

**EFFECT OF THE VALUE NETWORK ON THE PERFORMANCE OF  
COMMERCIAL BANKS IN KENYA**

**By**

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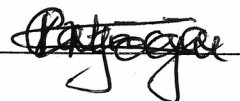
**A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE AWARD OF MASTER OF BUSINESS  
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**APRIL, 2016**

## DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

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And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed.

Sign:  Date: 18/11/2015

Dr. Ambrose Jagongo

Dissertation Supervisor

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## ABSTRACT

Globalisation and advances in information technology have created a complex, dynamic economic landscape with a shift from a focus on tangibles to intangibles thus creating the intangible - service and information - economy: A networked economy characterized by partnerships amongst firms. As a result, the Commercial Banking sector in Kenya has progressed from a regulatory and strategic perspective as banks have built Value Networks in order to counter increasing competition thus constantly innovating products and services; and increasing market segments towards growth. The main purpose of this study was to investigate the effect of the Value Network on the performance of Commercial Banks in Kenya. Independent variables examined included scale, growth in alliances, R&D expenditure and training. A sample of 15 Commercial Banks was drawn from the target population of 43 Commercial Bank headquarters located in Nairobi and studied over five years from 2010 to 2014. Data was collected from audited financial statements. Data analysis included descriptive and inferential statistics. The former employed frequency distributions, measures of central tendency and exploratory data analysis using growth pattern graphs and overlain growth plots. The results indicated an upward trend in all variables across the period and the presence of random effects. Panel descriptive analysis was also conducted which revealed the between and within differences. The Jarque Bera test for Normality indicated that data was not normal. Consequently Logarithm transformation of all variables, excluding R&D intensity, was employed to achieve Normality. R&D intensity was not transformed because it is a ratio. Inferential statistics entailed the use of correlation and panel regression analysis. No multicollinearity was present because all independent variables registered a correlation coefficient of less than 0.8. Prior to regression panel data diagnostic tests were run. They confirmed: The appropriateness of random effects regression for analysis (Breusch-Pagan LM test), absence of heteroskedasticity (modified Wald test), presence of time effects (time fixed effects test) and serial correlation (Wooldridge-Drukker test). Therefore, the FGLS two way random effects regression model was employed in the study (random effects model was also clarified by the Hausman test). The findings indicated that scale, growth in alliances and training had a positive significant relationship whilst R&D expenditure had a negative significant relationship with Commercial Bank performance. The study suggested various recommendations: On scale: Bank managers are advised to increase adoption of NPS and TCF metrics. Secondly, on growth in strategic alliances: As banks establish more strategic alliances management should apply Epstein's five measures of success to ensure well structured management. Thirdly, on R&D expenditure: Policy makers should shift the approach to R&D financial reporting: Capitalize R&D's Development component and seek sectoral reforms on this through regulators such as the Central Bank of Kenya and Kenya Banker's Association. Finally, on training: Managers are encouraged to incorporate more of the Value Network's systems thinking as they invest further in training. Suggested areas for further study include comparative analysis amongst different industry sectors and countries, investigation on other firm level factors such as customer loyalty and macroeconomic factors as the determinants of Commercial Banks' performance in Kenya, study on the effect of R&D on firm performance in the longer term and the threshold effect of R&D investment on optimal performance.

**Keywords:** Value Networks, Performance, Commercial Banks, Intangibles

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## TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENT .....	iv
DEDICATION .....	vi
LIST OF FIGURES AND TABLES .....	vii
ACRONYMS AND ABBREVIATIONS .....	viii
TERMS AND DEFINITIONS .....	ix
CHAPTER ONE: INTRODUCTION .....	1
1.1 Background of the Study .....	1
1.2 Statement of the Problem .....	11
1.3 Objectives of the Study .....	15
1.4 Research Questions.....	16
1.5 Significance of the Study.....	16
1.6 Scope and Limitations of the Study.....	17
CHAPTER TWO: LITERATURE REVIEW.....	19
2.1 Introduction .....	19
2.2 Theoretical Literature.....	19
2.3 Empirical Literature.....	33
CHAPTER THREE: RESEARCH METHODOLOGY .....	51
3.1 Research Design .....	51
3.2 Study Location .....	51
3.3 Target Population .....	52
3.4 Sampling Design and Procedures .....	52
3.5 Data Collection Procedures .....	53
3.6 Reliability and Validity .....	54
3.7 Data Analysis Procedures .....	54
CHAPTER FOUR: FINDINGS AND DISCUSSION .....	57
4.1 Introduction .....	57
4.2 Descriptive Statistical Analysis.....	57
4.3 Exploratory Data Analysis.....	59
4.4 Diagnostic Analysis .....	63
4.5 Value Networks' Random Effects Regression Model on Commercial Banks' Performance .....	66
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS.....	68
5.1 Summary ... ..	68
5.2 Discussion .. ..	72
5.3 Conclusion. ....	82
5.4 Recommendations .....	83
5.5 Suggestions for Further Study.....	84
REFERENCES.....	85
APPENDICES .....	95

## **DEDICATION**

I dedicate this project to my Dear Mother, Father and Siblings.

## LIST OF FIGURES AND TABLES

FIGURE 1 - Conceptual Framework .....	49
FIGURE 2 - Commercial Banks' Net Profit Patterns.....	60
FIGURE 3 - Overlain Growth Plots for Commercial Banks Performance.....	61
TABLE 1 - Operationalisation of Variables.....	50
TABLE 2 - Descriptive Statistics.....	58
TABLE 3 - Resultant Matrix after Log Transformation.....	59
TABLE 4 - Correlation Analysis.....	63
TABLE 5 - Chi-Square values for the Breusch-Pagan LM Test.....	64
TABLE 6 - Results for Time Fixed Effects Test .....	64
TABLE 7 - Results for Modified Wald and Wooldridge-Drukker Tests.....	64
TABLE 8 - Panel Descriptive Analysis .....	65
TABLE 9 - Results for Hausman Test .....	66
TABLE 10 - Value Networks' Random Effects Regression Model on Commercial Banks' Performance .....	67



## ACRONYMS AND ABBREVIATIONS

<b>ASCA</b>	Accumulating Savings and Credit Association
<b>ATM</b>	Automated Teller Machine
<b>CBK</b>	Central Bank of Kenya
<b>CSR</b>	Corporate Social Responsibility
<b>DFI</b>	Development Finance Institutions
<b>DTM</b>	Deposit Taking Microfinance
<b>EPS</b>	Earnings per Share
<b>FGLS</b>	Feasible Generalised Least Squares
<b>IJV</b>	International Joint Ventures
<b>M&amp;A</b>	Mergers and Acquisitions
<b>MFI</b>	Micro Finance Institution
<b>NPS</b>	Net Promoter Score
<b>OE</b>	Organisational Economics
<b>OECD</b>	Organisation for Economic Cooperation and Development
<b>R&amp;D</b>	Research and Development
<b>RBV</b>	Resource Based View
<b>RoA</b>	Return on Assets
<b>RoE</b>	Return on Equity
<b>RoI</b>	Return on Investment
<b>ROSCA</b>	Rotating Savings and Credit Association
<b>SACCO</b>	Savings and Credit Co-operative
<b>SNA</b>	Social Network Analysis
<b>TCF</b>	Treating Customers Fairly
<b>VN</b>	Value Network

## TERMS AND DEFINITIONS

- Actor:** Member (partner) firms in respective VNs (Inkpen & Tsang, 2005).
- Commercial Bank:** Financial institution that provides services such as accepting deposits, making business loans; and offering investment products and services to individuals and/or corporations thus serving as an intermediary linking up customers who have capital surpluses with those who have capital deficits (KBA, 2013).
- Customer:** Borrowers, lenders and suppliers (firms and individuals) at the Commercial Bank.
- Customer value (Perceived Value)** ‘Worth what is paid for’ - The customer’s overall assessment of the utility of a product based on ‘perceptions of what is received and what is given. (Keiningham *et al.*, 2007).
- Intangible Factors:** Referred to as ‘Intangibles’. Non-physical assets - centred on relationships, human competence, social capital, information/data and services - which support a business’ core products and services thus maximizing its value (Allee, 2008; Marr, 2005).
- Performance:** Outcomes, from the leveraging of tangible and intangible assets, and related to the accomplishment of a firm’s strategic objectives, measured against indicators e.g. innovations, acquisition of knowledge hence increased competencies etc (Allee, 2008, 2009).

- R&D Expenditure:** Current and capital expenditure (private and public) on creative work that is conducted systematically to increase knowledge - of humanity, society and cultures – and the use of this knowledge in new applications (OECD, 2008).
- R&D Intensity:** The ratio of R&D expenditure to net sales (Ayaydin & Karaaslan, 2014; Dave *et. al.*, 2013; Nord, 2011; Shin and Kim, 2011).
- Scale:** Number of customers in network and/or service access points available to customers (Allee, 2000; Stabell & Fjeldstad, 1998).
- Training:** Instrument that makes the generation and accumulation of human capital possible and which provides employees with the knowledge, abilities and skills required to perform a task (Sastre *et al.*, 2009).
- Value Network** A value configuration model where a set of people or firms form a nested system (seeking to share information and achieve an economic or social objective), rely on a mediating technology to link customers who are or wish to be interdependent and thus facilitates complex, dynamic exchange relationships of tangible and intangible value amongst customers distributed in space and time (Allee, 2002, 2008, 2009; Christensen & Rosenbloom, 1995; Stabell & Fjeldstad, 1998).

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

The prevailing ever-changing and complex business environment has demanded a shift in the way firms address value creation and strategy. It has called for a move from traditional thinking grounded in industrial age assumptions where a company adopted the model of the linear, value chain to the new economy perspective of the Value Network (VN). In the value chain a firm strategically occupies a position to engage in one of a sequence of value adding activities. Comparatively, a VN strategy is not just about adding but also reinventing value; and both strategy execution and value creation are achieved through simultaneous, multi-layered, reciprocal activities and relationships (Allee, 2008, 2009; Normann & Ramirez, 1993; Stabell & Fjeldstad, 1998). Furthermore, the VN comprises a value-creating system involving cooperation amongst multidimensional, networks of participants (actors). Normann and Ramirez (1993) define this VN as a value creating system with a constellation of economic actors - customers, allies, suppliers, business partners - who work together to co-produce value.

According to Stabell and Fjeldstad (1998) the VN is a value configuration model offering an approach to firm level diagnosis of competitive advantage and analysis of ways to improve it. It is a model following the value creation logic where a set of firms form the network and “rely on a mediating technology to link customers who are or wish to be interdependent,” and thus delivers value by “facilitating direct and indirect exchange relationships amongst (and linking or connecting) customers distributed in space and time” (pg. 16). In the case of a Commercial Bank the customers include borrowers, lenders and suppliers (both firms and individuals) and value creation occurs by linkage of the whole group of customers through a common pool of funds (Stabell and Fjeldstad, 1998). As an

intermediary (mediator), a firm in a VN provides a networking service - which it charges a fee for - whereby bilateral interactions between it and its customers are used to enable multilateral interactions amongst customers. Consequently, value is derived from this service (for both the firm and its customers) which is further increased by connecting more customers and more opportunities for services through other firms via alliances, money markets and so on and so forth. Allee (2009), Normann and Ramirez (1993) and, Stabell and Fjeldstad (1998) recognize the VN as a system which generates value through exchange relationships. Allee (2009) sums this up as any purposeful group of people or organizations creating social and economic good through complex dynamic exchanges of tangible and intangible value.

The current dynamism and complexity of the business ecosystem has been catalyzed by the advent of globalization and changing markets resulting in firms' acquisition of new competencies - technological and organizational - which have conferred competitive advantage. These competences have also facilitated firms' reorganization of their home activities and movement of operations out of their home societies. Furthermore, the complexity of this ecosystem has been caused by the interaction of political, social and economic factors which have created meta problems. In turn, these macro issues have required solutions derived through collaborative networks and the adoption of a systems view of the firm in its operating environment resulting in the strategic engagement and application of the VN (Allee, 2008, 2009; Camarinha-Matos & Afsarmanesh, 2006; Iansiti & Levien, 2004).

Systems thinking entails a firm's view of itself as a complex system within a wider system comprising of other firms (with their own systems) and fundamentally, analyzing its operations according to principles of living systems (Allee, 2002, 2003, 2009; Nzuve & Omollo, 2012; Senge, 1990). It thus requires understanding that a change in one part - such

as removal or addition of an actor or transaction; or breaking of an agreement or principle - has an impact on the whole system. Therefore, monitoring the health not just of one firm but also of its fellow actors in the VN and hence the whole system is critical. Living systems are complex and vary from mechanical systems. Mechanical - engineered - systems bear three characteristics namely pattern, structure and process. Pattern of organisation refers to the configuration of relationships amongst a system's parts which determine its essential characteristics. Structure of the system is the physical embodiment of the pattern of organisation (a description of the actual components or dynamics of the pattern such as shape, composition) and purpose of the system. Process is activity involved in the continual embodiment of the system's pattern of organisation. Therefore, process is the link between pattern and structure (Allee, 2002).

Comparatively, living systems exhibit – in addition to pattern, structure and process – the element of cognition (intelligence) because their patterns of organisation continually produce themselves. In other words the 'being and doing' are inseparable and this explains the multi-layered, simultaneous activities and exchanges that are characteristics of VNs. Secondly, living systems are dissipative structures that are open to the inflow and outflow of energy and matter (Allee, 2002). Therefore, VNs can be open or closed determining the level of exchanges that occur amongst actors within their VNs or between one VN and another. Consequently, a systems view entails a firm's adoption of a living systems perspective where it identifies its pattern of organisation as a network of tangible exchanges (flows of energy and matter) and intangible exchanges (cognitive processes and intelligence), describes its participants and discovers its most critical processes from a cognitive perspective (information and/or knowledge sharing) and the flow of energy and matter (includes goods and services) (Allee, 2002). Therefore, viewing the whole and analyzing the interrelationship between parts is fundamental (Senge, 1990).

The systems view enables firms in their VNs to resolve complex problems - created by the convergence of political, social and economic factors - by functioning as complex adaptive systems where they learn (through the exchanges of value) and modify behaviours according to feedback (Allee, 2003). In this way firms evolve and new business forms emerge. As a result, these adaptive capabilities have opened up new ways of creating value and thus more opportunities are available to customers which in turn, have created an environment of more uncertainty and greater risk. In this contemporary complex marketplace intangible resources, the most fundamental being relationships and knowledge, are heavily recognized as key resources for value creation and exchange (Allee, 2008, 2009; Camarinha-Matos & Afsarmanesh, 2006). This is because the VN's key task (in order to reinvent value) is the reconfiguration of roles and relationships among actors in order to mobilize the creation of value in new forms and by new players (Normann & Ramirez, 1993). Social networking has also arisen, in the VN, as an interactive mechanism which businesses use to enhance value creation and value exchange.

Literature demonstrated the effect the VN has on firm performance. However, the evidence was contradictory with some indications that the VN generates more value by enhancing performance of actors and yet in contrast, other studies indicated that it generates less value for its actors through its associations with curtailed firm performance. Comparatively, the study observed that more prolific were literary findings demonstrating the positive effect the VN has on actors (in producing value) than the availability of evidence citing its negative effect on actors.

Evidence of value generated by VNs included a study on alliances by Deloitte (2008) which indicated that, "the number of corporate alliances continues to rise - by as much as 25 percent a year - and accounts for nearly a third of many firms' revenues and value" (p. 1). Deloitte (2008) which also described VNs as, "co-development partnerships"

and “open distributed business models that fuel the growth engines of stagnating firms” (p. 2), asserted that VNs are mechanisms for generating value in volatile markets. The study indicated that indeed firms in their respective VN configurations exhibit performance outcomes such as sustained competitive advantage due to extensive value derived namely the VN’s facilitation of acquisition of resources and capabilities, reduction in product development costs and revenue boosts, increase in skills and stimulated innovation through access to external knowledge, access to new markets and technologies, aggregation of resources that are no longer effective in isolation, exploitation of economies of scale, reduction in operation costs and shared risk or uncertainty with partners.

According to Allee (2008, 2009) firms in VNs operate as complex adaptive systems thus they adopt Value Network Analysis (VNA) as a systems view to understand how their business processes work simultaneously, as well as key dynamics such as feedback, interdependencies, flows, and exchanges; and fundamentally, how intangibles directly contribute to business value. Therefore the VN generates value: It promotes organizational effectiveness and redesign, enhances customer support, improves service delivery, facilitates development of new performance standards and non-financial business reporting, and drives better supply chain management and lean manufacturing. Thus VNA as a vital component of the VN describes, analyzes, evaluates and improves firm-level performance, especially in complex environments (Allee, 2009). According to Camarinha-Matos and Afsarmanesh (2006) firms in VNs have higher survival chances. Furthermore, social capital within the network increases which accords actors in the VN prestige and influence, privileged access to knowledge and information; and preferential opportunities for new business (Inkpen & Tsang, 2005).

Whilst the proliferation of literature on VNs’ enhanced performance outcomes (generation of value) was observed some studies revealed that, in contrast, firms in VNs



encounter performance challenges. According to Deloitte (2008), and Zineldin and Dodourova (2005) the failure rate of alliances stands at about seventy percent and the outcomes of alliance failure can be devastating. Indeed performance of alliances has often fallen short of expectations (Sampson, 2007). Deloitte (2008) cited reasons for this as poor executive and managerial skill once the VN is formed coupled with uncertainty that abounds at the initial decision stages. Furthermore, failure is due to lack of exposure to systems thinking and organizational dynamics which are the relevant business tools in the current networked environment where business forms, as adaptive systems, keep evolving (Allee, 2002, 2003, 2009).

Despite the inconsistencies in literary evidence that the study identified, it was clear that theoretical conjectures and empirical investigations, as highlighted previously in this section, revealed an accelerating proliferation of these Value - interorganisational - Networks. It followed then that the existence of the aforementioned problem required further investigation on the VN's dynamics in terms of the factors within it that affect the performance of the member firms (actors). This is deemed as vital for managers and policy makers in the new economy in order to learn how best to capitalize on the strategic strengths of the VN and to maintain its health to avoid compromising on its capacity to thrive.

Evidence of the significance and vast emergence of the use of the VN abounds in theoretical and empirical literature with studies ranging from social networks to public networks and beyond. VNs are and continue to be a developing field of study in various disciplines namely knowledge management, strategic management, economics, public policy and administration, organizational behaviour and theory, small group theory, operational research, communications, health services, computer science, neuroscience, marketing, economics and the list goes on. VNs comprise joint ventures (such as strategic

alliances, equity investments and consortia), mergers, licensing, franchising, interlocking directorates and commercial agreements, supplier relationships, trade association memberships, employee relationships, cartels, cooperatives, industry standard groups (Allee, 2009; Deloitte, 2008; Todeva & Knoke, 2005; Camarinha-Matos & Afsarmanesh, 2006).

### ***1.1.1 Intangible Factors (Value Network indicators) in Value Networks***

Theoretical frameworks and empirical research findings indicated that intangible factors (also defined here as Value Network indicators) demonstrate a consistent pattern of association with overall network performance. According to Allee (2008, 2009) and Marr (2005) intangibles are a key source of competitive advantage for firms when they interact with each other (are increased and leveraged through deliberate action) and managed properly. Intangible factors demonstrated to be drivers of value and cost in a VN include scale, learning, capacity utilization and linkages (Allee, 2000; Stabell & Fjeldstad, 1998). Stabell and Fjeldstad (1998) indicated that scale - which refers to the size and composition of the customer base and customers' accessibility to services - is critical as a value and cost driver in the VN. Linkages arise from reciprocal interdependencies during the execution of activities in the VN which are characterized as simultaneous and synchronized. These drivers influence the opportunities available in the VN for customers to exercise interdependencies and hence the value derived and costs incurred in the VN. For instance, the larger the customer base, the more the opportunities for exchanges and higher value generated. Furthermore, the number of access points facilitate the provision of opportunities effectively hence the higher the number of access points the more value generated. Meanwhile, a large customer base and great number of access points in the VN

absorb the costs incurred because economies of scale apply: costs are spread out over numerous units of output and thus decreased.

Similarly Allee (2000, 2009) categorized measures which comprise an expanded view of intellectual capital and which capture intangible value that resides in the VN. They embody aspects such as external relationships, human competence, internal structure of the firm, social citizenship, corporate identity and environmental health. Therefore, use of these measures enables firms to see beyond the traditional, limited, financial view of the enterprise and start incorporating systems thinking that sees the larger value system in operation. Furthermore, by incorporating these measures, this shift in view promotes firms' economic growth as the system's diversity in resources can be measured in the non-rigid VN system rather than restricting the firms to conformity which arises when solely using financial measures. The measures facilitate the capturing not only of monetary but also non-monetary value.

These categories include growth in asset development, efficiency of value conversion, utilization, stability and renewal. Measures operationalised within the categories are as follows: Growth in asset development includes indicators such as growth rate in alliances and growth in customer base (scale). Secondly, efficiency of value conversion includes RoI from improvement ideas and ratio of inquiries to contracts. Thirdly, utilization includes measures such as diffusion of best practices (which could be deemed as a facet of learning), ratio of local hires and employee satisfaction. Fourth, stability includes metrics such as turnover/loyalty and consistency of involvement in community projects. Finally, renewal includes indicators such as customer demographic change, time in or cost of training and so on and so forth. As expounded on by Allee (2000, 2009) the indicators within each of these categories were substantial. Therefore those outlined here are not exhaustive.

Meanwhile Inkpen and Tsang (2005), and Eisingerich and Bell (2008) focused on network strength of ties, configuration or linkages, stability (network structure); shared culture and goals (cognitive dimension of network); and trust and network openness to new exchange partners (relational dimension of network). These factors in varied degrees influence the availability and exchange of information and other resources thus either restricting or promoting economic outcomes in the VN (Granovetter, 2005).

In their research on factors influencing International Joint Venture (IJV) performance Christoffersen (2013), and Ozorhon, Arditi, Dikmen and Birgonul (2010) shed light on intangible drivers categorized into background variables, antecedents, core factors and external factors. Background variables include international business experience and partner fit (choice); antecedents such as organizational learning and knowledge management, management characteristics, venture demographics such as age of venture, and partner relations analysed through commitment, trust, conflict, cooperation, collaboration, and satisfaction (Allee, 2009; Camarinha-Matos & Afsarmanesh, 2006; Christoffersen, 2013; Cooper & Shumate, 2012; Ozorhon *et al.*, 2010; Todeva & Knoke, 2005). Core factors comprise R&D intensity, employee incentives, management turnover, product and service quality, sales and distribution networks, firm position and embeddedness and information (Allee, 2008; Ozorhon *et al.*, 2010). External factors are related to industry characteristics and the regulatory environment namely growth rate, labour and scale.

This study focused on the following value drivers: Growth in asset development category (growth in alliances and scale, the latter measured as number of customers); efficiency of value conversion category (R&D expenditure), the latter which is perceived to include product and service development costs; and finally, the renewal category (annual training cost).

### ***1.1.2 The commercial banking sector in Kenya***

Banks in Kenya are licensed and regulated by the Central Bank of Kenya (CBK). CBK's mandate is fostering the liquidity, solvency and proper functioning of a market-based financial system. In its supervisory capacity it develops and enforces appropriate laws, regulations and guidelines that govern the players in the banking sector. These laws include the Banking Act, Microfinance Act, Central Bank of Kenya Act; and related Risk Management, and Prudential Guidelines and Regulations (CBK, 2014). In addition to the CBK Guidelines banks promote self-regulation through the various processes and initiatives that are overseen by the Kenya Bankers Association (KBA, 2013).

Kenya is recognised internationally for having one of the most progressive, stable and innovative banking sectors in Africa. It has been envisaged as the Financial Services Hub and the most diverse banking industry in East Africa. The sector has 43 Commercial Banks; 30 are locally owned and 13 are foreign owned (CBK, 2014). Dominant players include some of the indigenous banks such as Equity Bank, Kenya Commercial Bank and Cooperative Bank; and foreign owned banks such as Barclays Bank of Kenya, Standard Chartered and so on and so forth. Developments within the banking sector are guided by the medium-term objectives of the financial sector reform and development strategy embedded in the economic development blueprint, Vision 2030 (CBK, 2011). Key trends projected for 2014 included: CBK's reforms and implementation of sound policies towards financial deepening and inclusion; entrenchment of devolution in Kenya, expansion of banks into new market segments, advances in information and communications technology, regional integration and so on and so forth (CBK, 2013).

Changing trends have influenced the shift in strategic moves of various Commercial Banks as each has tried to keep up with the dynamism of the industry and stay ahead of the competition. Changing trends within the business environment affect the performance of

organisations and therefore, have a bearing on how strategies are formulated and executed by organisations. Strategy formulation and execution is seen as an analytical, data-driven process that rigorously identifies customer needs, differentiates the company from rivals, and maximises profits (Govindarajan & Trimble, 2012). Whilst strategy formulation is important strategy execution is more critical as emphasized by Gakure, Keraro, Okari and Kiambati (2012) that the best formulated strategies may fail to produce superior performance for the firm if they are not successfully implemented. Therefore, from this perspective firms have found the VN instrumental and adopted it as an effective model for executing their strategic moves. Various reasons were posited for applying the VN namely, to expand distribution networks and market share. Strategies applied by banks are mainly driven by the capabilities of core technology rich operational systems and other integrated systems such as mobile banking. The capabilities of these systems dictate the types of products and services the institution can offer and how efficiently they will be offered to its customers.

## **1.2 Statement of the Problem**

Literature demonstrated the effects the VN has on firm performance. However, the problem identified by the study was that literary findings were contradictory with some indications that the VN generates more value by enhancing performance for actors and yet in contrast, other studies observed that it generates less value for its actors through its associations with curtailed firm performance.

Outlined in the foregoing literature in this chapter and further advanced here were demonstrations that VNs enhance performance of actors within them. In the case of strategic alliances, community work groups, cooperatives and other similar arrangements the VN accelerates access to integration of internal and external knowledge and its transfer

with relevant effects on company growth and innovativeness; achieves production efficiency, shared R&D risks, gained access to new markets and skills, achieved time compression in the development of new products and access to new technological opportunities (Allee, 2008, 2009; Camarinha-Matos & Afsarmanesh, 2006; Sampson, 2007), higher Return on Equity and better Return on Investment (Todeva & Knoke, 2005) and solving complex meta (large scale) problems (Allee, 2008, 2009; Clarke, 2006; Cooper & Shumate, 2012).

In contrast, empirical research also revealed that VNs have been associated with reduced firm performance or performance challenges. For instance, Emerald Publishing Group (2005), and Stewart and Maughn (2011) reported that fifty percent of joint ventures are doomed to be outright failures. Deloitte (2008), Emerald Publishing Group (2005), and Stewart and Maughn (2011) cited reasons namely management's poor strategic planning and/or due diligence on the type of joint venture selected and lack of understanding on the implications of the choice made on the performance outcome (end result). Subsequently, this culminates in poor decision making on choice of partner to collaborate with in the joint venture. The poor planning includes senior management's lack of communication with line managers and technical staff, and failure to consult experienced management. These parties are better placed to give input during negotiation, structuring and documentation of the joint venture to ensure critical issues are addressed thus saving the venture from cost and possible failure. Furthermore, performance failure of firms in VNs is also attributed to poor post-deal integration (Epstein, 2004). Stewart and Maughn (2011) also indicated causes of joint venture failure as partner selfishness - lack of a shared, balanced focus between partners, lack of an exit strategy, acting with haste hence sacrificing quality and lack of management autonomy.

Allee (2000, 2002, 2003, 2009) and Stewart and Maughn (2011) indicated that performance challenges in VNs are also attributed to lack of systems thinking – management is inflexible, and does not view the VN and the relationships within it as a system that is living and evolving. This is critical for sustainability and success. Firms still adopt the traditional process view of the enterprise and apply rigid frameworks and tools that do not incorporate sociological and environmental perspectives. Moreover, these traditional models ignore and do not capture areas of non-monetary value (such as social citizenship, human competence, external relationships, corporate identity and environmental health) hence posing challenges in the measurement of intangibles.

The contradictory findings explained in the section above indicated the problem identified by this study: inconsistent evidence on the effects of VNs on firm performance. They indicated that VNs exhibit two contrasting associations with performance: on one hand enhanced firm performance and, on the other, firm performance challenges and/or failures. The section also provided evidence on reasons cited for performance challenges and/or failures and in doing so the study observed that these associations of VNs with firm performance are influenced by the behaviour of respective firms within their VNs. Since the VN is an adaptive living system, the firm's behaviour affects not only its own health but also that of the other actors in the VN: the firm's actions have either a positive or negative impact on the whole system (Allee, 2003; Senge, 1990). Therefore, the foregoing literature in this chapter and the evidence in the section above acknowledged that the VN is invaluable in generating value for actors hence its direct associations with performance. Its survival (health) is pegged on - and can be compromised by - the behaviour of the actors within it, which influence the amount of value derived from it and hence level of firm performance.



In reviewing literature this study also identified - as indicated in the section below - that there exists scanty and systematically documented information, specifically with a focus on the Commercial Banking sector in Kenya, which links general bank performance to VNs. Available literary pieces were few and far between that shed light on the influence of the VN on performance of the actors in the network especially through an investigation on intangible factors (value drivers) affecting firm performance in these VNs. As observed in the evidence presented in the Kenyan banking context findings on performance and its subsequent measurement seemed mainly focused on tangible factors using traditional indicators at both sectoral and firm level because typically tangibles have been easier to measure. Furthermore, at macroeconomic level studies focused on sector-specific factors that affect the overall banking sector performance (Olweny & Shiphoo, 2011). However, sectoral factors tend to be beyond the direct control of the firm.

Adero and Liu (2011) with a case study on Equity bank examined alliances specifically on the influence of two intangible factors namely, partner selection in alliance formation and management of the alliance. Odero *et al.* (2012) investigated the impact of mergers and acquisitions on performance (on shareholder wealth) using the typical performance indicators - Return on Assets (RoA), Return on Equity (RoE) and the Efficiency ratio (EFF) - which majorly capture measurement of tangibles. Other studies on bank performance, at micro level, focused on strategic responses by individual banks and their effects on performance. For example, Abishua (2010) studied a combination of various strategies adopted by Equity Bank and Koks (2008) determined strategic responses adopted by Barclays Bank of Kenya. Furthermore, Mungai (2008) examined the choice of strategy that influences bank performance.

According to the study, as highlighted in this section, what was still scanty and seemed unclear was empirical evidence specifically on the intangible factors (value drivers)

- which interact at micro level and thus are within direct control of the firm - that affect performance of the Commercial Banks within their VNs in Kenya. Therefore, the discussion presented in this chapter set the foundation for this investigation. As a result, the main purpose of this - descriptive - study was to investigate the effect of the Value Network on the performance of Commercial Banks in Kenya (by examining the effect of intangible factors present in the banks' respective Value Networks on the banks' performance).

### **1.3 Objectives of the Study**

#### ***1.3.1 General objectives***

The general objective for the study was to investigate the effect of the Value Network on the performance of Commercial Banks in Kenya.

#### ***1.3.2 Specific objectives***

The specific objectives of the study were:

- i. To establish the effect of scale on performance of Commercial Banks in their VNs in Kenya.
- ii. To determine the effect of growth in alliances on performance of Commercial Banks in their VNs in Kenya.
- iii. To identify the effect of Research and Development (R&D) expenditure on the performance of Commercial Banks in their VNs in Kenya.
- iv. To identify the effect of training on performance of Commercial Banks in their VNs in Kenya.

## **1.4 Research Questions**

The following were the research questions for the study:

- i. How does scale influence the performance of Commercial Banks in their VNs in Kenya?
- ii. What is the effect of growth in alliances on performance of Commercial Banks in their VNs in Kenya?
- iii. Is there a relationship between (R&D) expenditure and performance of Commercial Banks in their VNs in Kenya?
- iv. What is the impact of training on the performance of Commercial Banks in their VNs in Kenya?

## **1.5 Significance of the Study**

This study is fundamental to sectors of the economy and applicable universally as outlined below:

### ***1.5.1 Industry practitioners: Managers and policy makers***

Building on the research already done, this investigation is of value to managers and policy makers to enhance understanding on the language of networks - systemic view and organizational dynamics (behaviours of actors and/or patterns of intangible exchanges of firms including how knowledge adds value) in VNs and the intangible factors associated with performance in VNs - thus informing the overall development of network management strategies and policies aimed at improving performance.

### ***1.5.2 Statisticians***

By contributing to insights on the management of intangibles, specifically clarity on intangible factors affecting performance, the study supports statisticians in the continuous

development of performance measurement tools that maintain relevance for use, in this dynamic prevailing business ecosystem.

### ***1.5.3 Institutional regulators and investors***

The study offers insight to government regulators and investors not just for enhancing performance at firm (micro) level but also at the overall network level, to facilitate collective behaviour of actors, which can then create positive impacts at industry (macro) level. For instance, the Central Bank of Kenya in conjunction with banking institutions in Kenya can collectively develop and implement an overall network governance mechanism. Similarly, the Kenya Bankers Association, in competing with the foreign financial sector, can engage in strategic initiatives to enhance multi-firm customer loyalty and value innovation to uplift the industry's performance. The positive effects on performance promote investment in the sector.

### ***1.5.4 Academicians***

This study informs academicians by providing implications for future research in various fields including strategic management, network research, organisational studies and so on and so forth.

## **1.6 Scope and Limitations of the Study**

Whilst the financial sector in Kenya comprises banks, MFIs, pension funds, insurance firms, capital markets, SACCOs, DFIs, ROSCAs and ASCAs, mutual funds, this examination focused on the Commercial Banks. VNs investigated constituted strategic alliances. Whilst the study acknowledged that VNA may be applied for mapping out the structure of the respective VNs neither was this nor its use for calculating the costs and

benefits of each value generating activity, in terms of both tangible and intangible costs, employed in this study.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

In the commencement of this chapter this research drew on conceptual literature to present various theories supporting - underpinning - the study namely the Value Network Perspective, Resource Based View, Social Network and Egocentric theories. Thereafter, a review on empirical literature was presented covering Value Networks (VNs). Empirical evidence was provided on VNs' positive and negative associations with firm performance thus putting into context the problem - inconsistencies in findings on performance (performance contradiction in VNs) - described in the previous chapter and which was the foundation for this study. Furthermore the effect of the intangible factors on firm performance, within the VN, was presented. These intangible factors under study included scale, growth in alliances, R&D expenditure and training.

#### **2.2 Theoretical Literature**

This section provided deeper insight on theories which served as a basis for understanding the Value Network (VN) and its fundamental value creation logic. The theories namely the Value Network perspective, the Resource Based View and the Social Network theory expounded on the VN model and its value creation through value conversion, value exchange and value reinvention logic. Furthermore, the aforementioned theories shed light by outlining perspectives on the VN and its fundamental value creation logic as entrenched in systems thinking and through the leveraging of intangible assets such as knowledge, technical resources and social capital.

### ***2.2.1 Value Network perspective***

The status quo of the business ecosystem of the new economy demands that the firm adopts a perspective that creates a new definition of value, analyses the role of knowledge and other intangibles in creating value; and that incorporates systems thinking to best understand how tangibles and intangibles are used as currencies of exchange to build value (Allee, 2002). In the past decade, there has been heightened development of this perspective, the Value Network (VN), and findings have accrued on the benefits of adopting it to enhance firm performance. Allee (2008) described the VN as any set of roles and interactions in which people engage in both tangible and intangible exchanges to achieve economic or social good. According to Christensen and Rosenbloom (1995) a VN is a nested commercial system within which a firm competes and solves customers' problems: "the context within which the firm identifies and responds to customers' needs, procures inputs and reacts to competitors" (pg. 5).

Traditionally, economic exchanges were perceived only in the form of physical goods and resources, money or capital (tangibles). However the VN facilitates firms' provision of a mediating environment (and/or mediating technology) in the contemporary economy to deliver, in addition to tangibles (direct exchanges), also intangible (indirect) exchanges of value that previously were not taken into account between customers (Allee, 2008, 2009; Stabell & Fjeldstad, 1998). Furthermore, the VN is a system that not only enables value delivery and/or exchange amongst actors within the network but also their co-production and re-invention of value which includes social innovation: the design and redesign of complex business systems (Allee, 2000, 2002, 2008; Normann & Ramirez, 1993). The VN recognizes the new currencies (exchanges) of value as its foundation: Goods, Services and Revenue - GSR (these are tangible deliverables), knowledge and intangible benefits which are intangible deliverables (Allee, 2002, 2008). Therefore

through the VN a business gains economic benefit from the VN's cognitive ability to transform intangibles, for instance, information and knowledge inputs into learning and financial value (Allee, 2002).

Goldfinger (1997) acknowledged the modern economy and the significant value that resides in intangibles: "the economic landscape of the present and future is no longer shaped by physical flows of material goods and products but by ethereal streams of data, images and symbols" (pg. 198). Tangible deliverables not only include transactions around GSR (such as contracts, invoices, request for proposals and confirmations or payments) but also knowledge products and services (such as reports or package inserts) that generate revenue or are expected as a part of the tangible flow of GSR. Whilst intangible deliverables include knowledge exchanges - that flow around and support the core product and service value chain but are not contractually paid for - they also include benefits which are favours or advantages extended from one person or group to another. Knowledge exchanges include strategic information, process knowledge, technical know-how, collaborative design and policy development. Benefits include customer loyalty, good will, prestige and image enhancement. The VN appreciates that knowledge can be traded for knowledge or for a benefit or money (Allee, 2000, 2002).

The VN unlike the traditional value chain model - which strives to maintain continuity and thus drives out variation through business process engineering - appreciates diversity and thus accommodates variation (that is a prominent, unavoidable characteristic of the new economy). This variation exists as a result of continuous emergence of complex problems, new opportunities and business forms in the business ecosystem of the new economy. In appreciating variation, the VN detects barriers, urgencies, risks, big opportunities and thus changes accordingly with this dynamic market to absorb shocks and



seize opportunities through its webs of collaborative and cooperative interdependencies (Allee, 2000, 2008; Normann & Ramirez, 1993).

Traditionally firms perceived intangibles as a means to producing tangible goods rather than viewing them as assets. Therefore for a long time the management, and particularly measurement, of intangibles was neglected. This created a measurement gap because statisticians and researchers struggled to establish indicators for evaluation and/or measurement methodologies. Goldfinger (1997) revealed that practitioners long ignored how critical intangibles were to contributing firm value because of various challenges encountered namely, poor data quality - data inaccuracy - due to inadequate attention to their generation methods and quality of the sources. Secondly, tension between stable statistical apparatus and the dynamic economy. Thirdly, there was an issue of the relevance of underlying conceptual models and assumptions. As a result conceptual approaches were inadequate; and did not gain enough internal consistency and external recognition to provide a credible basis for the development of an alternative measurement framework. The traditional firm thus focused on capturing value through the use of financial performance metrics.

In contrast, the VN enables the contemporary, learning organization to apply non-financial tools, such as Value Network Analysis, to map and measure intangibles which it recognizes as a key source of value (Allee, 2002, 2008, 2009). Various indices and analytical approaches were suggested to explain, measure and manage knowledge assets and other intangibles in the VN such as intellectual capital methods (Brooking, 1996; Edvinsson & Malone, 1997; Roos *et al.*, 1998; Sveiby, 1997; Sullivan, 1998). Moreover, Kaplan and Norton (1996) proposed the Balanced Scorecard approach, and Housel and Kanavsky (1995) presented a system calculating knowledge value added which is a variation of Economic Value Added (EVA). In addition, other assessment tools were

applied such as the Deloitte Corporate Environmental Report Score Card by Deloitte (1997) and the Future 500 Performance Tool Kit (Kiuchi & Shireman, 2002).

Value Network Analysis (VNA) is an approach based on the principles of living systems which is suggested to manage the complex interdependencies of the networked, business environment. It is applied for business analysis to facilitate understanding not only on tangible but also intangible patterns of value exchange, the value impact of tangible and intangible inputs for each participant; and the dynamics of creating and leveraging value which involves calculating costs and benefits of each value generating activity (Allee, 2002, 2008). Consequently, it offers a way to model, analyze, evaluate, and improve the capability of a business to convert both tangible and intangible assets into other forms of negotiable value, and to realize greater value for itself. VNA links specific interactions within the value creating network directly to financial and non-financial scorecards. Allee expounded that rather than the seldom direct attachment of monetary valuations to intangible deliverables, VNA can be used to come up with quantitative measures for them (Allee, 2002).

The benefits of analysis using the VNA modelling tool are numerous. Through its application, manager's can understand the structural characteristics of their respective VNs. Secondly, since it is a tool used to visually map interfirm relationships it illustrates not only tangible but also intangible patterns of value exchange. Consequently, this mapping also indicates the position of firms (centrality) relative to each other in the network. In addition, if VNA is applied periodically it will also give managers insight on the impact of centrality on evolution of the network as firms mature with time, increase in size and business cycles shift. Powell *et al.* (1999) demonstrated that centrality stimulates growth in size and internally-funded R&D, and at the same time reinforces the use of - external - R&D alliances. VNA, as afore-outlined, can be used to quantify intangibles and the value

obtained therein. There is also the added benefit of the identification of the respective type of network in which the firms participate. VNA opens up a whole new world of whole-system types of indicators that can provide powerful insights into the health and vitality of an organization and subsequently the network itself.

The study recognized that as a result of all the aforementioned benefits managers may better understand how to govern their firms and, collaboratively, how to govern their overall VNs. However, it also noted that questions about the overall indicators and patterns for healthy VNs still required further investigation and answers: A need to understand where and how to use network indicators including their operationalisation. They include risk, structure, reciprocity, brand (perceived value), resilience, stability operationalised for instance as, employee or customer turnover, employee satisfaction; asset impact indicators (growth in asset development) measured through scale (number of customers, number of access points to services and composition of network), increase in number of strategic business relationships; efficiency of value conversion measured through process cycle times, RoI, percentage of customer orders; renewal measured namely by percentage of image or structure enhancing projects, time in training, growth of non-renewable resources; utilization measured as percentage of repeat orders, percentage of employee retention or percentage of repeat customers and so on and so forth (Allee, 2000, 2009; Inkpen & Tsang, 2005; Stabell & Fjeldstad, 1998).

Allee (2011) explained that businesses are driven by collaborative technologies that allow new ways of organisation such that they are changing from a process-centric view of work to a human-centric view of business as value creating networks; and that the true shape and nature of collaboration is more than the social network: it is the Value Network (VN). As the new ways of organizing work are changing the challenge is that structures, processes, and systems (business tools, work design approaches and organizational

structures) are not evolving as rapidly, and indeed in many cases are thus inadequate and do not support more flexible and networked ways of working. The new collaborative ways of organizing business are thus disconnected from work flows and performance goals creating a lack of agility: the latter is the single largest risk and opportunity facing global organizations. However, Allee (2009) explained that the emergence and adoption of the VN overcomes this challenge.

Indeed at the macro level, the VN is the primary economic mechanism for converting one form of value to another and for creating value (Allee, 2002, 2008, 2009; Normann and Ramirez, 1993). The VN model therefore enhances the firm's exchanges of value and survival in the complex marketplace. Moreover Christensen and Rosenbloom (1995) indicated that in the current knowledge driven society VNs, through advances in information and communication technologies, confer innovative competitive advantage to firms and facilitate the creation of highly integrated and dynamic supply chains and virtual business communities. This is necessary to overcome competitive challenges in the context of keeping up with changes in the business environment hence adapting to emerging markets whilst still meeting the needs of the firms' established markets.

### ***2.2.2 Resource Based View (RBV)***

Wernerfelt (1984) advanced the resource based theory which is concerned with a firm's source of competitive advantage through the leveraging of a bundle of valuable tangible or intangible resources which it has within itself and at its disposal. Therefore, resources are deemed as key to firm performance. To provide a firm with competitive advantage its resources must be heterogeneous, immobile and must meet the VRIN criteria: Valuable, Rare, In-imitable and Non-substitutable. The VN, rife in the modern economy, is built on cooperation through inter-organisational relationships. The objective of cooperation -

through alliance formation - with actors is that it is a central strategy to strengthen organisational capabilities and, as advanced by the Resource Based View (RBV), generate sustainable competitive advantage: by creating bundles of strategic and social resources which are not available to other partner actors in the VN (Joia & Malheiros, 2009; Sampson, 2007).

Network research perspectives further assert RBV's contribution to the formation of networks through cooperation by explaining that firms attempt to adapt to their environments to enable procurement of necessary resources which they themselves do not have. Consequently, the RBV is concerned with collaborative arrangements between firms to reduce uncertainty and over-dependency on products, services, tangible and intangible resources and competencies; and to contribute to the creation of their offerings to customers (Camarinha-Matos & Afsarmanesh, 2006). Therefore, top management engages in actions which best capitalize on a firm's unique endowments and capabilities whilst relying on actors within its VN for the resources it does not have but which it deems as vital for the firm's performance.

The RBV asserts the strengthening of firm capabilities which the VN places similar emphasis on: A firm should leverage the most fundamental resources which are intangibles and particularly the most critical - relationships and knowledge - through reconfiguration of roles and relationships amongst actors to mobilize creation of value in new forms (Allee, 2000, 2008, 2009; Normann & Ramirez, 1993). Consequently each actor gains complementary competitive advantage by developing new value that is different to what the other actors have in the VN and which continuously creates an ever improving fit between competencies and customers. Christensen and Rosenbloom (1995) emphasized this when they demonstrated that firms that focus on technological advancements - the development and adoption of new technologies - meet their customer needs within their

VN. Fundamentally too, further interpretation of their study findings lent itself to an understanding that the VN (through its ability to accommodate uncertainty, shocks and changes in the market environment) enables the same firms to develop technology that anticipates and addresses user needs in emerging competitor markets (in other VNs).

### ***2.2.3 Social network theory***

Social Network theory has made a worthy contribution to network research which includes the foundation set by scholars such as Simmel (1908) who outlined the formation of a network as a social structure comprised of actors or nodes (such as individuals or organisations) who are linked up to each other by ties (social relationships of a specified type). These ties (dyads or webs) that link the actors up to each other form patterns of relationships amongst them - the latter referred to as relational embeddedness (Gulati *et al.*, 2002; Eisingerich & Bell, 2008, Inkpen & Tsang, 2005). By virtue of this characteristic of social embeddedness the network bears social capital: The aggregate of resources embedded within, available through and derived from these web of relationships possessed by an organisation or individuals.

Lin (1999) defined social capital as investments in social relations as an avenue to gain access to and/or mobilise resources embedded in a social structure in order to enhance expected returns of instrumental or expressive (purposive) actions. An actor executes either of these actions with an expectation that there will be a return on the social relations it invests. In instrumental action the anticipated return for social relations is the gaining of added resources (resources not presently possessed by a firm or individual) whereas in expressive actions, the return is the maintaining of possessed resources (Lin, 1999).

Simmel (1908) documented the nature and size of networks based on interactions at network level (between the networks of people or firms) rather than at individual level.

Network research has evolved from studies aimed at understanding the influence of individuals' embeddedness on their behaviour or influence of organizations' embeddedness on their behaviour in an organisational network to investigations leading to increased knowledge on network formation and its influence on performance of firms in these networks.

The social network theory is concerned with studying the pattern of relationships (embeddedness) amongst individuals, organisations or societies which in turn offers an understanding on the structure as well as the relational and cognitive dimensions of networks and their effect on firm performance (Eisingerich & Bell, 2008; Gulati *et al.*, 2002; Inkpen & Tsang, 2005; Provan *et al.*, 2007). Granovetter (2005) indicated that social structure in the form of social networks affects economic outcomes such as productivity, innovation, pricing, choice of alliance partners, decisions to acquire other firms and strategies for acquisition, and the diffusion of corporate governance techniques. Structure is influenced by network ties, configuration of ties, centrality and stability. Whilst configuration refers to the pattern of linkages or ties amongst actors and thus constitutes elements of hierarchy, density and connectivity; centrality is the proximate situation or position occupied by the firm within its social network of relationships and stability is the change of membership in the network (Gulati *et al.*, 2002; Inkpen & Tsang, 2005). Shared culture and goals comprise the cognitive dimension of the network. Trust and network openness to new exchange partners are factors that influence the relational dimension of network.

These characteristics influence firm performance of the actors in their respective VNs such that in varying degrees and based on various economic circumstances they can act as factors that either constrain or offer opportunities for firm growth where the latter includes amassing social capital as an asset. In supporting this, Lin (1982) stated that the

social resources theory posits that access to and use (mobilisation) of resources embedded in social networks can lead to better socioeconomic status. Furthermore, that this mobilisation of resources is determined partly by positions in the hierarchical structure (the strength of position proposition) and by the use of weaker ties (the strength of tie proposition). In terms of centrality the proximity of individuals or firms to a strategic location, such as a bridge, in the network determines the amount of information available to them and the influence they wield (Granovetter, 1973, 1983; Lin, 1999). For instance, a firm which is close to a useful bridge has competitive advantage in terms of access to more and diverse, novel information.

According to Granovetter (2005) a bridge is the only route facilitated by an individual or firm through which information or other resources may flow from one network sector to another. Consequently, the firm is said to be exploiting a 'structural hole' in the network. These bridging individuals or firms may often also have the added strategic advantage of having ties into multiple networks that are largely separated from one another. In emphasizing the importance of these bridging ties, Granovetter (1973, 1983) advanced the concept of 'the strength of weak ties' indicating that without some weak ties, particularly bridges, (noting that not all weak ties are bridges) separate cliques of individuals or groups of firms in their different VNs (the latter is by this study's interpretation) would not be linked. Moreover, in addition to enabling the efficient spread of new information, bridging ties are key in the diffusion of innovation and cultural ideas, and promote cohesion rather than fragmentation of social systems.

Strong ties positively influence performance by enhancing the speed of information flow amongst actors in the network and offering greater credibility and influence than weak ties or bridging ties. Most influence for instance, through decision making is transmitted through strong ties (Granovetter, 1973,1983). Inkpen and Tsang (2005), and Eisingerich



and Bell (2008) explained that stable, intense firm ties amongst actors within the network may negatively influence performance: That membership in a network in and of itself may cause rigidity, limiting actors from discovering opportunities and information as each partner may be wary of divulging valuable knowledge to the other. Firms may also be hesitant to accept foreign entrants into the VN who, ironically, may come in with new beneficial knowledge which may be of value to the incumbent actors in the VN. Subsequently, such conditions cause failure in the local adaptability of firms to changing economic environments, their ability to remain relevant and to survive. Comparatively, loose and diverse ties may prevent the development of trust with key businesses thus preventing full exploitation of opportunities presented by new technologies and markets. Indeed openness to new ideas, technologies and business opportunities gives actors competitive advantage and sustainable success. The degree of openness and diversity of actors (loose ties) determines the speed and ease of adopting a new technology.

The social network is observed in VNs which constitute collaborative agreements between actors pursuing economic activities, whose basis is social relationships and mutual trust. With an increased focus on social networks, research reveals that perspectives on VNs focus on human centric views and advocate for a management shift from the traditional - industrial age - firm's process views to the modern firm's human centric views in the contemporary intangible economy. These human centric perspectives give hierarchy to social embeddedness, and hence social capital, and knowledge as the most fundamental resources (Allee, 2009). Social Network Analysis (SNA) has also oriented us to the importance of relationships and their impact on performance in VNs (Hakanson & Snehotta, 1995; Holmlund & Tornroos, 1997). Social networking technologies have been adopted to increase knowledge sharing, communication and expand collaboration.

Studies within Social Network theory inevitably link up to the Egocentric theory which is concerned with trying to explain how involvement of an organization as the focal, influential, firm in its network affects its actions and outcomes. The firm exists in an egocentric network which comprises of it, the focal firm (ego), a set of organizations (alters) who have ties with the ego and ties also exist amongst alters (Gulati *et al.*, 2002; Provan *et al.*, 2007; Uzzi, 1997). The Egocentric views indicate a focus on the influence of the focal organization's pattern of relationships - with other organizations in the same network - on its behaviour (relational embeddedness). This relational embeddedness (that is manifest in various degrees of collaboration between or amongst the firms in the network) is seen to have an impact on the performance of the respective firms. According to Egocentric theory cohesive versus bridging ties relate to the degree of embeddedness thus connectedness (density) between the focal firm and other firms as well as partner firms whilst the strong versus weak ties orient to dyadic relationships (Gulati *et al.*, 2002; Lin, 1999; Provan *et al.*, 2007). The former may prevent firms from securing safety and opportunity, obtaining new non-redundant information and the latter may increase the risk of partnering with firms with whom it has limited prior cooperative experiences (Gulati, 1998; Gulati *et al.*, 2002). Therefore, the appropriate tie configuration depends on the context in which firms are situated.

VNs, whilst it may be argued as not always the case, exhibit similar characteristics: The existence of an ego that exerts its influence on the other firms (alters) in the network and the typical collaborative pattern of relationships (relational embeddedness) between the ego and the alters as well as between or amongst the alters in the network. The various levels of collaboration between ego and alters or amongst alters have a bearing on the firm performance. This study viewed each Commercial Bank as an ego interacting with alters -

that include agents, suppliers, contractors, financial intermediaries and so on and so forth - in its network.

The Ego-centric theory has not only given insight on the impact of relational embeddedness - dyadic relationships between firms - but also structural embeddedness which as aforementioned relates to a firm's centrality and the associated impact on performance (Gulati *et al.*, 2002; Powell *et al.*, 1999; Provan *et al.*, 2007). This centrality influences confidence and trust between partners, visibility to partner firms, access to and use of resources, generation of social capital, rate of growth in size, R&D and alliances, volume of patenting and non operating incomes and sales, adoption of administrative innovations and corporate strategy (Gulati *et al.*, 2002; Lin, 1999; Powell *et al.*, 1999). Poor centrality implies that the firm is invisible to other firms and unreachable by other firms for new rewarding opportunities. It also means that the firm does not offer cooperation with other firms thus inhibiting facilitation of information and learning benefits; and does not have closeness centrality (reduced connectedness - short distances between focal firm and its partners) which would otherwise influence speed of interaction with other firms and information access such as new business opportunities or information about valuable innovations. Poor centrality also means a firm fails to act as a mediator (betweenness centrality) thus loses the strategic position of being the link between two non adjacent actors having control of information and resource flow, and negotiation terms (Freeman 1979).

Lin (1999) identified measures of social capital namely, embedded resources and network location. The embedded resources are categorized into two sets: network and contact resources. Whilst network resources are those accessible assets embedded in an ego's network, contact resources refer to resources embedded in contacts and which are mobilised in instrumental actions, for instance a contact that helps in linking up a person to

a key party in another network. On the other hand network location refers to the strategic position (centrality) of an individual or firm in the network. For instance, existence of a bridging tie where an ego is a bridge between it and another network enables access to new information. Additional measures in the network location category include size, density, closeness and betweenness centrality (Lin, 1999)

## **2.3 Empirical Literature**

The empirical literature in this section situated the research problem by citing studies demonstrating inconsistencies in findings on performance (performance contradiction in VNs). Thereafter, the section indicated studies that highlighted the effect of intangible factors (under study) on firm performance namely scale, growth in alliances, R&D expenditure and training.

### ***2.3.1 Value Networks and enhanced firm performance***

Studies on network performance demonstrated that VNs have certain positive relationships - correlations - with performance. The VN enhances firm survival, high levels of agility, creation of new value by confrontation of ideas and practices, combination of complimentary resources and technologies, and creation of synergies; innovation, team productivity and knowledge sharing (Allee, 2009; Camarinha-Matos & Afsarmanesh, 2006; Purchase *et al.*, 2008). Stewart and Maughn (2011) stated that in the case of international joint venture (IJV) arrangements they facilitate quick access to channels of distribution and provide access, for the non-resident partner, to knowledge and know-how of the local marketplace. Furthermore the firms have greater strategic control in international business, enhanced experiential knowledge for overseas commitments and better long-term financial

payback than other foreign market entry and expansion modes such as exporting, licensing, and contract manufacturing.

Furthermore, there are indications of several strong associations namely between: network coordination and performance in multi-sectoral public networks; collaboration and performance in strategic alliances; collaboration networks and performance whereby the VN maximizes some component of its value system (Camarinha-Matos & Afsarmanesh, 2006; Herranz, 2009; Todeva & Knoke, 2005). There are also positive associations between interfirm cooperation and performance; and commitment and performance where commitment is perceived as a multi-dimensional construct and a psychological state or force that directs individuals to adopt behaviours consistent with obtaining collaborative outcomes (Clarke, 2006).

### ***2.3.2 Value Networks and reduced firm performance***

Empirical research revealed that in spite of firms' adoption of the VN model (which demonstrates that the VN maximises firm value and hence performance) that performance challenges abound in VNs. Scholars indicated that between fifty and seventy percent of strategic alliances fail, and the outcomes of alliance failure can be devastating such that firms do not survive and fail to meet their performance expectations (Deloitte, 2008; Emerald Publishing Group, 2005; Epstein, 2004; Sampson, 2007; Stewart & Maughn, 2011; Todeva & Knoke, 2005; Zineldin & Dodourova, 2005). Poor strategic planning was cited as a reason for performance challenges and/or failure. The remedy suggested was careful planning which entails an assessment of the prevailing circumstances to inform the joint venture strategy adopted. Therefore, factors to be considered are the type of resources to be combined, the synergies sought, the extent of redundant resources, the degree of market uncertainty and the level of competition faced.

Secondly Epstein (2004) highlighted poor post-deal integration as another reason. To ensure success of the joint venture proper planning using ‘Epstein’s drivers of success’ was proposed: a coherent integration strategy, a strong integration team, consistent and constant communication from senior management, speed in implementation and success measures that are aligned with the joint venture strategy and vision.

Allee (2000, 2002, 2003, 2009) and Stewart and Maughn (2011) indicated that performance challenges in VNs are attributed to lack of systems thinking. They stressed that in order for sustainability and success actors should adopt a practical approach and view their relationships and system as a whole, as living and evolving. There should be positive interaction and dialogue between the business decision-makers after the formation of the joint ventures and flexibility: As circumstances change, the management team and the joint ventures must be capable of adapting to suit the shift in conditions.

The basic challenge of the network orientation is the same challenge which has continuously been tackled in organisations for two decades: The firm’s focus on business processes whereby the world of human interactions and the world of business transactions are (split up) treated as two completely different worlds (Allee, 2009). There is a need to evolve frameworks to an expanded view where businesses redefine value (to include non-monetary perspectives hence incorporating intangibles as currencies) and avoid restricting themselves only to analysis and measurements using financial measures. Furthermore, redefinition of value implies analysis of the firm using new value domains – business relationships, internal structures, human competence, social citizenship, environmental health and corporate identity. Herranz (2009) emphasized that an additional key performance challenge is the lack of appropriate indicators for assessing network performance in public networks.

### ***2.3.3 Intangible factors (value drivers) and performance of firms in Value Networks***

Allee (2009) a strong proponent of VNs, asserted how critical intangible assets are in influencing performance: Most estimates place intangible value such as reputation, social capital and human competencies at fifty to seventy per cent of company value. The author outlined that classical financial reporting in the modern economy is not enough because it primarily captures value that resides in tangible assets and does not account for value present in intangibles. Indeed intangibles' value requires capturing through non-financial reporting because they are key predictors of future performance. Chen, Cheng and Hwang (2005) similarly indicated the significance of measuring intangibles, through non-financial reporting, because they give a view of the firm's market value both in terms of offering the current synopsis of the company and fundamentally, the future value (to predict future performance). This is unlike the classical accounting system that reports book value (net assets on the balance sheet) hence, captures historical data that influences past decisions. Therefore, classical accounting does not offer information that can facilitate decision making for the future. In the past, firms have used book value as the typical means of reporting because tangible assets have been easier to measure.

Whilst book value is important, market value is critical. Traditionally prior to the 1970s book value accounted for over ninety percent of market value. However, over the years and more recently in the past decade it has accounted for approximately twenty five percent. Alipour (2012) echoed this with an indication that, a decade and a half ago, intangibles constituted at least eighty percent of a firm's market value. Currently, a measure of the same is likely to indicate a higher proportion because the modern firm continues to more consciously appreciate and measure the contribution intangibles make to its overall company value. Marr and Roos (2005) emphasized the importance of intangibles for strategic development and execution when they outlined that a company

needs to understand its corporate competence and resource composition in order to evaluate the opportunities it has to create value in a certain space and time.

Intangible assets meeting the VRIN (Valuable, Rare, In-imitable and Non-substitutable) criteria are the key resources that yield a firm's sustainable competitive advantage. However, these resources are only critical value drivers when they are not static and are thus dynamically interacting with each other to be transformed into value (Marr, 2005). Managing and hence leveraging of intangibles, namely Intellectual Capital (IC), influence the amount of benefit derived from the network which in turn influences firm performance. According to Marr (2005), and Marr and Roos (2005) IC includes human capital, structural capital and relational capital. However according to Alipour (2012) intangibles include - in addition to the latter three categories - social, organizational and stakeholder capital.

An expanded view of IC constitutes typical categories of intangibles which include business relationships, human competence, internal structure, social citizenship, environmental health and corporate identity (Allee, 2000). Rodriguez-Castellanos, García-Merino, and García-Zambrano (2011) explained that human capital is difficult to replace because there are no two people with the same characteristics and people have tacit knowledge that is difficult to imitate and is acquired in situ. Therefore, this type of capital can only be developed internally. Human capital is also related to the efficient management of costs, an innovative organisational culture and the capability to adapt. On the other hand, it is related to customer loyalty, the image or reputation of the company and its products. This may be the reason why many firms have seen the advantages that nurturing human capital provides and have thus aggressively engaged in Corporate Social Responsibility (CSR) to build social insurance and customer loyalty. When a firm engages in CSR customers are observed to buy in more to its products, services and brand because



they acquire psychological and/or emotional attachment to it due to its perceived investment in the community and hence, corporate citizenship. Allee (2000, 2009), and Henderson (2006) outlined this in stating that reputation now goes beyond brand to include the assets of social citizenship and environmental responsibility, which are demonstrated in sustainable business values and practices.

Structural capital relates to the non-human storehouses of knowledge that reside in a firm's structure, processes or culture, and remains there, even if its employees leave the firm (Alipour, 2012). Therefore, structural capital offers infrastructure that supports human capital. Alipour (2012) also defined social capital as social relationships that form networks founded on shared values and understanding. These in turn facilitate cooperation amongst individuals, communities or economic actors, and consequently support growth. Secondly, stakeholder capital is deemed as the primary means through which organisations import external knowledge into the firm. Thirdly, organisational capital refers to assets that include production or other processes, specialisation, and flow of information which establish patterns of behaviour and interpretation systems that guide knowledge acquisition.

Relational Capital refers to the existing relationships between different relational components: Human associations with the different stakeholders who include the (internal and external) customers, suppliers, competitors and social stakeholders (Ordóñez de Pablos, 2002). Intangibles are those "little extras" people do that help keep things running smoothly and build relationships (Allee, 2008). They include exchanges of knowledge and information, social responsibility, collaboration, customer loyalty and satisfaction, the effectiveness of the organisation's work groups and structure, the efficiency of the organisation's production and service processes, the level of trust between the people or organisations forming the relationships, creativity, problem solving capability, entrepreneurial capabilities, brand image, reputation and intellectual property (Allee, 2008,

2009; Marr, 2005). Shaner and Maznevski (2006) reiterated Allee (2008) in her emphasis on social and relational capital when they explained that leveraging of roles in the network is critical and that these 'roles' are indeed the - people - agents/facilitators of value conversion and creation.

Shaner and Maznevski (2006), and Allee (2008) stated that the "who" is in the network proposes the strongest relationship with performance thereby emphasising the significance of IC. Rodríguez-Castellanos *et al.* (2011) critically highlighted the key role of relational capital in creating a wide range of links (which the company needs) with other organizations and stakeholders that enables it to be competitive in the market and obtain better results. This is based on the assumption of the existence of a network of links amongst resources, individuals and activities where each individual relation is a substructure that is influenced by and influences the remaining relations.

A firm uses tangible and intangible assets in value creation and conversion within a VN. However, intangible assets have been underutilised and yet they are a prime source of value creation and conversion for the firm. Managers must realise the VN's key role as a value conversion mechanism and subsequently engage in efforts to enhance value conversion and value realization within the network (Allee, 2009). The two processes are interchangeable: value conversion entails conversion of an intangible asset into a more negotiable form of value (tangible); whilst value realization refers to the conversion of a tangible input into a non-financial (intangible) asset of increased levels of marketing competency.

Furthermore, effective management of intangibles entails looking beyond their nature as assets, fundamentally to be understood in terms of how they create value. They do so through value conversion, both in their state as negotiable forms of value and in their existence as deliverables, in the form of a promise during the execution of a transaction

(Allee, 2008). For example, human capital only generates competitive advantage if it transforms into structural capital. Marr (2005) reasserts that the intangibles' value is realised only when intangible assets are transformed into products or services that deliver value. Therefore, intangibles are valid when they enable the companies to do things for their employees, customers, suppliers and other stakeholders.

### ***Effect of scale on performance of the firm in its Value Network***

Scale which is a Value Network indicator is a driver of value and cost in the VN (Allee, 2000; Stabell & Fjeldstad, 1998). Scale is critical because VN services are characterised by demand side economies of scale. Therefore, the value of the service to existing customers increases with each new customer added to the network. Fundamentally, the size of the customer base and its growth influence the value available to the customers. A VN relies on a mediating technology that links - facilitates exchange relationships amongst - customers distributed in space and time. Therefore, the firm offers a networking service. Dependency amongst customers is the main product delivered hence the services in a VN mainly deliver the customers' opportunities to exercise those dependencies (Stabell & Fjeldstad, 1998).

Scale also allows risk sharing. Furthermore, if the customer network is imbalanced - too few relative to cost of delivering the service - then the burden of cost is higher on them. Therefore, the larger the customer base the greater the spread of cost of the service. An additional measure of scale is accessibility. A geographically extended network requires an extended infrastructure. This contributes to an additional size effect on value because the number of access points available to the customer increases. Consequently, while the effect of scale directly increases the value to the customer and firm, the size effect in the form of increased accessibility reduces the customer's cost of using the

mediation service and increases the firm's revenue as the customers increasingly utilise the conveniently available access points for service provision at a fee.

Moreover, in the VN the value of the service provided is affected by the characteristics of the customers that join the network. The concept of cost thus also applies to the composition - characteristics of the customers - of the network. Firms employ strategies that attract varied customer groups, for instance low versus high risk, to enable variations in pricing of their offerings. Therefore, composition of the customer base is key to pricing and consequently profitability.

### ***Effect of alliances on performance of the firm in its Value Network***

A prerequisite for the successful achievement of joint objectives in alliance arrangements is collaboration. Collaboration, a relational variable, is deemed as a driver of value creation in VNs thus it creates benefits, for instance, increasing survival ability of organisations in a context of market turbulence and aiding in better achieving common goals by excelling the firms' individual capabilities (Camarinha-Matos & Afsarmanesh, 2006; Todeva & Knoke, 2005). Cooper and Shumate (2012) explained that increased collaboration yields positive performance outcomes at all - individual firm and at whole network - levels. At whole network level it provides systemic capacity to the VN enabling it to serve more clients beyond individual firm capacity such as in the case of a network of NGOs sharing a common purpose. Collaboration is also documented to give firms with strong collaborative ties in the network prominence, prestige, information access and visibility. The latter three outcomes facilitate network effectiveness.

However, studies on collaboration give insight on the performance contradiction identified in literature and introduced in chapter one. This is such that whilst increased collaboration enhances performance in VNs, reduced collaboration curtails performance:

Collaboration can be constrained by poor operational and/or communication infrastructure, differing organisational commitments, financial resource constraints (the latter creates economic uncertainty) and competition for scarce resources (Cooper & Shumate, 2012). Whereas differing organisational commitments and insufficient financial resources cause conflict amongst actors in the VN, competition for scarce resources curtails information sharing culminating in slow decision making and poor documentation of accomplished work. This performance contradiction is developed further where some studies on strategic alliances reveal, on one hand, this type of collaboration - the alliance - confers performance benefits such as stock price boosts and sales growth, and on the other, the downside that most collaborations are relatively short-lived with many failing to achieve their formal objectives of R&D innovation, organisational learning, or foreign-market penetration (Todeva & Knoke, 2005).

Scale as previously discussed is measured by accessibility. In order to increase accessibility firms apply strategies involving collaborations (joint ventures) - such as alliances - to increase linkages of their services to customers and to penetrate markets (in the latter case, to extend reach to their customer base as well as to new customer segments). Consequently, growth in alliances influences the value available to the customer and cost of using the mediation service in the VN. For instance in the case of banking, a bank extends its network through other banks using strategic alliances or correspondent arrangements and the money markets. Inter-network alliances or agreements directly affect the value of the individual customer's network membership.

From a global management perspective Christoffersen (2013), and Ozorhon, Arditi, Dikmen and Birgonul (2010) offered findings from a systematic, analytical, and integrated assessment (of one hundred and sixty five empirical studies in the former piece of research and a survey in the latter) on drivers of IJV performance. They emphasised that whilst

background and external factors are key variables associated with performance, interpartner relational - antecedent - variables are the most important. The latter include commitment, trust, conflict, cooperation, and satisfaction with the alliance agreement; and are deemed to be antecedents to collaboration. Therefore, their influence either individually or collectively embodies various aspects of performance.

### ***Effect of training on performance of the firm in its Value Network***

In the past some firms have seen training as costly and have thus resorted to lean restructuring. However, there have been debates advocating for firms to perceive training as an investment rather than an expense. Consequently, there is evidence in literature of human capital as one of the most critical intangible assets and of its role in determining firm and country performance (Allee, 2008, 2009; Hanchane, 2010; Sastre, del Valle & Rodriguez-Duarte, 2009; Ubeda Garcia, Marco-Lajara, Sabater-Sempere & Garcia-Lillo, 2013). Training has also been demonstrated to be a source of competitive advantage that gives rise to better results by means of extraordinary income and that the profits obtained are greater than the costs derived from imparting training programmes (Sastre *et al.*, 2009). Knowledge and skills possessed by a firm's workforce are important for its competitiveness. Therefore, workplace learning and continuous improvement are important because human resources are a source of competitive advantage (Ubeda-Garcia *et al.*, 2013). This is especially important for service organizations which need intangible knowledge-based resources which reside in human capital.

The HR function in a firm does not operate in a vacuum but instead works as a partner providing inputs at strategy formulation level with other functions namely finance, marketing, operations and so on and so forth. Therefore HR no longer only plays a role in developing the capacity, knowledge, skills and attitude of employees but also in overall

firm strategy. Training is one amongst a range of practices the HR function conducts which include selection, performance appraisal, compensation, job description, career succession planning, information sharing, promotions and rewards. Research indicates that investments in training produce beneficial organisational outcomes in terms of firm competitiveness, survival and performance: reduced turnover, improved financial performance and productivity, innovation and adaptability to new technologies, better strategic and organisational decisions (Hanchane & Dumas, 2010). In their empirical study Hanchane and Dumas (2010) further demonstrated that the success in training and efficiency of training programs depends on the context in which a firm implements them. For instance, when the use of training programs meets public policy objectives firms receive additional returns.

Ubeda-Garcia *et al.* (2013) explained that, in their assessment of varied empirical studies, training was operationalised through measures which included absolute metrics such as amount of training received by employees (total training time - hours or days), total budget money allocated to training, total number of trained workers or presence and/or absence of training; proportional measures namely percentage of trained workers; content measures such as type of training provided; and emphasis-related measures for instance, perceived importance of training within the organisation. These measures are traditionally based on an approach that views training as the transmission of the abilities, skills and knowledge needed to perform the current job. However, Ubeda-Garcia *et al.* (2013) emphasised the need to use additional measures in research which should pay attention to workers' attitudes - namely, training policy - in addition to the latter outlined metrics.

Sastre *et al.* (2009) advocated for the operationalisation of training using more than a single indicator indicating that numerous studies have applied only one metric which is an oversimplified method that only measures a partial aspect of training effort. Consequently,

they propose measurement in three dimensions: The variety of training, time spent by the employees and the economic resources used by the company. These are operationalised respectively as the different number of courses taken, the number of annual on-site hours that each employee has spent taking training courses and the annual investment on training effort per employee made by the company. Sastre *et al.* (2009) highlighted other indicators which were used in some empirical studies. Time spent on training per employee was observed as the most popular indicator. Other common measures included the scope of training operationalised as the percentage of trained employees, type of courses taken, training course assessment, training expenditures regarding wage costs or training programme length.

### ***Effect of Research and Development expenditure on firm performance in its Value Network***

Numerous empirical studies demonstrated R&D's positive influence in boosting firm performance (Adeyeye, Jegede & Akinwale, 2013; Ayaydin & Karaaslan, 2014; Dave, Wadhwa, Aggarwal & Seetharaman, 2013; Ghaffar & Khan, 2014; Nord, 2011; Shin & Kim, 2011). There is a positive and direct correlation between R&D expenditure and high RoE, RoA and EPS (Ghaffar & Khan, 2014). However, through their empirical study on the IT industry Dave *et al.* (2013) revealed the positive impact of R&D expenditure (using the measure of R&D intensity) on financial sustainability (measured via RoA) through the mediating effect of gross margins. In other words, R&D intensity positively affects gross margins which in turn positively influence financial sustainability. R&D intensity is the ratio of R&D expenditure to net sales (Ayaydin & Karaaslan, 2014; Dave *et al.*, 2013; Nord, 2011; Shin & Kim, 2011). R&D intensity positively impacts gross margins due to reduction in variable costs of production as a result of R&D expenditure. Subsequently,



gross margins positively have an impact on the financial sustainability of IT companies because economies of scale lower the average cost per unit through increased production since fixed costs are shared over an increased number of goods. Dave *et al.* (2013) also highlighted R&D's positive impact on sales growth through new product innovation.

Firms that invest in R&D do so because the benefits foreseen are expected to outweigh, and compensate the firm for, the costs incurred (Wang, 2009). Innovation is deemed as the heart of R&D which culminates in investments in knowledge generation thus enhancing productivity, developing the specialisation patterns of a company's competitive advantage, maintenance or improvement of existing products and services, creation of new products and services, innovation of the production or service processes of companies and high levels of profitability; thereby improving firm's financial performance (Artz, Norman, Hatfield & Cardinal, 2010; Ayaydin & Karaaslan, 2014; Ghaffar & Khan, 2014). Innovations can be achieved by innovation activities such as development of new products, discovery of new markets, procurement of new materials and adoption of new organising methods (Shin & Kim, 2011).

Nord (2011) stated that as firms innovate, they inevitably bring about an efficient allocation of the economy's resources and growth will occur. Innovation does not only lead to growth of a single firm, but innovation also improves the quality of life for all consumers in the economy. Firms that invest in R&D (innovative firms) have higher firm value (using the performance measure of market value as the basis for future growth opportunities and profitability) than non-innovative firms (Nord, 2011; Shin & Kim, 2011). Consequently, this allows innovative firms to earn super normal or above average returns (Ghaffar & Khan, 2014). R&D, through innovation, has increasing effects on firm value and economic development, creates intangible assets and generates excessive stock returns in the stock market (Shin & Kim, 2011). In the spirit of the RBV theory firms see R&D as

a critical means of survival in the competitive environment whereby it is the mechanism that enables them to allocate their resources to develop more resources and capabilities that are inimitable and non-substitutable thus differentiating them in the marketplace.

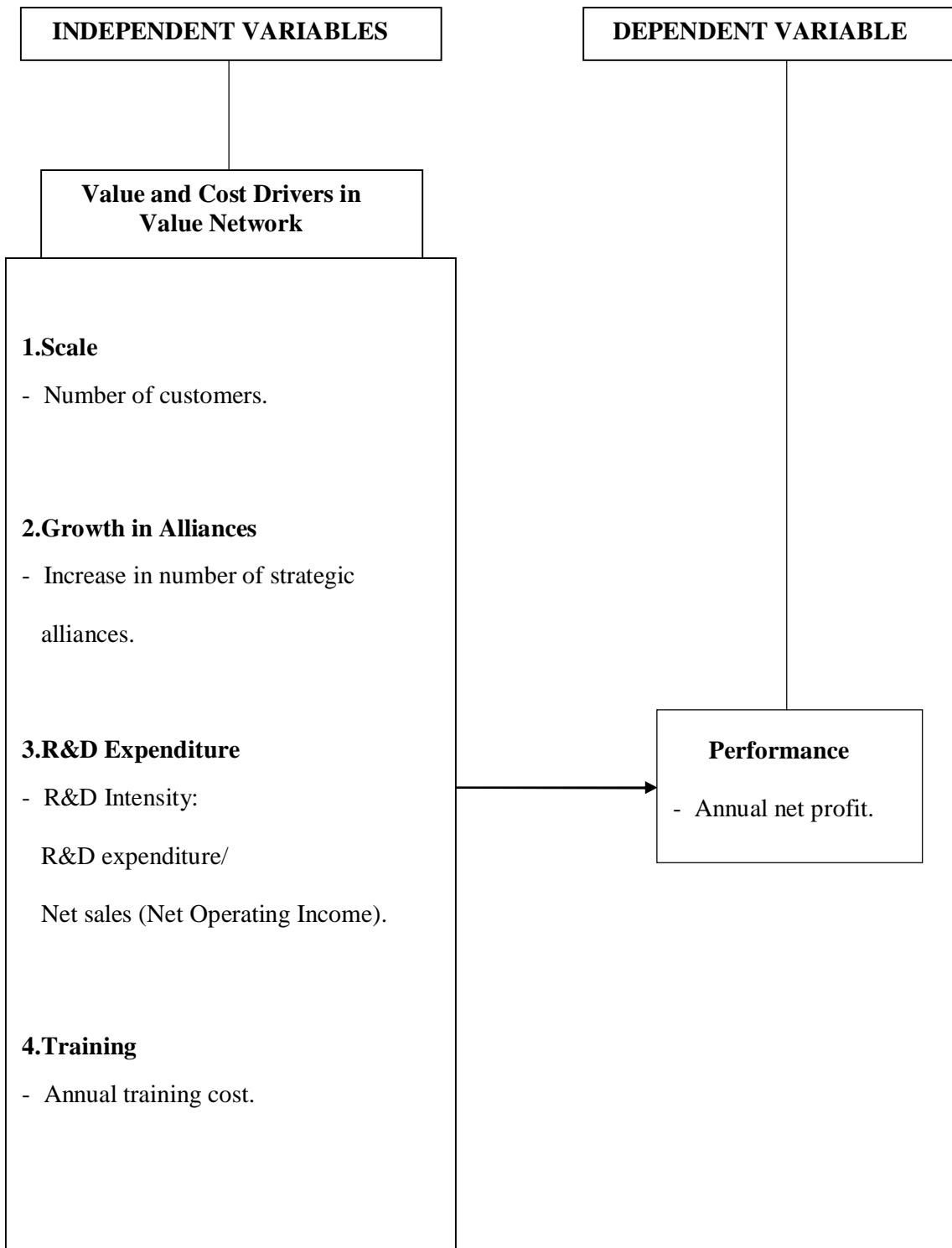
Artz *et al.* (2010) outlined the outputs (innovative outcomes) of R&D as inventions (such as patents) and innovations (such as product announcements) and that they have positive correlations with R&D. Nord (2011) advanced these findings further indicating that patents have a direct and positive relationship on market value of a firm. However, the life of a patent (period company holds exclusive rights to production of the respective product or service) influences firm profitability which in turn influences R&D expenditure because the RoI changes. Artz *et al.* (2010) also demonstrated that R&D, as a strong internal capability of a firm, is key to enabling a firm to generate creative outputs. Consequently, there is a positive relationship of increasing returns to scale to R&D spending (advantages of scale in innovation).

Some scholars indicate that whilst R&D has a positive relationship, playing a pivotal role in firm performance and representing future growth opportunities; it has also been observed to have a negative relationship with performance. Lewin and Chew (2005) indicated that R&D may not guarantee high profitability unless a firm manages it properly. They state that R&D expenses affect profitability because the requirement is that expenditure has to be expensed immediately; the profitability in turn distorts RoA. Shin and Kim (2011) in their empirical examination of listed SMEs in Korea, classified R&D expenditure into asset-counted (capitalised) R&D expenditure and cost-counted (expensed) R&D expenditure. They defined the former as that which is factored in as intangible assets on the balance sheet and the latter is included as part of the current expenses in the income statement. The authors indicated that both positively and significantly affect firm value but asset-counted (capitalised) R&D expenditure has a higher and persistent effect whilst cost-

counted (expensed) R&D expenditure has a temporary effect due to how they are reported in the financial statement.

**FIGURE 1**

**Conceptual Framework**



**TABLE 1****Operationalisation of Variables**

<b>Variable</b>	<b>Variable type</b>	<b>Operationalisation</b>	<b>Measurement</b>
Scale	Independent Variable	Size of Commercial Bank's customer base.	Number of customers.
Growth in Alliances	Independent Variable	Rise in generation of partnerships in the form of strategic alliances with firms which include agents, financial intermediaries; suppliers; other banks, public and private organisations (towards achieving joint social and economic objectives).	Increase in number of strategic alliances.
R&D Expenditure	Independent Variable	Current and capital expenditure on creative work that is conducted systematically to increase knowledge - of humanity, society and cultures - and the use of this knowledge in new applications.	R&D Expenditure.
		Net sales.	Net Operating Income.
Training	Independent Variable	An instrument that makes the generation and accumulation of human capital possible and which provides employees with the knowledge, abilities and skills required to perform a task or a job.	Annual training cost.
Performance	Dependent Variable	Outcomes, from the leveraging of tangible and intangible assets, related to the accomplishment of a firm's strategic objectives and measured against indicators e.g. innovations, acquisition of knowledge hence increased competencies etc.	Annual net profits.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Research Design**

The study employed descriptive research design because this makes an evaluation of what the existing conditions are which accounted for the prevailing problem amongst the Commercial Banks. A descriptive study is employed when a researcher wants to explain the present state of affairs, relationships and to account for their changes over time (Cohen, Manion & Morrison, 2007). In this study the design was based on the use of readily available information obtained across the period under study. Furthermore, a descriptive study was appropriate because it sought to make an assessment by obtaining and analysing the data without manipulating the environment since the data was retrieved from the banks' records.

Furthermore, the descriptive study engaged correlational methods in order to demonstrate the degree of associations (relationships) between the dependent and respective independent variables. The descriptive study also adopted quantitative approaches to enable detailed, rigorous and measurable analysis of the data and inferences to be made on the variables under study thus comprehensively answering the research questions and explaining the existence of the current state of affairs.

#### **3.2 Study Location**

The study location was Nairobi County. Nairobi city, which coupled with its surrounding suburbs form Nairobi County, is the Financial Capital of the East and Central Africa Region. Leading local and international banks have set up operations in the County creating a vibrant and competitive financial ecosystem that is ever evolving. It houses the

headquarters of the 43 Commercial Banks and is home to the Central Bank of Kenya which oversees the Kenyan banking sector (Nairobi City County, 2014).

### **3.3 Target Population**

Ogula (2005) defined a population as any group of institutions, people or objects that have common characteristics. The target population is the entire group of institutions, people or objects to which the researcher wishes to generalize the study findings. This is also called the sampling frame which is described as the population from which the study sample is drawn (Oso & Onen, 2005). In this study the target population comprised of a total of the 43 Commercial Bank headquarters all situated in Nairobi in Kenya (CBK, 2014). A sample was drawn from this population and used to conduct the investigation whereby the unit of study was the Commercial Bank.

### **3.4 Sampling Design and Procedures**

A sample is a subgroup obtained from the accessible population: the selected institutions, people or objects chosen for participation in a study. Each member or case in the sample is referred to as the subject or respondent. This subgroup is carefully selected so as to be representative of the whole population and thus bearing the relevant characteristics. Sampling is a procedure, process or technique of choosing a sub-group from a population to participate in the study (Ogula, 2005). During the period of investigation the study identified and confirmed that there were 43 Commercial Banks in Kenya by referring to CBK's Annual Supervision Reports for the years 2010 – 2014. This count excluded Charterhouse bank which was closed down and has been under statutory management since 2006 (CBK, 2014).

A purposive sample of 15 banks was selected for the study, with a focus on the better performing banks, and analysed over a period of five years, from 2010 to 2014. In the first stage, a minimum benchmark of Kshs. 4,500,000,000 was used for initial selection whereby 38 Commercial Banks met this criterion (Appendix I). Since the focus was on the better performers all 6 top performers in tier I qualified to constitute the study sample. Thereafter, random sampling was applied to 32 banks (those that met the benchmark) in tiers II, III and IV (Appendix II). This enabled the researcher to ascertain the remaining 9 banks to be included in the sample of 15 subjects. The sample was representative of the target population since it comprised of banks in all four categories namely, tiers I to IV as indicated in Appendix II (Think Business Banking Survey, 2014). Whilst random sampling involves random selection which accords each member an equal and independent chance of selection with each round, purposive (judgmental) sampling involves the researcher's selection of subjects on the basis of the judgement of their typicality or possession of the particular characteristics being sought (Cohen *et al.*, 2007).

The sample of 15 banks constituted 34.8% of the target population. According to Kasomo (2006) a sample of at least 30% of the population is a sufficient proportion of the target population and enables a researcher to generalise findings to the whole population. Cohen *et al.* (2007) state that a minimum sample size of 30% of the population is advisable if it is to be capable of being subjected to statistical analysis.

### **3.5 Data Collection Procedures**

Data collection according to Cohen *et al.* (2007) is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, test hypotheses and evaluate outcomes. Secondary sources of data were used to extract quantitative secondary data on the number of



customers, number of strategic alliances, annual training cost, net operating income (net sales) and R&D expenditure. This data was obtained from audited financial statements contained in bank annual reports for the respective years, 2010 to 2014. Net operating income (net sales) and R&D expenditure were used to calculate R&D intensity and number of strategic alliances was collected and computed to determine the increase in number of strategic alliances. The researcher conducted the data collection exercise independently and completed it in two weeks.

### **3.6 Reliability and Validity**

The study confirmed the reliability and validity of the secondary sources of data collection by seeking expert opinions from members of the university fraternity which included the study supervisor and lecturers within the School of Graduate Studies and Research at KCA University.

### **3.7 Data Analysis Procedures**

The collected data was subjected to processing and rigorous quantitative analysis. According to Mackey and Gass (2005) processing is organising data into a manageable, easily understandable and analyzable base of information. The term analysis refers to the computation of certain measures along with searching for patterns of relationships that exist amongst data-groups. Analysis of data involves a number of closely related operations which are performed with the purpose of summarising the collected data and organising the latter in such a manner that it answers the research question(s). The following procedures were employed: Firstly, data was cleaned and thereafter coded, classified and tabulated. E-Views version 9 and Stata version 12 were used for analysis. Both descriptive and inferential statistics were used to analyse the data. The following descriptive statistics were

employed: Measures of central tendency, frequency distributions and panel descriptive analysis. Furthermore, exploratory data analysis was conducted using growth pattern graphs and overlain growth plots. Inferential statistics followed which employed correlation and panel regression analysis. Correlation analysis using Karl Pearson's correlation coefficient measured strength of relationships between the independent variables and the dependent variable; as well as checking for multicollinearity. Jackson (2006) states that correlation analysis assesses the degree of relationship (associations) between two measured variables. Multicollinearity exists when two independent variables are inter-correlated such that they highly interact with each other and cause an issue of reduced reliability of results (Cohen *et al.*, 2007).

Panel regression was used to explain the exact nature of the associations between the independent and dependent variables by more precisely predicting the value of independent variables relative to a specific value of dependent variable. However prior to panel regression some diagnostic tests were conducted namely Breusch-Pagan LM, time fixed effects, modified Wald, Wooldridge-Drukker and serial correlation tests. Breusch-Pagan LM test was used to check which model was appropriate between Pooled Effects (POLS) and Random Effects (RE) and time fixed effects test investigated the presence of time related effects that if significant, needed to be taken into account. Heteroskedasticity was tested using the modified Wald test and serial correlation was tested using the Wooldridge Drukker test. The Hausman test was conducted to determine which model to run for panel regression, whereby the null hypothesis states that the preferred model is random effects versus the alternative that is the fixed effects (Greene, 2008).

According to Greene (2008) the random effects regression model and as employed in this study was as follows:

$$Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \mu_{it} + \epsilon_{it} \dots\dots\dots(i)$$

The model specifications in this study were:

$Y$  = Performance. Therefore,  $Y_{it}$  = Profitability (Annual net profit ) for  $i^{th}$  firm in  $t^{th}$  year.

$i$  = Measurement of the entities (firms): The Commercial Banks.

$t$  = 1, 2 ... 5 (time indicator) where 1 is year 1 (year 2010), 2 is year 2 (year 2011), 3 is year 3 (year 2012), 4 is year 4 (year 2013) and 5 is year 5 (year 2014).

$\beta_0$  = Constant

= the intercept for each entity

$\beta_1$  = coefficient of scale

$\beta_2$  = coefficient of growth in alliances

$\beta_3$  = coefficient of R&D expenditure

$\beta_4$  = coefficient of training

$X_1$  = Scale (measured in terms of number of customers)

$X_2$  = Growth in alliances (measured in terms of increase in number of strategic alliances)

$X_3$  = R&D expenditure (measured in terms of R&D intensity: Ratio R&D expenditure to net sales)

$X_4$  = Training (measured in terms of annual training cost)

$\mu_{it}$  = between entity error term

$\epsilon_{it}$  = within entity error term

## **CHAPTER FOUR**

### **FINDINGS AND DISCUSSION**

#### **4.1 Introduction**

The current chapter consists of analysis of secondary data as per research objectives and questions derived in chapter one. Secondary data for measuring the study variables was retrieved from annual audited financial statements. In total five variables were developed (four independent variables and one measure of the dependent variable). This formed balanced panel data of (n\*t) with fifteen cross-sections and five periods running from the years 2010 to 2014. This amounted to seventy five observations. Analysis was done using E-Views version 9 and Stata version 12. Logarithm transformation was carried out amongst several variables because they were not normally distributed and hence to reduce the skewness too. Correlation analysis was initially carried out in order to test the strength of the relationship as well as multicollinearity amongst the independent variables.

#### **4.2 Descriptive Statistical Analysis**

Descriptive statistics of the variables under investigation was carried out. They included scale, growth in alliances, R&D expenditure, training and performance which were operationalised as number of customers, increase in number of strategic alliances, R&D intensity, annual training cost and net profit, respectively. Findings of the study indicated that on average Commercial Banks made a profit of Kshs. 4,355,426,947; with a maximum profit of Kshs. 16,836,000,000 and a minimum of Kshs. 125,712,000. Secondly, results of the study demonstrated that on average Commercial Banks in Kenya had 934,871 customers; with a Commercial Bank registering the maximum number of customers as 8,437,018 whilst the minimum number of customers was 8,829. Close scrutiny indicated a wide dispersion in the number of customers as accounted by the standard deviation of

1,879,880 customers. Thirdly, on average Commercial Banks had 25 numbers of strategic alliances, with the highest number of alliances recorded as 66 and the lowest at 8 alliances. Fourth, on average the Research and Development (R&D) intensity was 0.05 with an average deviation of 0.005 which implied that R&D intensity differed less across the Commercial Banks. Finally, the average training cost was Kshs. 145,202,332; with a minimum of Kshs. 4,574,000 and a maximum of Kshs. 772,773,000.

Data normality was tested using Jarque-Bera test which according to Hill, Griffiths and Lim (2011) hypothesises that data is normally distributed against an alternative which states that data is not normally distributed. Since all variables under investigation had p values less than 0.05, then the data were not normally distributed.

**TABLE 2**  
**Descriptive Statistics**

<b>Description</b>	<b>Net profit</b>	<b>Number Customers</b>	<b>Number of strategic alliances</b>	<b>Research and development Intensity</b>	<b>Training cost</b>
Mean	4.36E+09	934871	24.97333	0.052723	1.45E+08
Median	3.00E+09	81732	21.00000	0.030745	79580000
Maximum	1.68E+10	8437018	66.00000	0.232245	7.73E+08
Minimum	1.26E+08	8829	8.000000	0.005033	4574000
Std. Dev.	4.11E+09	1879880	13.09732	0.052560	1.78E+08
Skewness	1.019529	2.611979	1.230955	1.630454	2.141910
Kurtosis	3.266086	8.976611	4.314360	5.146018	7.107402
Jarque-Bera	13.21426	196.9050	24.33918	47.62163	110.0683
Probability	0.001351	0.000000	0.000005	0.000000	0.000000
Sum	3.27E+11	70115358	1873.000	3.954243	1.09E+10
Sum Sq. Dev.	1.25E+21	2.62E+14	12693.95	0.204426	2.36E+18
Observations	75	75	75	75	75

#### **4.2.1 Data Transformation**

Normally distributed data has a skewness and kurtosis of approximately 0 and 3 respectively (Hill *et al.*, 2011). The variables - which were not normally distributed - were skewed to the right since all had skewness coefficients greater than 1 and kurtosis was

greater than 3. To resolve this log transformation was carried out of net profit, number of customers, annual training cost, number of strategic alliances and the resultant matrix is as shown below. Since R&D intensity was a ratio it was not appropriate to transform it using log transformation. Results of the study demonstrated that both net profit and annual training cost had negative skewness after log transformation. Following transformation all the variables were normally distributed since the p values were greater than 0.05. Although R&D intensity was not normally distributed the coefficient of kurtosis was not far from +3 while the Jarque-Bera test coefficient was 47.6 which is not big thus the coefficient was assumed to be normally distributed. In supporting the latter Hill *et al.* (2011) indicate that a large and significant coefficient (value) reveals skewness of error terms, implies less normality and thus gives evidence against the null hypothesis.

**TABLE 3**  
**Resultant Matrix after Log Transformation**

<b>Description</b>	<b>Log of net profit</b>	<b>Log of number of customers</b>	<b>Research and development intensity</b>	<b>Log of strategic alliances</b>	<b>Log of training cost</b>
Mean	21.57692	12.01929	0.052723	3.093325	18.15860
Median	21.82079	11.31120	0.030745	3.044522	18.19227
Maximum	23.54679	15.94814	0.232245	4.189655	20.46550
Minimum	18.64950	9.085797	0.005033	2.079442	15.33590
Std. Dev.	1.295475	1.897325	0.052560	0.501702	1.203489
Skewness	-0.539817	0.527797	1.630454	0.077275	-0.273957
Kurtosis	2.308517	2.184567	5.146018	2.504369	2.954516
Jarque-Bera	5.136751	5.560036	47.62163	0.842299	0.944617
Probability	0.076660	0.062037	0.000000	0.656292	0.623561
Sum	1618.269	901.4464	3.954243	231.9994	1361.895
Sum Sq. Dev.	124.1910	266.3883	0.204426	18.62617	107.1805
Observations	75	75	75	75	75

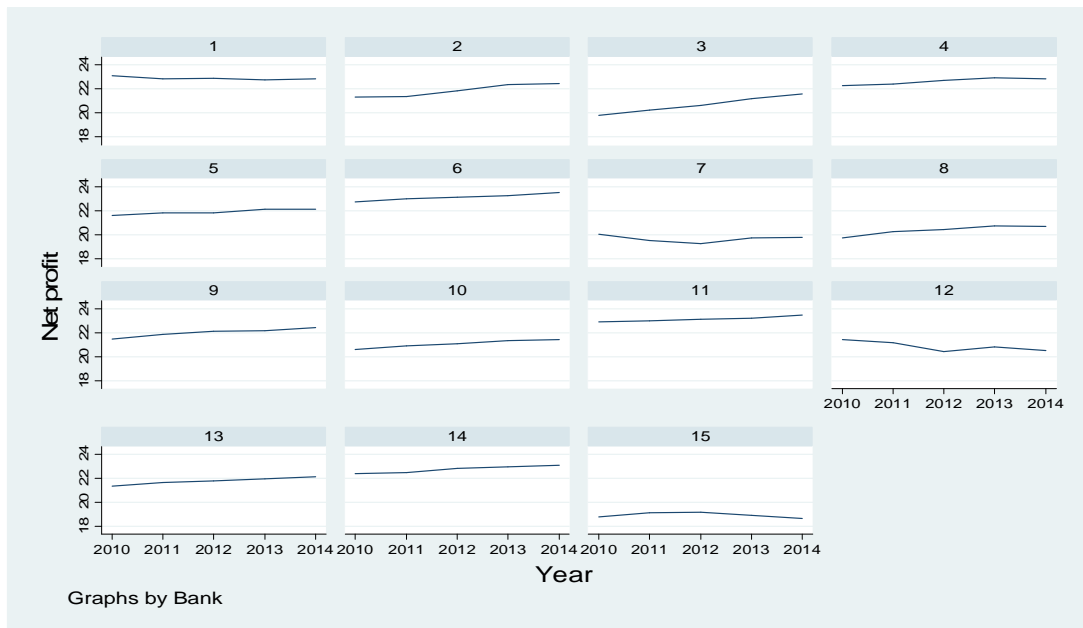
### 4.3 Exploratory Data Analysis

Prior to panel regression analysis the study employed growth pattern graphs and overlain growth plots to explore the patterns of growth in net profit generated by the respective Commercial Banks for the period (years 2010 to 2014).

### 4.3.1 Growth Pattern Graphs for Net Profit

The graphs for net profit patterns in Figure 2 demonstrate that there were variations in the net profit generated by the various Commercial Banks across the period. There was a general upward trend in net profit with the least registered in 2010 and the most accrued in 2014. The exceptions were Giro Bank and National Bank of Kenya which registered their lowest net profit in year 2012 and Trans National Bank which registered maximum net profit for the period in 2012.

**FIGURE 2**  
**Commercial Banks' Net Profit Patterns**



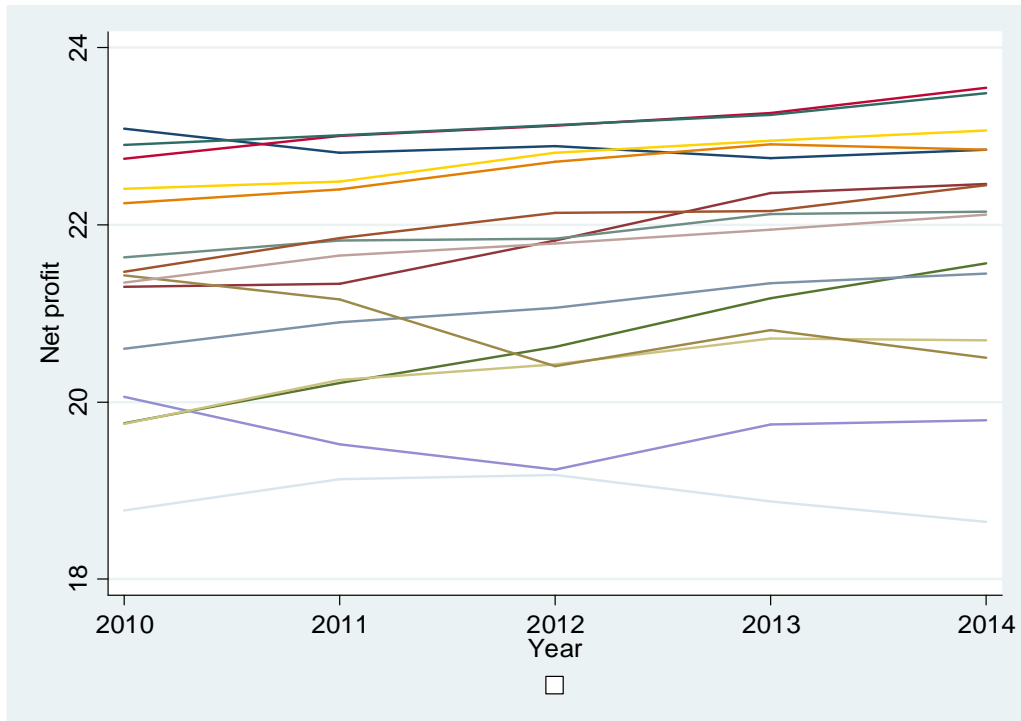
**KEY:** 1 – Barclays Bank of Kenya, 2 – CFC bank 3 – Chase Bank 4 - Cooperative Bank, 5 - Diamond Trust Bank, 6 – Equity Bank, 7 – Giro Bank, 8 – Housing Finance Bank, 9 – I & M Bank, 10 – Imperial Bank, 11 - Kenya Commercial Bank, 12 - National Bank of Kenya, 13 - NIC, 14 - Standard Chartered Bank, 15 - Trans National Bank

### 4.3.2 Overlain growth plots

Figure 3 indicates the overlain graphs which were used to show whether the slopes of respective Commercial Banks performance in terms of net profit registered were significantly different from each other. The pictorial presentation revealed that whilst there

was a general upward trend, the slopes and the intercepts were different. From these findings it can be deduced that there were random effects - individual Commercial Bank changes in the variable at time (t) were random and could not be determined from the previous period.

**FIGURE 3**  
**Overlain Growth Plots for Commercial Banks' Performance**



#### 4.3.3 Multi collinearity analysis

Correlation analysis was carried out to investigate the strength of the relationship between variables as well as to check for and treat multicollinearity if any existed. The study findings (in Table 4) indicated a positive significant relationship between net profit and number of customers ( $\rho = 0.75$ ,  $p$  value  $< 0.05$ ). This implied that an increase in scale was associated with an increase in performance among Commercial Banks in Kenya. Secondly, there was a negative significant relationship between R&D intensity and net profit among Commercial Banks in Kenya, ( $\rho = -0.233$ ,  $P$  value  $< 0.05$ ). This implied that the more Commercial Banks increased their R&D expenditure the more performance



decreased. Thirdly, there was a positive significant relationship between net profit and increase in number of strategic alliances among Commercial Banks in Kenya, ( $\rho=0.70$ ,  $p$  value  $<0.05$ ). This implied that growth in strategic alliances had a strong positive influence on Commercial Banks' performance. Finally, the study findings indicated that there was a strong positive significant relationship between annual training cost and net profit among Commercial Banks in Kenya, ( $\rho=0.844$ ,  $P$  value  $<0.05$ ). Furthermore, close scrutiny indicated that annual staff training cost had the most significant influence on net profit, thus the Commercial Banks should intensify their annual training in order to increase their performance.

There was a strong positive significant relationship between number of customers and increase in number of strategic alliances among Commercial Banks in Kenya, ( $\rho=0.72$ ,  $p$  value  $<0.05$ ). Moreover, there was a significant positive relationship between number of customers and annual training cost, ( $\rho =0.56$ ,  $p$  value  $<0.05$ ). This implies that scale among Commercial Banks is dependent on training as well as growth in alliances. Additionally, there was a significant positive relationship between annual training cost and increase in number of strategic alliances ( $\rho =0.54$ ,  $p$  value  $<0.05$ ). However, no multicollinearity was present because all independent variables had a correlation coefficient that was less than 0.8. Cohen, Manion & Morrison (2007) state that multicollinearity exists between independent variables when they have correlation coefficients that are higher than 0.8.

**TABLE 4**  
**Correlation Analysis**

	<b>Net Profit</b>	<b>Number of Customers</b>	<b>Research &amp; Development Intensity</b>	<b>Number of Strategic Alliances</b>	<b>Annual Training Cost</b>
Net profit	1				
Number of Customers	0.751105	1			
	0.000	-----			
Research & Development Intensity	-0.233328	-0.304778	1		
	0.0439	0.0078	-----		
Number of Strategic Alliances	0.70253	0.715571	-0.345702	1	
	0.000	0.00	0.0024	-----	
Annual Training Cost	0.844748	0.564675	-0.087041	0.537769	1
	0.000	0.000	0.4578	0.000	-----

#### **4.4 Diagnostic Analysis**

In this section the study reports panel data diagnostic tests carried out namely Breusch-Pagan LM, time fixed effects, modified Wald, Wooldridge-Drukker tests and Hausman tests. Descriptive statistics were also computed from panel data to reveal the between and within differences.

##### **4.4.1 Breusch-Pagan LM test**

Breusch-Pagan LM test was used to check which model was appropriate between Pooled Effects (POLS) regression and random effects (RE) regression model. The null hypothesis is that variance across entities is zero. This means there is no significant difference across units. As indicated in Table 5 since the P value was  $= < 0.05$ , the null hypothesis was rejected. There was a significant difference in firm performance (annual net profit) across the Commercial Banks. Therefore, pooled effects regression modelling was not appropriate for the study.

**TABLE 5**  
**Chi-Square values for the Breusch-Pagan LM Test**

<b>Model</b>	<b>Dependent variable</b>	<b><math>\chi^2</math>-value</b>	<b>p-value</b>
1	Net profit	79.57	0.000

#### *4.4.2 Time fixed effects test*

Results in Table 6 demonstrate the test results for time fixed effects. The findings indicated that there were time effects (p value < 0.05) thus, it was necessary to utilize a two way model or introduce dummy variables.

**TABLE 6**  
**Results for Time Fixed Effects Test**

<b>Model</b>	<b>Dependent variable</b>	<b>F- value</b>	<b>p-value</b>
1	Net profit	18.92	0.000

#### *4.4.3 Modified Wald and Wooldridge Drukker tests*

While heteroskedasticity was tested using the modified Wald test, serial correlation was tested using the Wooldridge Drukker test. Results in Table 7 revealed that there was uniform variance therefore, there was no heteroskedasticity (p value > 0.05). In addition, there was evidence of serial correlation in the data since p value < 0.05. Consequently the study employed the FGLS (Feasible Generalised Least Squares) two way random effects regression model.

**TABLE 7**  
**Results for Modified Wald and Wooldridge-Drukker Tests**

<b>Model</b>	<b>Dependent variable</b>	<b>Test for heteroskedasticity</b>		<b>Serial Correlation</b>	
		<b><math>\chi^2</math>-value</b>	<b>p-value</b>	<b>F-value</b>	<b>p-value</b>
1	Net profit	0.28	0.7584	32.823	0.0001

#### 4.4.4 Panel data analysis

Panel descriptive analysis followed, prior to panel regression analysis, as indicated in the Table 8 below, which revealed the between and within differences.

**TABLE 8**  
**Panel Descriptive Analysis**

Variable		Mean	Std. Dev.	Min	Max
return	overall	21.57692	1.295475	18.6495	23.54679
	between		1.287934	18.92148	23.15408
	within		0.330373	20.66908	22.4731
custo	overall	12.01929	1.897325	9.085797	15.94814
	between		1.917661	9.131613	15.74653
	within		0.348135	10.97106	13.56237
cost	overall	18.1586	1.203489	15.3359	20.4655
	between		1.197555	15.5421	20.23032
	within		0.302933	17.25626	18.87907
stra	overall	3.093325	0.501702	2.079442	4.189655
	between		0.42428	2.40242	3.869853
	within		0.285345	2.370063	3.641065
rdi	overall	0.005505	0.010561	0.00	0.053938
	between		0.010332	0.00	0.039073
	within		0.003248	-0.01458	0.020371

Results from the Breusch Pagan LM test indicated that the Pooled Effects (POLS) model was not appropriate for the study. Consequently, the most appropriate model for the study was the panel regression model which conferred the possibility that it could either be random effects (RE) or fixed effects (FE). To ascertain which was ideal to employ the Hausman test was run and results were as demonstrated in Table 9. The null hypothesis is that the preferred model is random effects versus the alternative which is the fixed effects (Greene, 2008). Since the  $p > 0.05$ , the most appropriate model to explain the relationship between annual net profit and number of customers, increase in number of alliances, R&D intensity and annual training cost among the Commercial Banks was random effects regression modelling. Particularly, the study employed the FGLS two way random effects

regression model to tackle the serial correlation which was present in the data as diagnosed by the Wooldridge Drukker test.

**TABLE 9**  
**Results for Hausman Test**

<b>Variable</b>	<b>Fixed</b>	<b>Random</b>	<b>Variable (Diff.)</b>	<b>sqrt(diag(V_b-V_B)) SE</b>
Customers	.4094263	.310932	.0984943	.0857558
Cost	.5039521	.5442142	-.0402621	.0608611
Strategic alliances	-.0017242	.0800133	-.0817375	.0735969
Research and development intensity	-22.32558	-17.65185	-4.673736	4.796614
Chi square =3.71 P value = 0.4484				

#### **4.5 Value Networks' Random Effects Regression Model on Commercial Banks'**

##### **Performance**

In order to answer the research questions FGLS two way random effects regression analysis was employed and an overall model was fitted as conceptualized in the conceptual framework (chapter two). Results of the study (in Table 10) demonstrated that there was a significant relationship between number of customers, increase in number of strategic alliances, R&D intensity and annual training cost which all combined had an influence on Commercial Bank performance since F statistics was 115.171 and P value <0.05. This implies that at least one of the slope coefficients was non-zero. The model goodness of fit showed 97.4% of the changes in Commercial Banks' performance were explained jointly by number of customers, increase in number of strategic alliances, R&D intensity and annual training cost.

Furthermore, on the combined model results indicated that there was a positive significant relationship between number of customers and Commercial Banks' performance in Kenya. Secondly, there was a positive significant relationship between increase in

number of strategic alliances and Commercial Banks' performance in Kenya. Thirdly, there was a negative significant relationship between R&D intensity and Commercial Banks' performance amongst Commercial Banks in Kenya. Finally, there was a positive significant relationship between annual training cost and Commercial Banks' performance. Consequently, the implication was that there was a positive significant relationship between scale and performance, growth in alliances and performance, training and performance; and a negative significant relationship between R&D expenditure and performance.

**TABLE 10**  
**Value Networks' Random Effects Regression Model on Commercial Banks' Performance**

<b>Variable</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>t-Statistic</b>	<b>Prob.</b>
Constant	7.748	1.999	3.876	0.000
Number of customers	0.414	0.108	3.829	0.000
Increase in number of strategic alliances	0.254	0.085	2.987	0.000
Research and Development intensity	-7.590	2.600	-2.919	0.005
Annual training cost	0.510	0.100	5.098	0.000
<b>Weighted Statistics</b>				
R-squared	0.974	Mean dependent var		21.577
Adjusted R-squared	0.965	S.D. dependent var		1.295
S.E. of regression	0.242	Sum squared resid		3.267
F-statistic	115.171	Durbin-Watson stat		1.992
Prob(F-statistic)	0.000			
<b>Unweighted Statistics</b>				
R-squared	0.974	Mean dependent var		21.577
Sum squared resid	3.267	Durbin-Watson stat		1.992

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATIONS**

This chapter summarises and presents the research findings from the study. It has been organized to provide a concise conclusion of the study findings and areas suggested for further research.

#### **5.1 Summary**

This study commenced with the demonstration of a research problem in literature on firm performance in Value Networks (VNs). Evident in empirical literature was a performance contradiction that stemmed up from inconsistent findings on VNs' association with, on one hand, enhanced firm performance and on the other, VNs' association with firm performance challenges. Moreover scantily existing was systematically documented information, specifically with a focus on the Commercial Banking sector, which linked general bank performance to VNs.

Consequently, the study's main objective sought to investigate the effect of the Value Network on the performance of Commercial Banks in Kenya. This research also aimed to answer four research questions in order to sufficiently achieve the aforementioned overall objective. These four questions which coincide with the four specific objectives for the study were as follows: How does scale influence the performance of Commercial Banks in their VNs in Kenya?; What is the effect of growth in alliances on the performance of Commercial Banks in their VNs in Kenya?; Is there a relationship between R&D expenditure and the performance of Commercial Banks in their VNs in Kenya?; What is the impact of training on the performance of Commercial Banks in their VNs in Kenya?

In order to meet the overall objective and thus answer the specific research questions the researcher conducted a descriptive study. The research location was Nairobi

County, in Kenya, which is home to the target population: The Headquarters of all the 43 Commercial Banks in Kenya. A sample of 15 out of the 43 Commercial Banks was drawn for study. Data was collected using secondary sources (audited financial statements contained in bank annual reports) to retrieve the relevant data. The data was analysed over a period of five years from 2010 to 2014. The VN was operationalised using metrics namely: number of customers (to measure scale); increase in number of strategic alliances (to measure growth in alliances); R&D intensity (to measure R&D expenditure) and annual training cost (to measure training). Scale, growth in alliances, R&D expenditure and training constituted the independent variables. Performance was the dependent variable which was operationalised as annual net profit.

The collected data was then processed and subjected to descriptive statistics using measures of central tendency, frequency distributions and panel descriptive analysis. Moreover, it included conducting the Jarque Bera test for analysing Normality of the variables under study. Based on the test outcome, that the variables were not normally distributed, appropriate treatment (transformation of variables) was applied. Panel data analysis was used to reveal the between and within differences. Exploratory data analysis was conducted using graphs for net profit patterns and overlain growth plots to explore the patterns of growth in net profit generated by the respective Commercial Banks for the period (years 2010 to 2014).

Inferential statistics employed correlation and panel regression analysis. Correlation analysis using Karl Pearson's correlation coefficient measured the strength of relationships between the independent variables and the dependent variable; and investigated the presence of multicollinearity. Panel regression was used to explain the exact nature of the associations between the independent and dependent variables by more precisely predicting the value of independent variables relative to a specific value of



dependent variable. However, prior to panel regression some diagnostic tests were conducted namely Breusch-Pagan LM, time fixed effects, modified Wald and Wooldridge-Drukker tests. Breusch-Pagan LM test was used to check which model was appropriate between Pooled Effects (POLS) and Random Effects (RE) regression. The time fixed effects test investigated the presence of time related effects which if diagnosed as significant, needed to be taken into account. While heteroskedasticity was tested using the modified Wald test, serial correlation was tested using the Wooldridge Drukker test. Finally, the Hausman test was run to determine the model to use between random and fixed effects for panel regression.

In general, the study findings demonstrated that there was an upward trend in number of customers, increase in number of strategic alliances, R&D intensity, annual training cost and net profit amongst Commercial Banks between 2010 and 2014. The highest annual average trend across all variables was recorded in 2014 while the least was in 2010. The Normality test indicated that the study variables were not normally distributed: all had skewness coefficients greater than 1 and kurtosis was greater than 3. Consequently logarithm transformation was conducted on net profit, number of customers, increase in number of strategic alliances and annual training cost. Since R&D intensity is expressed as a ratio and less than 1, logarithm transformation was not carried out. The variable was assumed to be normally distributed since the Jarque-Berra value (at 47.62) was not big, the coefficient of kurtosis (at 5.14) was not far from +3 and skewness (at 1.63) was not far from 0. All transformed variables were normally distributed because the p values were greater than 0.05. Both net profit and annual training cost had negative skewness after log transformation (- 0.53 and - 0.27 respectively).

No outliers were present since data was normal and there was no multicollinearity because all independent variables had correlation coefficients that were less than 0.8

(Cohen, Manion & Morrison, 2007). The graphs indicating net profit patterns of growth displayed variations in the net profit generated by the various Commercial Banks across the period. There was a general upward trend. Furthermore, the overlain growth plots indicated that random effects were present: Individual Commercial Bank changes in the variable at time (t) were random and could not be determined from the previous period. Breusch-Pagan LM test confirmed that pooled effects regression modelling was not appropriate for the study and thus clarified that the appropriate model for the study was panel regression. However, this implied that it could either be random effects (RE) or fixed effects (FE) and hence required ascertaining using the Hausman test.

The time fixed effects test identified the presence of time effects hence verifying the need to use a two way model. The modified Wald test indicated that there was no heteroskedasticity but the Wooldridge Drukker test confirmed the presence of serial correlation. Consequently, to take the latter into account the FGLS (Feasible Generalised Least Squares) two way random effects regression model was employed. The Hausman test evaluates the null hypothesis that the preferred model is Random Effects against the alternative that the preferred model is Fixed Effects (Greene, 2008). Since the p value > 0.05, the null hypothesis was accepted and thus the preferred model that was employed in the panel regression analysis was the Random Effects model.

Panel regression was conducted thereafter, using the FGLS two way random effects regression model. A combined model was fitted as conceptualized in chapter two. The combined model results indicated that there was a significant relationship between number of customers, increase in number of strategic alliances, R&D intensity, annual training cost which all combined determined Commercial bank's annual net profit (performance). This was indicated by the F statistic = 115.171 and p value = < 0.05. The model goodness of fit indicated that 97.4% of the changes in Commercial Banks' net profit were explained jointly

by number of customers, increase in number of strategic alliances, R&D intensity and annual training cost whilst 2.6% could be explained by other factors apart from these indicators which were investigated.

Whilst number of customers, increase in number of strategic alliances and annual training cost had a positive significant relationship, R&D intensity had a negative significant relationship with Commercial Bank performance. Furthermore on number of customers,  $\beta = 0.414$  implied that a unit (100%) increase in number of customers increased Commercial Banks' annual net profit by 0.414 units (41.4%). Pertaining increase in number of strategic alliances,  $\beta = 0.254$  indicated that a unit (100%) increase in number of strategic alliances increased Commercial Banks' annual net profit by 0.254 units (25.4%). On R&D intensity,  $\beta = -7.59$  indicated that a unit (100%) increase in R&D intensity decreased Commercial Banks' annual net profit by 7.59 units (759%). On annual training cost,  $\beta = 0.51$  indicated that a unit (100%) increase in annual training cost increased Commercial Banks' annual net profit by 0.51 units (51%).

## **5.2 Discussion**

Regarding the first research question scale had a strong, positive significant relationship with Commercial Banks' performance as noted by Karl Pearson's correlation coefficient which was  $\rho = 0.751$ , after correlation analysis and t-statistic,  $t = 3.829$ , after regression with p values =  $< 0.05$ . These findings concur with theoretical literature on the Value Network (VN) where Allee (2000) and Stabell and Fjeldstad (1998) underscored that scale, a driver of cost and value in the VN, positively influences performance in the VN. Value increases with every customer added to the network and as such, in its role as a mediator, as the number of customers increases the VN delivers more of the customers' opportunities to exercise their interdependencies and facilitates increased exchange relationships amongst

them. The outcome of this is heightened demand for more of the bank's products and services leading to higher sales.

Furthermore, the higher the number of customers the lower the cost per unit - of delivering the service - which gets spread out due to economies of scale. Consequently, the increased value and reduced cost due to the increase in numbers of customers results in higher profitability. Wisskirchen *et.al.* (2006) results from their Bain & Company global benchmarking survey concurred with these findings on the positive relationship between number of customers and bank performance. The scholars emphasized one of the six imperatives for increased bank growth and profitability as the number of customers and indicated that customer-centric, high performing (leaders) firms in the survey had Returns on Equity (RoE) that were fifty percent higher than the rest of the peers in their survey sample.

Auka (2012) in his empirical study on banks in Nakuru county in Kenya asserted that service quality, customer value and satisfaction are critical to create and maintain customer loyalty which in turn improve competitive advantage and performance. Therefore, banks should adopt a customer led approach where they utilise customer advocacy as a tool that engages loyal customers in communication channels to win over new customers. This has the effect of further increasing customer value, retaining current and attracting new customers.

Furthermore banks in Kenya should adopt NPS and TCF metrics to enable them to predict customer behaviour and - with the data obtained in conjunction with other customer metrics - feed the customer advocacy process. This in turn guides management in making decisions that inform the strategic planning process in customer retention and loyalty which ultimately lead to firm growth. Noted (from the annual reports) during this study is that in terms of capturing customer equity only two (Barclays Bank of Kenya and Standard

Chartered Bank) out of the fifteen banks in the sample had indicated their adoption of the Net Promoter Score (NPS) and Treating Customers Fairly (TCF) index to measure customer loyalty (Barclays Bank of Kenya Annual report, 2014; Standard and Chartered Bank Annual report, 2014). Accordingly, since the other banks in the study sample had not documented use of these metrics inference was made that it is likely they still utilize standard (traditional) benchmarks such as Customer Satisfaction Indices which, debatably, do not yield insights on customer retention, willingness to upgrade additional products or purchase new ones or customer referrals (which the NPS and TCF manage to capture).

NPS has been demonstrated to be a far more accurate estimate of growth for the entire business than models consisting of data from multiple survey items to predict firm growth and also forecast individual customer behaviour and offers additional value hence gives firm resilience (Denning, 2014; Keiningham *et al.*, 2007; Reichheld, 2006; Satmetrix, 2004; Wisskirchen *et al.*, 2006). Indeed the cost of acquisition relative to that of retaining customers is much higher let alone the reality that there is no guarantee that efforts to win over new customers will pay off. The firm may only acquire a few who end up not matching the profitability of those who defect especially when the latter includes high profit clients.

Various industries including the banking sector in USA, Germany and the United Kingdom have realized that whilst cost cutting has been employed heavily, to boost profitability, it is not the best approach especially when the initiatives have included stripping down some services which end up sidelining clients and lead to their defection (Wisskirchen *et al.*, 2006). They have thus shifted to a greater focus on other underlying sources of revenue growth such as customer retention and customer loyalty and delivering additional value in this context. As such there has been popular uptake of new metrics like NPS by industries such as personal computer, property, insurance and car rental industries

and banking in the aforementioned countries to measure and fundamentally, monitor customer loyalty and consequently a deeper engagement in strategies towards improving customer retention and customer loyalty. The uptake of NPS by Commercial Banks in Kenya, as previously outlined, is low and should be adopted by all banks.

Secondly, findings of the study indicated that there was a strong positive significant effect between growth in strategic alliances and Commercial Banks' performance as noted by Karl Pearson's correlation coefficient which was  $\rho = 0.702$ , after correlation analysis and t-statistic,  $t = 2.987$ , after regression with  $p \text{ values} = < 0.05$ . This is consistent with the Resource Based View that outlines that firms build partnerships as a central strategy to strengthen organisational capabilities and acquire competitive advantage by creating resources that are not available to other actors in the network (Wernerfelt, 1984). The findings also concur not only with the RBV but also the VN perspective. Both theories advance that cooperation arises to enable procurement of resources which the firm does not have. Secondly, they affirm that collaboration occurs (inevitably resulting in VN formation) to reduce uncertainty and over-dependency on a small selection of the firm's tangible and intangible resources. This results in the creation of more and diverse offerings to the firms' customers. Consequently, as firms cooperate and collaborate they build strategic alliances which culminate in complex exchanges of tangible and intangible value (the latter includes knowledge and collaborative relationships), which are the foundation of the VN.

Further rationale supporting the findings on this positive relationship between growth of alliances and performance is the Social Network theory (Simmel, 1908). It outlines the formation of a network as a social structure comprised of actors who are linked up to each other by ties. These ties (dyads or webs) that link the actors up to each other, form patterns of relationships in this context between firms (relational embeddedness). The

relationships manifest in the form of partnerships (collaborations) such as alliances between firms which enhance competitive advantage and improve company results (Marr & Roos, 2005; Rodríguez-Castellanos, García-Merino & García-Zambrano, 2011). These alliances are founded on antecedents such as mutual trust, knowledge sharing, commitment and communication in the VN. Founded on the aforementioned antecedents, the more the partnerships (alliances in the context of this study) the higher the efficiencies and the better the health of the network. As a result, there is increased performance of the firms in the VN.

The Ego-centric theory also supports the findings here on the strong, positive relationship between growth in alliances and firm performance, because in the context of this study the Commercial Bank is viewed as the focal firm (ego) in its VN, it has sets of relationships in the form of alliances with actors (alters) that constitute other firms and the alters also have relationships amongst themselves (Gulati *et al.*, 2002; Provan *et al.*, 2007; Uzzi, 1997). These sets of relationships between the ego (Commercial Bank) and alters is called relational embeddedness and the ego is the key influencer of its own actions and outcomes (Provan *et al.*, 2007). This is observed in the degree of relational embeddedness and the positive effect of these relationships (alliances) on the ego's performance. For instance, the general trend observed was that tiers I and II (Appendix II) banks in the study sample displayed greater relational embeddedness indicated by a higher aggregate annual number of alliances than the tiers III and IV (Appendix II) banks in the sample. Subsequently, observed performance adopted the same trend of tiers I and II banks registering higher net profit than tiers III and IV across the period 2010 to 2014.

Banks should increase their strategic alliances and yet as they do so with a well-structured management whilst paying attention to Epstein's five key drivers of success. These critical success factors enhance profitability in joint ventures namely, a coherent

integration strategy (with decisions based on neutral and objective ground), a strong integration team (with a strong leader who helps to integrate company cultures), consistent and constant communication (between senior management on both sides as well as to staff and customers), speed in implementation, and aligned measurements. The latter are targets for customer satisfaction, employee retention, risk management and ought to be congruent with the alliance's vision and strategy (Epstein, 2004).

Commercial Banks in Kenya should also increase the use of strategic alliances as a strategy for increasing their internationalization which subsequently gives the banks reach to specific targeted, multinational customer segments which they may not have and that are within their strategic focus since they may tap into the customer segments of their alliance partners. The alliances, in the context of internationalization, also enable banks to respond to structural changes in the financial services markets (Howcroft & ul-Haq, 2007). Indeed a number of Commercial Banks in Kenya have engaged in internationalization to help tap into foreign markets and thus for further growth (Boojihawon & Acholonu, 2013; Bosibori, 2013; Mbogo, 2013; Mulatya, 2012).

Thirdly, results of the study demonstrated that there was a negative (inverse) significant relationship between R&D expenditure and Commercial Bank performance as indicated by Karl Pearson's correlation coefficient which was negative,  $\rho = -0.233$ , after correlation analysis and had the lowest t-statistic,  $t = -2.919$ , after regression with p values  $= < 0.05$ . The inverse relationship observed here contrasts with the RBV (Wernerfelt, 1984) but coincides with some empirical studies (Cooper, 2008; Donelson & Resutek, 2012; Lewin & Chew, 2005). Past research predominantly indicated a positive relationship between R&D expenditure and performance which was supported by the RBV (Adeyeye, Jegede & Akinwale, 2013; Ayaydin & Karaaslan, 2014; Ehie, 2010; Ghaffar & Khan, 2014; Mullineaux & Pyles, 2010; Nord, 2011; Pindado, 2010; Shah, 2008; Shin & Kim,



2011). However, it is important to note the benefits from R&D expenditure were reported to accrue over the long term. In other words, they are neither immediate nor reaped within a short period of time.

The positive relationship between R&D and performance was also observed in terms of increasing returns to scale which is consistent with economic arguments regarding the advantages of scale in innovation but reaped over a long period (Artz *et al.*, 2010). The RBV (Wernerfelt, 1984) posits that firms with resources that meet the VRIN - Valuable, Rare, difficult to Imitate and non Substitutable - criteria achieve a sustained competitive advantage over other firms. Therefore according to Wang (2009) the benefits obtained far outweigh the costs incurred and thus firms invest more in R&D to increase their resource capacity in for instance, technology, product and service offerings. Subsequently, this increases the sales and profitability of the firm.

This contrasts the observation in this study that whilst there was an upward trend from 2010 to 2014 in both the R&D expenditure and net sales figures this increase in the R&D costs reduced the banks' net profits. However, this was the case because the study was conducted - made observations - in the short term (over a five year period). In the initial stages (years) costs are invested heavily in R&D programmes which do not yield returns until the final phase is reached. Lewin and Chew (2005) indicated that R&D may not guarantee high profitability unless a firm manages it properly. They stated that R&D expenses affect profitability because the requirement is that expenditure has to be expensed immediately. Shin and Kim (2011) supported this with reference to cost accounted R&D expenditure which negatively influences profitability estimates.

However, the study suggests that this negative relationship was also as a result of Commercial Banks in Kenya solely expensing R&D expenditure as a marketing cost in their income statements in accordance with GAAP (Generally Accepted Accounting

Principles. This mode of financial reporting applies to countries that follow the United States of America (USA) GAAP - Generally Accepted Accounting Principles (Dave *et al.*, 2013; Weiguo Fan, 2014). Evidence supporting a negative outcome on firm performance when R&D is expensed was indicated in empirical studies. R&D expenses affect profitability estimates of businesses in firms where R&D expenditure is required to be expensed immediately on the income statement; and this is with the exception of capital assets used in R&D which may be capitalized as assets and then depreciated over their expected life (Cooper, 2008; Donelson & Resutek, 2012; Lewin & Chew, 2005). R&D costs which are only expensed reveal a significant negative relationship with firm performance (Tsoligkas & Tsalavoutas, 2011; Weiguo Fan, 2014).

Therefore, the study proposes that Commercial Banks should shift their perspective on how they reflect R&D expenditure to one where they include capitalization, of the Development component, in their financial statements and seek reforms, through the Kenya Bankers Association (KBA) and from the Central Bank of Kenya (CBK), on the banking financial reporting policy. This will enable them to break R&D expenditure down and thus get a more genuine picture of firm performance and company value as influenced by R&D costs. Applying the accounting treatment of partly capitalized R&D expenditures makes the firm provide more relevant and useful accounting information for decision-making. Furthermore it still conveys a genuine and yet positive signal to investors and for instance, in the case of publicly listed firms, has the ability to demonstrate the incremental capacity of its stock prices hence market value. Empirical research supported this in providing evidence of positive relationships between R&D expenditure and performance measured - in terms of market value and profitability - when it is partly capitalized (Ahmed & Falk, 2006; Tsoligkas & Tsalavoutas, 2011; Weiguo Fan, 2014).

The rationale behind the GAAP requirement on R&D expenditure is that, according to the Statement of Financial Accounting Standards (SFAS) N.2 of the Financial Accounting Standards Board (FASB) of the USA or more recently FASB ASC 730-10, there is a high degree of uncertainty about whether there will be any future economic benefits from current R&D outlays. However, a different reporting method that follows the International Financial Reporting Standards (IFRS) of the European Union gives leeway for the capitalization of R&D expenditure if it meets certain criteria under, (IAS38-Intangible Assets), Section 38 of the International Accounting Standards (Weiguo Fan, 2014).

Section 38 of the International Accounting Standards outlines the treatment of intangible assets and breaks down R&D costs into Research costs (which should be expensed) and Development costs capitalized only after technical and commercial feasibility for sale or use of the asset have been established. This means that the firm must intend and be able to complete development of the intangible asset and either use or sell it and be able to demonstrate how the asset will generate future economic benefits. Therefore, if an R&D project does not fulfil these conditions then its costs must be expensed when incurred. The latter shift in perspective - on capitalization - enables R&D to be viewed as an investment rather than just a cost (Dave *et al.*, 2013; Ghaffar & Khan, 2014). Consequently, it has been increasingly adopted by countries not just in but also outside Europe for instance, China (Weiguo Fan, 2014).

Pertaining the fourth research question, findings indicated the strongest positive significant relationship (of all the independent variables in the study) between training and Commercial Bank performance as observed by Karl Pearson's correlation coefficient  $\rho = 0.844$  after correlation analysis and the highest t-statistic = 5.098, during regression with p values =  $< 0.05$ . This is consistent with the Resource Based View by Wernerfelt (1984)

and the VN perspective (Allee, 2008, 2009; Stabell & Fjeldstad, 1998). The former suggests the strengthening of organizational capabilities as being central to increasing a firm's competitive advantage and hence improving its performance whilst the latter emphasizes how critical intangible assets are (the most fundamental being people and information) in the contemporary economy, characterized by firms operating in VNs, in leveraging according to Deloitte (2008) nearly a third of firm value.

However, scholars like Allee (2009) stated that these intangibles account for a greater amount: fifty to seventy percent of firm value than tangibles. Therefore, strengthening a firm's human capital as a strategic capability through practices like training helps leverage the role of people (such as employees) who are the agents of value conversion and creation in the VN (Allee, 2009; Shaner & Maznevski, 2006). This in turn enhances relational capital through people (employees) who establish relationships amongst firms and/or stakeholders (including alliances) which in turn creates links to other critical resources, individuals and activities that enable the firm (Commercial Bank in this context) to be competitive in the market and obtain better results.

Training had a positive significant relationship with Commercial Banks' performance coupled with evidence that it had the most significant influence on performance. This is consistent with empirical literature that indicates training and development as a Strategic Human Resource Management (SHRM) tool which has a very high positive effect on financial performance, is the best predictor and one of the necessary tools for remedying firm performance crises (Dimba, 2010; McKim & Hughhart, 2005; Waweru & Kalani, 2009). It provides incentives and motivates a firm's employees thus increasing work commitment and job satisfaction, which in turn improves their productivity and efficiency in achieving a firm's strategic goals (Divini & Schiniotakis, 2014).

Therefore, Commercial Banks should invest majorly in training and development to increase their profitability.

Training is a mechanism for the transmission of knowledge. So far there is recognition that banks have managed to adopt the tenets of the Learning Organization in their operations. However, since knowledge and relationships are some of the most critical resources in the modern economy, banks are encouraged to incorporate more of the Learning Organization's and hence the VN's perspective of systems thinking (Allee, 2000; Nzube & Omolo, 2012), which has been a challenge to integrate and more so to do so at all levels of the organization. It involves training and dissemination of knowledge to management and employees which includes understanding of the firm not just as a set of processes but as a living, complex adaptive system - synonymous to a biological ecosystem - that is part of a bigger system (the latter being the VN).

Moreover, systems thinking involves comprehending how a change in one area affects all processes thus facilitating a visualization of feedbacks, interdependencies, flows and exchanges. This will enable the banks firstly, to detect and fill up gaps where needed by employing corrective measures. Secondly, to understand how to better utilize their employee skills to detect and correct these loopholes as well as to identify how to engage them in leveraging other critical resources; hence increasing efficiencies in quality firm outputs thus enhancing profitability and the health of the firm.

### **5.3 Conclusion**

Based on the study findings the current research inquiry attained the main objective of determining the effect of the Value Network on the performance of Commercial Banks in Kenya. It answered the following research questions: How does scale influence the performance of Commercial Banks in their VNs in Kenya?; What is the effect of growth in

alliances on the performance of Commercial Banks in their VNs in Kenya?; Is there a relationship between R&D expenditure and the performance of Commercial Banks in their VNs in Kenya?; What is the impact of training on the performance of Commercial Banks in their VNs in Kenya?

Scale, growth in alliances and training had a significant positive relationship on the Commercial Bank's annual net profit. However, R&D expenditure had a significant negative relationship on the Commercial Bank's annual net profit. Comparatively across all four independent variables under study R&D expenditure had the least influence whilst training had the greatest impact on Commercial Bank performance. Scale was the second most critical followed by growth in alliances in influencing Commercial Bank performance.

#### **5.4 Recommendations**

In relation to the study findings various recommendations are suggested. Pertaining scale, bank management is advised to focus on customer advocacy and increase uptake on new metrics namely, NPS and TCF. Secondly, on growth in strategic alliances: As bank management build's more strategic alliances it should apply Epstein's five measures of success to ensure well structured management. Thirdly, pertaining R&D expenditure bank management in conjunction with policy makers in the industry should shift their approach to R&D financial reporting: Capitalization of the Development component in R&D expenditure should be considered and sectoral reforms on this sought through policy organs and regulators such as the Kenya Bankers Association and the Central Bank of Kenya. Finally, on training managers are encouraged to incorporate more of the Value Network's systems thinking as they invest further in training.

### **5.5 Suggestions for Further Study**

The current study analysed the effect of VNs on the performance of Commercial Banks in Kenya. However, there is need for a comparative analysis to be carried out amongst different industry sectors and in different countries due to the recognition that they operate within different regulatory frameworks. Future studies may be carried out over a long period of time to allow for prolonged observation of data behaviour and to enable identification of long term relationships between variables influencing the performance of Commercial Banks in Kenya. Particularly, further to the results in this study, observing the long term effect of R&D expenditure on Commercial Bank performance may be insightful.

Whilst Commercial Banks have made investments in R&D, they have expressed that the amounts expended have not been large. It has been suggested that certain levels of R&D expenditure yield varying effects on firm performance (Wang, 2009). This is an area researchers may delve further into so that more insight may be offered on the threshold effect of R&D investment on optimal firm performance.

The current study was limited to micro (firm) level factors namely scale, growth in alliances, R&D expenditure and training; and how they influence Commercial Banks' performance. Future studies should investigate other firm level factors such as customer loyalty and macroeconomic factors as the determinants of Commercial Banks' performance in Kenya.

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## APPENDICES

### APPENDIX I

#### Return on Assets (RoA) for Study Sample of Commercial Banks in Kenya

Bank	Return on Assets (Kshs. In Millions)				
	2010	2011	2012	2013	2014
<b>Equity Bank</b>	133,890	176,911	215,829	238,194	277,116
<b>Barclays Bank of Kenya</b>	172,691	167,305	185,102	207,010	226,043
<b>Standard &amp; Chartered Bank</b>	142,880	164,182	195,493	220,524	222,636
<b>CFC Stanbic Bank</b>	107,139	140,087	133,378	170,726	171,347
<b>Cooperative Bank of Kenya</b>	153,984	167,772	199,663	228,874	282,689
<b>Kenya Commercial Bank</b>	223,025	282,494	304,112	323,312	376,969
Citi Bank N. A. Kenya	62,070	74,646	69,580	71,243	79,398
<b>I&amp;M Bank</b>	62,552	76,903	91,520	110,316	137,299
<b>Diamond Trust Bank</b>	58,606	77,453	94,512	114,136	141,176
Bank of Baroda (K)	32,332	36,701	46,138	52,022	61,945
<b>NIC Bank</b>	54,776	73,581	101,772	112,917	137,087
Commercial Bank of Africa	63,592	83,283	100,456	124,882	175,809
<b>Chase Bank</b>	21,859	36,513	49,105	76,569	107,112
Bank of Africa (K)	26,699	38,734	48,958	52,683	62,212
<b>National Bank of Kenya</b>	60,027	68,665	67,155	92,493	122,865
Bank of India	19,671	23,352	24,877	30,721	34,370
Prime Bank	32,444	35,185	43,463	49,461	54,918
<b>Imperial Bank</b>	19,399	25,618	34,590	43,006	56,599
Family Bank	20,188	26,002	30,985	43,501	61,813
<b>Housing Finance Bank</b>	29,326	31,972	40,686	46,755	60,491
African Banking Corporation	10,297	12,507	19,071	19,639	21,439
Gulf African Bank (K)	9,594	12,915	13,562	16,054	19,754
Guaranty Trust (formerly Fina) Bank	14,112	14,630	17,150	25,638	32,992
Development Bank of Kenya	10,650	11,523	13,417	15,581	16,954
Ecobank Kenya	26,892	27,210	31,771	36,907	45,934
Consolidated Bank of Kenya	10,479	15,318	18,001	16,779	15,077
Equatorial Commercial Bank	10,399	12,927	14,109	15,562	16,589
Victoria Commercial Bank	6,215	7,645	10,323	13,644	17,244
Habib Bank A. G. Zurich	8,127	8,722	9,702	11,009	12,147
Habib Bank Ltd.	5,426	5,861	7,014	8,078	9,449
K-Rep Bank	7,670	9,319	9,546	13,199	15,799
<b>Giro Commercial Bank</b>	10,234	11,846	12,280	13,623	15,082
<b>Trans-National Bank</b>	4,762	7,287	8,801	9,658	10,240
First Community Bank	6,380	8,740	9,959	11,305	15,278
Guardian Bank	8,031	8,836	11,745	12,835	14,571
Fidelity Commercial Bank	8,209	10,789	11,772	12,779	16,515
Oriental Commercial Bank	4,558	5,030	6,220	7,007	7,858
Credit Bank	4,530	5,394	6,407	7,309	8,865

*Source: Central Bank of Kenya Annual Supervision Reports 2010 – 2014*

15 Commercial Banks (in bold) constituted the study sample. 38 banks met the study's set benchmark of above Kshs. 4,500,000,000 on RoA, as indicated here. Thereafter, random sampling was conducted as indicated in Appendix II in the following section.

**APPENDIX II**  
**Peer Ranking of Commercial Banks in Kenya**

<b>RANKING</b>		<b>NAME OF INSTITUTION</b>
<b>2013</b>	<b>2012</b>	
<b>TIER I</b>		
1	1	<b>Equity Bank</b>
2	3	<b>Barclays Bank of Kenya</b>
3	2	<b>Standard &amp; Chartered Bank</b>
4	6	<b>CFC Stanbic Bank</b>
5	5	<b>Cooperative Bank of Kenya</b>
6	4	<b>Kenya Commercial Bank</b>
<b>TIER II</b>		
1	1	Citi Bank
2	2	<b>I&amp;M Bank</b>
3	3	<b>Diamond Trust Bank</b>
4	4	Bank of Baroda
5	5	<b>NIC Bank</b>
6	6	Commercial Bank of Africa
7	8	<b>Chase Bank</b>
8	9	Bank of Africa
9	7	<b>National Bank of Kenya</b>
<b>TIER III</b>		
1	2	Bank of India
2	7	Prime Bank
3	5	<b>Imperial Bank</b>
4	10	Family Bank
5	4	<b>Housing Finance Bank</b>
6	6	ABC Bank
7	1	Gulf African Bank
8	8	GT (Guaranty Trust) Bank Kenya
9	3	Development Bank of Kenya
10	12	Ecobank
11	11	Consolidated Bank
12	9	Equatorial Commercial Bank

Source: *Think Business Banking Survey 2014*

Categories and ranking based on size of asset base, capital adequacy, profitability, liquidity and efficient use of assets.

Study sample constitutes the 15 Commercial Banks marked in bold.

Random sampling was conducted of banks in tiers II, III and IV excluding the marked (\*) which fell beneath the benchmark of Kshs. 4,500,000,000 on RoA.

**APPENDIX II**  
**Peer Ranking of Commercial Banks in Kenya**

<b>RANKING</b>		<b>NAME OF INSTITUTION</b>
<b>2013</b>	<b>2012</b>	
<b>TIER IV</b>		
1	2	Victoria Commercial Bank
2	1	Habib A. G. Zurich Bank
3	3	Habib Bank Ltd.
4	6	K-Rep Bank
5	9	<b>Giro Commercial Bank</b>
6	8	Jamii Bora Bank*
7	5	<b>Trans-National Bank</b>
8	7	First Community Bank
9	14	Guardian Bank
10	18	Fidelity Bank
11	17	UBA Kenya Bank *
12	16	Dubai Bank*
13	11	Oriental Commercial Bank
14	13	Credit Bank
15	10	Middle East Bank*
16	15	Paramount Universal Bank*

Source: *Think Business Banking Survey 2014*

Categories and ranking based on size of asset base, capital adequacy, profitability, liquidity and efficient use of assets.

Study sample constituted the 15 Commercial Banks marked in bold.

Random sampling was conducted of banks in tiers II, III and IV excluding the marked (\*) banks which fell beneath the benchmark of Kshs. 4,500,000,000 on RoA.

**APPENDIX III**  
**Research Plan**

**APPENDIX IV  
Budget**

DESCRIPTON	QTY		AMOUNT	TOTAL
<b>Stationery For General Study</b>				
Paper reams for printing out documents: Authorization letter, copies of proposal, dissertation etc.	3	Reams	450.00	1,350.00
Pens	3	Pieces	50.00	150.00
Printing cartridge	1	Piece	6,000.00	6,000.00
Calculator	1	Piece	1,000.00	1,000.00
Binding - proposal & dissertation	8	Copies	200.00	1,600.00
Final hard cover binding	3	Copies	400.00	1,200.00
<b>Other</b>				
E-Views (Version 9) and Stata (Version 12) software	2	Pieces	3,000.00	6,000.00
Miscellaneous	1			10,000.00
<b>GRAND TOTAL</b>				<b>27,300.00</b>

