specific factors such as the level of institutional development and the quality of the regulatory environment. Future studies can extend to other countries and sectors of the economies, which might shed more light on intellectual capital's effect on financial performance.

Finally, the research variables were measured quantitatively based on disclosures in published financial reports. Future studies should consider using primary data that may offer an in-depth understanding of the various intellectual capital elements and their influence on financial performance. Besides, due to data unavailability, noninterest income was measured in aggregate form. Thus, prospective researchers can consider decomposing noninterest income into its constituent elements.

REFERENCES

Abbas, K. D. (2019). Knowledge Management Resources and Techniques used to Enhance Knowledge Management Initiatives in Nigerian Agricultural Research Institutes. *i-Manager's Journal of Educational Technology*, *15*(4), 9.

Abdin, J. (2016). Financial development and poverty reduction: Exploring the links between the issues using evidence from Bangladesh. *International Journal of Financial Research*, *7*(4), 44-65.

Abedifar, P., Molyneux, P., & Tarazi, A. (2014). Noninterest Income Activities and Bank Lending. *Working Paper Responsible Banking and Finance*, 15-002 2015

Abhayawansa, S., Aleksanyan, M., & Cuganesan, S. (2018). Conceptualization of intellectual capital in analysts' narratives: a performative view. *Accounting, Auditing & Accountability Journal*, *31*(3), 950-969.

Abualoush, S., Masa'deh, R. E., Bataineh, K., & Alrowwad, A. (2018). The role of knowledge management process and intellectual capital as intermediary variables between knowledge management infrastructure and organization performance. *Interdisciplinary Journal of Information, Knowledge, and Management*, *13*, 279-309.

Acquaah, M. (2003). Corporate management, industry competition and the sustainability of firm abnormal profitability. Journal of Management and Governance, 7(1), 57-85.

Adam, F. (2014). Methodological and Epistemic Framework: From Positivism to Post-positivism. In *Measuring National Innovation Performance* (pp. 5-7). Springer, Berlin, Heidelberg.

Adeola, O., & Evans, O. (2017). Financial inclusion, financial development, and economic diversification in Nigeria. *The Journal of Developing Areas*, *51*(3), 1-15.

Agostino, C. (2004). *Tax interdependence in the U.S. states*. Georgetown University, Department of Economics, Working Papers Series.

Ahmadi, S. A. A., Jalilian, H., Salamzadeh, Y., Saeidpour, B., & Daraei, M. (2012). Intellectual capital and new product development performance in production firms: A case study of Kermanshah production firms. *Global Business & Management Research*, *4*(1).

Alhassan, A. L., & Tetteh, M. L. (2017). Noninterest Income and Bank Efficiency in Ghana: A Two-Stage DEA Bootstrapping Approach. *Journal of African Business*, 18(1), 124-142.

Allen, L. (1988). The determinants of bank interest margins: a note. *Journal of Financial and Quantitative analysis*, *23*(2), 231-235.

Almeida, P., & Phene, A. (2004). Subsidiaries and knowledge creation: The influence of the MNC and host country on innovation. *Strategic Management Journal*, *25*(8-9), 847-864.

Al-Musali, M. A., & Ku Ismail, K. N. I. (2016). Cross-country comparison of intellectual capital performance and its impact on financial performance of commercial banks in GCC countries. *International Journal of Islamic and Middle Eastern Finance and Management*, *9*(4), 512-531.

Amadieu, P., & Viviani, J. L. (2010). Intangible effort and performance: the case of the French wine industry. *Agribusiness*, *26*(2), 280-306.

Ambrosini, V., & Bowman, C. (2009). What are dynamic capabilities and are they a useful construct in strategic management?. *International journal of management reviews*, *11*(1), 29-49.

Amidu, M., & Wolfe, S. (2013). The impact of market power and funding strategy on bank-interest margins. *The European Journal of Finance*, *19*(9), 888-908.

Amihud, Y., & Lev, B. (1981). Risk reduction as a managerial motive for conglomerate mergers. *The bell journal of economics*, 605-617.

Anbar, A., & Alper, D. (2011). Bank specific and macroeconomic determinants of commercial bank profitability: Empirical evidence from Turkey.

Anderson, E. W., Fornell, C., & Lehmann, D. R. (1994). Customer satisfaction, market share, and profitability: Findings from Sweden. *The Journal of marketing*, 53-66.

Anetor, F., Ogbechie, C., Kelikume, I., & Ikpesu, F. (2016). Credit supply and agricultural production in Nigeria: a vector autoregressive (VAR) approach. *Journal of Economics and Sustainable Development*, *7*(2).

Ansoff, H. I. (1957). Strategies for diversification. *Harvard business review*, *35*(5), 113-124.

Arvan, M., Omidvar, A., & Ghodsi, R. (2016). Intellectual capital evaluation using fuzzy cognitive maps: A scenario-based development planning. *Expert Systems with Applications*, *55*, 21-36

Asefa, S., & Huang, W. C. (Eds.) (1994). *Human Capital and Economic Development.* Michigan: W.E. Upjohn Institute for Employment Research.

Asheim, B., Grillitsch, M., & Trippl, M. (2017). Smart Specialization as an innovation-driven strategy for economic diversification: Examples from Scandinavian regions. In *Advances in the theory and practice of smart specialization* (pp. 73-97). Academic Press.

Athanasoglou, P. P., Brissimis, S. N., & Delis, M. D. (2008). Bank-specific, industry-specific and macroeconomic determinants of bank profitability. *Journal of international financial Markets, Institutions and Money*, 18(2), 121-136.

Attar, M., Kang, K., & Sohaib, O. (2019). Knowledge Sharing Practices, Intellectual Capital and Organizational Performance. In *Proceedings of the 52nd Hawaii International Conference on System Sciences*.

Attig, N., & Cleary, S. (2014). Organizational Capital and Investment-Cash Flow Sensitivity: The Effect of Management Quality Practices. *Financial Management*, 43(3), 473-504.

Audia, P. G., & Greve, H. R. (2006). Less likely to fail: Low performance, firm size, and factory expansion in the shipbuilding industry. *Management science*, *52*(1), 83-94.

Azis, N., & Basri, H. (2019). Intellectual Capital and Financial Performance: The Role of Good Corporate Governance (Study on Islamic Banking in Indonesia). *KnE Social Sciences*, *3*(14), 1-9.

Aziz, N. N. A., & Samad, S. (2016). Innovation and competitive advantage: Moderating effects of firm age in foods manufacturing SMEs in Malaysia. *Procedia Economics and Finance*, *35*, 256-266.

Bae, J., & Lawler, J. J. (2000). Organizational and HRM strategies in Korea: Impact on firm performance in an emerging economy. *Academy of management journal*, *43*(3), 502-517.

Baek, H. Y. (2004). Corporate diversification and performance: evidence on production efficiency. *Journal of Multinational Financial Management*, *14*(2), 135-152.

Baele, L., De Jonghe, O., & Vander Vennet, R. (2007). Does the stock market value bank diversification? *Journal of Banking & Finance*, 31(7), 1999-2023.

Balcilar, M., Gupta, R., Lee, C. C., & Olasehinde-Williams, G. (2018). The synergistic effect of insurance and banking sector activities on economic growth in Africa. *Economic Systems*, *42*(4), 637-648.

Banghøj, J., Gabrielsen, G., Petersen, C., & Plenborg, T. (2010). Determinants of executive compensation in privately held firms. *Accounting & Finance*, *50*(3), 481-510.

Bank, J. H., & Davies, G. (2002). History of Money: From Ancient Times to the Present Day. *University of Wales*.

Banker, R. D., & Mashruwala, R. (2007). The moderating role of competition in the relationship between nonfinancial measures and future financial performance. Contemporary Accounting Research, 24(3), 763-793.

Banker, R. D., Potter, G., & Srinivasan, D. (2000). An empirical investigation of an incentive plan that includes nonfinancial performance measures. *The accounting review*, *75*(1), 65-92.

Banking (Amendment) Act 2016. Law of Kenya

Bapna, R., Langer, N., Mehra, A., Gopal, R., & Gupta, A. (2013). Human capital investments and employee performance: an analysis of IT services industry. *Management Science*, 59(3), 641-658.

Barkat, W., & Beh, L. S. (2018). Influence of Intellectual Capital Dimensions on Knowledge Process Capability and Organizational Performance. *Asian Journal of Scientific Research*, *11*, 308-318.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, *17*(1), 99-120.

Barron, D. N., West, E., & Hannan, M. T. (1994). A time to grow and a time to die: Growth and mortality of credit unions in New York City, 1914-1990. *American Journal of Sociology*, *100*(2), 381-421.

Barua, A., Konana, P., Whinston, A. B., & Yin, F. (2004). An empirical investigation of net-enabled business value. *MIS quarterly*, 28(4), 585-620.

Bashir, A. H. M. (2001). Assessing the performance of Islamic banks: Some evidence from the Middle East. *Topics in Middle Eastern and North African Economies*, *3*.

Baysinger, B., & Hoskisson, R. E. (1989). Diversification strategy and R&D intensity in multiproduct firms. *Academy of Management journal*, *32*(2), 310-332.

Beccalli, E., Anolli, M., & Borello, G. (2015). Are European banks too big? Evidence on economies of scale. *Journal of Banking & Finance*, *58*, 232-246.

Beck, T., Demirgüç-Kunt, A. and Levine, R (2007) Finance, inequality and the poor, *Journal of Economic Growth*, 12(1), 27-49

Becker, G. S. (2009). *Human capital: A theoretical and empirical analysis with special reference to education*. Chicago, IL: University of Chicago Press.

Benevene, P., Kong, E., Lucchesi, M., & Cortini, M. (2019). Intellectual capital management among Italian non-profit socio-cooperatives. *Journal of Workplace Learning*, *31*(1), 17-3

Benhabib, J., & Spiegel, M. M. (2005). Human capital and technology diffusion. *Handbook of economic growth*, *1*, 935-966.

Bennett, B., Bettis, J. C., Gopalan, R., & Milbourn, T. (2017). Compensation goals and firm performance. *Journal of Financial Economics*, *124*(2), 307-330.

Berger, A. N., Hasan, I., & Zhou, M. (2010). The effects of focus versus diversification on bank performance: Evidence from Chinese banks. *Journal of Banking & Finance*, *34*(7), 1417-1435.

Berger, P.G., & Eli, O.(1995). Diversification's effect on firm value. *Journal of financial economics* 37, no. 1 39-65.

Berry, C. H. (1971). Corporate growth and diversification. *The Journal of Law and Economics*, 14(2), 371-383.

Bettis, R. A. (1981). Performance differences in related and unrelated diversified firms. *Strategic Management Journal*, 2(4), 379-393.

Bettis, R. A., & Hitt, M. A. (1995). The new competitive landscape. *Strategic management journal*, 16(S1), 7-19.

Bhagat and Bolton (2008). Corporate governance and firm performance. Journal of Corporate Finance 14 (2008) 257–273

Bharadwaj, A. S., Bharadwaj, S. G., & Konsynski, B. R. (1999). Information technology effects on firm performance as measured by Tobin's q. *Management science*, *45*(7), 1008-1024.

Bhattacherjee, A. (2012). *Social Science Research: Principles, Methods, and Practices.* USF Tampa Bay Open Access Textbooks Collection. Book 3. Florida, USA

Bikker, J. A. (2010). Measuring performance of banks: an assessment. *Journal of applied Business and Economics*, *11*(4), 141-159.

Bin Shaari, J. A. N., bin Md Isa, A. H., & Khalique, M. (2018). Impact of Intellectual Capital on Organizational Performance of ICT SMEs in Penang, Malaysia.

Boadi, I. (2018). Income Diversification and Banks' Profitability from an African Market Perspective: A Relief for SMEs?. In *African Entrepreneurship* (pp. 153-188). Palgrave Macmillan, Cham.

Bobáková, I. V. (2003). Raising the profitability of commercial banks. *Biatec*, *11*, 21-25.

Bontis, N. (1998). Intellectual capital: an exploratory study that develops measures and models. *Management decision*, *36*(2), 63-76.

Bontis, N. (2001). Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field. In *World Congress on intellectual capital readings* (pp. 13-56).

Bontis, N., & Fitz-Enz, J. (2002). Intellectual capital ROI: a causal map of human capital antecedents and consequents. *Journal of Intellectual capital*, *3*(3), 223-247.

Bontis, N., Chua Chong Keow, W., & Richardson, S. (2000). Intellectual capital and business performance in Malaysian industries. *Journal of intellectual capital*, *1*(1), 85-100.

Bontis, N., Ciambotti, M., Palazzi, F., & Sgro, F. (2018). Intellectual capital and financial performance in social cooperative enterprises. *Journal of Intellectual Capital*, *19*(4), 712-731.

Boschma, R. (2017). Relatedness as driver of regional diversification: A research agenda. *Regional Studies*, *51*(3), 351-364.

Bowonder, B., & Miyake, T. (1994). Globalization, alliances, diversification and innovation: A case study from Hitachi Ltd. *Creativity and Innovation Management*, 3(1), 11-28.

Bratianu, C. (2018). Intellectual capital research and practice: 7 myths and one golden rule. *Management & Marketing*, *13*(2), 859-879.

Brem, A., Maier, M., & Wimschneider, C. (2016). Competitive advantage through innovation: the case of Nespresso. European Journal of Innovation Management, 19(1), 133-148.

Brennan, N., & Connell, B. (2000). Intellectual capital: current issues and policy implications. *Journal of Intellectual capital*, *1*(3), 206-240.

Breschi, S., Lissoni, F., & Malerba, F. (2003). Knowledge-relatedness in firm technological diversification. *Research policy*, *32*(1), 69-87.

Brooking A. (1996). *Intellectual Capital: Core Assets for the Third Millennium Enterprise*. Thompson Business Press, London.

Buch, C. M., Krause, T., & Tonzer, L. (2019). Drivers of systemic risk: Do national and European perspectives differ?. *Journal of International Money and Finance*, *91*, 160-176.

Bukh, P. N., Larsen, H. T., & Mouritsen, J. (2001). Constructing intellectual capital statements. *Scandinavian journal of management*, *17*(1), 87-108.

Burns, T., & Stalker, G. M. (1961). The management of innovation. London. *Tavistock Publishing. Cited in Hurley, RF and Hult, GTM (1998). Innovation, Market Orientation, and Organisational Learning: An Integration and Empirical Examination. Journal of Marketing*, *62*, 42-54.

Busch, R. and Kick, T.. (2009). Income Diversification in the German Banking Industry, Deutsche Bundesbank Euro system. *Discussion Paper. Series 2: Banking and Financial Studies.* No: 09/2009.

Cabrer-Borras, B., & Serrano-Domingo, G. (2007). Innovation and R&D spillover effects in Spanish regions: A spatial approach. *Research Policy*, 36(9), 1357-1371.

Cai, D., Song, Q., Ma, S., Dong, Y., & Xu, Q. (2018). The relationship between credit constraints and household entrepreneurship in China. *International Review of Economics & Finance*, *58*, 246-258.

Calmès, C., & Théoret, R. (2015). Product-mix and bank performance: new US and Canadian evidence. *Managerial Finance*, *41*(8), 773-805.

Campa, J. M., & Kedia, S. (2002). Explaining the diversification discount. *The journal of finance*, *57*(4), 1731-1762.

Carletti, E., Senbet, L. W., Cull, R., Allen, F., Qian, J., & Valenzuela, P. (2018). Improving Access to Banking: Evidence from Kenya. *BAFFI CAREFIN Centre Research Paper*, (2018-104).

Carmichael, H. L., & MacLeod, W. B. (1993). Multiskilling, technical change and the Japanese firm. *The Economic Journal*, *103*(416), 142-160.

Carnall, C., & By, R. T. (2014). *Managing Change in Organizations 6th edn*. Pearson Higher Ed.

Carnes, C. M., Chirico, F., Hitt, M. A., Huh, D. W., & Pisano, V. (2017). Resource orchestration for innovation: Structuring and bundling resources in growth-and maturity-stage firms. *Long range planning*, *50*(4), 472-486.

Carpenter, M. A., Sanders, W. G., & Gregersen, H. B. (2001). Bundling human capital with organizational context: The impact of international assignment experience on multinational firm performance and CEO pay. *Academy of management journal*, *44*(3), 493-511.

Carpinetti, L. C., Buosi, T., & Gerolamo, M. C. (2003). Quality management and improvement: A framework and a business-process reference model. *Business Process Management Journal*, *9*(4), 543-554.

Carroll, D. A., & Stater, K. J. (2008). Revenue diversification in nonprofit organizations: Does it lead to financial stability?. *Journal of public administration research and theory*, *19*(4), 947-966.

Caruana, E. J., Roman, M., Hernández-Sánchez, J., & Solli, P. (2015). Longitudinal studies. *Journal of thoracic disease*, *7*(11), E537.

Castaldi, C., & Giarratana, M. (2014). Diversification, branding and performance of knowledge-intensive service firms. In *conference; DRUID Conference 2014*.

Castellani, D., Piva, M., Schubert, T., & Vivarelli, M. (2019). R&D and productivity in the US and the EU: Sectoral specificities and differences in the crisis. *Technological Forecasting and Social Change*, *138*, 279-29

Castillo, E. A. (2016). Beyond the balance sheet. *Journal of Nonprofit Education and Leadership*, *6*(3), 287-303.

Casu, B., Dontis-Charitos, P., Staikouras, S., & Williams, J. (2016). Diversification, size and risk: The case of bank acquisitions of nonbank financial firms. *European Financial Management*, *22*(2), 235-275.

Catasús, B., Ersson, S., Gröjer, J. E., & Yang Wallentin, F. (2007). What gets measured gets… on indicating, mobilizing and acting. *Accounting, Auditing & Accountability Journal*, *20*(4), 505-521.

CBK ((2018). Impact of Interest Rate Capping on the Kenyan Economy. Published by Central Bank of Kenya, Nairobi

CBK (2007-17). Central Bank of Kenya Bank Supervision Annual Report 2007- 2017. Central Bank of Kenya

Central Bank of Kenya (CBK) Commercial Banks' Credit Officer Survey October – December 2017

Chakrabarti, A., Singh, K., & Mahmood, I. (2007). Diversification and performance: evidence from East Asian firms. *Strategic Management Journal*, *28*(2), 101-120.

Chan, S. H., Martin, J. D., & Kensinger, J. W. (1990). Corporate research and development expenditures and share value. *Journal of Financial Economics*, *26*(2), 255-276.

Chandler , D. (1962). Strategy and Structure. Cambridge: M.I.T. Press

Chandler, A. D. (1990). Strategy and structure: Chapters in the history of the industrial enterprise (Vol. 120). *MIT press.*

Chang, A., & Tseng, C. N. (2005). Building customer capital through relationship marketing activities: The case of Taiwanese multilevel marketing companies. *Journal of Intellectual capital*, *6*(2), 253-266.

Chang, S. J. (1996). An evolutionary perspective on diversification and corporate restructuring: Entry, exit, and economic performance during 1981-89. *Strategic Management Journal*, 587 611.

Chang, Y., & Thomas, H. (1989). The impact of diversification strategy on risk-return performance. *Strategic Management Journal*, *10*(3), 271-284.

Chase, R. L. (1997). The knowledge-based organization: an international survey. *Journal of Knowledge Management*, *1*(1), 38-49.

Chatterjee, S., & Wernerfelt, B. (1991). The link between resources and type of diversification: Theory and evidence. *Strategic management journal*, *12*(1), 33-48.

Chen, C. R., Huang, Y. S., & Zhang, T. (2017). Noninterest Income, trading, and bank risk. *Journal of Financial Services Research*, *51*(1), 19-53.

Chen, J., Zhu, Z., & Yuan Xie, H. (2004). Measuring intellectual capital: a new model and empirical study. *Journal of Intellectual capital*, *5*(1), 195-212.

Cheng, M. Y., Lin, J. Y., Hsiao, T. Y., & Lin, T. W. (2008). Censoring model for evaluating intellectual capital value drivers. *Journal of Intellectual Capital*, *9*(4), 639-654.

Chibani, F., Henchiri, J., & Kefi, M. K. (2019). The relationship between innovation and he financial structure with consideration of the moderating role of the generational stage of family businesses. *Corporate Governance: Search for the Advanced Practices*, 293.

Chicu, D., del Mar Pàmies, M., Ryan, G., & Cross, C. (2019). Exploring the influence of the human factor on customer satisfaction in call centres. *BRQ Business Research Quarterly*, *22*(2), 83-95.

Child, J. (1972). Organizational structure, environment and performance: The role of strategic choice. *sociology*, *6*(1), 1-22.

Chiorazzo, V., Milani, C., & Salvini, F. (2008). Income diversification and bank performance: Evidence from Italian banks. *Journal of Financial Services Research*, *33*(3), 181-203.

Chiu, C. L., & Chen, Y. S. (2017). A web-scale experience to identify the component impacts of intellectual capital on corporate performance from perspective of multimedia data applications. *International Journal of Applied Systemic Studies*, *7*(1-3), 138-153.

Chong, Y. Q., Wang, B., Tan, G. L. Y., & Cheong, S. A. (2014). Diversified firms on dynamical supply chain cope with financial crisis better. *International Journal of Production Economics*, 150, 239-245.

Christensen, H. K., & Montgomery, C. A. (1981). Corporate economic performance: Diversification strategy versus market structure. *Strategic Management Journal*, *2*(4), 327-343.

Chu, P. Y., Hsiung, H.-H., Huang, C. H., and Yang, C.-Y. (2008). Determinants of the valuation of intangible assets - a contrast between Taiwanese and American IC design houses. *International Journal of Technology Management, 41*(3-4), 336-358

Chung, D., Kim, M. J., & Kang, J. (2019). Influence of alliance portfolio diversity on innovation performance: the role of internal capabilities of value creation. *Review of Managerial Science*, *13*(5), 1093-1120.

Cirera, X., Marin, A., & Markwald, R. (2015). Explaining export diversification through firm innovation decisions: The case of Brazil. *Research Policy*, *44*(10), 1962-1973.

Clark D. 2000. Implementation issues in core competence strategy making, *Strategic Change,* Vol 9, No 2, 115-127.

Clarke, M., Seng, D., & Whiting, R. H. (2011). Intellectual capital and firm performance in Australia. *Journal of Intellectual Capital*, *12*(4), 505-530.

Clarke, T., & Gholamshahi, S. (2018). Developing human capital for knowledge based economies. In *Innovation in the Asia Pacific* (pp. 247-270). Springer, Singapore.

Coad, A., Segarra, A., & Teruel, M. (2013). Like milk or wine: Does firm performance improve with age?. *Structural Change and Economic Dynamics*, *24*, 173-189.

Coccia, M. (2017). Sources of technological innovation: Radical and incremental innovation problem-driven to support competitive advantage of firms. *Technology Analysis & Strategic Management*, *29*(9), 1048-1061.

Coff, R. W. (2002). Human capital, shared expertise, and the likelihood of impasse in corporate acquisitions. *Journal of Management*, *28*(1), 107-128.

Comte, A . (1856). *A general view of positivism*. London: Smith Elder & Co.

Corrado, C., Haskel, J., Jona-Lasinio, C., & Iommi, M. (2012). *Intangible capital and growth in advanced economies: Measurement methods and comparative results* (No. 6733).

Craigwell, R., & Maxwell, C. (2006). Noninterest income and financial performance at commercial banks in Barbados. *Savings and Development*, 309-328.

Crass, D., & Peters, B. (2014). Intangible assets and firm-level productivity. *ZEW-Centre for European Economic Research Discussion Paper*, (14-120).

Crook, T. R., Todd, S. Y., Combs, J. G., Woehr, D. J., & Ketchen Jr, D. J. (2011). Does human capital matter? A meta-analysis of the relationship between human capital and firm performance. *Journal of applied psychology*, 96(3), 443.

Curi, C., Lozano-Vivas, A., Zelenyuk, V. (2015). Foreign bank diversification and efficiency prior to and during the financial crisis: Does one business model fit all?, *Journal of Banking & Finance*

D'Souza, C., & Lai, A. (2003). Does diversification improve bank efficiency?. *The evolving financial system and public policy*, 105-127.

Dai, G., & de Vries, J. (2018). Place Making in Shanghai Hongqiao Business District: An Institutional Capacity Perspective. *Urban Policy and research*, *36*(1), 97-11

Dakhli, M., & De Clercq, D. (2004). Human capital, social capital, and innovation: a multi-country study. *Entrepreneurship & regional development*, *16*(2), 107-128.

Daly, S., & Frikha, M. (2017). Determinants of Bank Performance: Comparative Study Between Conventional and Islamic Banking in Bahrain. *Journal of the Knowledge Economy*, 8(2), 471 488.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of management journal*, 34(3), 555-590.

Damanpour, F., & Wischnevsky, J. D. (2006). Research on innovation in organizations: Distinguishing innovation-generating from innovation-adopting organizations. *Journal of engineering and technology management*, 23(4), 269-291.

Dammak, A. (2015). Research paradigms: Methodologies and compatible methods. *Veritas*, *6*(2), 1-5.

Danai, H. A., Ghezavat, F., & Ardakani, M. F. (2018). The Effects of Intellectual Capital on firm Performance in Exporting Companies. *Academy of Social Science Journal*, *3*(6), 1191-1198.

Datta, D. K., Rajagopalan, N., & Rasheed, A. (1991). Diversification and performance: Critical review and future directions. *Journal of Management Studies*, *28*(5), 529-558.

Daud, A. S., Awoyemi, T. T., & Omotayo, A. O. (2018). Human Capital and Income Diversification Among Crop Farmers in Rural Oyo State, Nigeria. *Journal of Agribusiness and Rural Development*, (3 (49)), 251-26

Davenport, T.H. and Prusak, L. (1998), *Working Knowledge: How Organizations Manage What They Know*, Harvard Business School Press, Boston, MA.

Deesomsak**,** R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: evidence from the Asia Pacific region. Journal of multinational financial management, 14(4-5), 387-405.

Deligianni, I., Voudouris, I., & Lioukas, S. (2014). The Relationship Between Innovation and Diversification in the Case of New Ventures: Unidirectional or Bidirectional?. *IEEE Transactions on Engineering Management*, 61(3), 462-475.

Delpachitra, S., & Lester, L. (2013). Non-Interest Income: Are Australian Banks Moving Away from their Traditional Businesses?. *Economic Papers: A journal of applied economics and policy*, *32*(2), 190-199.

Demirgüç-Kunt, A., & Huizinga, H. (1999). Determinants of commercial bank interest margins and profitability: some international evidence. *The World Bank Economic Review*, *13*(2), 379-408.

Denis, D. J., Denis, D. K., & Sarin, A. (1997). Agency problems, equity ownership, and corporate diversification. *The Journal of Finance*, 52(1), 135-160.

Denis, J. E., & Depelteau, D. (1985). Market knowledge, diversification and export expansion. *Journal of International Business Studies*, *16*(3), 77-89.

Desta, T. S. (2016). Financial Performance of "The Best African Banks": A Comparative Analysis Through Camel Rating. *Journal of Accounting and Management*, *6*(1), 1-20.

D'Este, P. (2002). The distinctive patterns of capabilities accumulation and inter-firm heterogeneity: the case of the Spanish pharmaceutical industry. *Industrial and Corporate Change*, 11(4), 847-874.

DeYoung, R., & Rice, T. (2004). Noninterest income and financial performance at US commercial banks. *Financial Review*, *39*(1), 101-127.

DeYoung, R., & Roland, K. P. (2001). Product mix and earnings volatility at commercial banks: Evidence from a degree of total leverage model. *Journal of Financial Intermediation*, *10*(1), 54-84.

Dilshad, M. N. (2013). Profitability analysis of mergers and acquisitions: An event study approach. *Business and Economic Research*, *3*(1), 89-125.

Dimitrios, A., Helen, L., & Mike, T. (2016). Determinants of non-performing loans: Evidence from Euro-area countries. *Finance research letters*, *18*, 116-119

Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of management Review*, *20*(1), 65-91.

Drucker, P. (1993) *Post-Capitalist Society*, New York: Harper Business.

Drucker, P. F. (1954). *The practice of management: A study of the most important function in America society*. Harper & Brothers

Drukker, D. M. (2003). Testing for serial correlation in linear panel-data models. *The stata journal*, *3*(2), 168-177.

Duc, T. P., & Waibel, H. (200). Diversification in land and labor allocation in response to shocks among small-scale farmers in central Vietnam. In *49th Annual Conference, Kiel, Germany, September 30-October 2, 2009* (No. 53255). German Association of Agricultural Economists (GEWISOLA).

Duffy, J. (2000). Measuring customer capital. *Strategy and Leadership*, *28*(5), 10-15.

Dwyer, R. E. (2018). Credit, debt, and inequality. *Annual Review of Sociology*, *44*, 237-261.

Ebrahim, A., & Hasan, I. (2008). The value relevance of product diversification in commercial banks. *Review of Accounting and Finance*, *7*(1), 24-37.

Edirisuriya, P., Gunasekarage, A., & Dempsey, M. (2015). Australian Specific Bank Features and the Impact of Income Diversification on Bank Performance and Risk. *Australian Economic Papers*, *54*(2), 63-87.

Edvardsson, B., Johnson, M. D., Gustafsson, A., & Strandvik, T. (2000). The effects of satisfaction and loyalty on profits and growth: products versus services. *Total quality management*, *11*(7), 917-927.

Edvinsson, L., & Malone, M. S. (1997). *Intellectual capital: The proven way to establish your company's real value by finding its hidden brainpower*. Piatkus.

Edwards, C. D. (1955). Conglomerate bigness as a source of power. In *Business concentration and price policy* (pp. 331-359). Princeton University Press.

Eggoh, J., Houeninvo, H., & Sossou, G. A. (2015). Education, health and economic growth in African countries. *Journal of Economic Development*, *40*(1), 93.

Eije, H. V., & Jin, J. (2016). Industrial Diversification and Shareholders' Value in China: The Case of Shanghai Listed Manufacturing Firms. *The South East Asian Journal of Management*, 9-28.

Eisenhardt, K.M. and Martin, J.A. (2000). Dynamic capabilities: what are they? *Strategic Management Journal*, **21**, 1105–1121.

Eisfeldt, A. L., & Papanikolaou, D. (2013). Organizational capital and the cross-section of expected returns. The Journal of Finance, 68(4), 1365-1406.

Elsas, R., Hackethal, A., & Holzhäuser, M. (2010). The anatomy of bank diversification. *Journal of Banking & Finance*, *34*(6), 1274-1287.

Ersado, Lire (2006). *Income diversification in Zimbabwe: Welfare implications from urban and rural areas*. The World Bank.

Evangelista, R., Sandven, T., Sirilli, G., & Smith, K. (1998). Measuring innovation in European industry. *International Journal of the Economics of Business*, *5*(3), 311-333.

Fallah, M. H., & Ibrahim, S. (2004, April). Knowledge spillover and innovation in technological clusters. In *Proceedings, IAMOT 2004 Conference, Washington, DC* (pp. 1-16).

Fang, Y., & van Lelyveld, I. (2014). Geographic diversification in banking. *Journal of Financial Stability*, *15*, 172-181.

Farjoun M. (1994). Beyond industry boundaries: human expertise, diversification and resource-related industry groups. *Organization Science* 5(2): 185-199.

Farjoun M. (1998). The independent and joint effects of the skill and physical bases of relatedness in diversification. *Strategic Management Journal* 19(7): 611-630.

Fauver, L., Houston, J., & Naranjo, A. (2003). Capital market development, international integration, legal systems, and the value of corporate diversification: A cross-country analysis. *Journal of Financial and Quantitative Analysis*, 38(1), 135-158.

Felício, J. A., Couto, E., & Caiado, J. (2014). Human capital, social capital and organizational performance. *Management Decision*, *52*(2), 350-364.

Feng, H., Morgan, N. A., & Rego, L. L. (2017). Firm capabilities and growth: the moderating role of market conditions. *Journal of the Academy of Marketing Science*, *45*(1), 76-92.

Fisch, J. H., & Schmeisser, B. (2020). Phasing the operation mode of foreign subsidiaries: Reaping the benefits of multinationality through internal capital markets. *Journal of International Business Studies*, 1-33.

Firer, S., & Mitchell Williams, S. (2003). Intellectual capital and traditional measures of corporate performance. *Journal of intellectual capital*, *4*(3), 348-360.

Fitzgerald, L., & Moon, P. (1996). *Performance measurement in service industries: making it work*. London, CIMA

Foss, N. J., & Christensen, J. F. (2001). A market-process approach to corporate coherence. *Managerial and Decision Economics*, *22*(4-5), 213-226.

Fox, J. (1991). *Regression diagnostics: An introduction* (Vol. 79). Sage.

Francis, B. B., Mani, S. B., & Wu, Q. (2015). The impact of organizational capital on firm innovation. Working Paper.

Fraumani, B., & Liu, G. (2019). Human Capital: Educational Attainment Progress-Inclusive Wealth Report 2018: Measuring Sustainability ad Well-being Chapter 6. *Inclusive Wealth Report 2018: Measuring Sustainability ad Well-being*.

Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Cambridge University Press.

Fukui, Y., & Ushijima, T. (2007). Corporate diversification, performance, and restructuring in the largest Japanese manufacturers. *Journal of the Japanese and International Economies*, *21*(3), 303-323.

Funke, M., & Strulik, H. (2000). On endogenous growth with physical capital, human capital and product variety. *European Economic Review*, *44*(3), 491-515.

Gabriel, A. S., Cheshin, A., Moran, C. M., & van Kleef, G. A. (2016). Enhancing emotional performance and customer service through human resources practices: A systems perspective. *Human Resource Management Review*, *26*(1), 14-24.

Gagnon, S. (1999). Resource-based competition and the new operations strategy. *International Journal of Operations & Production Management*, 19(2), 125-138.

Galbraith, J. K. (1969). *The New Industrial State*: Harmondsworth: Penguin.

Gallego, I., & Rodríguez, L. (2005). Situation of intangible assets in Spanish firms: an empirical analysis. *Journal of Intellectual Capital*, *6*(1), 105-126.

Gamal, D., Salah, E. T., & Elrayyes, E. N. (2011). How to measure organization Innovativeness. *Technology Innovation and Entrepreneurship Center*.

Gamra, S. B., & Plihon, D. (2011). Revenue diversification in emerging market banks: implications for financial performance. *arXiv preprint arXiv:1107.0170*.

Garson, G. D. (2013). Fundamentals of hierarchical linear and multilevel modeling. *Hierarchical linear modeling: Guide and applications*, 3-25.

Gennaioli, N., La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2012). Human capital and regional development. *The Quarterly journal of economics*, *128*(1), 105-164.

Gerhart, B. A., Minkoff, H. B., & Olsen, R. N. (1995). Employee compensation: Theory, practice, and evidence. *CAHRS Working Paper Series*, 194.

Ghosh, A. (2017). *Capital structure and firm performance*. Routledge.

Gilbert, R. A., Meyer, A. P., & Vaughan, M. D. (2000). The role of a CAMEL downgrade model in bank surveillance. *Federal Reserve Bank of St. Louis Working Paper Series*, (2000-021).

Gill, A., Biger, N., & Tibrewala, R. (2010). Determinants of dividend payout ratios: evidence from United States. The Open Business Journal, 3(1).

Gittleman, M., & Pierce, B. (2015). Pay for performance and compensation inequality: evidence from the ECEC. *ILR Review*, *68*(1), 28-52.

Gololo, I. A. (2018). Challenges of the Nigerian Banking Sector and the Way Forward. *American Finance & Banking Review*, *3*(1), 26-34.

Gort, M. (1962). *Diversification and integration in American industry: a study by the National Bureau of Economic Research*. Princeton University Press.

Gort, M., Grabowski, H., & McGuckin, R. (1985). Organizational capital and the choice between specialization and diversification. *Managerial and Decision Economics*, *6*(1), 2-10.

Gould, W., & Rogers, W. H. (1994). Quantile regression as an alternative to robust regression. In *Proceedings of the Statistical Computing Section* (pp. 171-210). American Statistical Association Alexandria, VA.

Gourio, F., & Rudanko, L. (2014). Customer capital. *Review of Economic Studies*, *81*(3), 1102-1136.

Government of the Republic of Kenya. (2007). Kenya Vision 2030, A globally competitive and prosperous Kenya. Government Printer. Nairobi

Granstrand, O. (1998). Towards a theory of the technology-based firm. *Research policy*, *27*(5), 465-489.

Grant, R. M. (1996). Toward a knowledge-based theory of the firm. *Strategic management journal*, *17*(S2), 109-122.

Grant, R. M., Jammine, A. P., & Thomas, H. (1988). Diversity, diversification, and profitability among British manufacturing companies, 1972–1984. *Academy of management Journal*, *31*(4), 771-801.

Grant, R.M. (1991). The resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, 33, 114–135.

Greene, W. H. (2003). *Econometric analysis*. Pearson Education India.

Greenwood, R., Li, S. X., Prakash, R., & Deephouse, D. L. (2005). Reputation, diversification, and organizational explanations of performance in professional service firms. *Organization Science*, *16*(6), 661-673.

Greve, H. R. (2003). *Organizational learning from performance feedback: A behavioral perspective on innovation and change*. Cambridge University Press.

Gujarati, D. N. (2012). *Basic econometrics*. Tata McGraw-Hill Education.

Gul, S., Irshad, F., & Zaman, K. (2011). Factors Affecting Bank Profitability in Pakistan. *Romanian Economic Journal*, *14*(39)

Gupta, A. K. (1990). Impact of technological intensity on related and unrelated diversification. *The Journal of High Technology Management Research*, *1*(1), 57-67.

Gurbuz, A. O., Yanik, S., & Ayturk, Y. (2013). Income diversification and bank performance: Evidence from Turkish banking sector. *Journal of BRSA Banking and Financial markets*, *7*(1), 9-29.

Guru, B. K., Staunton, J., & Balashanmugam, B. (2002). Determinants of commercial bank profitability in Malaysia. *Journal of Money, Credit, and Banking*, *17*(1), 69-82.

Guthrie, J. (2001). The management, measurement and the reporting of intellectual capital. *Journal of Intellectual capital*, *2*(1), 27-41.

Hahm, J. (2008). *Noninterest income of commercial banks: evidence from OECD countries*. BOK Working Paper 330, The Bank of Korea.

Hahn, F. R. (2009). A note on management efficiency and international banking. Some empirical panel evidence. *Journal of Applied Economics*, *12*(1), 69-81.

Hair, J. F. (2006). *Multivariate data analysis*. Pearson Education India.

Hakimi, A., Hamdi, H., & Djelassi, M. (2012). Modelling noninterest income at Tunisian banks. MPRA Paper No 65114

Halim, S. (2010). Statistical analysis on the intellectual capital statement. *Journal of Intellectual Capital*, *11*(1), 61-73.

Hall, R. E. (2001). The stock market and capital accumulation. *American Economic Review*, *91*(5), 1185-1202.

Hammer, M. (2007). The Process Audit. *Harvard Business Review*, 85(4), 111-9.

Han, J. K., Kim, N., & Srivastava, R. K. (1998). Market orientation and organizational performance: is innovation a missing link?. *Journal of marketing*, *62*(4), 30-45.

Han, J., Han, J. and Brass, D.J. (2014) Human capital diversity in the creation of social capital for team creativity. *Journal of Organizational Behaviour*. Vol 35, No 1. pp54 71.

Hao, S., Jin, Q., & Zhang, G. (2011). Relative firm profitability and stock return sensitivity to industry-level news. The Accounting Review, 86(4), 1321-1347.

Harreld, J. B., O'Reilly III, C. A., & Tushman, M. L. (2007). Dynamic capabilities at IBM: Driving strategy into action. *California management review*, *49*(4), 21-43.

Hauner, D. (2009). Public debt and financial development. *Journal of development economics*, *88*(1), 171-183.

Havranek, T., & Irsova, Z. (2013). Determinants of bank performance in transition countries: A data envelopment analysis. *Transition Studies Review*, 20(1), 1-17.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Guilford Publications.

Henderson, R., & Clark, K. B. (1990). Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. *Administrative science quarterly*.

Hendricks, K. B., Singhal, V. R., & Stratman, J. K. (2007). The impact of enterprise systems on corporate performance: A study of ERP, SCM, and CRM system implementations. *Journal of operations management*, *25*(1), 65-82.

Hergert, M. (1984). Market Share and Profitability: Is Bigger Really Better?. *Business Economics*, 45-48.

Hervas-Oliver, J. L., Sempere-Ripoll, F., & Boronat-Moll, C. (2014). Process innovation strategy in SMEs, organizational innovation and performance: a misleading debate?. *Small Business Economics*, *43*(4), 873-886.

Hillman, A. J., Withers, M. C., & Collins, B. J. (2009). Resource dependence theory: A review. *Journal of management*, *35*(6), 1404-1427.

Hinterhuber, H.H. (1995), Business process management: the European approach. *Business Change & Re-engineering,* Vol. 2 No. 4, pp. 63-73.

Hitt, M. A., & Ireland, R. D. (1986). Relationships among corporate level distinctive competencies, diversification strategy, corporate structure and performance. *Journal of management studies*, 23(4), 401-416.

Hitt, M. A., Bierman, L., Shimizu, K., & Kochhar, R. (2001). Direct and moderating effects of human capital on strategy and performance in professional service firms: A resource-based perspective. *Academy of Management journal*, *44*(1), 13-28.

Hitt, M.A., Hoskisson, R.E., & Kim, H. (1997). International diversification: Effects on innovation and firm performance in product-diversified firms. *Academy of Management Journal*, 40, 767–798.

Ho, T. S., & Saunders, A. (1981). The determinants of bank interest margins: theory and empirical evidence. *Journal of Financial and Quantitative analysis*, *16*(4), 581-600.

Hoechle, D., Schmid, M., Walter, I., & Yermack, D. (2012). How much of the diversification discount can be explained by poor corporate governance? *Journal of Financial Economics*, 103(1), 41-60.

Holmberg, S. (2000). A systems perspective on supply chain measurements. *International Journal of Physical Distribution & Logistics Management*, *30*(10), 847-868.

Hong, P., Dobrzykowski, D., Park, Y. W., HassabElnaby, H. R., Hwang, W., & Vonderembse, M. A. (2012). The impact of ERP implementation on organizational capabilities and firm performance. *Benchmarking: An International Journal*.

Hong-kit Yim, F., Anderson, R. E., & Swaminathan, S. (2004). Customer relationship management: Its dimensions and effect on customer outcomes. *Journal of Personal Selling & Sales Management*, *24*(4), 263-278.

Honohan, P. (2004). Financial development, growth and poverty: how close are the links?. In Financial Development and Economic Growth (pp. 1-37). *Palgrave Macmillan,* London

Hoskisson, R. E., & Hitt, M. A. (1990). Antecedents and performance outcomes of diversification: A review and critique of theoretical perspectives. *Journal of management*, 16(2), 461-509.

Hossain, I., & Hossain, A. (2015). Determinants of capital structure and testing of theories: A study on the listed manufacturing companies in Bangladesh. *International Journal of Economics and Finance*, *7*(4), 176-190.

Hsu, C. W., & Liu, H. Y. (2008). Corporate diversification and firm performance: The moderating role of contractual manufacturing model. *Asia Pacific Management Review*, *13*(1), 345-360.

Hsu, L. C., & Wang, C. H. (2012). Clarifying the effect of intellectual capital on performance: the mediating role of dynamic capability. *British Journal of Management*, *23*(2), 179-205.

Hsu, Y. H., & Fang, W. (2009). Intellectual capital and new product development performance: The mediating role of organizational learning capability. *Technological Forecasting and Social Change*, 76(5), 664-677.

Huang, L. W., & Chen, Y. K. (2006). Does bank performance benefit from non-traditional activities? A case of noninterest incomes in Taiwan Commercial Banks. *Asianjournal of management and humanity sciences*, *1*(3), 359-378.

Hughes, J. P., Mester, L. J., & Moon, C. G. (2001). Are scale economies in banking elusive or illusive?: Evidence obtained by incorporating capital structure and risk-taking into models of bank production. *Journal of Banking & Finance*, *25*(12), 2169-2208.

Hughes, K., & Oughton, C. (1993). Diversification, multi-market contact and profitability. Economica, 203-224.

Hult, G. T. M., Hurley, R. F., & Knight, G. A. (2004). Innovativeness: Its antecedents and impact on business performance. *Industrial marketing management*, 33(5), 429-438.

Hung, R. Y. Y. (2006). Business process management as competitive advantage: a review and empirical study. *Total Quality Management & Business Excellence*, *17*(1), 21-40.

Hung, Y. C., & Chang, E. L. (2006). Measurement scale of intellectual capital for the information service industry. *International Journal of Services and Standards*, *2*(2), 154-175.

Ibrahim, S., & Lloyd, C. (2011). The association between non-financial performance measures in executive compensation contracts and earnings management. *Journal of Accounting and Public Policy*, *30*(3), 256-274.

Ilaboya, O. J., & Ohiokha, I. F. (2016). Firm age, Size and Profitability dynamics: A test of learning by doing and structural inertia hypotheses. *Business and Management Research*, *5*(1), 29.

Imai, M. (1986). Kaizen: The Key to Japan's Success. New York: Random House.

Inkinen, H. (2015). Review of empirical research on intellectual capital and firm performance. *Journal of Intellectual capital*, *16*(3), 518-565.

International Monetary Fund, *Global Financial Stability Report—Risk Taking, Liquidity, and Shadow Banking: Curbing Excess while Promoting Growth* (Washington, October 2014).

International Monetary Fund. 2017. *Global Financial Stability Report: Is Growth at Risk?* Washington, DC, October.

Iqbal, Z. (2007). Challenges facing Islamic financial industry. *Journal of Islamic Economics, Banking and Finance (JIEBF), 3*.

Ismail, A., Hanif, R., Choudhary, S., & Nisar, A. (2015). Income-diversification in banking sector of Pakistan: a'Blessing'or'Curse'?. *The Journal of Commerce*, *7*(1), 11.

Itami, H. (1987). Mobilizing Invisible Assets' Harvard Uni. *Press, Cambridge Mass*.

Ittner, C. D., & Larcker, D. F. (1998). Are nonfinancial measures leading indicators of financial performance? An analysis of customer satisfaction. *Journal of accounting research*, *36*, 1-35.

Jalbert, T., Furumo, K., & Jalbert, M. (2010). Does educational background affect CEO compensation and firm performance?. *The Journal of applied business research*, *27*(1), 15-40.

Jara-Bertin, M., Arias Moya, J., & Rodriguez Perales, A. (2014). Determinants of bank performance: evidence for Latin America. Academia *Revista Latinoamericana de Administración,* 27(2), 164-182.

Jen Huang, C., & Ju Liu, C. (2005). Exploration for the relationship between innovation, IT and performance. *Journal of Intellectual Capital*, *6*(2), 237-252.

Jensen, M. C. (1986). Agency costs of free cash flow, corporate finance, and takeovers. *The American economic review*, 76(2), 323-329.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of financial economics*, *3*(4), 305-360.

Jensen, M. C., & Murphy, K. J. (1990). Performance pay and top-management incentives. *Journal of political economy*, *98*(2), 225-264.

Jibril, H., Kaltenbrunner, A., & Kesidou, E. (2018). Financialisation and Innovation in Emerging Economies: Evidence from Brazil.

Johnson, B., & Christensen, L. (2008). *Educational research: Quantitative, qualitative, and mixed approaches*. Sage.

Joia, L. A. (2000). Measuring intangible corporate assets: linking business strategy with intellectual capital. *Journal of Intellectual capital*, 1(1), 68-84.

Jones, D. C., Kalmi, P., & Kauhanen, A. (2011). The effects of general and firm-specific training on wages and performance: evidence from banking. *Oxford economic papers*, *64*(1), 151-175. *Journal of Banking & Finance* 31, 2043-2063.

Jouida, S. (2018). Diversification, capital structure and profitability: A panel VAR approach. *Research in International Business and Finance*, *45*, 243-256

Kabir, A., & Dey, S. (2012). Performance analysis through CAMEL rating: A comparative study of selected private commercial banks in Bangladesh. *Journal of Politics & Governance*, *1*(2/3), 16-25.

Kabir, M. N. (2019). Knowledge Society. In *Knowledge-Based Social Entrepreneurship* (pp. 59-89). Palgrave Macmillan, New York.

Kajola, S. O., Adewumi, A. A., & Oworu, O. O. (2015). Dividend pay-out policy and firm financial performance: Evidence from Nigerian listed non-financial firms. *International Journal of Economics, Commerce and Management*, *3*(4), 1-12.

Kamakura, W. A., Mittal, V., De Rosa, F., & Mazzon, J. A. (2002). Assessing the service-profit chain. *Marketing science*, *21*(3), 294-317.

Kamukama, N., Ahiauzu, A., & Ntayi, J. M. (2010). Intellectual capital and performance: testing interaction effects. *Journal of Intellectual Capital*, *11*(4), 554-574.

Kannan, G., & Aulbur, W. G. (2004). Intellectual capital: measurement effectiveness. *Journal of intellectual capital*, *5*(3), 389-413.

Kannan, R., Narain, A., & Ghosh, S. (2001). Determinants of net interest margin under regulatory requirements: an econometric study. *Economic and political Weekly*, 337-344.

Kanwal, M., & Hameed, S. (2017). The Relationship between Dividend Payout And Firm Financial Performance. *Research in Business and Management*, *4*(1), 5-13.

Kaplan, R. S., & Norton, D. P. (1996). *The balanced scorecard: translating strategy into action*. Harvard Business Press.

Kasekende, E., & Nikolaidou, E. (2018). *Mobile Money and Money Demand in Kenya* (No. 2018-11). School of Economics, University of Cape Town.

Kato, M., Okamuro, H., & Honjo, Y. (2015). Does Founders' Human Capital Matter for Innovation? Evidence from J apanese Start-ups. *Journal of Small Business Management*, *53*(1), 114-128.

Kavale, S. (2012). The connection between strategy and structure. *International journal of business and commerce*, 1(6), 60-70

Keizer, J. A., Dijkstra, L., & Halman, J. I. (2002). Explaining innovative efforts of SMEs.: An exploratory survey among SMEs in the mechanical and electrical engineering sector in The Netherlands. *Technovation*, *22*(1), 1-13.

Kemp, R. G., Folkeringa, M., De Jong, J. P., & Wubben, E. F. (2003). *Innovation and firm performance* (No. H 200207). Zoetermeer,, The Netherlands: EIM.

Khalique, M., Bontis, N., Abdul Nassir bin Shaari, J., & Hassan Md Isa, A. (2015). Intellectual capital in small and medium enterprises in Pakistan. *Journal of Intellectual Capital*, *16*(1), 224-238.

Khalique, M., Shaari, N., Abdul, J., Isa, A. H. B. M., & Ageel, A. (2011). Relationship of intellectual capital with the organizational performance of pharmaceutical companies in Pakistan. *Australian Journal of Basic and Applied Sciences*, *5*(12), 1964-1969.

Khan, S. J. M., & Anuar, A. R. (2018). Access to Finance: Exploring Barriers to Entrepreneurship Development in SMEs. In *Global Entrepreneurship and New Venture Creation in the Sharing Economy* (pp. 92-111). IGI Global.

Kianto, A., Ritala, P., Spender, J. C., & Vanhala, M. (2014). The interaction of intellectual capital assets and knowledge management practices in organizational value creation. *Journal of Intellectual capital*, *15*(3), 362-375.

Kijek, T. (2012). Innovation Capital and its Measurement. *Journal of Entrepreneurship, Management and Innovation (JEMI)*, 52-68.

Kijek, T. (2014). Market valuation of innovation capital. *International Journal of Innovation and Learning*, *15*(4), 411-421.

Kilmann, R. (1995) A holistic program and critical success factors of corporate transformation, *European Management Journal*, 13(2), pp. 175–186.

Kim, D. J., & Kogut, B. (1996). Technological platforms and diversification. O*rganization Science,* 7(3), 283-301.

Kim, E. H., & Singal, V. (1993). Mergers and market power: Evidence from the airline industry. *The American Economic Review*, 549-569.

Kim, J. W. (2010). The relationship between international diversification and global brand value: Is it linear? One way? Country-of-origin dependent?. *Journal of Global Business Issues*, *4*(1).

Kim, W. C., Hwang, P., & Burgers, W. P. (1993). Multinationals' diversification and the risk-return trade-off. *Strategic Management Journal*, 14(4), 275-286.

Kimberly, J. R. (1981). Managerial innovation. *Handbook of organizational design*, *1*(84), 104.

Kivunja, C., & Kuyini, A. B. (2017). Understanding and Applying Research Paradigms in Educational Contexts. *International Journal of Higher Education*, *6*(5), 26-41.

Kiweu, J. (2012). Income diversification in the banking sector and earnings volatility: evidence from Kenyan commercial banks. *KBA centre for Research on Financial Markets and Policy, Working paper series*, (2).

Klein, P. G., & Lien, L. B. (2009). Diversification, industry structure, and firm strategy: an organizational economics perspective. In *Economic Institutions of Strategy* (pp. 289 312). Emerald Group Publishing Limited.

Klein, P. G., & Saidenberg, M. R. (2000). Diversification, organization, and efficiency: Evidence from bank holding companies. *Performance of Financial Institution*, 153-173.

Klein, P. G., & Saidenberg, M. R. (2010). Organizational structure and the diversification discount: Evidence from commercial banking. *The Journal of Industrial Economics,* 58(1), 127 155.

Kleinknecht, A., & Mohnen, P. (Eds.). (2001). *Innovation and firm performance: Econometric explorations of survey data*. Springer.

Kogut, B., & Zander, U. (1992). Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization science*, *3*(3), 383-397.

Kohlbacher, M. (2010). The effects of process orientation: a literature review. *Business Process Management Journal*, 16(1), 135-152.

Kohli, A. K., & Jaworski, B. J. (1990). Market orientation: the construct, research propositions, and managerial implications. *Journal of marketing*, *54*(2), 1-18.

Kolachi, N. A., & Shah, H. A. (2013). BRICS countries and their strategic HRD agenda in 2020. *International Journal of Management & Information Systems (Online)*, *17*(2), 105.

Kor, Y. Y., & Leblebici, H. (2005). How do interdependencies among human-capital deployment, development, and diversification strategies affect firms' financial performance?. *Strategic Management Journal*, *26*(10), 967-985.

Kor, Y. Y., & Mahoney, J. T. (2005). How dynamics, management, and governance of resource deployments influence firm-level performance. *Strategic Management Journal*, *26*(5), 489-496.

Koroglu, B. A., & Eceral, T. O. (2015). Human capital and innovation capacity of firms in defense and aviation industry in Ankara. *Procedia-Social and Behavioral Sciences,* 195, 1583-1592.

Kotabe, M. (1990). The relationship between offshore sourcing and innovativeness of US multinational firms: An empirical investigation. *Journal of International Business Studies*, *21*(4), 623-638.

Krapl, A. A. (2015). Corporate international diversification and risk. *International Review of Financial Analysis*, *37*, 1-13.

Krishnan, H. A., Miller, A., & Judge, W. Q. (1997). Diversification and top management team complementarity: Is performance improved by merging similar or dissimilar teams?. *Strategic management journal*, *18*(5), 361-374

Kumar, M. M. S., & Hauner, M. D. (2006). *Fiscal Policy and Interest Rates: How Sustainable is the" new Economy"?* (No. 6-112). International Monetary Fund

Kumhof, M. M., & Tanner, M. E. (2005). Government debt: A key role in financial intermediation (No. 5-57*). International Monetary Fund.*

Kurdyś-Kujawska, Agnieszka & Zawadzka, Danuta & Sompolska-Rzechuła, Agnieszka. (2018). The probability of farm's diversification – On the example of central Pomerania in Poland. *Bulgarian Journal of Agricultural Science*. *24.* 171-179.

Kuruzovich, J., Han, S., Koukova, N. T., Ravichandran, T. (2013). Testing the Steve Jobs Hypothesis in a B2B Context. Will a Portfolio of Hierarchically Related Technology Products Improve Customer Outcomes? *Journal of Service Research, 16(3), 372-385*

Kutan, A. M., Ozsoz, E., & Rengifo, E. W. (2012). Cross-sectional determinants of bank performance under deposit dollarization in emerging markets. *Emerging Markets Review*, 13(4), 478-492.

Landskroner, Y., Ruthenberg, D., & Zaken, D. (2005). Diversification and performance in banking: The Israeli case. *Journal of Financial Services Research*, *27*(1), 27-49.

Lang, L. H., & Stulz, R. M. (1994). Tobin's q, corporate diversification, and firm performance. *Journal of political economy*, 102(6), 1248-1280.

Lavrakas, P. J. (2008*). Encyclopedia of survey research methods*. Sage Publications.

Lee, H. S., Cheng, F. F., & Chong, S. C. (2016). Markowitz portfolio theory and capital asset pricing model for Kuala Lumpur stock exchange: A case revisited. *International Journal of Economics and Financial Issues*, *6*(3S), 59-65.

Lee, J. W., & Lee, H. (2016). Human capital in the long run. *Journal of Development Economics*, *122*, 147-169.

Lee, J. Y., & Kim, D. (2013). Bank performance and its determinants in Korea. *Japan and the World Economy*, 27, 83-94.

Lee, J., & Pati, N. (2017). A study of the effect of corporate diversification strategy on technological innovation and strength in technology-oriented multinational corporations across countries. *International Journal of Business Innovation and Research*, *13*(1), 1-29.

Lei, Q., & Chen, H. (2019). Corporate Governance Boundary, Debt Constraint, and Investment Efficiency. *Emerging Markets Finance and Trade*, *55*(5), 1091-1108

Lentjushenkova, O., & Lapina, I. (2014). The classification of the intellectual capital investments of an enterprise. *Procedia-Social and Behavioral Sciences*, 156, 53-57.

Leontiades, M. (1986). *Managing the unmanageable: Strategies for success within the conglomerate*. Addison-Wesley.

Lepetit, L., Nys, E., Rous, P., & Tarazi, A. (2008). Bank income structure and risk: An empirical analysis of European banks. *Journal of Banking & Finance*, *32*(8), 1452-1467.

Lev, B., & Radhakrishnan, S. (2005). The valuation of organizational capital. In *Measuring capital in the new economy* (pp. 73-110). University of Chicago Press.

Lev, B., Radhakrishnan, S., & Zhang, W. (2009). Organizational capital. Abacus, 45(3), 275-298.

Lewellen, W. G. (1971). A pure financial rationale for the conglomerate merger. *The Journal of Finance*, 26(2), 521 – 537.

Li, H., Loyalka, P., Rozelle, S., & Wu, B. (2017). Human capital and China's future growth. *Journal of Economic Perspectives*, *31*(1), 25-48.

Liang, C. J., & Lin, Y. L. (2008). Which IC is more important? A life-cycle perspective. *Journal of Intellectual Capital*, *9*(1), 62-76.

Liebeskind, J. P. (2000). Internal capital markets: Benefits, costs, and organizational arrangements. *Organization Science*, *11*(1), 58-76.

Liebowitz, J., & Suen, C. Y. (2000). Developing knowledge management metrics for measuring intellectual capital. *Journal of intellectual capital*, *1*(1), 54-67.

Lin, B. W., Lee, Y., & Hung, S. C. (2006). R&D intensity and commercialization orientation effects on financial performance. *Journal of Business Research*, *59*(6), 679-685.

Lin, S. J., & Chen, T. F. (2016). Multi-agent architecture for corporate operating performance assessment. *Neural Processing Letters*, *43*(1), 115-132.

Lindow, C. M. (2013). A strategic fit perspective on family firm performance. In *A Strategic Fit Perspective on Family Firm Performance* (pp. 49-93). Springer Gabler, Wiesbaden.

Ling, Y. H. (2013). The influence of intellectual capital on organizational performance—Knowledge management as moderator. *Asia Pacific Journal of Management*, *30*(3), 937-964.

Link, A. N., & van Hasselt, M. (2019). Exploring the impact of R&D on patenting activity in small women-owned and minority-owned entrepreneurial firms. *Small Business Economics*, 1-6.

Lippman, S. A., & Rumelt, R. P. (1982). Uncertain imitability: An analysis of interfirm differences in efficiency under competition. *The Bell Journal of Economics*, 418-438.

Liu, S. S., & Lin, C. Y. Y. (2007). Building customer capital through knowledge management processes in the health care context. *Health Care Management Review*, *32*(2), 92-101.

Liu, S. S., Luo, X., & Shi, Y. Z. (2002). Integrating customer orientation, corporate entrepreneurship, and learning orientation in organizations-in-transition: An empirical study. International Journal of Research in Marketing, 19(4), 367–382.

Loderer, C. F., & Waelchli, U. (2010). Firm age and performance. *Available at SSRN 1342248*.

Lööf, H., & Heshmati, A. (2006). On the relationship between innovation and performance: A sensitivity analysis. *Economics of Innovation and New Technology*, *15*(4-5), 317-344.

Lou, Y. C., Chang, A., Wei, S. C., & Sun, K. N. (2008). A case study of customer capital management in Taiwan's financial industry. *International Journal of Learning and Intellectual Capital*, *5*(3-4), 332-347.

Luthy, D. H. (1998). Intellectual capital and its measurement. In *Proceedings of the Asian Pacific Interdisciplinary Research in Accounting Conference (APIRA), Osaka, Japan* (pp. 16-17).

Lynch, P., Walsh, M., & Harrington, D. (2010). Defining and dimensionalizing organizational innovativeness. *In International CHRIE Conference-Refereed Track* (pp. 28-31).

Ma, H. (1999). Anatomy of competitive advantage: a select framework. *Management decision*, *37*(9), 709-718.

MacDonald, J. M. (1985). R & D and the directions of diversification. *The Review of Economics and Statistics*, 583-590.

Maddala, G. S., & Wu, S. (1999). A comparative study of unit root tests with panel data and a new simple test. *Oxford Bulletin of Economics and statistics*, *61*(S1), 631-652.

Maditinos, D., Chatzoudes, D., Tsairidis, C., & Theriou, G. (2011). The impact of intellectual capital on firms' market value and financial performance. *Journal of intellectual capital*, *12*(1), 132-151.

Maditinos, D., Sevic, Z., & Theriou, N. G. (2005). Performance Measures: Traditional Accounting Measures Versus Modern Value-Based Measures: The Case of Earnings and EVA® in the Athens Stock Exchange (ASE). In *proceeding, The 3 rd International Conference on Accounting and Finance in Transition (ICAFT)*.

Mahdi, O. R., Nassar, I. A., & Almsafir, M. K. (2019). Knowledge management processes and sustainable competitive advantage: An empirical examination in private universities. *Journal of Business Research*, *94*, 320-334

Mahoney, J. T., & Kor, Y. Y. (2015). Advancing the human capital perspective on value creation by joining capabilities and governance approaches. *Academy of Management Perspectives*, *29*(3), 296-308.

Mank, D. A., & Nystrom, H. E. (2001). Decreasing returns to shareholders from R&D spending in the computer industry. *Engineering Management Journal*, *13*(3), 3-8.

Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: rethinking social initiatives by business. *Administrative Science Quarterly*, *48*(2), 268-306.

Markham, S. K., & Griffin, A. (1998). The breakfast of champions: associations between champions and product development environments, practices and performance. *Journal of Product Innovation Management*, *15*(5), 436-454.

Markides, C. C. (1995). Diversification, restructuring and economic performance. *Strategic Management Journal*, *16*(2), 101-118.

Markides, C. C., & Williamson, P.J (1996). Corporate Diversification and Organizational Structure: A Resource-Based View. The Academy of Management Journal, Vol. 39, No. 2 (Apr., 1996), pp. 340-367

Markowitz, H. (1952). Portfolio selection. *The journal of finance*,7(1), 77-91.

Marlin, D., Lamont, B. T., & Geiger, S. W. (2004). Diversification strategy and top management team fit. *Journal of Managerial Issues*, 361-381.

Marr, B., Schiuma, G., & Neely, A. (2004). Intellectual capital–defining key performance indicators for organizational knowledge assets. *Business Process Management Journal*, *10*(5), 551-569.

Matsusaka, J. G. (2001). Corporate diversification, value maximization, and organizational capabilities. *The Journal of Business*, 74(3), 409-431.

Matthies, B. (2014). Process capital: a synthesis of research and future prospects. *Knowledge and Process Management*, 21(2), 91-102.

Maudos, J., & Solís, L. (2009). The determinants of net interest income in the Mexican banking system: An integrated model. *Journal of Banking & Finance*, *33*(10), 1920-1931.

May, D. O. (1995). Do managerial motives influence firm risk reduction strategies?. *The Journal of Finance*, 50(4), 1291-1308

McDowell, W. C., Peake, W. O., Coder, L., & Harris, M. L. (2018). Building small firm performance through intellectual capital development: Exploring innovation as the "black box". *Journal of Business Research*, *88*, 321-327.

Meeks, G. (1977). *Disappointing marriage: A study of the gains from merger* (Vol. 51). CUP Archive.

Meihami, B., Varmaghani, Z., & Meihami, H. (2014). Role of Intellectual Capital on Firm Performance (Evidence from Iranian Companies). *International Letters of Social and Humanistic Sciences*, *1*(1), 43-50.

Meles, A., Porzio, C., Sampagnaro, G., & Verdoliva, V. (2016). The impact of the intellectual capital efficiency on commercial banks performance: Evidence from the US. *Journal of Multinational Financial Management*, *36*, 64-74.

Mention, A. L., & Bontis, N. (2013). Intellectual capital and performance within the banking sector of Luxembourg and Belgium. *Journal of Intellectual capital*, *14*(2), 286-309.

Mercieca, S., Schaeck, K., & Wolfe, S. (2007). Small European banks: Benefits from diversification?. *Journal of Banking & Finance*, *31*(7), 1975-1998.

Miles, R. H., & Cameron, K. S. (1982). *Coffin nails and corporate strategies*. Prentice Hall.

Minot, N. (Ed.). (2006). *Income diversification and poverty in the Northern Uplands of Vietnam* (Vol. 145). Intl Food Policy Res Inst.

Miroshnychenko, O. (2013). The intellectual capital of an enterprise: the innovative aspect. *Informacijos mokslai*, *63*.

Mithas, S., Krishnan, M. S., & Fornell, C. (2005). Why do customer relationship management applications affect customer satisfaction?. *Journal of Marketing*, 69(4), 201-209.

Mittal, S., & Nihar, L. (2018). Analyzing Income Diversification Relationship for Indian Banks based on Ownership and Size. *Vinimaya*, *39*(3), 40-58.

Miyazaki, K. (1999). Building technology competencies in Japanese firms. *Research-Technology Management*, *42*(5), 39-45.

Molina, J. A., & Ortega, R. (2003). Effects of employee training on the performance of North-American firms. *Applied Economics Letters*, *10*(9), 549-552.

Mondal, A., & Ghosh, S. K. (2012). Intellectual capital and financial performance of Indian banks. *Journal of Intellectual Capital*, *13*(4), 515-530.

Montgomery, C. A. (1985). Product-market diversification and market power. Academy of *Management Journal*, 28(4), 789-798.

Montgomery, C. A., & Wernerfelt, B. (1988). Diversification, Ricardian rents, and Tobin's q. *The Rand journal of economics*, 623-632.

Morck, R., Shleifer, A., & Vishny, R.W. (1990). Do Managerial Objectives Drive Bad Acquisitions?. *Journal of Finance* (45), 31-48.

Morgan, D. P., & Samolyk, K. (2003). Geographic diversification in banking and its implications for bank portfolio choice and performance. *Unpublished paper, Federal Reserve Bank of New York.*

Moudud-Ul-Huq, S., Ashraf, B. N., Gupta, A. D., & Zheng, C. (2018). Does bank diversification heterogeneously affect performance and risk-taking in ASEAN emerging economies?. *Research in International Business and Finance*, *46*, 342-362

Moustaghfir, K. (2009). How knowledge assets lead to a sustainable competitive advantage: are organizational capabilities a missing link?. *Knowledge Management Research & Practice*, 7(4), 339-355.

Mujeri, M. K., & Younus, S. (2009). An analysis of interest rate spread in the banking sector in Bangladesh. *The Bangladesh Development Studies*, 1-33.

Muthinja, M. M., & Chipeta, C. (2018). What drives financial innovations in Kenya's commercial banks? An empirical study on firm and macro-level drivers of branchless banking. *Journal of African Business*, *19*(3), 385-408

Mwangi, M., & Murigu, J. W. (2015). The determinants of financial performance in general insurance companies in Kenya. *European Scientific Journal, ESJ*, *11*(1).

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, *13*(2), 187-221.

Naceur, S., & Goaied, M. (2008). The Determinant of Commercial Bank Interest Margin and Profitability: Evidence from Tunisia. *Frontiers in Finance and Economics*, *5*(1), 106-130.

Namvar, M., Fathian, M., Gholamin, M., & Akhavan, P. (2010). Exploring the Role of Human Capital on Firm's Structural Capital in Iranian E-Business Industry. In *International Conference on Management Technology and Applications (ICMTA), Singapore*.

Narasimhan, R., & Kim, S. W. (2002). Effect of supply chain integration on the relationship between diversification and performance: evidence from Japanese and Korean firms. Journal of operations management, 20(3), 303-323.

Naz, F., Ijaz, F., & Naqvi, F. (2016). Financial Performance of Firms: Evidence from Pakistan Cement Industry. Journal of Teaching and Education, CD-ROM. ISSN: 2165-6266 : 05(01):81–94 (2016)

Nazari, J. A., & Herremans, I. M. (2007). Extended VAIC model: measuring intellectual capital components. *Journal of Intellectual Capital*, 8(4), 595-609)

Nazir, T. (2010). Analyzing Financial Performance of Commercial Banks in India: Application of CAMEL Model. *Pakistan Journal of Commerce & Social Sciences*, *4*(1).

Neffke, F., & Henning, M. (2013). Skill relatedness and firm diversification. *Strategic Management Journal*, 34(3), 297-316.

Nelson, R. R. (1991). Why do firms differ, and how does it matter?. *Strategic management journal*, 12(S2), 61-74.

Nelson, R. R., & Winter, S. G. (1982). An Evolutionary Theory of Economic Change, *Belknap Press of Harvard University Press*

Nepali, S. R. (2018). Income diversification and bank risk-return trade-off on the Nepalese commercial banks. *Asian Economic and Financial Review*, *8*(2), 279-293.

Nguyen, M., Skully, M., & Perera, S. (2012). Bank market power and revenue diversification: Evidence from selected ASEAN countries. *Journal of Asian Economics*, *23*(6), 688-700.

Nieves, J., & Quintana, A. (2018). Human resource practices and innovation in the hotel industry: The mediating role of human capital. *Tourism and Hospitality Research*, *18*(1), 72-83.

Nisar, S., Peng, K., Wang, S., & Ashraf, B. N. (2018). The Impact of Revenue Diversification on Bank Profitability and Stability: Empirical Evidence from South Asian Countries. *International Journal of Financial Studies*, *6*(2), 40.

Noe, R. A., Hollenbeck, J. R., Gerhart, B., & Wright, P. M. (2017). *Human resource management: Gaining a competitive advantage*. New York, NY: McGraw-Hill Education.

Nonaka, I. (2008). *The knowledge-creating company*. Harvard Business Review Press.

Nonaka, I., Toyama, R., & Nagata, A. (2000). A firm as a knowledge-creating entity: a new perspective on the theory of the firm. *Industrial and corporate change*, *9*(1), 1-20.

Nooteboom, B. (1999). Innovation, learning and industrial organisation. *Cambridge Journal of economics*, *23*(2), 127-150.

Ntim, C. G., Lindop, S., Thomas, D. A., Abdou, H., & Opong, K. K. (2017). Executive pay and performance: The moderating effect of CEO power and governance structure. *The International Journal of Human Resource Management*, 1-43.

Nurazi, R., & Evans, M. (2005). An Indonesian study of the use of CAMEL (S) ratios as predictors of bank failure. *Journal of Economic and Social Policy*, *10*(1), 6.

Odagiri, H. (1994). Growth through competition, competition through growth: Strategic management and the economy in Japan. *OUP Catalogue*.

Odugbesan, J. A., & Rjoub, H. (2019). Relationship among HIV/AIDS Prevalence, Human Capital, Good Governance, and Sustainable Development: Empirical Evidence from Sub-Saharan Africa. *Sustainability*, *11*(5), 1348.

Ojala, A., & Laatikainen, G. (2019). Pricing of Digital Innovations as an Entrepreneurial Process. In *Proceedings of the Annual Hawaii International Conference on System Sciences*. University of Hawai'i at Manoa

Olaka, H (2017)*: The Capping Interest Rates Debate: Market Failure or Necessary Intervention? Presentation at the 25th ICPAK Economic Symposium, 16thFebruary 2017 Chief Executive Officer, Kenya Bankers Association*

Olalekan, A., & Adeyinka, S. (2013). Capital adequacy and banks' profitability: an empirical evidence from Nigeria. *American International Journal of Contemporary Research*, *3*(10), 87-93.

Olweny, T., & Shipho, T. M. (2011). Effects of banking sectoral factors on the profitability of commercial banks in Kenya. *Economics and Finance Review*, *1*(5), 1-30.

Örnek, A. Ş., & Ayas, S. (2015). The relationship between intellectual capital, innovative work behavior and business performance reflection. *Procedia-Social and Behavioral Sciences*, *195*, 1387-1395.

Ovi, N. Z., Perera, S., & Colombage, S. (2014). Market power, credit risk, revenue diversification and bank stability in selected ASEAN countries. *South East Asia Research*, *22*(3), 399-416.

Palacios-Huerta, I. (2001). The human capital of stockholders and the international diversification puzzle. *Journal of international Economics*, *54*(2), 309-331.

Pan, S. L., & Scarbrough, H. (1999). Knowledge management in practice: An exploratory case study. *Technology Analysis & Strategic Management*, *11*(3), 359-374.

Pelinescu, E. (2015). The impact of human capital on economic growth. *Procedia Economics and Finance*, *22*, 184-190.

Penrose, E. T. (1959). The theory of the growth of the firm: Oxford University Press. *New York*.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic management journal*, 14(3), 179-191.

Phillips, D. C., & Burbules, N. C. (2000). *Postpositivism and educational research*. Rowman & Littlefield.

Piscitello, L. (2000). Relatedness and coherence in technological and product diversification of the world's largest firms. *Structural Change and Economic Dynamics*, 11(3), 295-315.

Plank, J., & Doblinger, C. (2018). The firm-level innovation impact of public R&D funding: Evidence from the German renewable energy sector. *Energy policy*, *113*, 430-438.

Porter, M. E. (1990). The competitive advantage of nations. *Harvard Business Review*, 68, 73– 93.

Porter, Michael E. (1985). Competitive Advantage: Creating and Sustaining Superior Performance. New York

Pöyhönen, A. (2004). Modeling and measuring organizational renewal capability. *Acta Universitatis Lappeenrantaensis*.

Pradhan, J. P. (2003). Liberalization, firm size and R&D performance: A firm level study of Indian pharmaceutical industry. *Journal of Indian school of political economy*, *14*(4), 647-666.

Prahalad, C. K., & Hamel, G. (1999). The core competence of the corporation. *In Strategic learning in a knowledge economy* (pp. 3-22).

Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, *36*, 717-731.

Prescott, E. C., & Visscher, M. (1980). Organizational capital. *Journal of political Economy*, *88*(3), 446-461.

Priem, R. L., & Butler, J. E. (2001). Is the resource-based "view" a useful perspective for strategic management research?. *Academy of management review*, 26(1), 22-40.

Prior, D., & Solà, M. (2000). Technical efficiency and economies of diversification in health care. Health Care Management Science, 3(4), 299-307.

Psillaki, M., & Mamatzakis, E. (2017). What drives bank performance in transitions economies? The impact of reforms and regulations. *Research in International Business and Finance*, *39*, 578-594.

Pucar, S. (2012). The influence of intellectual capital on export performance. *Journal of Intellectual Capital*, *13*(2), 248-261.

Pucheta-Martínez, M. C., & Bel-Oms, I. (2019). What have we learnt about board gender diversity as a business strategy? The appointment of board subcommittees. *Business Strategy and the Environment*, *28*(2), 301-315.

Pulic, A. (2000), MVA and VAIC™ Analysis of Randomly Selected Companies from FTSE 250, Austrian Intellectual Capital Research Center, Graz – London. Available online at: http://www.measuring-ip.at/Papers/ham99txt.htm

Purkayastha, S., Manolova, T. S., & Edelman, L. F. (2012). Diversification and performance in developed and emerging market contexts: A review of the literature. *International Journal of Management Reviews*, *14*(1), 18-38.

Quinn, J. B. (1992). The intelligent enterprise a new paradigm. *Academy of Management Perspectives*, *6*(4), 48-63.

Quo, B., Wang, Q. Z., & Shou, Y. Y. (2004). Firm size, R&D, and performance: an empirical analysis on software industry in China. In *Engineering Management Conference, 2004. Proceedings. 2004 IEEE International* (Vol. 2, pp. 613-616). IEEE.

Rafindadi, A. A., & Bello, A. (2019). Is Dividend Payment of any Influence to Corporate Performance in Nigeria? Empirical Evidence from Panel Cointegration. *International Journal of Economics and Financial Issues*, *9*(2), 48-58.

Rajan, R., Servaes, H., & Zingales, L. (2000). The cost of diversity: The diversification discount and inefficient investment. *The journal of Finance*, *55*(1), 35-80.

Ramanujam, V., & Varadarajan, P. (1989) Research on corporate diversification: A synthesis. *Strategic management journal*, 10(6) 523-551

Ramirez, P. G., & Hachiya, T. (2006). Measuring firm-specific organizational capital and its impact on value and productivity: Evidence from Japan. *Review of Pacific Basin Financial Markets and Policies*, 9(04), 549-574.

Rathnayake, D., Kassi, D. F., Louembé, P. A., Sun, G., & Ding, N. (2019). Does Corporate Ownership matter for Firm Performance? Evidence from Chinese Stock Exchanges. *International Journal of Economics and Financial Issues*, *9*(1), 96-107.

Reed, K. K., Lubatkin, M., & Srinivasan, N. (2006). Proposing and testing an intellectual capital-based view of the firm. *Journal of Management Studies, 43(4), 867-893*.

Rehman, A., & Takumi, H. (2012). Determinants of dividend payout ratio: Evidence from Karachi Stock Exchange (KSE). *Journal of Contemporary Issues in Business Research*, 1(1), 20-27.

Reichenberg, M., & Andreassen, R. (2018). Comparing Swedish and Norwegian teachers' professional development: How human capital and social capital factor into teachers' reading habits. *Reading Psychology*, *39*(5), 442-467.

Reinartz, W., Krafft, M., & Hoyer, W. D. (2004). The customer relationship management process: Its measurement and impact on performance. *Journal of marketing research*, 41(3), 293 305

Ricceri, F. (2008). *Intellectual capital and knowledge management: Strategic management of knowledge resources*. Routledge.

Richard, P. J., Devinney, T. M., Yip, G. S., & Johnson, G. (2009). Measuring organizational performance: Towards methodological best practice. *Journal of management*, 35(3), 718-804.

Riganelli, C., Marchini, A., Polenzani, B., & Martino, G. (2018). Strategies of Diversification and Brand Extension in SME Food Companies: Which Factors Might Affect the Impact of Consumers' Preferences. *International Journal on Food System Dynamics*, *9*(2), 127-137.

Robins, J. and Wiersema, M. F. (1995). A Resource-based Approach to the Multibusiness Firm: Empirical Analysis of Portfolio Interrelationships and Corporate Financial Performance, *Strategic Management Journal*, 16(4), 277–299.

Robson, C. (2002). Real world research 2nd edition. *Malden: BLACKWELL Publishing*.

Rodríguez-Duarte, A., Sandulli, F. D., Minguela-Rata, B., & López-Sánchez, J. I. (2007). The endogenous relationship between innovation and diversification, and the impact of technological resources on the form of diversification. *Research Policy*, 36(5), 652-664.

Rogers, K. E. (1998). Nontraditional activities and the efficiency of US commercial banks. *Journal of Banking & Finance*, *22*(4), 467-482.

Roman, A., & Şargu, A. C. (2013). Analysing the financial soundness of the commercial banks in Romania: an approach based on the camels framework. *Procedia economics and finance*, *6*, 703-712.

Romer, P. M. (1990). Human Capital and Growth: Theory and Evidence ', Carnegie-Rochester Conference Series on Public Policy. *Spring 1990b*, *32*, 25186.

Romijn, H., & Albaladejo, M. (2002). Determinants of innovation capability in small electronics and software firms in southeast England. *Research policy*, 31(7), 1053-1067.

Roos, G., & Roos, J. (1997). Measuring your company's intellectual performance. *Long range planning*, *30*(3), 413-426.

Roos, J., Edvinsson, L., & Dragonetti, N. C. (1997). *Intellectual capital: Navigating the new business landscape*. Springer.

Rose, N. L., & Shepard, A. (1994). Firm diversification and CEO compensation: Managerial ability or executive entrenchment? (No. w4723). *National Bureau of Economic Research*.

Rosenbusch, N., Brinckmann, J., & Bausch, A. (2011). Is innovation always beneficial? A meta-analysis of the relationship between innovation and performance in SMEs. *Journal of business Venturing*, *26*(4), 441-457.

Roth, K. (1995). Managing international interdependence: CEO characteristics in a resource-based framework. *Academy of Management Journal*, *38*(1), 200-231.

Rubera, G., & Kirca, A. H. (2012). Firm innovativeness and its performance outcomes: A meta analytic review and theoretical integration. *Journal of Marketing*, *76*(3), 130-147.

Rumelt, R. P. (1974). Strategy, structure and economic performance: Division of research. Boston: *Harvard Business School*

Rumelt, R. P. (1982). Diversification strategy and profitability. *Strategic management journal*, *3*(4), 359-369.

Rushdi, M., & Tennant, J. (2003). Profitability of Australian Banks: 1985-2001. *Agenda: A Journal of Policy Analysis and Reform*, 229-243.

Sachs, S., & Rühli, E. (2011). *Stakeholders matter: A new paradigm for strategy in society*. Cambridge University Press.

Sahari, S., Nichol, E. O., & Yusof, S. M. (2019). Stakeholders' Expectations on Human Capital Disclosure vs. Corporate Reporting Practice in Malaysia. *International Business Research*, *12*(1), 148-155.

Santarelli, E., & Tran, H. T. (2016). Diversification strategies and firm performance in Vietnam: Evidence from parametric and semi-parametric approaches. *Economics of Transition*, *24*(1), 31-68.

Santos, J. B., & Brito, L. A. L. (2012). Toward a subjective measurement model for firm performance. BAR-Brazilian Administration Review, 9(SPE), 95-117.

Sanya, S. and Wolfe, S.. (2011). Can Banks in Emerging Economies Benefit from Revenue Diversification?. *Journal of Financial Services Research*. 40: 79- 101.

Sardo, F., Serrasqueiro, Z., & Alves, H. (2018). On the relationship between intellectual capital and financial performance: A panel data analysis on SME hotels. *International Journal of Hospitality Management*, *75*, 67-74.

Saunders, A., Schmid, M., & Walter, I. (2016). *Noninterest Income and Bank Performance: Does Ring-Fencing Reduce Bank Risk?* (No. 1417). University of St. Gallen, School of Finance.

Saunders, M. N. (2011). *Research methods for business students*, 5/e. Pearson Education India.

Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students. Essex. *Financial Times/Prentice Hall*.

Saunila, M. (2014). Innovation capability for SME success: perspectives of financial and operational performance. *Journal of Advances in Management Research*, *11*(2), 163-175.

Scafarto, V., Ricci, F., and Scafarto, F. (2016). Intellectual capital and firm performance in the global agribusiness industry. The moderating role of human capital. *Journal of Intellectual Capital, 17*(3), 530-552.

Schoar, A. (2002). Effects of corporate diversification on productivity. *The Journal of Finance*, *57*(6), 2379-2403.

Schoenmaker, D., & Wagner, W. (2011). *The impact of cross-border banking on financial stability* (No. 11-054/2/DSF18). Tinbergen Institute Discussion Paper.

Schwarze, S., & Zeller, M. (2005). Income diversification of rural households in Central Sulawesi, Indonesia. *Quarterly Journal of International Agriculture*, *44*(1), 61-74.

Seetharaman, A., Lock Teng Low, K., & Saravanan, A. S. (2004). Comparative justification on intellectual capital. *Journal of Intellectual Capital*, *5*(4), 522-539.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. John Wiley & Sons.

Seleim, A., Ashour, A., & Bontis, N. (2007). Human capital and organizational performance: a study of Egyptian software companies. *Management Decision*, *45*(4), 789-801.

Shang, S. S., & Wu, Y. L. (2013). Measuring process capital from a system model perspective. *Business Process Management Journal*, 19(4), 662-679.

Shang, S.S.C. and Lin, S.F. (2010), A model of intellectual capital management capability in the dynamic business environment. *Knowledge Management Research and Practice*, Vol. 8 No. 1, pp. 15-23

Shaw, J. D., Park, T. Y., & Kim, E. (2013). A resource-based perspective on human capital losses, HRM investments, and organizational performance. *Strategic management journal*, *34*(5), 572-589.

Sheng, M. L. (2019). Foreign tacit knowledge and a capabilities perspective on MNEs' product innovativeness: Examining source-recipient knowledge absorption platforms. *International Journal of Information Management*, *44*, 154-163.

Sherer, P. D. (1995). Leveraging human assets in law firms: Human capital structures and organizational capabilities. *ILR Review*, *48*(4), 671-691.

Shih, C. H., Wu, C. C., & Yang, T. H. (2018). Diversification, Internal Capital Market, and Information Advantage.

Shih, K. H., Chang, C. J., & Lin, B. (2010). Assessing knowledge creation and intellectual capital in banking industry. *Journal of intellectual capital*, *11*(1), 74-89.

Shin, (2009). Information technology and diversification: How their relationship affects firm performance. *International Journal of e-Collaboration* (IJeC), 5(1), 69-83.

Shleifer, A., & Vishny, R. W. (1989). Management entrenchment: The case of manager-specific investments. *Journal of financial economics*, 25(1), 123-139

Shrader, R., & Siegel, D. S. (2007). Assessing the Relationship between Human Capital and Firm Performance: Evidence from Technology–Based New Ventures. *Entrepreneurship theory and Practice,* 31(6), 893-908.

Shukla, S. S. (2015). Analysing financial strength of public and private sector banks: a CAMEL approach. *Pacific Business Review International*, *7*(8), 44-50.

Silverman, B. S. (2003). Technological resources and the logic of corporate diversification. Routledge.

Singh, Y. K. (2006). *Fundamental of research methodology and statistics*. New Age International.

Sirilli, G., & Evangelista, R. (1998). Technological innovation in services and manufacturing: results from Italian surveys. *Research policy*, *27*(9), 881-899.

Skandia: *Power of Innovation*, Supplement to the 1996 Interim Report, 1996.

Smith, N. C., & Rönnegard, D. (2016). Shareholder primacy, corporate social responsibility, and the role of business schools. *Journal of Business ethics*, *134*(3), 463-478.

Smriti, N., & Das, N. (2017). Impact of intellectual capital on business performance: evidence from Indian pharmaceutical sector. *Polish Journal of Management Studies*, *15*.

Sofian, S., Tayles, M., & Pike, R. (2006). The implications of intellectual capital on performance measurement and corporate performance. *Jurnal kemanusiaan*, *4*(2).

Srivastava, K. B. (2001). Intellectual Capital Development and Management of Knowledge in Knowledge Based Economy. *Indian Journal of Industrial Relations*, *36*(3), 355 362.

Ståhle, P., Ståhle, S., & Aho, S. (2011). Value added intellectual coefficient (VAIC): a critical analysis. *Journal of Intellectual Capital*, *12*(4), 531-551.

Stewart, T (1997) *Intellectual Capital: The New Wealth of Organizations,* Doubleday / Currency, New York, NY.

Stiroh, K. J. (2004). Diversification in banking: Is noninterest income the answer?. *Journal of money, Credit and Banking*, 853-882.

Stiroh, K. J., & Rumble, A. (2006). The dark side of diversification: The case of US financial holding companies. *Journal of banking & finance*, 30(8), 2131-2161.

Stulz, R. (1990). Managerial discretion and optimal financing policies. *Journal of financial Economics*, *26*(1), 3-27.

Sufian, F., & Chong, R. R. (2008). Determinants of bank profitability in a developing economy: empirical evidence from the Philippines. *Asian Academy of Management Journal of Accounting & Finance*, *4*(2). p.91-112

Sugheir, J., Phan, P. H., & Hasan, I. (2012). Diversification and innovation revisited: An absorptive capacity view of technological knowledge creation. *IEEE Transactions on Engineering Management*, 59(4), 530-539.

Sun, P. H., Mohamad, S., & Ariff, M. (2017). Determinants driving bank performance: A comparison of two types of banks in the OIC. *Pacific-Basin Finance Journal*, 42, 193-203.

Sun, S. T., & Yannelis, C. (2016). Credit constraints and demand for higher education: Evidence from financial deregulation. *Review of Economics and Statistics*, *98*(1), 12-24.

Suzuki, J., & Kodama, F. (2004). Technological diversity of persistent innovators in Japan: Two case studies of large Japanese firms. *Research Policy*, *33*(3), 531-549.

Sveiby, K. E. (1997). *The new organizational wealth: Managing & measuring knowledge-based assets*. Berrett-Koehler Publishers

Szymanski, D. M., Bharadwaj, S. G., & Varadarajan, P. R. (1993). An analysis of the market share-profitability relationship. *Journal of marketing*, *57*(3), 1-18.

Tangen, S. (2005). Demystifying productivity and performance. *International Journal of Productivity and performance management*, *54*(1), 34-46.

Tate, G. A., & Yang, L. (2016). The human factor in acquisitions: Cross-industry labor mobility and corporate diversification. *US Census Bureau Center for Economic Studies Paper No. CES-WP-15-31*.employing the control graph method. *Organizations alike and unlike*, 183-210.

Teece, D. and Pisano, G. (1994). The dynamic capabilities of firms: an introduction. *Industrial and Corporate Change*, **3**, 537–556.

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

Tharenou, P., Donohue, R., & Cooper, B. (2007). *Management research methods* (p. 338). Melbourne: Cambridge University Press.

Thomas, H., Smith, R.R. and Diez, F. (2013) *Human capital and global business strategy*. New York: Cambridge University Press.

Thomas, S. (2002). Firm diversification and asymmetric information: evidence from analysts' forecasts and earnings announcements. *Journal of Financial Economics*, 64(3), 373-396.

Tihanyi, L., Ellstrand, A. E., Daily, C. M., & Dalton, D. R. (2000). Composition of the top management team and firm international diversification. *Journal of management*, *26*(6), 1157-1177.

Toms, S., Wilson, N., & Wright, M. (2019). Innovation, intermediation, and the nature of entrepreneurship: A historical perspective. *Strategic Entrepreneurship Journal*.

Tongurai, J., & Vithessonthi, C. (2018). The impact of the banking sector on economic structure and growth. *International Review of Financial Analysis*, *56*, 193-207.

Tronconi, C and Marzetti, G (2012) Organizational capital and firm performance. Empirical evidence for European firms .*Economics Letters* 112 (2011) 141–143

Tseng, C and Goo, Y. (2005) Intellectual capital and corporate value in an emerging economy: empirical study of Taiwanese manufacturers. *R&D Management 35, 2,* 2005.

Tyagi, S., Nauriyal, D. K., & Gulati, R. (2018). Firm level R&D intensity: evidence from Indian drugs and pharmaceutical industry. *Review of Managerial Science*, *12*(1), 167-202.

Ulrich, D., & Kryscynski, D. (2015). Winning in challenging markets requires stronger attention to human capital. LSE Business Review.

Ulrich, D., Brockbank, W., Yeung, A. K., & Lake, D. G. (1995). Human resource competencies: An empirical assessment. *Human resource management*, *34*(4), 473-495.

Uwuigbe, U., & Uadiale, O. M. (2011). Intellectual capital and business performance: Evidence from Nigeria. *Interdisciplinary Journal of Research in Business*, 1, 49-56.

Valla, N., Saes-Escorbiac, B., & Tiesset, M. (2006). Bank liquidity and financial stability. *Banque de France Financial Stability Review*, *9*(1), 89-104.

Valverde, S. C., & Fernández, F. R. (2007). The determinants of bank margins in European banking. *Journal of Banking & Finance*, *31*(7), 2043-2063.

Van Auken, H., Madrid-Guijarro, A., & Garcia-Perez-de-Lema, D. (2008). Innovation and performance in Spanish manufacturing SMEs. *International Journal of Entrepreneurship and Innovation Management*, *8*(1), 36-56.

Van Buren, M. E. (1999). A yardstick for knowledge management. *Training & development*, *53*(5), 71-78.

Van Buren, M. E. (2002). Making Knowledge Count. In *Human resource development and information technology* (pp. 105-130). Springer, Boston, MA.

Van Vu, H., Tran, T. Q., Van Nguyen, T., & Lim, S. (2018). Corruption, types of corruption and firm financial performance: New evidence from a transitional economy. *Journal of Business Ethics*, *148*(4), 847-858

Veltri, S., & Silvestri, A. (2011). Direct and indirect effects of human capital on firm value: evidence from Italian companies. *Journal of Human Resource Costing & Accounting*, *15*(3), 232-2

Venkatraman, N., & Ramanujam, V. (1986). Measurement of business performance strategy research: A comparison of approaches. *Academy of management review*, *11*(4), 801-814.

Vincent, L. H., Bharadwaj, S. G., & Challagalla, G. N. (2004). Does innovation mediate firm performance?: a meta-analysis of determinants and consequences of organizational innovation.

Voss, G. B., & Voss, Z. G. (2008). Competitive density and the customer acquisition–retention trade-off. *Journal of Marketing*, *72*(6), 3-18.

Vossen, R. W., & Nooteboom, B. (1996). Firm size and participation in R&D. In *Determinants of Innovation* (pp. 155-168). Palgrave Macmillan, London.

Wahid, A. (1994). The Grameen Bank and poverty alleviation in Bangladesh. *American Journal of Economics and Sociology*, 53(1), 1-15.

Wan, G., & Zhang, Y. (2018). The direct and indirect effects of infrastructure on firm productivity: Evidence from Chinese manufacturing. *China Economic Review*, *49*, 143-153.

Wang, C. H., Chen, K. Y., & Chen, S. C. (2012). Total quality management, market orientation and hotel performance: The moderating effects of external environmental factors. International *Journal of Hospitality Management*, 31(1), 119-129.

Wang, C. L., & Ahmed, P. K. (2007). Dynamic capabilities: A review and research agenda. *International journal of management reviews*, *9*(1), 31-51.

Wang, J. C. (2008). Investigating market value and intellectual capital for S&P 500. *Journal of intellectual capital*, *9*(4), 546-563.

Wang, W. Y., & Chang, C. (2005). Intellectual capital and performance in causal models: Evidence from the information technology industry in Taiwan. *Journal of intellectual capital*, *6*(2), 222-236.

Waterson, P. E., Clegg, C. W., Bolden, R., Pepper, K., Warr, P. B., & Wall, T. D. (1999). The use and effectiveness of modern manufacturing practices: A survey of UK industry. *International Journal of Production Research*, *37*(10), 2271-2292.

Wei Kiong Ting, I., & Hooi Lean, H. (2009). Intellectual capital performance of financial institutions in Malaysia. *Journal of Intellectual capital*, *10*(4), 588-599.

Weiss, M. (2016). Related Diversification: A Critical Reflection of Relatedness and the Diversification-Performance Linkage. In *Advances in Mergers and Acquisitions* (pp. 161-180). Emerald Group Publishing Limited.

Wernerfelt, B. (1984). *A resource-based view of the firm*, Strategic Management Journal, 5(2), pp. 171-180.

White, F. (1983). Trade-off in growth and stability in state taxes. *National Tax Journal* 36 (1): 103-14.

Williamson, O. (1975). *Markets and hierarchies analysis and antitrust implications: A study in the economics of internal organization*. New York: Free Press.

Williamson, S. D. (1986). Costly monitoring, financial intermediation, and equilibrium credit rationing. *Journal of Monetary Economics*, *18*(2), 159-179.

Wooldridge, J. M. (2002). *Econometric analysis of cross section and panel data*: MIT press.

World Bank,& I. M. F. (2005). Financial Sector Assessment: A Handbook. *Disponibil online la: http://web.* World Bank. .

Wright, P. M., McCormick, B., Sherman, W. S., & McMahan, G. C. (1999). The role of human resource practices in petro-chemical refinery performance. *International Journal of Human Resource Management*, *10*(4), 551-571.

Wright, P. M., McMahan, G. C., & McWilliams, A. (1994). Human resources and sustained competitive advantage: a resource-based perspective. *International journal of human resource management*, *5*(2), 301-326.

Wrigley, L. (1970). Diversification and divisional autonomy. DBA thesis, *Harvard Business School.*

Wu, A. (2005). The integration between balanced scorecard and intellectual capital. *Journal of Intellectual Capital*, *6*(2), 267-284.

Wu, H., Chen, J and Jiao H.(2015) Dynamic capabilities as a mediator linking international diversification and innovation performance of firms in an emerging economy, *Journal of Business Research* (2015), http://dx.doi.org/10.1016/j.jbusres.2015.11.003

Wu, S. H., Lin, L. Y., & Hsu, M. Y. (2007). Intellectual capital, dynamic capabilities and innovative performance of organisations. *International Journal of Technology Management*, *39*(3-4), 279-296.

Wuebker, R. J., & Klein, P. G. (2017). Corporate Diversification and Innovation: Managerial Myopia or Inefficient Internal Capital Market. In *Academy of Management Proceedings* (Vol. 2017, No. 1, p. 11182). Briarcliff Manor, NY 10510: Academy of Management.

Yalcinkaya, G., Calantone, R. J., & Griffith, D. A. (2007). An examination of exploration and exploitation capabilities: Implications for product innovation and market performance. *Journal of International Marketing*, *15*(4), 63-93.

Yang, S., & Kang, H. H. (2008). Is synergy always good? Clarifying the effect of innovation capital and customer capital on firm performance in two contexts. *Technovation*, *28*(10), 667-678.

Yazdanfar, D., & Öhman, P. (2015). Debt financing and firm performance: an empirical study based on Swedish data. *The Journal of Risk Finance*, *16*(1), 102-118.

Yeh-Yun Lin, C., & Edvinsson, L. (2008). National intellectual capital: comparison of the Nordic countries. *Journal of Intellectual Capital*, *9*(4), 525-545.

Yeh-Yun Lin, C., & Yi-Ching Chen, M. (2007). Does innovation lead to performance? An empirical study of SMEs in Taiwan. *Management Research News*, 30(2), 115-132.

Yildirim, A., & Allen, L. (2017). The Intangible Value of Key Talent: Decomposing Organizational capital. (October 20, 2017). Available at SSRN: https://ssrn.com/abstract=3056988 or http://dx.doi.org/10.2139/ssrn.305698

Young, C. S., Su, H. Y., Fang, S. C., & Fang, S. R. (2009). Cross-country comparison of intellectual capital performance of commercial banks in Asian economies. *The Service Industries Journal*, *29*(11), 1565-1579.

Yu, H. C., Wang, W. Y., & Chang, C. (2015). The stock market valuation of intellectual capital in the IT industry. *Review of Quantitative Finance and Accounting*, *45*(2), 279-304.

Yuliya, G., Yury, D., & Alexander, K. (2018). *The Impact of Innovation Capital on Firm Values* (No. WP BRP 79/STI/2018). National Research University Higher School of Economics.

Zahra, S.A., Ireland, R.D., & Hitt, M.A. (2000). International expansion by new venture firms: International diversity, mode of market entry, technological learning and performance. Academy of Management Journal, 43, 925–950.

Zawislak, P. A., Cherubini Alves, A., Tello-Gamarra, J., Barbieux, D., & Reichert, F. M. (2012). Innovation capability: From technology development to transaction capability. *Journal of technology management & innovation*, 7(2), 14-27

Zéghal, D., & Maaloul, A. (2010). Analyzing value added as an indicator of intellectual capital and its consequences on company performance. Journal of Intellectual Capital, 11(1),39-60

Zhao, X., Lynch Jr, J. G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of consumer research*, *37*(2), 197-206.

Zhou, A. Z., & Fink, D. (2003). Knowledge management and intellectual capital: an empirical examination of current practice in Australia. *Knowledge Management Research & Practice*, *1*(2), 86

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2013). *Business research methods*. Cengage Learning.

Zollo, M., & Winter, S. (2002). Deliberate learning and the evolution of dynamic capabilities. *Organization Science*, *13*, 339–351.

APPENDICES

Appendix I: Hausman Test: Testing Control Variables

```
. hausman fe re
```

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
logfa	-.5041124	-.0084639	-.4956485	.171734
logfs	.4861995	.3391423	.1470571	.0736996
logls	-.3551313	-.3459475	-.0091838	.0359764

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(3) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 11.86
Prob>chi2 = 0.0079

Appendix II: Hausman Test: Testing the Direct Effect

```
. hausman fe re
```

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
loghc	.3481119	.3766963	-.0285843	.0162972
logpc	.1114508	.1196937	-.0082429	.
logic	.0762276	.0765848	-.0003572	.0051627
logcc	.4661359	.3790703	.0870656	.0223823
logfa	.3368772	.0214024	.3154748	.1016389
logfs	-.2072328	-.2103396	.0031069	.0445219
logls	-.2577253	-.2455312	-.0121941	.0072673

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 12.05
Prob>chi2 = 0.0988
(V_b-V_B is not positive definite)

Appendix III: Hausman Test: Intellectual Capital and Income Diversification

```
. hausman fe re
```

	Coefficients			
	(b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
loghc	.5241261	.3926266	.1314996	.0708889
logpc	.3708352	.3305011	.0403342	.0174387
logic	.2062278	.1881414	.0180864	.0262346
logcc	.5244115	.4403686	.0840429	.0770716
logfa	.7047133	-.0120449	.7167582	.328501
logfs	-.6589772	-.4030724	-.2559048	.1530035
logls	-.6388348	-.5488537	-.0899812	.0863879

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 38.84
Prob>chi2 = 0.0000

Appendix IV: Hausman Test: Financial Performance, Intellectual Capital and Income Diversification

```
. hausman fe re
```

	Coefficients (b) fe	(B) re	(b-B) Difference	sqrt(diag(V_b-V_B)) S.E.
loghc	.2800537	.3081023	-.0280486	.0166969
logpc	.0632976	.0686954	-.0053978	.0021333
logic	.0494487	.0484491	.0009996	.0054351
logcc	.3980406	.3118243	.0862164	.0218595
logindiv	.1298509	.1447376	-.0148867	.0016853
logfa	.2453696	.005323	.2400466	.0966148
logfs	-.121664	-.1466154	.0249514	.043274
logls	-.174772	-.1587941	-.0159779	.0119496

b = consistent under Ho and Ha; obtained from xtreg
B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
= 39.92
Prob>chi2 = 0.0000
(V_b-V_B is not positive definite)

Appendix II: Data Collection Schedule

Dependent variable
Y = ROA

Independent Variables

(i) Human Capital (HC) = Expenditure on employees /No of Employees
(ii) Process Capital (PC) = Operating expenses / Number of Employees
(iii) Innovation Capital (IC) = R&D resources/employee
(iv) Customer capital (CC) = CBK Composite Market Share

Bank (t=1,10)	Profits 1	Staff Cost 2	Total Assets 3	Number of employees 4	Value of R&D resources 5	Operating expenses 6	Y=1÷2	HC= (2÷3)	PC= (6-2/7)	IC=5/4	CC= Market Share
KCB Bank Kenya Ltd											
Co - operative Bank of Kenya Ltd											
Equity Bank Kenya Ltd											
Barclays Bank of Kenya Ltd											
Standard Chartered Bank (K) Ltd											

Commercial Bank of Africa Ltd											
Diamond Trust Bank (K) Ltd											
Stanbic Bank Kenya Ltd											
NIC Bank PLC											
I & M Bank Ltd											
National Bank of Kenya Ltd											
Citibank N.A. Kenya											
Family Bank Ltd											
Bank of Baroda Ltd											
Bank of Africa Kenya Ltd											
Prime Bank Ltd											
HFC Ltd											
Ecobank Kenya Ltd											
Bank of India											

Guaranty Trust Bank (Kenya) Ltd											
Gulf African Bank Ltd											
African Banking Corporation Ltd											
Victoria Commercial Bank Ltd											
Mayfair Bank Ltd											
Sidian Bank Ltd											
SBM Bank (Kenya) Ltd											
Development Bank of Kenya Ltd											
Jamii Bora Bank Ltd											
Spire Bank Ltd											
First Community Bank Ltd											

DIB Bank Kenya Ltd											
Guardian Bank Ltd											
Consolidated Bank of Kenya Ltd											
Habib Bank A.G. Zurich											
Transnational Bank Ltd											
Paramount Bank Ltd											
M-Oriental Commercial Bank Ltd											
Credit Bank Ltd											
Middle East Bank (K) Ltd											
UBA Kenya Bank Ltd											
Charterhouse Bank Ltd*											

1.2 Mediating Variable
Income Diversification (INDIV)

	Amount in financial year (Sh. 000,000)			Income Diversification
Bank (t=1,10)	Net operating income (NOI)	Total interest income(NII)	Total non- interest income(NOI)	$HHI = \left[1 - \left\{\left(\frac{INT}{TOR}\right)^2 + \left(\frac{NIN}{TOR}\right)^2\right\}\right]$
KCB Bank Kenya Ltd				
Co - operative Bank of Kenya Ltd				
Equity Bank Kenya Ltd				
Barclays Bank of Kenya Ltd				
Standard Chartered Bank (K) Ltd				
Commercial Bank of Africa Ltd				
Diamond Trust Bank (K) Ltd				
Stanbic Bank Kenya Ltd				
NIC Bank PLC				
I & M Bank Ltd				

National Bank of Kenya Ltd				
Citibank N.A. Kenya				
Family Bank Ltd				
Bank of Baroda Ltd				
Bank of Africa Kenya Ltd				
Prime Bank Ltd				
HFC Ltd				
Ecobank Kenya Ltd				
Bank of India				
Guaranty Trust Bank (Kenya) Ltd				
Gulf African Bank Ltd				
African Banking Corporation Ltd				
Victoria Commercial Bank Ltd				
Mayfair Bank Ltd				

Sidian Bank Ltd				
SBM Bank (Kenya) Ltd				
Development Bank of Kenya Ltd				
Jamii Bora Bank Ltd				
Spire Bank Ltd				
First Community Bank Ltd				
DIB Bank Kenya Ltd				
Guardian Bank Ltd				
Consolidated Bank of Kenya Ltd				
Habib Bank A.G. Zurich				
Transnational Bank Ltd				
Paramount Bank Ltd				
M-Oriental Commercial Bank Ltd				
Credit Bank Ltd				

Middle East Bank (K) Ltd				
UBA Kenya Bank Ltd				
Charterhouse Bank Ltd*				

Income diversification

1.3 **Control Variables**

i). Firm Size (FS) = Log of Total Assets

ii). Firm Age (FA)= years from incorporation

iii) Lending Strategy (LS) = Total Loan/ Total Assets

Bank (t=1,10)	Total Assets = TA	FA= Year since incorporation	Total Loan=TL	LS= TL/TA	FS=Natural logarithm TA
KCB Bank Kenya Ltd					
Co - operative Bank of Kenya Ltd					
Equity Bank Kenya Ltd					
Barclays Bank of Kenya Ltd					
Standard Chartered Bank (K) Ltd					
Commercial Bank of Africa Ltd					
Diamond Trust Bank (K) Ltd					
Stanbic Bank Kenya Ltd					
NIC Bank PLC					
I & M Bank Ltd					
National Bank of Kenya Ltd					
Citibank N.A. Kenya					
Family Bank Ltd					
Bank of Baroda Ltd					
Bank of Africa Kenya Ltd					

Prime Bank Ltd					
HFC Ltd					
Ecobank Kenya Ltd					
Bank of India					
Guaranty Trust Bank (Kenya) Ltd					
Gulf African Bank Ltd					
African Banking Corporation Ltd					
Victoria Commercial Bank Ltd					
Mayfair Bank Ltd					
Sidian Bank Ltd					
SBM Bank (Kenya) Ltd					
Development Bank of Kenya Ltd					
Jamii Bora Bank Ltd					
Spire Bank Ltd					
First Community Bank Ltd					
DIB Bank Kenya Ltd					
Guardian Bank Ltd					
Consolidated Bank of Kenya Ltd					
Habib Bank A.G. Zurich					
Transnational Bank Ltd					
Paramount Bank Ltd					
M-Oriental Commercial Bank Ltd					
Credit Bank Ltd					
Middle East Bank (K) Ltd					
UBA Kenya Bank Ltd					
Charterhouse Bank Ltd*					