

Integrating corporate governance, technological capabilities and social capital in the Zimbabwean manufacturing sector

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Declaration

I, the undersigned Patience Siwadi, solemnly declare that this thesis is my own original work and that it has not been submitted, and will not be presented, at any other University for a similar or any other degree award.

.....
Signature

Dedication

I dedicate this work to my mother Mrs Tradder Siwadi for never wavering in her belief that I would make it, for praying every day for me and the completion of this work.

Publications from the thesis

Siwadi P, Miruka C and Ogutu F.A , (2015), Social capital interventions at firm level affecting performance in the Zimbabwean manufacturing sector, Corporate Ownership and Control, Volume 13 issue 1, Autumn 2015, Sumy, Ukraine

Siwadi P, Miruka C and Ogutu F.A , (2015), The impact of corporate governance on firm Performance in the Zimbabwean manufacturing sector , Corporate Ownership and Control, Volume 12 issue 4, summer 2015, Sumy, Ukraine

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LIST OF ACRONYMS

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GDP	Gross Domestic Product
CZI	Confederation of Zimbabwe Industries
TAI	Technology Achievement Index
UDI	Unilateral Declaration of Independence
GNU	Government of National Unity
ESAP	Economic Structural Adjustment Programme
BRICS	Brazil, Russia, India, China and South Africa
NEC	National Employment Council
ZPC	Zimbabwe Power Company
SADC	Southern African Development Community
FDI	Foreign Direct investment
AGOA	African Growth and Opportunity Act
ATC	Agreement on Textiles and Clothing
TPF	Timber Producers' Federation
ZETC	Zimbabwe Electricity Transmission company
MCAZ	Medicines Control Authority of Zimbabwe
API	Active Pharmaceutical Ingredients
GMP	Good Manufacturing Practice
FDI	Foreign Direct Investment
CEO	Chief Executive Officer
ROI	Return on investment
ROA	Return on assets
ROE	Return on equity
ROS	Return on sales

SIRDC	Scientific and Industrial Research and Development Centre
POTRAZ	Post and Telecommunications Regulatory Authority of Zimbabwe

ABSTRACT

This research sought to integrate the three drivers of performance, namely corporate governance, social capital and technological capabilities. Antecedent research has examined these three individually and sometimes in pairs. This study is one of the first attempts to integrate the three drivers of performance in a workable model in the context of the Zimbabwe manufacturing sector. The drivers invariably affect one another in the performance agenda as social capital impacts on acquisition of technological capabilities, and they all need a certain level of corporate governance to impact performance. The motivation for the study was that since 2009 Zimbabwe has been recovering from a decade of economic upheaval (1999 to 2009). There is a need to provide empirical evidence and focus on what and how corporate governance, social capital and technological capabilities contribute towards better performance in the manufacturing industry.

Literature was reviewed from both developed and developing countries as some of the aspects indicated exogenous influences. Literature from emerging economies such as China and South America was of particular interest, since Zimbabwe identifies more closely with them. The research was guided by the post positivism paradigm, which naturally led to a quantitative study method. A questionnaire was used to collect data from manufacturing firms in six subsectors that the government has earmarked to spearhead economic recovery. Statistical tests were carried out to validate the data. Econometric models were used for estimation. Results reveal that four of the corporate governance variables, three social capital variables and three technological capabilities variables were positively associated with firms' performance. Integrating these in a multivariate analysis turned up five variables that remain significant and address all the three issues affecting business performance. These are confirmed in the literature in terms of their impact on firm performance. However, further reading could be undertaken to look at each of these influences on firm performance, especially in emerging markets, as the majority of studies are from the developed world.

CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION AND DEFINITIONS

This research seeks to investigate the best means of integrating the organisational technological capabilities and existing nature of social capital and corporate governance for superior performance in the Zimbabwean manufacturing sector. There is a dearth of knowledge in Zimbabwe on how these three drivers of performance can be combined to enable firms to compete more effectively in the global market. This study therefore aims at filling the knowledge gap, especially since the country is recovering from almost a decade of economic woes from 1999 to 2009.

Technological capability is defined by Wang et al. (2006, p.30) as “the ability to develop and design new products and processes and upgrade knowledge about the physical world in unique ways, thus transforming this knowledge into designs and instructions for the creation of desired outcomes”. Social capital was defined by Adler and Helfat (2003, p.1021) as “social relationships that confer influence, control and power”. They further posit that a leader’s social ties allow them to acquire valuable information that can be used for the good of the business. Leaders who are well networked can provide resources and information on best practice for their organisations. Such diversity influences managerial decision making as well as organisational performance. In general, organisations that are willing to develop their social capital are likely to direct, lead or administer more effectively the knowledge and skills which lead to strengthening of technological capabilities (Wang et al. 2006, p.30).

A look at these three drivers of performance is more relevant in the globalised economy, which is characterised by rapid changes and stiff competition. The integration of the three concepts can result in innovations that respond to changes in markets and environments, and creatively address challenges and sustain high performance (Das 2010, p.47). During the turbulent times from 1999 to 2009, it is evident that there was little or no consideration given to integrating social capital, technological capabilities and corporate governance to change the fortunes of the manufacturing sector. Technological capabilities, social capital and corporate governance issues have been very topical in Zimbabwe in the last 15 years since 2000 in light of the skills flight and business failures, which have made it glaringly evident that Zimbabwe has not been at the forefront of creating exogenous knowledge which could

have helped the country weather economic storms. Among the different countries on the African continent, Zimbabwe has been the most advantaged, and should have exploited that, given that it had one of the most advanced manufacturing sectors in southern Africa outside of South Africa. At independence in 1980, everything was looking up for this southern African country with adequate infrastructure and arable land. Zimbabwe was coined the “Breadbasket of southern Africa” and above all, it had abundant natural resources. In comparison, visionary Asian industrialists have strived to develop technological capabilities, which have lifted that continent from similar poverty states to prosperity. Zimbabwe’s industrialists have not emulated these ‘Eastern Tigers’ despite the similar historical and economic backgrounds.

Technological developments and increased international competition have influenced business operations tremendously. Organisations are no longer confined to national or regional settings; global operations have become the norm. Industries are swiftly becoming an interconnected system with a large variety of complex relationships. Fierce competition, and the instantaneous distribution and availability of knowledge due to the advent of computer technology force organisations to change their corporate governance stance. The processes, customs, policies and laws necessary to keep the entire supply chain running have to change in order to fit in with the rapid changes in economies. This research, therefore, will delve into determining how technological capabilities, external networks and value systems, and corporate governance, can contribute to competitive performance in the present uncertain environment. It will also investigate how the three concepts can be used to propel an emerging economy like Zimbabwe into the global economy.

1.2 BACKGROUND

Manufacturing is a key sector in the Zimbabwean economy, which at its peak in 1999 was the major contributor to GDP at 22% (Zimbabwe Statistics Agency 2010). Inasmuch as the sector faced a downturn from 2000 to 2009 during the years of Zimbabwe’s worst economic woes, it is still being recognised by government as a key to economic recovery. The sector is still one of the four wealth generating sectors and is important to the Zimbabwe economy as it responsible for converting at least 60% of agricultural and mining output, and in turn at least 40% of its output is consumed by the aforementioned sectors (Ministry of industry and commerce 2011, p.4). In the government’s industrial policy development framework (2011 to

2015,p3), in 2011, the government stated its objectives for the manufacturing sector: to restore the sector's contribution to Zimbabwe's GDP from the current 15% to 30% and its contribution to exports from 26% to 50% by 2015. An average real GDP growth of 15% is targeted under this framework.

The table below shows the GDP contribution of the manufacturing sector from 2000 to 2013. The statistics show that the manufacturing sector is a major contributor to GDP. According to the Confederation of Zimbabwe Industries (CZI) the sector is still to restore its significance as it contributed 14% and 13.37% to GDP in 2009 and 2010 respectively; it grew by 4% in 2010 and according to the Minister of Finance, the sector was envisaged to grow by 6% in 2011.

Table 1.1: Manufacturing sector GDP growth/decline 2001 -2013

Year	GDP contribution to the economy
2001	19.65
2002	17.63
2003	16.24
2004	14.81
2005	15.25
2006	14.77
2007	14.03
2008	13.03
2009	14
2010	14
2011	14.4
2012	2.3
2013	1.5

Source: Zimbabwe Statistics Agency National Accounts (2014)

The sector also contributes to the economy through absorbing at least 15% of the employed population. In addition, at least 26% of total exports in 2010 stemmed from the manufacturing sector. The table below shows the sector's overall contribution to the economy. The sector also has a strong correlation with the other two major sectors, namely mining and agriculture. The recovery of these sectors was likely to see an even stronger correlation, thus the revitalised government's support of the manufacturing sector. In addition, the service sector is also related to the manufacturing sector, for instance, banks and

transport. The table below indicates capacity utilisation at 44%, which according to the CZI survey (2010,p.14) is attributed to a lack of working capital; antiquated plant machinery, loss of time due to machinery breakdowns or plant and machinery refurbishment; and low demand, a situation still prevailing in 2015. Thus the technological capabilities and the social capital which can boost demand are being noted as critical for performance in the manufacturing sector. Furthermore, technological advances start in the manufacturing sector and diffuse to other sectors. Table 1.2 below shows how the manufacturing sector contributed to the economy.

Table 1.2: Manufacturing contribution to the Zimbabwean economy 2010

Manufacturing Aspect	Contribution to economy 2010
Contribution to GDP	13.37%
Employment	15%
Exports	26%
National output	15%
Economic growth	2.7%
Capacity utilization	44%

Source: Zimbabwe Statistics Agency 2011

The ability of the sector to embrace state of the art technology throughout the value chain has been noted as the one way to achieve these targets and be competitive in the highly integrated global economy (CZI 2010, p.5). The assessment of science and technology in Africa by UNDP (hdr.undp.org 2011) ranked Zimbabwe 54th in the world on the Technology Achievement Index (TAI). This index uses indicators such as a country's creation of technology, diffusion of recent innovations, and diffusion of old innovations and the availability of the required human capital (Gudyanga 2011, p.1). Zimbabwe therefore lags behind in its technological capabilities.

The manufacturing sector is divided into light and heavy industries, and further subdivided into eight subsectors, producing a range of more than 6000 products from food, textiles, and chemicals to rubber and tyre manufacturing. Their contributions to the economy differ; agricultural processing dominates the sector. The major subsectors are food and beverages,

clothing and textiles, leather and leather products, fertiliser, chemicals and pharmaceuticals, timber and wood, motor industry, and non-metal products, plastic and packaging and rubber and tyre manufacturing. Through the Industrial Development framework, the Government has identified six priority sectors as the pillars for growth in the manufacturing sector: Agro-processing (Food and beverages, Clothing and Textiles, Wood and Furniture), Fertiliser Industry, Pharmaceuticals and Metals industry (Industrial Development Framework 2011, p.14). This study will focus on these subsectors relating to the integration of corporate governance, technological capabilities and social capital as these drivers of performance will be at the forefront of the effort to get the subsectors to achieve superior performance and aid national economic recovery.

The sector participants are spread right across the country, with some in close proximity to the major sources of raw materials. The table below indicates the historical spread of manufacturing companies in Zimbabwe, which has not shifted much since then. It is evident that the larger the city/town the greater the industrialisation.

Table 1.3: Geographical spread of Industrial Sector in Zimbabwe

City	% of Total
Harare	46
Bulawayo	19
Gweru	10
Mutare	10
Masvingo	7
Chinhoyi	8

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Source: Worker's compensation Summary of adjusted Assessment (1992)

The manufacturing sector grew under the Unilateral Declaration of Independence era from 1965 to 1980 when Ian Smith declared independence from Britain, a deliberate move by the white minority to guarantee minority rule. It resulted in the country being placed under sanctions by Britain. However, UDI was not acceptable to the majority of the people as evidenced by the liberation struggle that ended with the majority government being formed in 1980. In the pre 1980 era, industry concentrated on import substitution, brought about by sanctions. This closed up economy paid no heed to contemporary developments, which affected the quality of products and their competitiveness on the global market.

The new government, which was ushered in 1980, inherited this sector, and it is glaringly evident that Zimbabwe has not been at the forefront of creating exogenous knowledge since the UDI era. The sector suffered immensely during the 1999 to 2009 economic downturn period. According to the Confederation of Zimbabwean Industries (CZI Manufacturing Industry Survey Report (2010, p.11), "Although the correlations are not perfect, the poorest countries are invariably the least industrialised ones and the more successful developing countries are at the upper end of the scale". This is evident in Asia, where industrialists strove to develop technological capabilities; these have lifted the continent from similar poverty states to prosperity and are at the upper end of the developing countries scale.

Since independence in 1980, several factors have impacted on the Zimbabwean economy and on the manufacturing sector. The most profound has been the move from a closed economy under the historical UDI sanctions, then further under the socialist ideology, to an open market economy heralded by the Economic Structural Adjustment Programme of 1992. This was the first tentative step to join the new globalised economy. This shift, although timely, saw neither a simultaneous transition of technological capabilities, nor the expansion of networks which hitherto the country had not been exposed to. In fact, the hasty liberalisation of the economy resulted in de-industrialisation in certain sectors of the economy (Sachikonye2002, p.14). Furthermore, the closed in, inward looking thinking first matured under sanctions, and then under a socialist belief system. This resulted in limited organisational networking, leading to failure to make a mark in the global economy.

It is evident then that Zimbabwe's economic and political history greatly influenced the integration of social capital, technological capabilities and corporate governance in the manufacturing sector. The economic blockade brought on by UDI had an effect on the sporadic nature of the sector and challenged the technological capabilities of the industrialists. The focus on import substitution ignored external competition and the lack of outside interaction reduced concern for quality or innovation (Teitel 2000, p.514). Up to 2010 companies were failing to export because of inadequate knowledge of export markets and failure to secure orders (CZI 2010, p.18). This shows a need for social capital, the internal and external relationships a company can use to leverage information and resources. On the corporate governance front, ownership was largely concentrated in the hands of the white minority limiting access by the black majority up until the 1990s.

While other African states have attributed their lack of growth to factors such as backward technology; poor social conditions; ethnic and tribal divisions; deficient infrastructures; macroeconomic policy mistakes; hostile external environment; dependency on primary commodities for exports; high illiteracy rate; low incomes; low savings habit; and absence of or insignificant industry (Kurfi 2009, p.73), Zimbabwe does not have these burdens to the degree that many African states have. The country is well-endowed with agricultural and mineral resources and has literacy levels at 96% (Zimbabwe Population Census Report 2012, p.68). Although deficient in terms of modern infrastructure in the areas of water and power supply (very exposed during periodic droughts), transport, and communications (CZI 2010, p.23) Zimbabwe's economic growth should be far ahead of its counterparts. In terms of indigenous technological developments, these have centred around providing solutions for everyday living. These have included increasing agricultural yields given that Zimbabwe is an agro-based economy. A few innovations have been recorded in sanitation with the production of ventilated latrines. The manufacturing sector has basically been a technology adaptor rather than inventor.

In fact, the economy of Zimbabwe had not grown significantly from 1986 up to 2008, as shown in the table below.

Table 1. 4: Zimbabwe average economic growth 1986 to 2014

Year	Economic growth %	Share of manufacturing in national accounts %
1986 to 1990	4.6	20.6
1991 to 1996	2.8	21.1
1997 to 1999	-0.7	
2000 to 2007	-4.5	
2008 to 2009	-14	10
2010 to 2014	4%	8

Source: Ministry of Industry and Commerce State of the Manufacturing Sector Report (2014)

Hardest hit have been the state owned enterprises which at best should have the potential to inject not less than 40% into the (GDP). Up to 2010, State Enterprises were contributing a paltry 10% to the GDP (Ministry of State Enterprises and Parastatals handbook, 2010, p.10).

Despite the knowledge that globalisation is here to stay, (Das 2010, p.46), hitherto very few, if any, indigenous Zimbabwean companies have had the courage to come up with indigenous technologies or manufacture on the large scales that characterise companies with

globalisation in mind. It is evident that their managerial social capital has been inadequate to come up with such decisions. Furthermore, at the height of economic meltdown, when moving operations to other countries or somehow diluting political and economic risk would have made sense, leaders maintained the operations in Zimbabwe, suffering immense losses that will be difficult to recover from. Up to 2014, few changes were evident perhaps being encouraged by the stable economic environment from 2009-2012 brought about by the politically negotiated Government of National Unity (GNU) and the peaceful elections in 2013.

1.3 PROBLEM STATEMENT

Zimbabwe's economy suffered immense pressure from 1999 to 2009. This amounts to 10 years of little or no development towards competing well in the global economy.

Globalisation is putting pressure on technical competences that can propel organisations from just being efficient and effective to relevant and competitive. The global village is generally characterised by rapid, unpredictable changes in market conditions, boundless opportunities, and fierce competition (Das 2010, p.48). These pressures have brought profound changes to the ways companies compete and the ways companies are governed, and Zimbabwe is no exception. Globalisation has been considered as the most powerful transformative force in the global economy, influencing the evolution of several national economies. Das (2010, p.46; p.48) adds that it involves all kinds of painful social and cultural adjustments, which challenges every country has to meet in its own individual way.

The rapid changes that characterise this "new economy" render the post hyper-inflation models of organisational operation obsolete. There is therefore a need to redirect mind-sets towards larger scale operations more suitable for the globalised economy. The education system in its present state hardly addresses the issue of technological capabilities development; rather, the country is content to continue to implement en masse imported technologies. Organisations concentrate on management development programmes in the main and the social capital aspects are not emphasised. Hitherto, no university in the country has developed curriculum to focus specifically on the drivers of performance.

Therefore, we are drawn to conclude that social capital and technological capability development seem to be the missing link in creating manufacturing organisations able to propel the economic growth of the country and make it an active participant in the

globalisation agenda. Given that the quality of performance of organisations is a direct reflection of the quality of corporate governance, the quality of Zimbabwean business, customs, policies, and laws affecting the way organisations are directed, administered, led or controlled (Chambers 2012, p.369), falls short of the standards needed to fit into the present globalisation agenda.

The country's recovery cannot be propelled by the self-same methods that caused its failure. There is therefore room to develop a new mind-set that will enable organisations to enter and compete in the global scenario. The global context requires the manufacturing sector to enhance the following: ability to develop technical expertise, network ties that provide relevant information, effectively led organisations and astute human resources. There is a need for research on technological capabilities, social capital and better corporate governance that best suits the Zimbabwean context. This research will delve into determining how technological capabilities, external networks, value systems and corporate governance in the present uncertain environment can be integrated, and how the three concepts can be used to propel an emerging economy like Zimbabwe into the global economy.

In a nutshell, firms in the manufacturing sector are not yet able to integrate social capital, technology and corporate governance in their performance improvement strategies. Therefore, they are disadvantaged in their attempt to engage in the global market.

This study seeks to investigate techniques for integrating the three critical drivers (above) in order to improve the performance of the manufacturing sector of Zimbabwe for improved performance and fit into the new economy of globalisation.

1.4 RESEARCH OBJECTIVES

- To identify corporate governance factors which influence firm performance
- To isolate interventions at firm level aimed at building social capital for company performance
- To assess technological capabilities necessary for improved performance
- To assess the criteria that can be used in integrating social capital, corporate governance and technological capabilities in improving performance in the manufacturing sector

In order to achieve the above objectives, this research attempts to answer the following research questions:

1.5 RESEARCH QUESTIONS

The following four research questions have been identified as being core to this research:

- Which specific corporate governance provisions are positively and significantly related to organisational performance?
- What interventions can be effected at firm level to facilitate the building of social capital?
- What technological capabilities are necessary for improved performance?
- What criteria can be used to design a model that integrates social capital, corporate governance and technological capabilities in improving performance in the manufacturing sector?

1.6 HYPOTHESIS

The integration of technological capabilities, social capital and corporate governance would result in superior performance in the Zimbabwean manufacturing sector.

1.7 JUSTIFICATION OF THE STUDY

The relationship between a company's technological capabilities and performance has been investigated in the manufacturing sector in Zimbabwe (Teitel2000).The research indicated a statistically significant effect of technology on company output. Other studies to show the integration of corporate governance and social capital have also been carried out (Tian et al.2011; Murphy 2002; Orsenigo et al. 2001; Bueno et al 2004). A study by Bauer et al. (2003, p.97) indicated a positive relationship between corporate governance and company performance. Studies on the integration of technological capabilities and social capital have also been carried out (Carmeli and Azeroual2009; Lee et al.2001).They indicated a positive relationship between improved technological capabilities and company performance. Little is known about the integration of the three drivers, corporate governance, social capital and technological capabilities on organisational performance, and this study seeks to fill this knowledge gap in the Zimbabwean manufacturing context.

Since the advent of computer aided manufacturing in the 1980s several factors have impacted on manufacturing industries, such as the use of new and advanced manufacturing

technologies, and recent trends of measuring manufacturing performance, the manufacturing industry is viewed as a particularly relevant area of study. It is the one industry where the three drivers of firm performance are still well represented. Further, the use of performance measures is expected to be more diverse and extensive in manufacturing industries compared to service or other types of industries. In addition, the manufacturing sectors in Zimbabwe play an important role in converting minerals and agricultural produce into finished products; it is the third largest contributor to the country's GDP; it is critical to investigate means by which the sector can expeditiously recover.

1.8 DELIMITATIONS OF THE STUDY

This research focused on the integration of technological capabilities, social capital development and organisational corporate governance, and their influence on performance in companies in Zimbabwe's manufacturing sector. The study area was Harare, where 46% of the manufacturing firms reside and where most of the companies are operating at above 40% capacity.

1.9 LIMITATIONS OF THE STUDY

The manufacturing sector in Zimbabwe is recovering from almost 10 years of economic meltdown from 1999 to 2009 and those operating have introduced new technology in order to compete. It is expected that this technology is being used as a source of competitive advantage and companies might be very secretive about it. This could affect the completeness and quality of data collected. This study limited itself to the manufacturing sector, where technological capability is most associated with performance. Furthermore, only 40% of the companies are operating on at least 80% capacity, which reduces the population considerably and in turn, the sample. To circumvent this, the study used data from a non-probability judgemental sample of 77 companies across 6 subsectors, which had capacity utilisation of at least 80%. The researcher ensured that each of the six subsectors had fair representation in the respondents selected.

1.10 DEFINITION OF KEY TERMS

Corporate governance: The processes, customs, policies, and laws affecting the way organisations are directed, administered, led or controlled (Chambers 2012, p.370).

Globalisation a process of removing officially imposed restrictions on movements of resources between countries in order to form an 'open' and 'borderless' world economy. On this understanding, globalization occurs as authorities reduce or abolish regulatory measures like trade barriers, foreign-exchange restrictions, capital controls and visa requirements.

Gross Domestic Product (GDP)

This is one of the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all goods and services produced over a specific time period—a measurement of the country's total output.

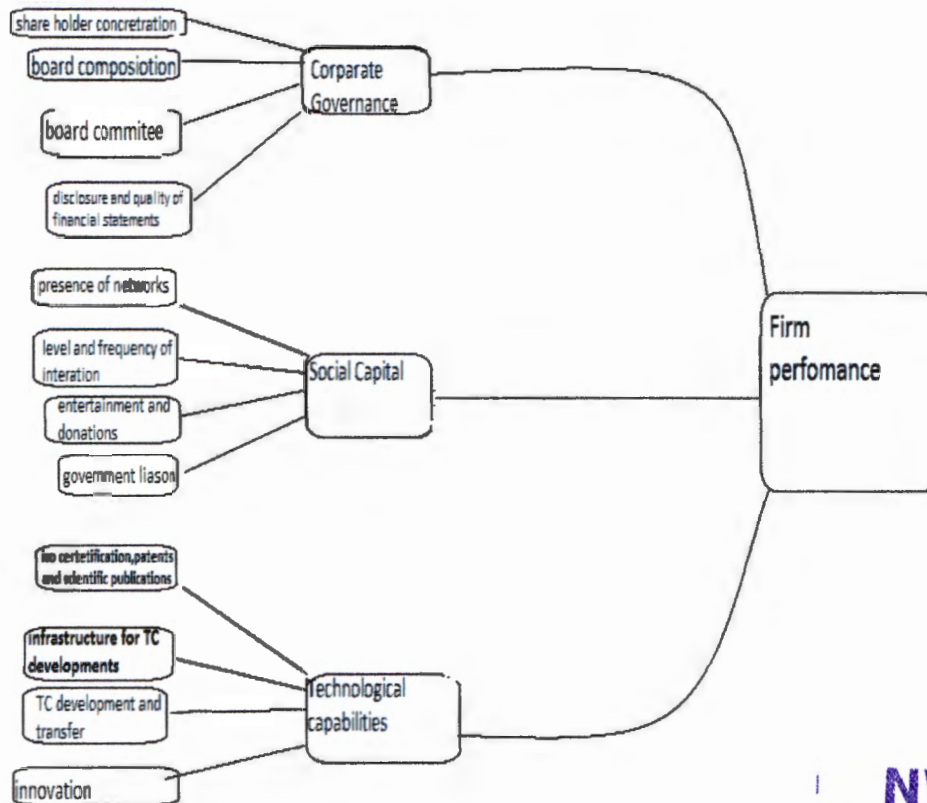
Manufacturing sector: is the secondary sector of the economy, engaged in chemical, mechanical, or physical transformation of materials, substances, or components into finished consumer or industrial goods.

Social capital: This refers to “social relationships that confer influence, control and power” (Adler and Helfat2003, p.1021). They further posit that social ties that a leader has, allow executives to acquire different and useful information that can be used for the good of the business. Leaders who are well networked can provide resources and information on best practice to their organisations (Adler and Helfat2003, p.1021).

Technological capabilities: This refers to “the ability to develop, design new products and processes and upgrade knowledge about the physical world in unique ways, thus transforming this knowledge into designs and instructions for the creation of desired outcomes” Wang et al. (2006, p. 30).

1.11 CONCEPTUAL FRAMEWORK

Figure 1.1: Pillars of the three drivers of firm performance



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1.12 LITERATURE REVIEW

This section will mainly focus on a critical theoretical literature review to unveil the stock of academic theory on social capital, corporate governance and technological capabilities, and how their integration can affect company performance. A literature review helps in pinning down the research problem and offers new ideas or perspectives as stipulated by previous authors (Creswell 2009, p.29)

1.12.1 Social Capital

Social capital theory postulates that both internal and external networking relationships provide resources and information on best practice to a company's benefit. Early writers on social capital (Bourdieu 1986; Lin 2001) as cited by Acquaah (2007, p.1238) define social capital as "sum of resources actual or virtual that accrue to an individual or an organisation as a result of the development of personal and social networking relationships." Adler and

Helfat (2003, p.1021) have defined social capital as “social relationships that confer influence control and power”. They further posit that a leader’s social ties allow them to acquire different and useful information, which can be used for the good of the business. This suggests interdependence, which enhances the performance of relationships and therefore, organisations.

While hitherto interdependence in organisations as been considered a liability, recent research has indicated that despite an inevitable power imbalance in interdependent relationships, the benefits of actual and potential resources far outweigh the costs. These benefits are embedded within, available through, and derived from the network of relationships possessed by an individual or social unit’. Furthermore, organisations in emerging economies that generally face uncertain environments are most likely to use and benefit from networking, relationship and ties that they “personally cultivate to reduce uncertainty in the business environment” Acquah (2007, p.1238).

Social capital development is closely related to cognition, which according to Adner and Helfat (2003, p.1022) refers to beliefs and mental models that serve as a basis for decision making. “The cognitive perspective suggested that the environment is not purely exogenous and therefore organizational response to the environment is mediated by the interpretations made of that environment by managers”. This is particularly true because of the uncertainties and complexities of the environment that decision-makers face Adner and Helfat (2003, p.1023) note that a manager’s limited field of vision, selective perceptions and interpretations, filtered by the cognitive base and value system, combine to produce managerial perceptions of a situation. Thus cognition affects the strategic response to the external environment and affects organisational performance.

1.12.2 Corporate Governance

The general definition for corporate governance was put forward in the 1992 Cadbury Report, which was considered a landmark in thinking on corporate governance. Coyle (2006, p.6) stated that “corporate governance is the system by which companies are directed and controlled”. In agreement, Carey and Lawson (2011, p.154) state that corporate governance is the processes, customs, policies, and laws affecting the way organisations are directed, administered, led or controlled. Corporate Governance principles are concerned with the practices and procedures that ensure that the performance of a company maximises the

shareholder's wealth with the minimum of risk. The principles also look at the "equal treatment of shareholders" with emphasis on the protection of minority shareholders, corporate transparency, functioning of supervisory and management board/board of directors, procedures of voting, decision-making and electing shareholders' representatives, evaluation procedures of directors activity and structuring executive compensation"(Aluchna2009,p.188).

The board of directors, for instance, should ideally be available to monitor and advise and encourage cooperation between shareholders. However, depending on the ownership structure and concentration, this duty can be compromised. The board of directors should exercise its powers in a responsible manner for the good of the shareholders. In order to succeed, organisations set objectives, and corporate governance is like the watchdog that ensures that the objectives are met in compliance with the laws and regulations as well as leaders behaving in an ethical way (Coyle 2006, p.12).

Research is continually revealing that corporate governance has an effect on company performance (Aluchna2009, p.187; Bauer and Guenster 2003, p.92; Kumar & Singh 2011; Brown &Caylor 2008; Ongore& K'Obonyo2011; Azim 2012).Corporate governance looks at the agent-principal nature of the relationship between shareholders and the board of directors to ensure that their interests are in sync. It follows then that the way an organisation is directed and controlled can affect its performance. Thus ownership structure and concentration can affect quality of decisions as dominant shareholders might otherwise thwart minority shareholders. On the positive side, however, independent directors positively influence corporate performance and professionalism (Aluchna2009, p.187). The presence of institutional investors might also attract investment and influence performance through experience and superior skill.

Research by Bauer and Guenster (2003, p.92) indicates that companies with better corporate governance guarantee payback to the shareholder and limit the risk of the investment. Further, in a separate research by McKinsey (2002), it was found that investors are willing to pay a special premium for shares of the companies that comply with corporate governance rules. This ranges from 18% for countries of strong institutional order (UK, USA) to as much as 27-28% for countries characterised by weak shareholder protection (Venezuela, Colombia).

1.12.3 Technological Capabilities

Technological capability is defined by Wang et al.(2006, p.30) as “the ability to develop, design new products and processes and upgrade knowledge about the physical world in unique ways, thus transforming this knowledge into designs and instructions for the creation of desired outcomes”. The advent of the knowledge based economy has made the acquisition of knowledge crucial and research has indicated a correlation between superior knowledge and competitive advantage as postulated by Teece et al. (1997, p.510) in their study of dynamic managerial capabilities. They advocate that competitive advantage is well determined by organisational capabilities and core competences and their applications, rather than the differences in industry characteristics. The idea, then, is to combine the specialised knowledge embedded in individuals, otherwise known as social or human capital, with specific organisational activities to enable innovation. Thus technological capabilities are now acknowledged as a resource necessary for superior performance.

Knowledge resides in different parts of the organisation (Carmeli and Azeroual 2009, p.79) and the interdependence within and without the organisation will determine the value of the knowledge along with the way organisations are governed, led and controlled. According to Moon (2010, p. 477) “organizational structures reflect the way a firm designs and shapes routines for hierarchical or reporting relationships”. Organisational structures influence level of involvement and collaboration, which in turn influences acquisition and improvement of knowledge (Moon 2010, p.478).

Technological developments and increased international competition have influenced business operations tremendously. Organisations are no longer confined to national or regional settings; global operations have become the norm. Industries are swiftly becoming an interconnected system with a large variety of complex relationships. The fierce

competition and the instantaneous distribution and availability of knowledge due to the advent of computer technology forces organisations to change their corporate governance stance. This is also changing entire supply chains and the processes, customs, policies and laws necessary to keep this running have to change in order to fit in with the rapid changes in economies. To add insult to injury, Zimbabwe's economy had been practically closed in the period 1999 to 2009, and it was lagging behind in both technological and global advances.

1.12.4 Culmination of the three issues

This research seeks to investigate the best means of integrating the organisational technological capabilities, existing nature of social capital and corporate governance for superior performance in the Zimbabwean manufacturing sector. The way an organisation is governed, led and controlled affects the development of its knowledge base. Social capital, which is a major source of such knowledge for instance, is not as mobile as human capital, nor can it be dissociated from the organisation in the same way as financial or physical capital. The very nature of social capital is that it is bound to the organisation. It enhances the development and acquisition of technological capabilities as knowledge is acquired through the embeddedness of relationships. This is crowned by the organisational corporate governance which harnesses -and combines a firm's resources and capabilities for superior performance (Moon 2010, p.477).

In essence, then, organisations that are willing to develop their social capital are likely to direct, lead or administer more effectively the knowledge and skills which lead to strengthening of technological capabilities (Wang et al.2006, p.31). This is more relevant in the globalised economy which is characterised by rapid changes and stiff competition. The integration of the three concepts can result in innovations that respond to changes in markets and environments and creatively address challenges, and sustain high performance. From the diversity in performance of manufacturing organisations in Zimbabwe during the turbulent times from 1999 to 2009, it is evident that these capabilities and social capital developments differ from organisation to organisation, even if they are in the same industry and the researcher is motivated to fill that knowledge gap.

1.13 METHODOLOGY

The validity and reliability of any research method hinges on the methodology used. This therefore calls for the researcher to provide a feasible research methodology that will be best suited to measure effectively, economically, efficiently, using environmentally friendly measures. Research methodology focuses on methodological problems and their solutions. It dwells on how data will be collected, which data collection techniques will be used and how data will be analysed (Creswell 2009, p.183).

This research study is quantitative in nature; it is dealing with causal paths as suggested by (Creswell 2009, p.15). This is more objective as it avoids personal bias and can be easily replicated. It followed a descriptive survey, which is a research design that seeks to understand the existence and/or the causal factors of observed common characteristics or practices in the research study area. The survey methodology is proposed specifically for its inherently multidisciplinary nature (Groves et al. 2009, p.6). Another reason for choosing the descriptive design for this research was that it accommodated judgemental sample selection, which was appropriate for research in an industry where there are many players. The six manufacturing subsectors of interest have at least 464 registered players. Sample selection is important in that it allowed the researcher to come up with a manageable proportion of a whole population of respondents that could provide population of respondents as well as provide authentic findings at a manageable cost and time limit (Leedy and Ormrod 2010, p.50).

For this study, the researcher visited firms in the sample and administered questionnaires to collect data. A correlation & regression analysis was then applied to come up with descriptive statistics, and tests to determine significance of the three drivers of performance.

1.13.1 Population

In research, according to Groves et al. (2009, p.44), a population is two-fold: the target population and the study population. The target population refers to members, events or objects to which the researcher wishes to generalise his or her findings. It is a list of the entire population from which the sample is to be collected. According to Groves et al. (2009, p. 44) this is “the set of units to be studied”. Hence, in this study, the target research population was made up of the entire Zimbabwean manufacturing industry. The study population, according to Groves et al.(2009, p.45) refers to all people or events or objects from which one actually

draws the sample. It should be noted that firms in the manufacturing sector are closing down or reducing operations on a daily basis with some are operating way below 40% capacity rendering the majority of the population unusable for research purposes. Therefore although the registered companies which make up the population is high there was need to collect data from firms operating from at least 80% capacity. At inception of the study in 2012, it was estimated that 60% of the firms were operating below 40% capacity (CZI 2011: p5). In this study, the researcher found information and drew conclusions from six subsectors targeted by the Zimbabwean government for growth as indicated in the table below.

Table 1.5: Proposed study population

Subsector	Study population Number of registered companies in Harare
Food and beverages	45
Clothing and textile	78
Timber and furniture	40
Fertiliser	2
Pharmaceuticals	4
Metals	16
Total	185

Source: Zimurade (2011)

1.13.2 Sample

A sample is a part of inferential statistics which is the portion of the population that is selected for analysis .The main purpose of sampling is to generalise to the whole population, as it is generally not possible to study the entire population. Thus the sample selection needs to be objective in order to avoid subjective inferences of the population of investigation (Groves et al.2009, p.46).The researcher used judgemental sampling to allow for firms in every subsector to be selected and to ensure that those operating above 80% capacity were selected. It is noted that some of the groups in the population are small and the probabilities do not need to be same. If at least a third is selected for the larger groups and all companies for the smaller groups, there would be a fair representation of the sub-sectors. The table below indicates the sample.

Table 1.6: Study sample

Sector	Number of companies in the population	Study sample 40% (those operating at 100% capacity)
Food and beverages	45	18
Clothing and textile	78	31
Timber and furniture	40	16
Fertiliser	2	2
Pharmaceuticals	4	4
Metals	16	6
Total	185	77

1.13.3 Research instrument

A questionnaire was used as the research instruments for data collection in the research study.

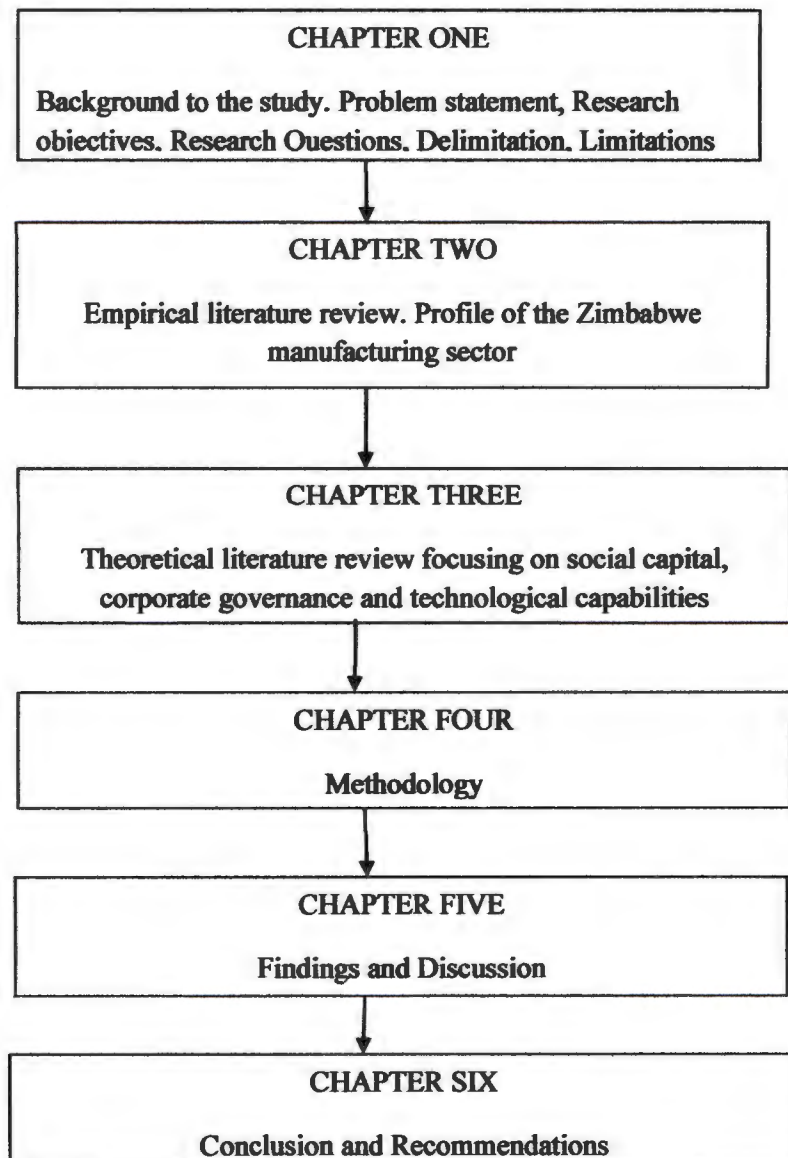
A questionnaire is a research instrument that involves acquiring information about one or more groups of people, their characteristic opinions, activities, or previous experiences, by asking those questions and tabulating their answers (Groves et al.2009, p.47).A survey can afford the researcher more manoeuvrability over the sample. It is possible to generate findings that are representative of the whole population at a lower cost than collecting the data for the whole population. Data collected by the survey method is unlikely to be wide-ranging as those collected by other research strategies (Leedy and Ormrod 2010, p.40). There is a likelihood of respondents saying what they believe to be true, or what they think the researcher want to hear. People's memories may distort reality or things on the ground. People's descriptions of their attitudes and opinions are often constructed on the spot, and so are coloured by recent events (Groves et al.2009, p.47). Issues of social capital and corporate governance can be prone to subjective opinions and the researcher needs to be conscious of biases.

1.13.4 Data presentation and analysis

Raw data was inspected for clarity and completeness by coding and editing. For the questionnaire, data was complete as the instruments were self-administered. A code book was developed for entering data into the computer for analysis. Collected data was analysed using a statistical analysis package called Stata. The researcher programmed the computer to present the data in categories as well as summary measures such as tables, pie charts, and bar

graphs. Tabulation assisted the researcher to understand the distribution of variables and to determine some correlation in these key descriptive statistics.

1.14 STUDY OUTLINE



1.15 CHAPTER SUMMARY

This chapter provides the foundation for the study by detailing the background of the Zimbabwean manufacturing sector, its setting in the economy and contribution to the Gross Domestic Product (GDP) and employment. The idea is to elaborate on the fact that the manufacturing sector in Zimbabwe is recovering and needs to focus on three drivers of performance: namely corporate governance, social capital and technological capabilities. Each has a part to play. The study sought to reveal the most significant associates to performance in light of the limitations of low capacity utilisation and firm closures. The discussion was covered in six chapters, each with a specific focus.

CHAPTER 2: EMPIRICAL LITERATURE REVIEW: OVERVIEW OF THE ZIMBABWE MANUFACTURING SECTOR

2.1 INTRODUCTION

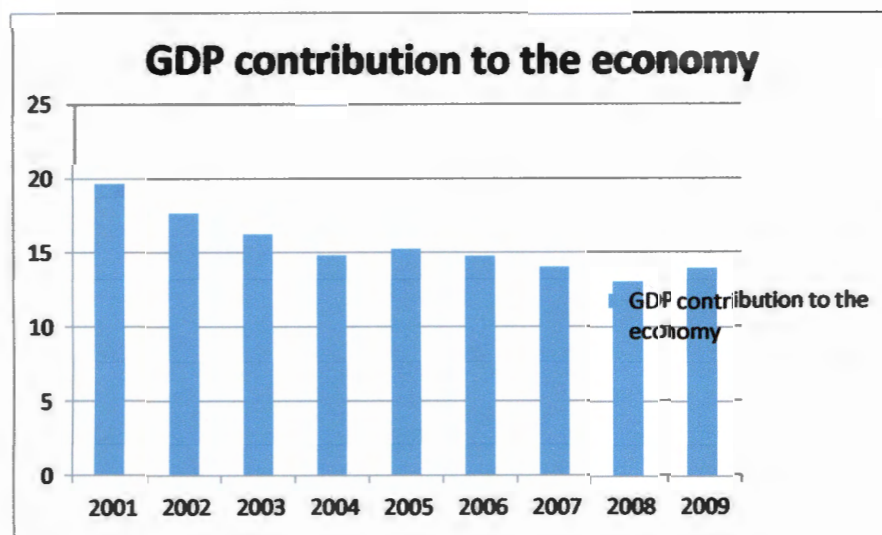
The Zimbabwe manufacturing sector dates back to 1940, with the only integrated iron and steel plant in sub-Saharan Africa. The sector developed against the backdrop of sanctions imposed on the then Rhodesia following the Unilateral Declaration of Independence (UDI) in 1965. The country adopted import substitution industrialisation strategy, firstly to ensure self-sufficiency for most of the basic consumer products, and to cushion the country against sanctions which ran from 1965 to 1980. The sector is well diversified by African standards, manufacturing over 6000 products ranging from food and beverages to chemicals, clothing and products of all kinds (Chiripanhura 2010, p.154).

This sector is divided into light and heavy industry. Establishments in the manufacturing sector are often described as plants, factories or mills and use power-driven machines and material-handling equipment (Zimtrade 2011). The import substitution industrialisation strategy was carried forward into the post-independence period until the adoption of the Economic Structural Adjustment Programme (ESAP) in 1991. As noted by Zwizwai et al. (2004, p.225) the aim of ESAP was to restore macroeconomic stability, but every one of its goals was thwarted by high levels of unemployment, where at least 100 000 jobs were to be created per year. These jobs did not materialise as the closed-in import substitution had debilitated the sector's ability to compete with external companies. Trade liberalisation in Zimbabwe, which was the backbone of ESAP, exposed local companies to external competition before they had had a chance to modernise their plants. Added to that, higher levels of inflation and high interest rates discouraged investment. Thus the performance of the manufacturing sector in the post- independence period has been mixed with brief periods of substantial growth, interspersed with decline in other years. Despite more than a decade of import substitution industrialisation, the manufacturing sector remains highly import dependent, requiring a wide range of imported inputs, ranging from packaging materials to components used in the manufacturing process Zimtrade (2011).

2.2 SECTOR'S CONTRIBUTION TO THE ECONOMY

The manufacturing sector is one of the four wealth generating sectors and is important to the Zimbabwe economy. At its peak in 1999, the manufacturing sector was the major contributor to GDP at 22% (Zimbabwe Statistics Agency 2010). Although the sector's contribution to the economy has fallen to the current levels of about 14% of GDP, it is the highest single contributor to the country's GDP, accounting for more than a third of the country's exports (Zimtrade 2011), and it remains an important sector that is critical for the economic development of the country. The sector employs about 15% of the total formal sector labour force. The manufacturing sector has linkages with other sectors in the economy. The linkages are strongest with the agricultural and mining sectors as it is responsible for converting at least 60% of agricultural and mining output and in turn, at least 40% of its output is consumed by the aforementioned sectors (Ministry of Industry and Commerce, 2011, p.4).

Figure 2.1: Manufacturing sector contribution to GDP



Source: Zimbabwe Statistics Agency 2010

Almost 60 countries have invested in Zimbabwe, with the highest investments coming from China, Germany and Switzerland. State participation exists in some parts of the sector, but is, in most cases, being gradually reduced through privatization CZI (2003, p.12). A study on

ownership patterns within Zimbabwean industry carried out by the Confederation of Zimbabwe Industries in 2003 showed that black ownership had increased from 3.86% in 1993 to 31.2% in 2003 CZI (2003,p.14). Local ownership has increased over the years encouraged by the indigenisation legislation enacted in 2010.

Zimbabwe has access to regional and international markets through its membership of numerous international trade agreements. The most active ones are with BRICS and African countries, while European and USA agreements have been greatly affected by sanctions.

Worthy of note is the fact that the Government has prioritised the Agro-processing subsector (consisting of food, beverages, clothing and textiles; wood and furniture; fertiliser) given their importance in the agricultural sector in Zimbabwe. The agro-industries dominate the manufacturing sector of the country in terms of both output and employment, accounting for approximately 60% of manufacturing value added and about 30% to employment. Pharmaceuticals and s have also been prioritised given the importance of curbing the HIV/AIDS virus and the impact s has on value addition to the mining industry. Accordingly, the researcher has selected these subsectors as the focus for study. Table 2.1 below shows the structure of the subsectors.

Table 2.1: Structure of the subsectors 2011

Subsector	Number of registered companies	GDP contribution to the economy	Number employed in the sub-sector
Food and beverages	113	7.2%	-
Clothing and textile	195	17%	27 000
Timber and Furniture	100	4%	25 000
Fertiliser	5	-	-
Pharmaceuticals	9	5%	1000
Metals	40	-	3900
Total	464		

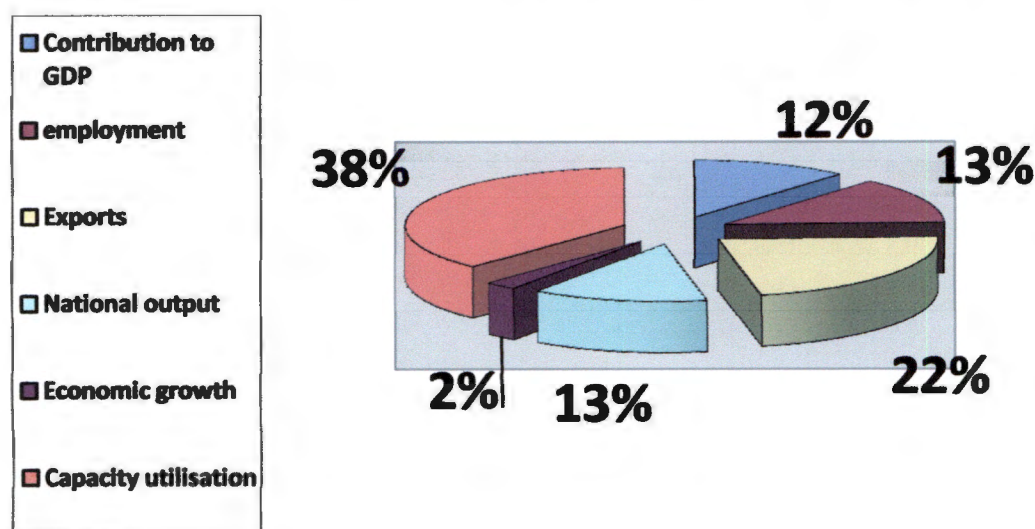
Source: Zimtrade (2011) www.zimtrade.co.zw

The manufacturing sector, by and large, is barely getting by, with antiquated machinery, high labour costs and a lag in technological capabilities. This is rendering the manufacturing sector

uncompetitive on the international market given the economies of scale and the strides in technological capabilities. The same applies to the domestic market, where products are facing stiff competition from imports.

Inasmuch as the sector faced a downturn from 2000 to 2009 during the years of Zimbabwe's worst economic woes, it is still being recognised by government as a key to economic recovery. In the government's Industrial Policy Development Framework (2011 to 2015, p.6), the government had clear objectives for the manufacturing sector which are: to restore the sector's contribution to GDP of Zimbabwe from the current 15% to 30% and its contribution to exports from 26% to 50% by 2015. An average real GDP growth of 15% is targeted under this framework. Figure 2.2 below shows the overall contribution to the economy of the manufacturing sector.

Figure 2.2: Manufacturing contribution to the Zimbabwean economy 2010



Source: Zimbabwe Statistics Agency (2011)

The following section will discuss each subsector in turn. Each of them has idiosyncrasies that assisted the researcher in fully investigating the integration of social capital, technological capabilities and corporate governance for better performance in the sector.

2.3 FOOD AND BEVERAGES

The food sub sector is very broad, with operations ranging from cane processing to processed and semi processed sugar, oil seed processing, grain processing for human and animal consumption, vegetable processing, meat production and processing. The operations also range in size from small to medium to very large scale. This industry has a high potential for growth and has its backbone in the agricultural sector, which provides 60% of its raw material requirements. Besides playing a major role in the value addition of agricultural produce, food processing companies directly contribute to the survival of other industries such as those in the agro-based raw material supply (seed, chemicals, fertilisers, equipment and spares,) printing and packaging, milling, energy and retail sectors, thereby contributing to the nation's Gross Domestic Product (GDP) in a significant way.

The Food and Beverages sector is divided into six sectors, namely milling, confectionaries and bakery, dairy products, food additives, beverages (alcohol and non-alcohol) and canned products. The sector had 113 registered companies according to the National Employment Council (NEC) for the Food and Allied Industry register for 2012. The number keeps fluctuating as new players enter the market. Major players in the various sub-sectors are indicated in the table below.

Table 2.2 Overview of the Food and Beverage sector in Zimbabwe

Milling	Confectioneries and Bakery	Dairy products	Food additives	Beverages	Canned products
Blue Ribbon	Gold Sugars	Dairiboard Zimbabwe	Four Seasons	Delta	Cairns Foods
National Foods	Crystal Candy	Nestle Zimbabwe	Tanganda Tea	African distillers	Cold Storage Commission
GMB	Bakers Inn	Lyons Zimbabwe	Pure Seasons	Schweppes	Colcom
Victoria Foods	Lobels	Gushungo Holdings	ARDA Katiyo		Olivine Industries
Premier Milling	Proton	Dendairy dairy			Lake Harvest
United Refineries	Dandy	Kefalos			
Anchor yeast	M.E. Charhon				
	Arenel Sweets				
	Mitchells				
	Lebena Biscuits				
	Iris Manufacturing				
	Innskor Bakeries				

Source: (Zimtrade, 2011)

Traditionally supported by a very successful agricultural sector, the processed food and beverages sector in Zimbabwe was well established and highly diverse. The sector has concentrated on value adding agricultural products, and producing finished and semi-finished products for both the local and export market.

Manufacturers/processors in this sector, eight of which are listed on the Zimbabwe Stock Exchange and these are African Distillers, Cairns Foods, Colcom, Dairiboard, Delta Beverages, Innskor Africa, National Foods, and Tanganda Tea (Stock Exchange Handbook 2013, p.16). The major operators in this sector have continuously improved their production facilities from 2009 to 2015 by acquiring new machinery. Production is located in the main cities of Harare, Bulawayo, Mutare and Gweru. The concentration of factories is high in Harare (about 63% of total number) and the other cities share the 37% (Zimtrade 2014). The sector has shown encouraging signs of recovery with players operating at 70% capacity (Mid-term fiscal review July 2010, p.37) but this has declined considerably to average 53% (CZI 2014,p.6).

Amongst the major capacity constraints bedevilling the food and beverages sector are high labour costs and expensive power (State of the manufacturing sector 2014, p.27). Failure to address such challenges in terms of investments in electricity generation has automatically attracted high manufacturing costs, thereby making locally produced products less competitive on the international market. Paying attention to the state of the machinery and human resource skills is likely to affect performance of the food and beverage sector positively and drive it towards a recovery path. Table 2.3 below shows the manufacturing index with 1990 as the base year.

Table 2.3 Volume of Manufacturing Index (VMI): Food and Beverage Industry (January 2006 - August 2010) (Base 1990=100)

Year	2006	2007	2008	2009	2010
Mean index for food industry	41.4	33.6	28.6	38.9	40.6
Mean index for beverages industry	57.0	88.0	58.2	53.7	68.5

(Source: ZIMSTAT, 2012)

Using 2000 as a base year, Table 2.4 below shows that the levels of capacity utilisation, production exports, and levels of employment within the sector and market share versus imports were still very low as from 2008 to 2010. This therefore calls for change within the food and beverage sector, in terms of technological interventions such as machinery used for production processes, and human resource skills. Failure to pay attention to those performance indicators will automatically mean high inefficiencies, leading to high manufacturing costs.

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Table 2.4 Food and processing sector statistics

	2000	2008	2009	2010
Capacity Utilization	80%	< 3%	35%	30%
Production (Tonnes)	75,000	3,000	33,000	25,000
Employment Level	10,000	3,000	5,000	4,000
Exports (USD)	30,000,000	X	< 1,000,000	< 1,000,000
Market share versus imports	95%	90%	50%	30%
Return on Investment	25%	-15%	-10%	-10%

Source: The case of the food processing subsector; paper January 2011

Trade indicators on the Food and Beverages sector for 2005-2010 show that the volume of imports was rising, thus depressing the volume of locally manufactured products (Table 2.4). The situation that prevailed in 2011 was such that 70% of the food retail shelf space was taken up by imports predominantly from South Africa, leaving only 30% to be filled by products from local food manufacturers, which is quite the opposite of a normal situation where 70% should come from locally produced goods (The case of the food processing subsector paper, January 2011). The situation has only changed slightly with the “Buy Zimbabwe campaign” and increases in trade laws for imported goods (2014 Mid-year fiscal policy review statement)In 2014 imports in this sector totalled \$US8.3 billion a worrying figure for the sector and the government (State of the manufacturing sector 2014, p.3).

2.3.1 Overview of the food processing sub-sector in Zimbabwe

2.3.1.1 Milling

The subsector is dominated by eight large players namely: Blue Ribbon; National Foods; Victoria Foods, Premier Grain Marketing Board, Mega Foods, ProBrands, Grain Marketing Board and Manama Milling all of which have their own brands (State of the manufacturing sector, 2011, p.4). Only one player, National Foods is listed on the Zimbabwe stock exchange. The Grain marketing Board is a parastatal wholly owned by the government while the rest are privately owned.

The major manufacturing activity for the milling industry is the processing of wheat into flour and maize into maize meal. Some companies produce these for both human and animal consumption. These products are sold through their own outlets, and also through the variety of wholesalers and supermarkets countrywide. The millers also export in the SADC region and some as far as the Democratic Republic of Congo.

The milling industry employed about 25 000 people in 2011 and is currently operating at 35% capacity on average in 2014. The milling subsector's greatest challenges are out dated plant and equipment whose maintenance was deferred for several years, erratic power supplies, and costly dedicated power supply from the monopolistic Zimbabwe Power Company (ZPC). This results in damage to equipment, lost production time and high production costs. Technological capabilities remain low as the cost of capital to replace antiquated machinery remains high with some banks charging annual interest of 18% and above for very short periods of time. Furthermore, the subsector faces stiff competition from cheaper genetically modified flour and maize, especially from South Africa, and limited supply of raw materials such as beans and cotton seed.

2.3.1.2 Confectionary and bakery

This subsector is dominated by five players who are spread countrywide and these are complemented by local bakeries servicing small towns and surrounding rural areas. Major players are Mitchell's Bakery, Lobel's Bread, Proton Bakery, Baker's Inn and Aroma Bakery. The bakeries produce both bread and confectionaries except for a few that specialise in biscuits only. Some millers, such as Blue Ribbon, have forward integrated to the manufacturing of biscuits.

2.3.1.3 Dairy products

This subsector is dominated by three national players, namely Dairibord Zimbabwe, Nestle and Lyons with two other companies Gushungo holdings and Dendairy coming up strongly from 2012. They are complemented by smaller companies located in small towns. The companies concentrate on the processing of milk and the manufacturing of milk-based and non-milk value-added products such as short shelf life liquid dairy delights; long shelf life liquid dairy delights; cultured milk; powdered milk; processed dairy delights, and milk based beverages. The subsector also competes on the beverages front.

2.3.1.4 Food additives

This is a very small subsector, with companies processing tea, coffee, spices and herbs. The majority of the companies in this subsector have their own plantations, forming a very tight supply chain situation.

2.3.1.5 Beverages

The beverage subsector is divided into two categories, namely alcoholic and non-alcoholic beverages. There are three main players in this subsector, with Delta Beverages by far the largest player and the only beverages company quoted on the Zimbabwe Stock Exchange since 1946. The company produces carbonated soft drinks for Coca Cola under licence as well as alcoholic beverages for South African Breweries. Schweppes is the other large company that is very active on the highly competitive non-carbonated drinks market with their Mazoe brand, which is a household name in Zimbabwe and competing well on the South African market. Fruit juices are also becoming very important on the non-carbonated front, using oranges, grapefruits, lemons, naartjies, nectarines and oranges, some of the citrus fruits grown in Zimbabwe. Annually out of the total production, 50% of these fruits are exported as fresh fruit, while the other 50% is consumed by the local market. However, a large portion goes to waste either through failure to get to the markets or simply due to oversupply. There is still room for value addition of various fruits that include oranges and mangoes.

2.3.1.6 Canning

This subsector in the food and beverages industry is dominated by seven companies whose products range from canned fruits and vegetables to meat. The largest up until 2010 was Cairns Foods which was the largest fruit and vegetable canning business in the country and in the region- north of the Limpopo. It used to process +/-10 000 tonnes of produce per annum and it used to account for more than 60% of the canning business sector in the country in peak times. The company has since closed its canning division. The largest meat canner, Colcom is listed on the stock exchange. Smaller canners concentrate on canning fruit and vegetables. New players are exploiting opportunities in this sub-sector every year.

2.4 CLOTHING AND TEXTILES

The clothing and textiles sector dates back to the 1960s. It developed during the years of the Federation of Zambia, Rhodesia and Nyasaland, and further during the days of UDI. At its peak in 1995 the sector contributed 25% to GDP, which was far higher than the Sub-Saharan Africa average (Kanyenze, 2006, p.275). In 2010 the sector consists of three subsectors: production and ginning of cotton, transformation of lint into yarn and fabric, and the conversion of fabric and yarn into garments. Textile ginning is the transformation of lint into yarn and fabric is a high cost, big energy user, low employer and has a high environmental impact (Chiripanhura, 2010, p.154). The other subsector, clothing and apparel, is a low cost, low energy user, large employer; it has allowed environmental impact studies and is highly adaptable. It can operate from the level of SMEs to bigger corporations and can also employ more people at various skill levels (Chiripanhura, 2010, p.163). It made an important contribution to employment and exports in 2010, but the sector's contribution to exports also declined to as low as 0.2% of total exports during the period 2009-2013 from more than 3% during the 1990s.

There were 195 registered players in this sector, 10 of which are in the ginning subsector which operates on a near oligopolistic situation Kanyenze (2006, p.276). The ginning capacity has gone down to only five companies due to the declining cotton hectareage by 16% from the 2012/2013 to 2013/2014 season (First round crop and livestock assessment report 2014, p.5). This was exacerbated by the cotton producer prices quoted at US\$0.35c in 2014 down from \$US0.85 in 2011. The majority of the players are in the textile and clothing subsectors, ranging from small operators to very large firms employing several hundreds of people. In 2014 Clothing and Textile subsectors had 105 players employing 827 people (Zimbabwe Manufacturers Association report 2014, p. 3). There is a significant foreign ownership in this sector with British and Indian ownership dominating with 24% apiece ownership of textile firms (Chiripanhura, 2010, p.158). The table below shows the ownership structure of the sector which has not changed much since 2010.

Table 2.5: Ownership structure in the textiles and clothing sector

	Textile sub-sector	Clothing sub sector
British	24	31
Indian	24	23
Israel	8	14
Zimbabweans	44	20
South Africans	-	6
Palestinians	-	4

Adapted from FAO 2010

The clothing industry is one of the sectors that the Government has focused on as one of the vehicles for the development of manufacturing due to its quick turnaround from investment to production. The sector is highly adaptable and can operate from the level of SMEs to bigger corporations and can also employ more people at various skill levels. Furthermore, the sector has other attractive features such as the low level of capital commitment required; it is a low energy user, has huge scope for value addition, huge scope for backward and forward integration and fast adaptation to consumer demands.

The table below shows the sector's contribution to GDP from 2000 to 2014.

Table 2.6: Textile and clothing contribution to GDP 2000 to 2014

Year	Contribution to GDP
2000	13.4
2005	39.7
2014	10

Source: State of the manufacturing sector report 2014

The textile sector produces various yarns and fabrics including cotton, polyester, acrylic, and other non- made fibre production bases installed in the country, while the clothing sector products range from various yarns, shoe laces, twines, cords, school uniforms, socks and hosiery, sanitary pads, cotton wool, under-garments, clothing, outer garments, blankets and carpets, to name but a few (Ministry of Industry and Commerce 2014, p.9). This sector has

the potential to fully utilise input from the cotton farming sector. It can also export the intermediary produce from the various stages of production from ginning, spinning, weaving of textile produce to the processing of fabric for the clothing manufacturing sector. The government has set a quota system where at least 30% of the cotton is for local consumption while the rest can be exported (The Cotton to Clothing Strategy of Zimbabwe 2014, p.63). The table below shows the export of lint for 2007 and 2008, sourced from the Global Agricultural Information Network (Gain) report (2009, p.7).

Table 2 .7: Exports of cotton lint in tonnes

Export destination	2007	2008
South Africa	34373	27912
Thailand	6829	10780
Italy	3852	4290
Singapore	8989	11229
UK	2362	5921
Switzerland	845	1418
Japan	3325	2960
Germany	1377	1164
China	5683	6629
Portugal	3462	2638
Tanzania	5225	3187
Lesotho	2974	916
Total for Others	79296	79044

Source: Gain report 2009

The major export destinations in 2008 were South Africa, the Far East and Europe, similar to 2007. The Far East accounted for 40.3% of exports, whilst Africa and the EU accounted for 35.9% and 17.7% of the exports respectively.

According to the Gain report (2009, p.7) cotton lint was Zimbabwe's second largest agricultural export after tobacco. In 2007 Zimbabwe earned over US\$120 million from the export of about 86,000MT (394,000 bales) of cotton lint. Cotton lint exports reached 82,237MT (376,000 bales) in 2008/9 and earned the country about US\$150 million. (Gain report 2009, p.6). The government controls the export of lint and permission is only granted if the prospective exporter applies for and is granted an export permit by government. The table below shows the lint and textile exports from 2005 to 2013.

Table 2.8: Zimbabwe lint and textiles exports 2005 to 2013

	2005	2006	2007	2008	2009	2010	2011	2012	2013	Total	%
Lint	96	108	103	114	65	120	269	215	97	1187	83
Textiles & clothing	23	17	18	15	16	55	53	21	25	243	17
Total	119	125	121	129	81	175	322	236	122	1430	100

Source: Africonsult 2005–2010; Zimbabwe National Statistics Agency (2014). Database. Available from www.zimstat.co.zw/index.php?option=com_content&view=article&id=75&Itemid=50.

Lint exports peaked in 2011 when the producer prices were at their best at US\$0.85 and declined by 55% between 2012 and 2013, reflecting the decline in seed cotton production as farmers moved out of cotton production and into other crops such as tobacco and sorghum due to unhappiness over the price of seed cotton (The Cotton to Clothing Strategy of Zimbabwe 2014, p.64).

The sectors face challenges on both the local and international front. On the local front, the issue of highest concern is the lack of investment, constraining industry's technological capabilities, which are more efficient and which enable the products to be more competitive on the international market. Foreign Direct investment (FDI) has remained low, consequently capacity utilisation in the cotton, clothing and textiles sector has therefore remained low, averaging 50% and remaining below potential production levels of 700 000 tonnes (CZI manufacturing sector report, 2014,p.13). The sector needed approximately USD\$50 million for recapitalisation and working capital Zimbabwe Industrial development policy (2011, p.20).

The local textile companies have not kept up to date with international fabric trends, rendering locally produced fabrics more and more unsuitable for the clothing export market, since world fashion trends have dictated a swing to fabrics with a high proportion of special weaves and more diverse colours (Zimtrade2011, p.14). Another challenge locally is that disposable income has remained low, with real consumptive wages declining by more than 25% since 1990. Although no accurate figures are available it is estimated that unemployment was as high as 95%, which results in people being attracted to the cheaper

Asian products and second hand clothing Chiripanhura (2010, p.158). On the international front, the sector has not enjoyed market access to lucrative markets such as America, under the African Growth and Opportunity Act (AGOA) since it is not eligible because it did not meet the criteria of good governance. This has led to limited export to USA. Furthermore, the quota system is under threat following the expiry of the Agreement on Textiles and Clothing (ATC) in December 2004 (Kanyenze2006, p.278).

2.5 TIMBER AND FURNITURE MANUFACTURING



This sector can be divided into two main subsectors, namely timber manufacturing, predominantly in the Eastern highlands of the country where the terrain and the climate are suitable, and furniture manufacturing, which is spread all over the country. The timber subsector is dominated by eight producers, spread over timber plantations covering 0.02% of the country. The plantations comprises of softwoods (pines) and hardwood (mainly eucalyptus). There are also natural hardwoods mainly in western part of the country. The country's forest resources account for about 3% of the Gross Domestic Product (Marisa, 2004, p.7) and contributes 4% of total value of agro-industrial products and employs about 25000 employees Ministry of Industry and Commerce (2011, p.15). The table below indicates the products produced and sold in this subsector in 2011.

Table 2.9: Production and sales of timber products in 2011

PRIMARY PROCESSING PLANT, PRODUCTION, SALES						
	Plants	Units	Production	Sales	Local Sales US\$	Export Sales US\$
Sawn & Processed Timber	11	m ³	175,658	127,902	19,687,465	9,020,529
Treated Poles ⁽¹⁾	4	m ³	60,791	33,531	1,196,847	1,238,600
Veneer & Plywood		m ³	6,170	7,767	0	0
Particle & Fibreboard		m ³	7,754	6,536	3,024,766	1,038,227
Paper and Paper Products		Tonne	0	0	0	0
Wattle Extract		Tonne	3,412	0	0	0
Charcoal		Tonne	11,968	9,719	0	0
Matches		Tonne	0	0	0	0
Total	15		265,753	185,455	23,909,078	11,297,356

Source: Timber Producers' Federation (TPF) 2011

The ownership of the plantations is balanced between private and state enterprises. Two of the companies are still registered on the stock exchange in 2015. The table below shows the ownership structure of the timber resources and their geographical spread.

Table 2.10: Spread of plantations and ownership structure of the timber industry

DISTRIBUTION OF COMMERCIAL FORESTS (ha)								
	Manicaland	Mashonaland			Midlands		Total	%
		West	Central	East				
Private	52,450	0	0	0	0	0	52,450	58
State	33,440	0	0	0	3,865	0	37,305	42
Total	85,890	0	0	0	3,865	0	89,755	100

Source: Timber Producers' Federation (TPF) 2011

The other subsector is furniture manufacturing, which feeds from the timber manufacturing sub sector. It is dominated by seven players, complemented by myriad formal and informal

manufacturers in various parts of the country. The sector covers all products manufactured, from exotic and indigenous hardwoods and soft woods to other related products for household, office and industrial use. These products include, but are not limited to bedroom suites, lounge suites, dining room suites, office furniture (Konje, 2011, p.2). The majority of furniture manufacturers are in Harare and Bulawayo. The sector is expanding at a rapid rate, and up to 2014 it was one of the best performing sectors producing high quality timber products which meets ISO Quality Standards and was fast becoming a net exporter of finished products (State of the manufacturing sector, 2014, p.17). The table below indicates the export destination of furniture.

Table 2.11: Exports of furniture from Zimbabwe

South Africa	62%	South Africa	70%	Botswana	96%
United Kingdom	11%	Zambia	10%	South Africa	3%
Zambia	3%	United Kingdom	1%	Zambia	1%

Source: Zimtrade 2014

It is evident that the region is becoming an important export market and there is room for value-addition to enable exports to the COMESA and SADC regions.

2.6 FERTILISER INDUSTRY

The fertiliser industry in Zimbabwe dates back to the 1930s and was generally focused on enhancing agricultural production for commercial farmers (Minde et al.2010, p.2). The industry has evolved along with the developments in the agricultural and economic environment of foreign direct investment constraints and land reform programme. The industry is well developed with four players whose ownership structure is cross linked. Two companies, Sable Chemicals and Zimphos are the primary producers of Ammonium Nitrate and phosphates. They sell their entire production to two other companies, Windmill and ZFC respectively. These companies utilise it, together with imported intermediates to blend and produce granular compounds. The four companies are interdependent in that the granulation technology and processes used are designed to use AN and superphosphates produced in Zimbabwe. (The Zimbabwe Fertilizer Industry, 2010, p.3). The industry produced 350 000 tonnes in 2010 but has a capacity to produce 560 000 tonnes (The Zimbabwe Fertilizer Industry Report, 2010, p.5). The industry employed almost 573 workers and capacity

utilisation in 2014 was around 20% (State of the manufacturing sector, 2014, p17). The sector required a resource envelope of about USD110 million in the short to medium term for recapitalisation and working capital purposes (Zimbabwe Industrial development policy 2011, p.21).

The fertiliser industry has a strong impact on the Zimbabwean economy as it greatly influences the agricultural output, which in turn feeds at least 60% of its output into the manufacturing sectors, thus having tremendous influence on the manufacturing sector performance. Such strong linkages have warranted the industry to be chosen as one of the key industries to be supported in the government recovery plan (Zimbabwe Industrial Development Framework 2011, p.14). In the decade from 1998 to 2008, only 32% of fertiliser supplies were produced locally, while the balance was imports. Capacity utilisation currently stands at 20% against the 40% recorded in 2012 (State of the manufacturing sector, 2014, p21). This was expected to increase to around 45% by the end of 2013, mainly driven by refurbishment of plant at Sable Chemicals, a situation dependent on the upgrading of production technology requiring much less electricity. At present, the industry utilises electrolysis for the production of fertiliser, which requires a high amount of electricity (Sable chemicals consumes at least 30% of the country's electricity production). The sole provider of electricity in Zimbabwe, Zimbabwe Electricity Transmission company (ZETC) also needs recapitalization to fulfil this demand and capacity utilisation still remains a dream. The industry needs to move to coal gasification technology to augment the energy needs.

2.7 PHARMACEUTICALS

The role of pharmaceuticals in the overall manufacturing sector was defined in the National Drug Policy, unveiled in December 1995, which states as one of its objectives: "To promote and encourage further the production of essential pharmaceutical products and raw materials required for these, thus achieving medicine self-reliance in Zimbabwe". The Policy aims at promoting and encouraging the most cost effective local production of safe, effective, and good quality drugs in order to achieve optimal self-reliance within the context of national development goals. This was done as a response to the devastating effects of the HIV/AIDS pandemic given that Zimbabwe has quite a high prevalence rate averaging 14% (Millennium Development Goals Progress Report 2012, p.11). The sector is well developed and is deemed to be second to South Africa (in terms of size and development) in the SADC region,

employing a highly skilled labour force. The sector produces more than 46% of Essential Drugs List and about 15% of Special Essential Drugs List of Zimbabwe (State of the manufacturing sector, 2014, p18). Added to that, the sector has modern production methods able to produce high quality drugs for the export market.

The Zimbabwean pharmaceutical industry is characterised by just a few manufacturers, with a total of nine players according to the most recent Register of Licensed Pharmaceutical Manufacturing Premises published by the Medicines Control Authority of Zimbabwe (MCAZ). The sector has potential to employ 3000 people directly and hundreds of others in the downstream sector, but in 2014 the pharmaceuticals sector was employing 1030 people (State of the manufacturing sector, 2014, p18) operating at 20% capacity. The major companies in this sector are CAPS Pharmaceuticals, Datlabs, Plus-5 Pharmaceuticals and Varichem Pharmaceuticals, which are serious generic manufacturers, whilst the rest largely concentrate on trading and have narrow product portfolios. Most of the companies are located in Harare. The table below shows the spread of companies in Zimbabwe:

Table 2.12: Spread of pharmaceutical companies in Zimbabwe in 2011

Area	Percentage of companies
Harare	55
Bulawayo	30
Mutare	5
Other cities	10

Source: Zimtrade (2011)

These four companies could easily account for 90% of the secondary pharmaceutical manufacturing (formulation) business in the country. They are secondary in the sense that there is no manufacturing of Active Pharmaceutical Ingredients (APIs) in Zimbabwe. This industry comprises companies primarily engaged in the manufacture of biological, medicinal and pharmaceutical products in various formats including ampoules, tablets, capsules, vials, ointments, powders, solutions and suspensions.

The overall pharmaceutical market can be divided between prescription based (or ethical) products and over-the-counter (OTC) medications. Note that the ethical sector can then be further segmented into brand-name products and generic products. The products in question are predominantly distributed via wholesalers and are then sold via pharmacies or distributed via hospitals (Ministry of Industry and Commerce 2011, p.14). Only one company, CAPS, was listed on the Stock Exchange up until 2012 when it was delisted and the rest are privately owned with a mixture of both local and foreign ownership. The table below gives a summary of the structure of the four major operators.

Table 2.13: Summary of data for the largest 4 pharmaceutical companies in Zimbabwe 2011.

Company name	Ownership	Number of employees	Year started	Product range	Age of equipment	Capital utilization	Capital required	Location
CAPS	Listed on the stock exchange	200	1952	204	refurbished	20%	N/A	Harare
Datlabs	100% private foreign	175	1950	137	16+years	32%	US\$1.5m	Bulawayo
Varichem	100% private local	110	1985	103	9+years	30 to 60%	US\$1m	Harare
Plus 5	100% private local	91	1996	28	8+years	18%	US\$1.5m	Bulawayo

Source: UNIDO 2011

This sector has been targeted for development by the government because of its multi-pronged benefits to the country, ensuring affordable healthcare to the nation indirectly. It affects every facet of the population, including that of contribution to GDP from the manufacturing sector, and finally, contributing to downstream industries such as pharmaceutical wholesalers, packaging, pharmacies and hospitals. There are investment and research and development opportunities in the production of medicinal, veterinary and skin products in the sector, which can enhance the utilisation of locally available resources (State of the manufacturing sector, 2014, p19). There have not been any significant technological capabilities developments since 2010 as only one of the local manufacturing facilities is able

to meet international clean room standards and current Good Manufacturing Practice (GMP) requirements for facility design and layout. In addition, the human capital has been eroded from 2007 to 2010. Even more so, the trainers have been eroded, which is a double blow to the sector.



2.8 METALS

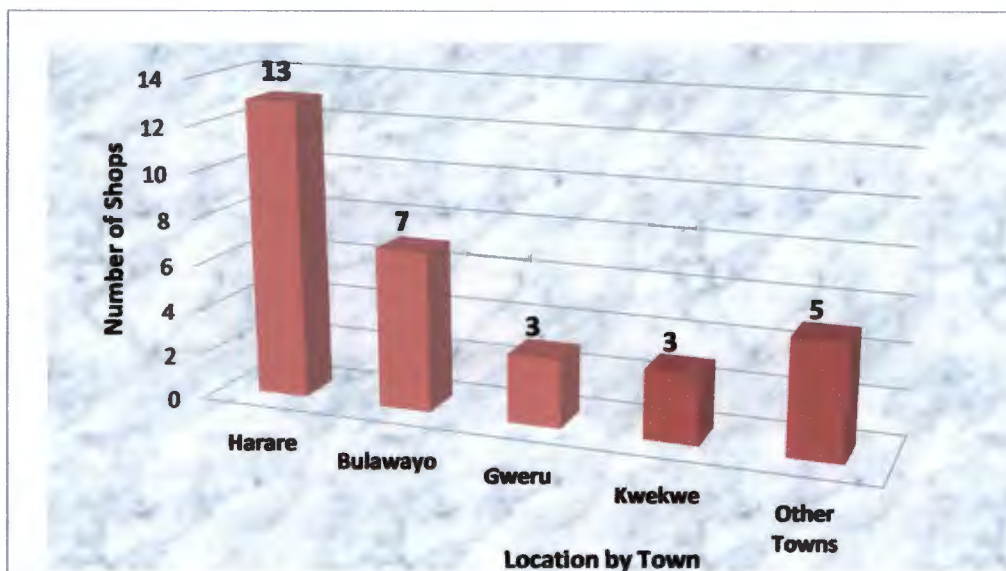
The metals industry has been targeted for development by the government because of its strong backward and forward linkages to sectors such as mining, construction, agriculture, machinery, and transport, which are some of the backbone of Zimbabwe's economy. The industry was previously dominated by Ziscosteel renamed NewZim Steel, which was the driver of the sector as 80% of the companies in the sector relied on raw materials from it. The company closed in 2008 and smaller operators like Steelmakers became dominant in the sector. There were 40 companies in 2011 mainly foundries operating producing a variety of mainly steel products. The sector has been struggling with production issues since 2009, for instance not meeting demand and the capital requirements being too high for any one company to meet.

The metals industry is based on the casting process, which allows steel to take shape as engineering components and spares that will serve the needs of different business sectors. The metal industry is thus built on one of the truly basic methods available for shaping steel to useful ends. A typical metal shop process comprises the following steps: patternmaking (including core boxes), core-making, moulding, melting and pouring and cleaning.

The scope of the metal industry encompasses a major segment of Zimbabwe's national economy contributing 2.15% to GDP in 2010 (ZIMSTAT 2011). In 2015 this sector is still a vital component in the success of the country's economic revival from 2009 as it produces engineering components and spares for every field where metals serve man. Castings are used in mining, transportation, communication, construction, sewer and water reticulation, agriculture, power generators and in other activities too numerous to describe. The country had forty (40) registered metal firms in 201 located in all provinces of Zimbabwe, but mainly concentrated in Harare and Bulawayo. This figure is not exhaustive as there are several small unregistered backyard metal firms mushrooming country wide. Fig. 2.3 below shows the distribution of operational metal firms in Zimbabwe. The figure indicates that of the 31 operating metal firms, Harare has thirteen which represents 32.5% of the total (40) registered

firms in Zimbabwe, followed by Bulawayo with seven (7) representing 17.5%. Note: Other Towns denote metal firms located one each in Kadoma, Marondera, Masvingo, Mutare and Norton.

Fig 2.3 – Distribution of Operational Metal firms in Zimbabwe from 2009 to 2012.



Source: Industry association 2012

The main product ranges and services of the metal industry for the various sectors of the economy are shown in Table 2.14 below.

Table 2.14: Metal Industry's Main Product Range

Item	Sector	Product Range
1	Mining	Gate valves, snatch blocks, dolly wheels, axles, wheels, coco pan wheels, pumps and accessories, loco brake shoes, mill balls, mill liners, furnace tap blocks, tapping moulds, bearing housings and any ferrous and non-ferrous castings.
2	Agriculture	Gate valves, non-return valves, pumps, sprinklers, hydrants and aluminium fittings.
3	Construction and Sanitation	Gate valves, manhole covers, drain covers, step irons and cast iron fittings, fire hydrants, non-return valves, landing and foot valves.
4	Automotive	Brake drums and discs to suit a wide range of motor vehicles and trailers and tractor weights.
5	General	Three legged pots, cast iron and non-ferrous castings to customer specifications.

Source: Paradzayi 2012

The advent of globalisation has forced Zimbabwean metal firms to compete in an uneven economic environment caused by trade liberalisation, resulting in importation of cheap metal products (such as valves, pumps and their accessories, mill balls). This is because the sector is constrained by several factors, which include lack of capital and unfavourable terms of financing, and machine breakdowns due to antiquated equipment. The cost of production remains high, with continued rises in cost of labour and utilities. The high cost of production, coupled with the low levels of capacity utilisation and inferior product quality, has largely rendered Zimbabwe's metal products uncompetitive both locally and on the international markets. Up until 2015, the country is still allowing this uneven environment to exist and thus forcing metal firms to survive never the less. This has however seriously threatened their viability.

A comparison of the average prices of selected products, namely valves, pumps and mill balls from Zimbabwean manufacturers and importers against South African suppliers is shown in Table 2.15 below.

Table 2.15: Comparison of Average Prices of Various Products

Item	Product Description	Manufacturer's Price, US\$ (Zimbabwe)	Importer's Price, US\$ (Zimbabwe)	South African Price, US\$
1	150mm Gate Valve	700.00	410.00	250.00
2	250mm Gate Valve	1 336.00	900.00	450.00
3	Mill Balls (One Tonne)	800.00	550.00	350.00
4	KSB 65/250 Pump	3 000.00	2 100.00	900.00

Source: Paradzayi (2012)

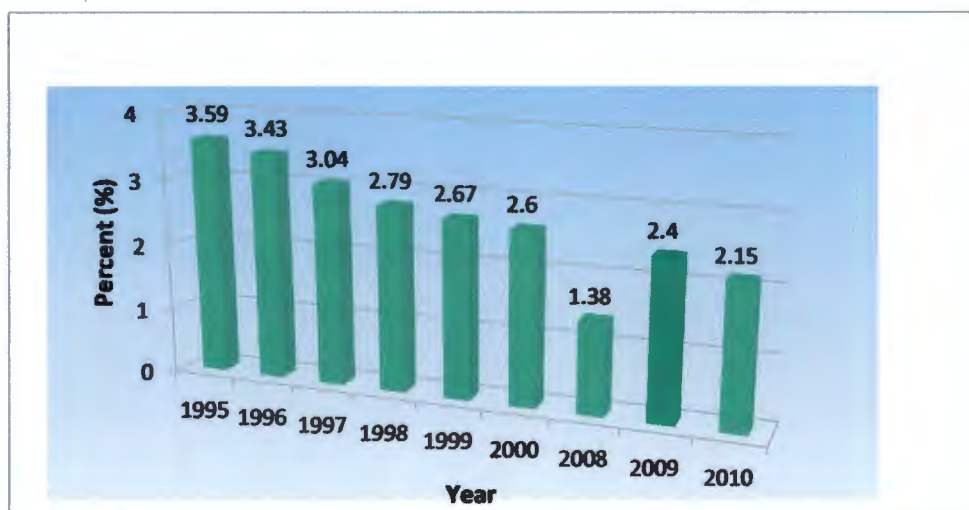
Note: The term Zimbabwean importer refers to any company or individual involved in sourcing products from outside Zimbabwe for reselling or end use.

From the table it can be observed that Zimbabwean manufacturers are charging almost double what the Zimbabwean importers are charging. The South African companies are charging almost 33% less than the Zimbabwean manufacturers. These figures are even higher for pumps, where South African prices are 25% less than the Zimbabwean manufacturers' prices in 2012. It should be noted that the lead time for Zimbabwean manufacturers is three weeks or more, whereas in South Africa most of the products are ex-stock (Paradzayi 2012,

p.25). Thus a customer will only need about three days to land a product in Harare from South Africa.

The metals industry has been earmarked to spearhead recovery as its value chain has critical synergies with those of several other manufacturers. In addition, the subsector makes a sizeable contribution to the country's GDP as given by the Zimbabwe National Statistical Agent (ZIMSTAT). This is summarised in Fig. 2.4, which gives the subsector's contribution as a percentage of the total GDP.

Figure 2.4: The Industry's Contribution to GDP



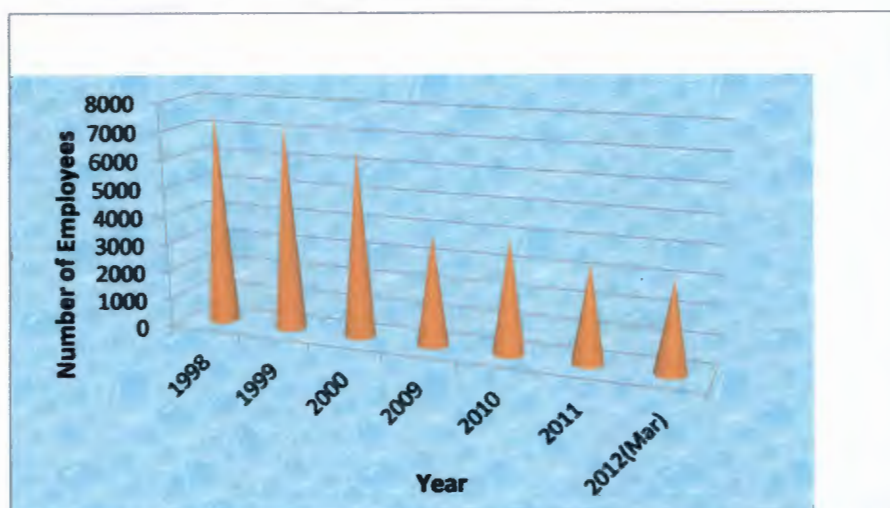
Source: ZIMSTAT's Quarterly Digest of Statistics: Second Quarter (2012))

The figure indicates that the contribution of the metal sector to the national GDP for 2009 and 2010 was at 2.4 % and 2.15 % respectively, lower than for periods before 2000, where a high of 3.59 % was recorded in 1995. The year 2008 was included to give the reader a perspective of the situation at the peak of the hyperinflation era when a low of 1.38 % was recorded. The contribution picked up for 2009 as it coincided with the introduction of the multi-currency system in Zimbabwe and thus the economy was starting to stabilize. The drop in 2010 coincides with intensifying competition from imports. In 2015 the sector was still faced with challenges preventing higher contribution to GDP.

The metals industry also contributes to formal employment in the country. The employment figures for the metal subsector from 1998 to 2000 and 2009 to March 2012 are shown in Figure. 2.5. Employment figures for 1998 to 2000 are given for comparison purposes as this

is the period when the economy was stable and just before the turbulent hyperinflationary economy of 2001 to 2008.

Fig. 2.5 – Employment Figures for the Metal Industry



Sources: ZIMSTAT Quarterly Digest of Statistics: Second Quarter (2012) and Compendium of Statistics (2008).

The table indicates that employment figures for 1998 and 1999 were much higher than for period 2009 to March 2012. This is attributable to a stable economic environment for that period. The figures started dropping in 2000 marking the advent of the hyperinflation era (2000 to 2008). However, when the multi-currency system was introduced in February 2009, 3 878 people were employed in the metal industry against figures of above 7 200 people for periods before 2000. The figure increased to 3 954 in 2010 as the economy started to stabilise. However, in 2011 the employment figures started dropping and by March 2012 it was at 3120 people with the possibility of the figure being much lower by end of 2012. This could be attributable to companies downsizing and outright closures due to the harsh economic conditions compounded by the advent of cheap imports.

The competitiveness of many metal firms has been negatively affected by factors such as increasing input costs and an unstable political environment, especially in the period 2000 to 2008 (i.e. before the birth of the inclusive government in 2009) which saw the incapacitation of the agricultural, construction and mining sectors, the major consumers of metal products.) The inclusive government stabilised the political environment at the time, although foreign investors are still concerned with the indigenisation policy, enacted in 2011 resulting in a

jittery market with little or no FDI flowing into the sector. Up until 2014, investment in the sector has remained very low. The introduction of the multi-currency in 2009 saw a tendency by metal products consumers to for imported products from the global village at the expense of the local industry because of more attractive prices, quality and delivery lead times offered resulting in most metal firms operating at low capacity (10%) with just a few operating at above 50% capacity. The capacity utilisation is expected to decrease if the current trend is not arrested. Thus the sector is anticipating the current situation of low orders for both the home and export markets to continue. Despite maintaining a significant contribution to the economy, the metal industry's share of both employment and GDP figures have been declining as earlier shown in Figs.2.4 and 2.5 above.

2.8 CHAPTER SUMMARY

There appears to be no evidence of integrating social capital, technological capabilities and corporate governance for survival and better performance in this emerging economy. The Zimbabwe manufacturing sector plays an important role in the Zimbabwean economy through creating employment opportunities, downstream opportunities, economic growth and development, poverty eradication and improving the standards of living of people. It is very diverse stemming from the import substitution era where there was a drive to avail goods to a closed up economy. This sporadic nature has not encouraged specialisation and the sector has lagged behind world manufacturing standards. The sector has not fully harnessed technological capabilities necessary to compete better in the international arena given the advent of globalisation. The government has only committed to revive this sector from 2011 after almost 10 years of hyper-inflation which caused serious closures and low capacity utilisation.

CHAPTER 3: THEORETICAL LITERATURE REVIEW

3.1 INTRODUCTION

This chapter critically reviews the literature on technological capabilities (TC), social capital (SC) and corporate governance (CG) and how their integration affects organisational performance. The chapter is divided into four sections. Firstly, it will focus on technological capabilities, the definitions and importance; followed by how firm ownership and size affect the development of technological capabilities. The issue of TC index development will also be pursued and the section will conclude by showing the relationship between TCs and firm performance, highlighting the literature gap and how this study seeks to fulfil it.

Secondly, the chapter will concern itself with social capital, the definition, historical aspects, cultural contexts and development of networks within organisations and how these affect innovation. This will be followed by how firm size and ownership affect social capital development. Finally, it discusses how firm performance is affected by social capital.

Thirdly, the chapter will discuss corporate governance issues, zeroing in on the definitions and key concepts. The different tenets of corporate governance will be discussed. Then: how firm size and ownership relate to CG and also, how CG affects company performance.

Lastly, the chapter will seek to point out the literature on the integration of the three key issues and how they affect firm performance. This is being guided by the following research objectives, to:

- Identify critical determinants of corporate governance
- Isolate interventions at firm level aimed at building social capital
- Assess technological capabilities necessary for improved performance
- To assess the criteria that can be used in integrating social capital, corporate governance and technological capabilities in improving performance in the manufacturing sector

3.1.1 Dynamic Managerial Capabilities

This study uses dynamic managerial capabilities as the theoretical underpinning for the research. The dynamic managerial capabilities (DMC) builds on the resource based view (RBV) which is one of the most widely accepted theories for comprehending organisational

Competitive advantage (Moon 2010, p.458). The basic argument of RBV is that firm performance is affected by the resources and capabilities it owns. The firm with more valuable scarce resources is more likely to generate sustainable competitive advantages (Toms and Filatotchev 2004, p.630). The DMC focuses on the reconfiguration of existing resources and capabilities into new competencies in response to changes in the environment; and globalisation has ushered in this kind of dynamism. While RBV stresses the accumulation of internal resources, DMC stresses adaptation and transformation to meet the demands of the rapidly changing environments.

Appropriately named, “dynamic”, this refers to the capacity to recreate competences in line with changes in the business environment and “capabilities” are the internal and external organisational skills, resources, and functional competences to match the requirements of a shifting environment. Zimbabwe has to face transformation both internally and externally. Internally, with the recovery from almost a decade of economic meltdown from 1999 to 2009 and externally, with the globalisation agenda having taken centre stage. Hence the posits of the dynamic managerial capabilities are very relevant.

The competitive advantage of firms is embedded in three pillars, which are “the firm's business processes, (routines or patterns of current practice through integration, learning, and reconfiguration); market positions (specific assets such as hard-to-transfer knowledge); and paths (path dependencies and technological opportunities; market positions, and expansion paths” (Teece et al. 1997, p.515). Table 3.1 below indicates the attributes of the three pillars of the dynamic managerial capabilities.



Table 3.1: Dynamic managerial capabilities attributes

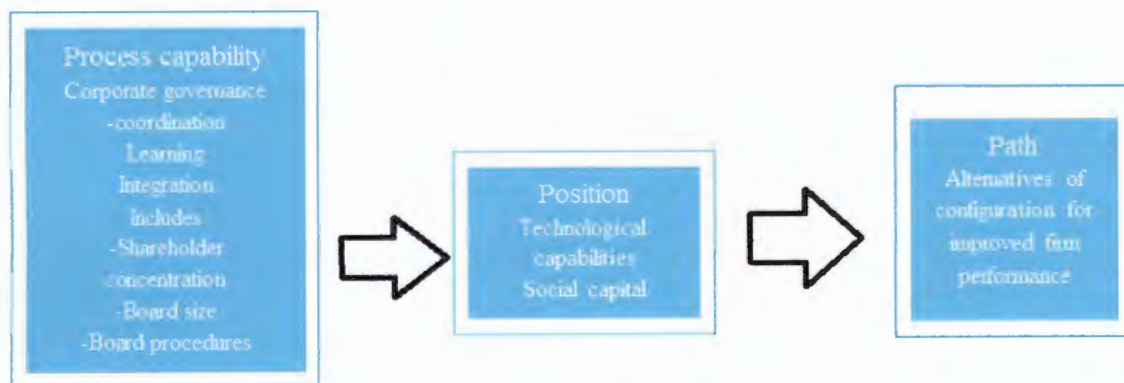
Process capabilities	Position capability	Paths capability
-Coordination/integration: a process of coordinating and combining activity inside the firm. - Learning: a process of repetition and experimentation that allow tasks to be accomplished faster and better. -Reconfiguration: the adaptation and transformation of existing firms for changing environments.	- a firm's specific assets, such as; -technological assets -complementary assets - financial assets - reputational assets - structural assets - institutional assets - market assets -organizational boundaries	-strategic alternatives available to the firm - historical experience that a firm has

Source: Teece et al. 1997

The dynamic managerial capabilities can be used to conceptualise the integration of corporate governance, social capital and technological capabilities for firm performance

The figure 3.1 below mirrors how the three drivers of performance interact with each other for the performance of the firm.

Fig 3.1: Theoretical model



Source: Teece et al. 1997

3.2 TECHNOLOGICAL CAPABILITIES

There is a variety of elements and processes used by firms to develop their activities, be it resources, skill, capability, knowledge, competence and asset. Wang et al. (2006, p.30) define technological capabilities as “the ability to develop, design new products and

processes and upgrade knowledge about the physical world in unique ways, thus transforming this knowledge into designs and instructions for the creation of desired outcomes". Wignaraja (2006, p.3) describes technological capabilities as "the resources that are organized to generate innovations, which may be incremental or radical".

The study on technological capabilities was taken further by Voudouris et al. (2012, p.403) to incorporate internal technological capabilities; they define them as an organisation's internally generated skills, experience and knowledge needed to initiate and manage change in the technologies used by the firm. The accumulation of such skills and stock of knowledge depends upon an organisation's cumulative efforts and investments in both production activities and initiatives toward innovation. In addition, Garcia-Muina and Navas-Lopez (2007, p.33) classify them as strategic technological capabilities which are the generic knowledge intensive ability to jointly mobilise different scientific and technical resources. This enables a firm to successfully develop its innovative products and/or productive processes, by implementing competitive strategies and creating value in a given environment. However, for the purposes of this research, the study of technological capabilities from a Zimbabwean perspective looked at considering the dynamic nature of the competitive technological environment.

3.2.1 Classification of technological capabilities

Wang et al. (2008, p.31) suggest that technological capabilities of a firm are based on multiple criteria, comprising both quantitative and qualitative criteria. On the other hand Garcia-Muina and Navas-Lopez (2007, p.32) propose that classification of technological capabilities is on the basis of the knowledge "exploration-exploitation" argument. This can be explained in terms of experimenting with new alternatives, uncertain results, often negative and far away in time, as well as refining and extension of existing skills and technological paradigms. This is expected to culminate in predictable and generally positive, as well as observable results. In agreement(Jonker et al.2006, p.125) justify a contingency approach to the study of the strategic potential of technological capabilities, implying that potential value is not always defined by the same criteria and that no capability can be considered strategic in all situations.

Science has traditionally demonstrated that any industry will evolve constantly throughout technological cycles. In these cycles, the stages of incremental change during a single technological trajectory alternate with others in an environment of greater uncertainty and

widespread radical innovation (Garcia-Muina and Navas-Lopez 2007, p.34). However, the researcher considered the contingency approach as being suitable for the Zimbabwean manufacturing industry against the background of the changing economic cycles experienced in the Zimbabwean industry since the economic woes of 1999 to 2009.

3.2.2 Types of technological capabilities

3.2.2.1 Investment capabilities

According to Jonker et al., (2006, p.126) investment capabilities are the skills, knowledge and organisation needed to identify, prepare and obtain technology to design, construct and equip an expansion or a new facility. They include capital costs of the project, the selected technology and equipment as well as the understanding gained by the operating firm on the basis of technology involved.

3.2.2.2 Production capabilities

Production capability relates to the know-how necessary to continue producing current products and knowledge and skills to carry out innovations (Iamarino, Padilla-Perez and Tunzelmann (2008, p.1981). In the same furrow, (Jonker et al. 2006, p.126) refer to production capabilities as the ability to administer and improve the operation of established facilities. The skills involved determine not only how well given technologies are operated and improved, but also how well organisational efforts are utilised to exploit technologies bought or replicated from other firms. Furthermore, production capabilities are routine; they can be regarded as the capacity to produce goods at specified levels of efficiency and at given input requirements. Alternatively, they can simply be regarded as technology-using skills, knowledge and organisational arrangements. The more effective and useful the technology, the more successful the business will be (O'Regan et al. 2006, p. 251). In the Zimbabwean context, a case in point Delta Beverages managed to acquire new bottling line machines for alcoholic beverages and soft drinks that gave the company an edge to outcompete imports from the market (Zimtrade 2011).

3.2.2.3 Linkage capabilities

Linkage capabilities refer to the skills, knowledge and organisation needed to transmit information; as well as the technology to receive knowledge diffused from component or raw material suppliers, consultants, service firms and technology institutions (Jonker et al. 2006, p.126). Linkage capabilities also include access to external technical information and support (from foreign technology sources, local firms and consultants, the technology infrastructure of laboratories, testing facilities and standards institutions) and access to appropriate “embodied” technology in the form of capital goods from the best available sources, domestic or foreign. According to authors such as Carmeli and Azeroual (2009, p.156) and Chen and Branstetter (2006, p. 187) an important part of the process of accumulating technological capabilities involves building various kinds of networks within which firms can interact in leveraging unique technological resource combinations. Interaction may take place for the purpose of gathering information about technologies and markets, and also for obtaining various other inputs to complement the internal knowledge (Yam et al.2011, p.392). Some of these linkages involve supplier–customer relationships; others involve various technology collaboration arrangements between competing as well as complementary firms, and others involve interactions with public assistance or other research institutions (Voudouris et al. 2012, p.403). Linkages can build capacity for local firms and launch them into the global economy (Jaspers and Mehta 2007p.5).

3.2.2.4 Innovation capabilities

According to Tödtling et al. (2008, p.8) innovation capability consists of creating and carrying new technical possibilities through to economic practice. Similarly, Wang et al. (2008, p.35) adopted the same position, defining innovation capability as the skills and knowledge that are needed for the effective absorption, mastering, and enhancement of existing technologies and the creation of new technologies. Wignaraja (2006, p.30) widens the definition of innovation technological capabilities to include a wide set of changes in processes, products, organisations and marketing, activities such as the purchase of equipment. Licensing is also taken as part of innovation. In fact, Teece (2007, p.691) suggested that it is more realistic to view continuous renewal as requiring an ongoing set of activities and adjustments that can be divided into three clusters: identification and assessment of an opportunity (sensing), mobilisation of resources to address an

opportunity and to capture value from doing so (seizing), and continued renewal (transforming). Collectively, these are taken as a firm's dynamic capabilities and are required if the firm is to survive through the changes in markets and technologies through innovation (Teece 2010, p.692). For example, Apple the producers of the popular iPhones, always make sure that they move with the latest innovation and technological advancement. They keep revising and re-versioning its iPhone device with splendid features that seldom miss the users' desire- hit list or imagination (<http://EzineArticles.com/7289786>).

Chipika and Wilson (2006, p.974) argue that there can be no form of innovation anywhere, without the means to innovate and this is where technological capability is of paramount importance. Therefore the identification of factors allowing and enabling firms to innovate is important for policy, especially when focusing on developing countries. As a means of developing innovative capacity within a firm, Chipika and Wilson (2006, p.975) posit that developing good customer networks is vital for process improvement both in terms of productivity and quality.

In terms of performance however, there are mixed results across the globe with researches carried out both in emerging and developed countries showing that innovation is not significant to firm performance (Hatzikian 2012, p.15; Darroch 2005, p.111 and Choi & Williams 2013, p.437). On the contrary, however, other researchers indicate the absence of country effects. As Atalay et al.(2013, p.232) and Li et al.(2006, p.692) found, innovation is positively associated with firm performance. In the Zimbabwean context, the larger firms are part of multinational groups and could be borrowing technology from their sister companies or have centralised research and development. Therefore, there is no need for local technological development. In the same furrow, Shiferaw (2007, p.130) in his study of Ethiopian firms, concluded that companies in development countries rarely embark on innovative activities.

3.2.3 Research and Development (R&D) Capabilities

According to Grimpe & Kaiser, (2010, p.1489) R&D is used to indicate level of activity in developing technological capabilities. Focus on R&D efforts produces an intermediate good that is firm-specific knowledge and this plays a dual role. Firstly, it exerts an impact on the firm's ability to screen and access the available technological options; and second, it enables the firm to put them to productive use and exploit technology benefits. However, beyond R&D as a formally organised activity, an organisation's technological knowledge is

strengthened by the evolutionary acquisition and assimilation of information provided through continuous activation in the day-to-day technological activities of the firm (Jonker et al. 2006, p.127).

Firms that systematically try to sort out their technological problems internally, and adapt or upgrade their technological equipment without placing reliance on third parties, increase their technological learning, which yields important intangible “assets-stocks”, resources that cannot be instantaneously developed. In other words, further than learning based on in-house R&D (Wang 2007, p.33), a firm also internally generates learning-by-doing and learning-by-using. Garcia et al. (2011, p.36) argue that when faced with new technologies, a firm that heavily invests in R&D is in a better position to discern its potential usefulness, combining it with current knowledge and applying it in its operations, thus improving performance.

3.2.4 Technological capability development

For the development of TCs within industries, a certain degree of technological diffusion is essential. Taking from the contribution of Wang et al. (2006, p. 35) technological diffusion is considered as the “building blocks that develop TCs of latecomer firms in developing countries”. Latecomer firms are regarded as firms residing in developing countries with limited access to cutting edge technologies and advanced markets. Thus the study highly emphasised technological catch-up and encouraged firms to develop a catch-up strategy through acquiring technology developed elsewhere, as opposed to innovating on the technology frontier with their counterparts in advanced countries. Studies in the Far East, (Branstetter& Chen 2006, p.190; Bilgin et al. 2012, p.495 and Hu et al. 2003, p.13) have noted that technology is significantly related to firm performance. In the same vein, firms in developing countries can benefit from knowledge spill-overs and fully develop their TCs by engaging local sites, that is, the universities, research institutes, and other industrial firms, to get access to R&D personnel, knowledge, and technical services (Voudouris et al.2012, p.410).

Voudouris et al. (2012, p.410) have also emphasised the need for networking and the strategic importance of strategic investment as key to the development of a firm’s TCs. Whilst networking tends to concentrate more on creating synergistic effects, strategic importance of technology investment seems to have an important direct influence (Voudouris et al.2012, p.410). Still on the subject of networking, and in a study of four light engineering SMEs in Zimbabwe, Chipika and Wilson (2006, p.970) agree that there is a clear and positive

association between networks and technological learning. In this way, networks have been taken as a means of promoting technology learning.

3.2.5 Measuring technological capabilities

Archiburgi and Coco (2004, p.403) propose a Technology Index (TI) to measure firms' asymmetries in technological capabilities (TCs). A TI is first constructed by allocating a score to each activity, based on the firm's level of competence in that activity. The activities are based on the firm's competence in (i) upgrading equipment, (ii) licensing technology, (iii) International Organization for Standardization (ISO) quality certification, (iv) process improvement, (v) minor adaptation of products, (vi) introduction of new products, (vii) research and development (R&D) activity, (viii) subcontracting, and (ix) technology linkages (Wignaraja 2012, p.230). Summing up these scores, an overall score of firms' TCs is obtained; the result is normalised to give a value between 0 and 1, and this is regarded as the overall TI of the firm (Wignaraja 2007, p.3). The TI's main strength is that it is a simple and practical way of comparing inter-firm differences in capabilities. One of its weaknesses concerns the difficulty to communicate the exact meaning of the score that should be accompanied by detailed complementary qualitative analysis. In a study conducted in China's automobile and electronic firms by Wignaraja (2012) it was concluded that a higher TI is likely to result in a higher probability of exporting.

Other means of measuring TCs involves the use of expenditures in R&D, in technical skills improvements, and in the output of innovation via patent indicators, for instance, patent registration (Archiburgi and Coco 2005, p.183). Patent registration is a valuable indicator of firm performance. Research by Simeth & Cincera (2013, p.16) found patent registration positively associated with firm performance. Contrary to this, however, Decarollis & Deeds (1999, p.964); Choi and Williams (2013, p.438); Coombs & Bierly (2006, p. 433) found to the contrary as patents are not a measure of the actual use of the innovation.

In addition, the use of R&D expenditure can also be used as an indicator of firm performance (Huergo 2006, p.2) recommended R&D expenditure as the classic measure of formal innovation activities, and it is considered the most relevant input for knowledge production. . Some researchers discovered that expenditure on research and development is positive, but not significant to firm performance (Coombs & Bierly 2006, p.433; Branstetter & Chen 2006, p.190 and Yam et al. 2011, p.397). Others have noted that expenditure on R&D was positive and significant to firm performance (Decarolis & Deeds 1999, p.964 and Hu et al. 2003,

p.13).In addition, Guan et al. (2006, p.975) went on to recommend the combination of sector R&D expenditure with the input–output table .In order to measure the techno-economic flows, the adoption of network analysis can be used to investigate where the technology comes from and where it goes. Considering the results of previous researches conducted so far on using TI and R&D as measures of the firm’s TCs, the researcher feels that the use of TI would be more appropriate in developed countries, since it takes into cognisance quite a number of variables, as opposed to developing countries which might not have all the stated indicators.

3.2.6 TCs and firm success

Firms with high levels of internal technological capability have the potential to keep up with the latest technological developments, and are enabled to recognise, appraise and assimilate new technologies, so as to accomplish successfully any process of technological change In accordance with the findings of Wignaraja (2007, p.4), variables such as firm size and national knowledge richness have significant impacts on the technological capabilities of firms. Also, large companies are able to employ a vast number of highly specialised R&D staff, which in turn can improve a firm’s learning and technology development, thus impacting positively on the firm’s success.

3.2.7 TCs and innovation

Chipika and Wilson (2006, p.970) went on to propose a circular relationship between innovation and technological capabilities: “the need to innovate creates a demand for technological capability, while for firms to learn technologically, a certain level of technological capability is needed”. In agreement, Adeoti and Adeoti (2010, p.353) add that technological capability is a major determinant of innovation capacity. According to Dada et al., (2010, p.154) new capabilities (absorptive and innovation) are of central importance in almost all economic sectors as they lead to key elements necessary for the transformation of economic systems. The capabilities are required in order to adopt, adapt and modify technologies developed elsewhere, introduce modifications and incremental innovations and eventually generate totally new products and processes (Dada et al. 2010, p.155).

The development of capabilities based on technological knowledge is, therefore, considered to be one of the basic foundations of business competitiveness, especially in technology-

intensive industries (Jonker et al. 2006, p.126) Any method assessing the role of the innovation system supporting the acquisition and development of technological capabilities in firms has to bring together both the firm and the regional technological capabilities (Padilla et al.2009).

3.2.8 Importance of TCs in the manufacturing sector



Technological capability is defined by Wang et al. (2006, p. 30) as “the ability to develop, design new products and processes and upgrade knowledge about the physical world in unique ways, thus transforming this knowledge into designs and instructions for the creation of desired outcomes”. In agreement, Wignaraja (2002, p.88) posits that it involves the skills; knowledge and experience that enterprises need to operate technology efficiently. TCs entails the amassed technological knowledge accumulated over a period of time which the firm can employ and deploy when developing new products or services and improving existing ones (Kylaheiko et al. 2011, p.510). The advent of the knowledge based economy has made the acquisition of knowledge crucial; research has indicated a correlation between superior knowledge and competitive advantage as postulated by Teece (2010, p.513) in his study of dynamic managerial capabilities. He advocates that competitive advantage is well determined by organisational capabilities and core competences and their applications rather than the differences in industry characteristics. The idea then is to combine the specialised knowledge embedded in individuals, otherwise known as human capital, with specific organisational activities to enable innovation. in this way, TCs are now acknowledged as a resource necessary for superior performance. They have a long term impact on the growth and performance of firms especially in developing countries (Iammarino et al.2008, p.1981). The newly industrialised economies of East Asia are a case in point, where strong development of TCs has resulted in rapid export growth (Wignaraja 2007, p.88). Hence, it can be agreed that TCs have a positive connection with an innovation-based growth strategy (Kylaheiko et al. 2011, p.511).

As noted, TCs are not quick fixes, but are a result of interactive learning and linkages between a number of participants (Szogs 2010, p.5; Hu et al. 2003, p.20; Palacios-Marque’s et al. 2013, p.981). Some such participants can be universities which are the centres of knowledge, technical training institutions responsible for practical application, the government which is the custodian of national policy, research institutions which create and

diffuse technology and firms themselves. Such human resource development has an impact on the performance of organisations (Thang&Buyens 2008, p14; Schwager et al. 2000, p.101). Strong linkages culminate in skills knowledge and infrastructure conducive to the development of TCs. The development of TCs in the manufacturing sector in Zimbabwe for instance would mean the upgrading of all actors.

3.2.9 Firm ownership and TCs

According to Wignaraja (2007, p.4), there is a difference between foreign and domestic firms' approach to TCs. Foreign firms tend to invest more in modern equipment than domestic firms. He indicated that as much as 50% of the foreign firms' equipment can be considered as new as opposed to 25% for domestic firms. This is one of the reasons that foreign firms perform significantly better than domestic firms. In addition (Wang et al. 2006, p.29) claim that a firm has to be active in many markets to capture successfully the fruits of innovation, which are improved TCs.

In addition, foreign firms have better human capital in terms of skills levels, education attained and experience (Wignaraja 2007, p.5). TCs involve a whole array of issues, including the technological skills of the individuals and teams (Kylaheiko et al. 2011, p.511). They also involve the processes and routines followed, and other technological assets such as machines and information(Kylaheiko et al. 201, p.511) which cannot come up over-night, but require rigorous investment and experienced human capital to create stocks of new technology and science-based knowledge that generates profit for the firm (Wignaraja 2007, p.5). TCs are also built on a foundation of resources both tangible and intangible. Tangible refers to physical and financial; intangible refers to networks, reputation and brand equity. Since foreign owned firms have these, they have a firm foundation on which to build their TCs (Shi 2009, p.187). TC development also involves elements of risk taking; the risk attributes of owners will affect the investment in TCs. According to Wu (2008, p.141), the owners through management are at the apex of the organisation and have the mandate to allocate resources. The risk attitude, personal interests and managerial focus must all be in congruence towards the development of TCs.

3.2.10 Firm size and TCs

According to Wignaraja (2007, p.5), firm size is significantly linked to the development of TCs. In agreement, Iammarino et al. (2008, p.1993) posit that TCs are closely associated with large plants that have the financial muscle and human capital to commission complex production processes. As pointed out by Szogs (2010, p.30), successful technology transfer requires requisite capabilities in the receiving entity. Therefore, larger firms are well placed to acquire the technology and their skills base can be utilized to adapt new technologies to local needs if need be. Given the relationship between ownership and firm size, and the fact that larger firms are generally foreign owned (Wignaraja 2007, p.5), they take advantage of their ownership to upgrade manpower skills and equipment. In the developing economies context, domestic firms that are smaller do not invest in research and development, generally relying on technology diffusion to boost new technology. On the other hand, larger firms invest heavily in research and development coming up with new products, processes and information (Iammarino et al. 2008, p.1994).

3.2.11 Skills development and TCs

TC development is closely related to the ability a firm has to innovate, to come up with new ideas. According to van Kleef and Romme (2007, p.38) this can be achieved through development of employees. They further argue that the existing employee knowledge base will enable the firm to acquire new TCs by means of imitation, licensing, partnerships, acquisitions and adaptations. It takes a level of appreciation of the appropriate technologies in order to develop relevant capabilities for a firm (Kylaheiko et al. 2011, p.512).

Institutions of higher learning are critical participants in creating and transferring knowledge (Szogs 2010, p.32). Thus the presence of universities in a region or country should provide the necessary and relevant skills for TC development suitable for that region. University to industry collaboration is a key element in promoting applied research earmarked at developing TCs (Iammarino et al. 2008, p.1995; Lee et al. 2001, p.630). They further note that universities have been significant developers of product centred capabilities, while process related capabilities were the mainstay of equipment providers. Technology is by no means static and as it evolves, so should organisations train and re-train to keep technical and managerial skills up to date (Wignaraja 2007, p.8).

Although in many cases private enterprises are at the forefront of investment in technological advances, research has shown the importance of effective cooperation between firms, knowledge providers such as universities, and technical training institutions, which are critical actors in development of and publication concerning TCs. Publication in scientific journals, although costly, had been positively associated with firm performance (Simeth & Cincera 2013, p.6 and Decarolis & Deeds 1999, p.964) making it an important indicator.

According to Wignaraja (2007, p.89), the development of TCs in developing countries is affected by national policy and institutional factors: country strategies, science and technology institutions and profitable strategic alliances. In the Zimbabwean context for instance, a Ministry of Science and Technology was set up in 2008 to foster TC development in cognisance of the role TCs have in economic development. Furthermore, the government has a role to play in TCs development in the form of crafting policy and the creation of an enabling environment. Special sector specific initiatives and government funding for university-industry linkages, technology diffusion and human resource development go a long way to bolster TCs in a country (Iammarino et al. 2008, p.1995). In Zimbabwe, two state universities namely the National University of Technology (NUST) and Chinhoyi University of Technology (CUT) established in 1991 and 2001 respectively have been given Science and Technology as their niche areas. Technical colleges, which are government run, also support TC by training artisans who are on campus at least half of their training period.

Iammarino et al. (2008, p.1995) also point out that industry associations, in addition to supporting members with their legal and administrative requirements, play a role in strengthening TCs. This can be in the form of human resource training, acquisition of market intelligence, identification of relevant university programmes, and negotiation for appropriate degree curricula and establishment of networks.

3.2.12 TC development

Innovation is seen as the process of discovery and development that creates new products, production processes, organisations, technologies, institutional and systemic arrangements, a process of creating new ideas (Kleef and Romme 2007, p.39). Innovation has been identified as a primary source of economic growth and industrial change especially in a firm's operating environment. Innovation is the means by which firms develop and sustain themselves in a competitive environment (Chipika and Wilson 2006, p.970). The Zimbabwe situation of

decades in a closed economy, followed by rapid liberalisation, then debilitating economic woes, is such an environment, requiring innovation and quick adaptation to meet capacity utilisation and performance goals. Innovation can take place in any sphere, but is closely related to technology in the manufacturing sector where technology driven processes have taken centre stage.

The literature distinguishes between different innovations, namely incremental, radical, technological, process, product, organisational, operational, managerial, social, or institutional (Kleef and Romme 2007, p.41). Innovations in developing countries are incremental in nature, building on innovation from elsewhere. On the sectorial level, the manufacturing sector requires innovations such as technological, process, organisational and managerial due to the interdependent nature of production systems.

Innovation is closely supported by institutional frameworks, infrastructure and policy instruments. Innovations can only flourish where a conducive environment exists. Szogs(2010, p.33) points out that in developing countries, institutional frameworks are characterised by institutional inappropriateness, inadequacy to foster innovative activities and a lack of physical and human resources. Universities and technical colleges are institutions which are viewed as sources of innovation. They can therefore be the main actors in industrial innovation (Tödtling et al. 2008, p.9). As centres of knowledge, they are closely linked to the development of TCs in terms of infrastructure, information technology, electricity and internet access drive innovation, and in turn, technological capabilities. The lack of such infrastructure hinders the development of technological capabilities (Rud 2011, p2). Research has the view that infrastructure has an impact on firm performance (Wernerfelt 1984; Tanriverdi 2005; Liang & Liu 2010; Huang et al. 2009).

3.2.13 ISO Certification

Global competitiveness has increased the quest for ISO certification and Zimbabwean manufacturing companies are also in a bid to obtain some form of certification as part of the recovery strategy. Certification is supposed to have a positive impact on competitiveness, capacity utilisation, employee motivation and retention and organisational communication (Goriwondo et al. 2012, p. 32). Even though it would be beneficial, Zimbabwe firms in the manufacturing sector received only 0.001% of global manufacturing sector certification in

2012 (ISO certification survey 2012), which is really a drop in the ocean. This might be a matter of the cost, since certification costs upwards of US\$10 000, excluding annual audits and preliminary costs of training, process adjustments and documentation. Though ISO certification focuses mainly on operational improvement, there is also a great interest on its effect on firm performance. Studies before 2000, when ISO certification gained momentum, indicated no positive relationship to firm performance (Simmons and White 1999, p.339). However, later researchers in emerging economies have noted that there is a significant relationship between ISO certification and firm performance (Lafuente et al. 2009, p.650; Al Refaie et al. 2012, p.2012 and Starke et al. 2012, p 991). This was confirmed by results obtained in research of firms in the United States (Corbett et al. 2005 p.1055). In Zimbabwe, Chikuku et al. (2012, p 4178) have noted a rise in return on assets once a company was certified.

3.3 Social capital

Research has traditionally focused on three types of capital, namely natural, physical and human capital; these were considered the basis for economic development and performance (Zhang & Fung 2006, p.198). It is now recognised that these three types of capital can only partially determine the process of economic growth, the important missing link being social capital. There is growing empirical evidence that these traditional forms of capital need to be augmented with social capital in order for sustainable economic development to be achieved. Prior to the 1990s, social capital seemed to be a preserve for sociologists (Bourdieu 1986 and Coleman 1988) and subsequent work was by political scientist Robert Putnam (1993; 2000) who added the dimension that social capital aspects are a form of investment. Later social capital research and discussions have made inroads into economic analysis and other scientific disciplines; it is now recognised as the missing link in the process of business growth and performance. Social capital has no universally accepted definition. Various definitions have been put forward for this concept. Adler & Kwon (2002) carried out extensive work in categorising existing definitions of social capital. The idea was to group the definitions according to the views on social capital, which basically categorise the sources of the capital. These ideas are as follows:

The first group focused on an external view known as bridging social capital, which is outward looking. It believes that social capital is a resource that is entrenched in the social

networks or structures that actors belong to (Adler & Kwon 2002, p.20). The second group of definitions focuses on the internal view known as bonding social capital, which is inward looking – where social capital is derived from and shared by members of a homogeneous group. The definitions focus on social capital's cohesiveness and collectiveness to facilitate a communal goal. The third group is impartial to the internal/external imperatives and social capital is defined as “the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit” (Adler & Kwon 2002, p.20).

The definitions of social capital as discussed in the literature are illustrated in Table 3.2 below.

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Table 3.2: Definitions of social capital.

Reference	Definition	
Coleman 1990, p. 302	"Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of social structure, and they facilitate certain actions of individuals who are within the structure".	INTERNAL
Putnam called it the "bowling alone" phenomenon (2000).	Features of social organization, such as networks, norms, trust, that facilitate coordination and cooperation for mutual benefit	
Putnam 2004,pg 1436	Social capital is social networks and the norms of reciprocity that come with it.	
Tsai & Ghoshal 1998, p. 465)	Social capital encompasses social ties and trusting relations that are useful to members of that context	
Molina- Morales & Martinez –Fernandez 2010, p. 261	Social capital consists of the norms and social relations embedded in the social structures of society and enable people to coordinate action and to achieve desired goals	
Cohen & Prusak (200, p. 4)	Social capital consists of the stock of active connections among people: the trust, mutual understanding, and shared values and behaviours that bind the members of human networks and communities and make cooperative action possible.	EXTERNAL
Bourdieu 1995, p.51	"Social capital is the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationship of mutual acquaintance and recognition..."	
Nahapiet & Ghoshal (1998, p.243) adopt a resource-based view	As the sum of the actual and potential resources embedded within, available through, and derived from the network of relationships possessed by an individual or social unit	NEUTRAL
Adler & Kwon (2002, p. 23)	Social capital is the goodwill available to individuals or groups. Its source lies in the structure and content of the actor's social relations. Its effects flow from the information, influence, and solidarity it makes available to the actor."	

3.3.1 Common threads running through Social Capital definitions

There is however some common threads than run through these definitions. On the issue of networks, Chipika & Wilson (2006, p. 971) state that these involve sustained relationships that are mutually beneficial to the parties involved, not just one of the actors. Closely related

to this is the notion that social capital is available to those people who are part of a certain social structure, as a function of their location in that structure (Molina- Morales & Martinez –Fernandez 2010, p. 261). This encompasses an element of cooperation, largely undocumented reciprocal relationship, as opposed to a business linkages relationship, commercial dealings between separate profit oriented enterprises. They further point out that well networked firms tend to perform better than their counterparts in the same industry. In agreement, Molina- Morales & Martinez –Fernandez (2010, p.261) indicate that by interacting with one another, firms have an opportunity to acquire new knowledge and to improve on the knowledge they already possess.

Another common thread is that social capital has been noted as a productive resource comparable to physical and human capital and can contribute to a company's ability to innovate (Tsai & Ghoshal 1998, p. 465). The basic premise is that the social ties or relations that exist within and outside organisations is a valuable resource (Adler & Kwon 2002, p.17) which according to Carmeli & Azeroual (2009, p.156) and Chen & Branstetter (2006, p.187) is a strategically important intangible resource which has increasingly become crucial in the knowledge economy and has a greater potential than tangible resources to produce competitive advantage. It has the economic function in the accumulation of other kinds of resources as it can substitute for or complement other forms of capital (Zhang & Fung 2006, p.199). Through networking relationships, organisations are exposed to high quality information about products, innovations, technological capabilities, marketing and new opportunities faster than they would without them (Acquaah 2007, p.1239). These social groups determine access to resources which they would not have apart from being a member of the group (Molina- Morales & Martinez –Fernandez 2010, p. 261). Further, this exchange of resources with other players in the network, suppliers, buyers, competitors, and regulators has been viewed as critical for an organisation's survival (Gulati & Sytch 2007, p.35). In the Zimbabwean context from 2010, companies with international networks like multinational companies seem to be recovering faster than local ones making international social capital an indispensable resource.

On the issue of benefits, social capital allows organisations to acquire information which leads to the creation of knowledge and can be exploited for the benefit of the organisation (Acquaah 2007, p.1239). It is believed that the types and mix of the networks to which a firm belongs have a strong influence on its exposure to new ideas, new opportunities and to new

knowledge (Zhang & Fung 2006, p.204). Information has been widely regarded not only as one of the key benefits of social capital (Wu 2008, p.123) but as having a key influence on the performance of organisations. According to Lee, Lee & Pennings (2001, p.620) having ties with focal firms in the sector, firms that have higher levels of social capital and clout, can propel smaller firms to greater level of knowledge acquisition and creation. Focal firms have the power to negotiate and make referrals to third parties. The potential benefits of social capital are translated into a firm's concrete competitiveness improvement through information sharing which is the exchange of business and market information between actors. Information sharing has been treated implicitly as an important link between social capital and performance (Wu 2008, p.123).

Another common thread is the issue of trust. Social capital involves trust between and among players as it is acquired through working together within the same organisation. This is known as internal social capital. According to Tian, Haleblan & Rajagopalan (2011, p.734), this social capital is acquired through trust relationships through utilising actors' experience in leading, managing and procuring for organisations. In agreement, Adler & Kwon (2002, p.17) note that the group forms a bonding type of social capital from working together and sharing experiences. The groups understand each other's level of expertise, and as a group enable each other to have access to information which is down each other's ally (Tian, Haleblan & Rajagopalan 2011, p.734). Trust is defined by Zaheer, McEvily & Perrone (1998, p.209) as being the belief that an organisation is dependable and can be relied upon to fulfil its obligations and to be fair in its negotiations, even if it has an upper hand. According to Nahapiet & Ghoshal (1998, p.20) trust has four facets: "belief in the good intent and concern of exchange partners, belief in their competence and capabilities, belief in their reliability, and belief in their perceived openness".

Organisations have been viewed as vulnerable, and are susceptible to the uncertainties of the environments within which they operate (Gulati & Sytch 2007, p.35). Trust enables information sharing as it is easier to disseminate information in a relationship with trust. Wu (2008, p.130) notes that trust is positively correlated with increased information sharing in supplier-buyer relationships. External social capital can be developed with related or unrelated organisations outside the firm, for instance, where executive managers as members become members of other boards and can acquire valuable insights and information for their

own organisations. These external trust relationships can extend to community and political leaders in emerging markets (Acquaah 2007, p.1238). The polarised political arena in Zimbabwe has given rise to a situation where a referral by political gurus opens many doors, having great impact on business performance.

3.3.2 Social capital accumulation

The acquisition of social capital is a deliberate, intentional and conscious investment of both economic and cultural resources carried out by organisations (Zhung& Fang 2006, p.198). Like any other investment social capital needs to be managed over time. The investment can be short term or long term as postulated by Zhung& Fang (2006, p.205) who noted that short term investments in entertainment and donations had a positive effect on profitability and sales of Chinese organisations. In contrast, Putnam believed that social capital is accumulated over a long period of time with cultivation efforts every year. Added to that, organisations that are strategically related and are rich in social capital are likely to accumulate networks faster than those with less (Tsai 2000, p.935).

Inasmuch as social capital is accumulated, it also depreciates over time as posited by Prashantham &Dhararaj (2010, p.978). The reasons for depreciation differ, but the most prevalent is diminished interaction with network actors, reduced investment into social capital and substitution of networks by others. They add that some network relationships simply become obsolete as they are no longer needed in the firm's existing context (Prashantham &Dhararaj 2010, p.988). They suggest that network expansion is a way to prevent depreciation and replenish social capital continually. As Zimbabwe recovers economically from 2009, the initial stocks of social capital will be insufficient for development and growth and some networks that were indispensable during the recovery process will become obsolete as the country establishes new ones. Prashantham and Dhararaj (2010, p.980) also bring to the fore the issue of "utility life cycle" of a network where no more opportunities can be derived from the relationship and thus it depreciates.

3.3.3 Dimensions of social capital and social capital interventions

Early research on social capital suggested that it exists in different forms (Coleman 1988) or dimensions (Koka & Prescott 2002; Nahapiet & Ghoshal 1998). These include trustworthiness, information-flow capacity, and cognitive relational and structural social

capital. It is structural in the sense that it is inherent in the structure of relationships between actors (Rostila 2010, p.310), structural being the extent of intensity of involvement in associations. This dimension is more quantitative in nature as the number of associations and level of participation can be quantified. Social capital cannot be lodged in individuals, but is a result of existing relations that bring about collective benefits and results. Social capital has a relational dimension because it takes relations of actors to exist. The cognitive aspect is a belief in trust, solidarity and reciprocity, which lean heavily on the qualitative nature (Rostila 2010, p.312). Different dimensions of social capital not only have different information benefits, but also have different influences on firm performance (Wu 2008, p.125).

The less tangible side of social capital that refers to values, beliefs, attitudes, behaviour and social norms is termed here *cognitive* social capital. These values include the trust, solidarity and reciprocity that are shared among members of a community and that create the conditions under which communities can work together for a common good. *Structural* social capital includes the composition and practices of local level institutions, both formal and informal, that serve as instruments of community development. Structural social capital is built through horizontal organisations and networks that have collective and transparent decision making processes, accountable leaders, and practices of collective action and mutual responsibility.

These dimensions were further classified into bonding, bridging and linking social capital (Zhang & Fung 2006, p.199). Putman (2000, p.20) suggests bonding social capital, which refers to the social capital generated and shared by members of a relatively homogeneous group and is inward looking. Bonding social capital refers to the intra-community ties that members can depend on in situations of need (Wallis, Killerby & Dollery 2004, p.249). Bonding social capital is upheld as a firm foundation for reciprocity and for creating solidarity. Bridging social capital refers to the social capital generated and shared through interconnections between heterogeneous groups (Putman 2000, p.23). Bridging social capital is outward looking, focusing on inter-community ties which cross social divides, like ethnicity, gender and socio-economic status. Although these are unlikely to be as strong as the intra-community ties that give rise to bonding social capital, it would seem that a combination of both is required to open up a path of economic advancement (Wallis, Killerby & Dollery 2004, and p.249). Bridging social capital is suitable for the creation of valuable

external links and facilitates cooperation and information flow (Rostila 2010, p.313). The concepts of bonding and bridging social capital contain elements of norms of behaviour and societal structures in that they indicate both a tendency for people to act in a certain manner (Putnam 2000, p.21).

A further subcomponent was added by Szreter & Woolcock (2004, p.655) who came up with the concept of linking social capital. These are links formed by communities with economic, political and social institutions. In agreement Van Oorschot, Arts & Gelissen 2006, p.152) describe linking social capital as ties connecting actors to people or groups in positions of political or financial power. Linking social capital works best in a situation where the people trust the organs of the state (Van Oorschot, Arts & Gelissen 2006, p.152). When put together, the combination of bonding, bridging and linking social capital affects the productive capacity of the actors (Nardone et al. 2010, p.64).

Well summarised by Wim Van Oorschot, Wil Arts and John Gelissen (2006, p.151):

Bonding social capital is often protective and exercising close membership and therefore good for undergirding specific reciprocity and mobilizing informal solidarity; in other words, it cements homogeneous groups and facilitates economically disadvantaged individuals and groups to 'get by'. Bridging social capital, however, is often civically engaged, narrows the gap between different communities and exercising open membership and is therefore crucial to organized solidarity and to 'get ahead'.

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3.3.4 Social capital and firm performance

The influence of social capital on firm performance has been well documented in literature. The influence may not be direct because social capital works as a catalyst in converting the networks into other forms of capital which can be considered the raw material for economic wealth and in turn contributes to firm performance (Wu 2008, p.122). The results from studies to date confirm that social capital may result in capital accumulation, skill acquisition, innovation, the transfer of information and technology, and reduced transaction costs. In addition, social capital may facilitate the management of common property and provision of public goods, increase investment, and reduce the social costs of crime, corruption and other forms of non-cooperative conduct. Alternatively, low levels of social capital may impede economic activity by limiting the viable range of transactions (including the exchange of

ideas), particularly in an environment of social polarisation (e.g. income inequality or ethnic tension). The evidence to date also indicates that social capital has a diminishing marginal rate of return (i.e. social capital is more valuable in developing countries (Wallis, Killerby & Dollery 2004, p.246).

Social capital reduces transaction costs and helps the diffusion of new knowledge and adoption of new technologies. Depending on the quality of information, in terms of its detail, accuracy, and timeliness and exchange process, social capital can be instrumental in the performance of a firm (Gulati & Sytch 2007, p.42). Social capital may also facilitate production through greater provision of public goods, improved management of common property resources, and lower social costs.

Davidsson and Honig (2003, p.17) find a significant positive association between social capital and performance. According to the resource-based view, a firm's competitive advantage is achieved by controlling the endowment of rare, valuable, non-substitutable, and inimitable resources and capabilities (Tödtling 2008, p.7). However, in today's increasingly dynamic business world, more and more firms are starting to find themselves trapped in the uninviting situation that their existing firm-specific resources and competencies are no longer sufficient to maintain their competitive advantages.

To out-perform their competitors, firms are increasingly motivated to seek harmonising resources and develop new capabilities through collaboration with other firms and even longstanding competitors in the form of both formal and informal networks such as strategic alliances. Social capital is critical source of knowledge and skills for the creation of the inimitable value-generating resources that are intrinsic in a firm's network of relationships. It allows people to benefit from knowledge accumulated by close contacts and associates. With the growing importance of the role of business networks in enhancing a firm's competitive advantage, the social capital–performance relationship has emerged as a prominent research area of strategic management (Gulati et al. 2000, p.203).

3.3.5 Social capital in emerging economies

The impact of social capital on new ventures has been of particular interest in recent years. Social capital has been shown to contribute to new venture formation and growth in several ways, including motivating nascent entrepreneurs through the start-up process. In China social capital is an important and natural phenomenon as the country is a traditionally network-oriented economy, more so than its western counterparts where individualism is celebrated. In China it is known as *guanxi* (personal connections), which is a special kind of social capital based on favour, trust and interdependence and on unwritten but well understood norms of reciprocity (Szeto, Wright & Cheng 2006, p.426). They further posit that business decisions are driven by these reciprocal obligations, which have an important lubricating function. This has been deemed unethical, a form of corruption, by westerners doing business in China. It has however been revered as the most effective way of doing business in an emerging economy where institutional structures are not yet fully functional (Szeto, Wright & Cheng 2006, p.426). In emerging economies such as Africa, social capital takes on a collectivistic stance in tandem with a culture that reveres traditional leaders, and the influence of strong interpersonal ties among individuals and families (Acquaah 2007, p.1238).

3.3.6 Social capital and innovation

The combination of internal and external networks can assist firms to propel innovation. Firms in developing countries are resource constrained and social capital can enhance their ability to acquire knowledge. According to Yli-Renko, Autiou&Sapienza (2001, p.588) firms can use networks to acquire and exploit knowledge and this can be a source of competitive advantage. Smendlund (2008, p.72) suggests that in knowledge creation, which leads to innovation, there are three types of social capital. There is that social capital necessary for the creation of knowledge, another type for the transfer of knowledge, and a third for the implementation of knowledge. He terms these networks for potential knowledge, tacit knowledge and explicit knowledge. As a result of this article, it is suggested that there are three different types of social capital to leverage competencies in the knowledge-based economy. First, there is social capital to leverage competencies related to potential knowledge – to create knowledge. Second, there is social capital to leverage competencies related to tacit knowledge – to transfer knowledge. And finally, there is a certain type of

social capital to leverage competencies related to codified knowledge – to implement knowledge.

3.3.7 Social capital measurement

Social capital measurement has received a lot of attention in literature. Researchers have proposed different indicators for measurement that mainly depend on the context of the research. As suggested by Patuny&Svendensen2007, p.34) measures such as membership in voluntary organisations, and a number of network ties can be used. They further posit that measurement can be focused on different social capital aspects such as trust scores. In his research comparing northern and southern Italy, Putnam (1993) examines social capital in terms of the degree of civic involvement, as measured by voter turnout, newspaper readership, membership in choral societies and football clubs, and confidence in public institutions. Northern Italy, where all these indicators are higher, shows significantly improved rates of governance, institutional performance and development.

Table 3.3: Summary of social capital variables

Variable	Description
Presence of networks	Does the company possess any networks?
	What proportion of business has come from the networks?
	How many business ties does the company have?
	How strong are the ties?
Level of trust	On average, what is the level of trust in the network?
Frequency of interaction	How frequently do the network members interact?
	How many business associations did a company belong to?
Investment in networks	How much was spent on donations?
	Does the company have an entertainment budget(an indicator of investment in social capital)?
	What is the portion of the company budget to entertainment?
Liaison with government	To what extent does the company liaise with government?

3.3.8 Summary

In summary, while the role of social capital is well covered in the literature, the mechanisms through which it operates over time remain poorly understood. As Mauer and Ebers (2006, p. 262) lament,

... to date we know very little about how organizations' social capital develops over time, about the factors and processes enabling and constraining its development, and about possible related performance implications.

Also, scant attention has been given to the reality of the ebbs and flows of social capital, and its boundaries, when it comes to impacting economic decisions. Social capital, like any other capital asset, has to be seen as being dynamic. It appreciates under certain circumstances and depreciates in others. In addition, it can become obsolete or depleted over time. Despite this recognition, the literature does not discuss how social capital and its influences evolve over time

3.4 CORPORATE GOVERNANCE

Corporate governance has received a lot of attention internationally fuelled by corporate scandals such as Enron and WorldCom in the United States of America and Marconi in the United Kingdom that made global headlines. Equally, in Zimbabwe, the financial sector has had its share of corporate scandals that saw the closure of several financial institutions which were focusing more on non-core business. This attention inspired the inception of committees on corporate governance on a country by country level, which set out to institutionalise corporate governance. Such reports have set the governance agenda in developing as well as many emerging economies. Zimbabwe in the throes of recovery from 2009 has also embarked on creating a corporate governance framework.

The table below shows some examples of corporate governance guidelines or reports in the given countries that are the basis for organisational corporate governance procedures.

Table 3.4: Examples of corporate governance guidelines

Country	Corporate governance guideline
United States of America	The Sarbanes-Oxley Act and The New York stock Exchange listing requirements (2001)
United Kingdom	Cadbury (1992) and Hampel (1998) committee reports
South Africa	King Reports 1 and 2
India	The code of Federation of Indian Industries (1998), The SEBI-Birla report (1999), The Ganguly Committee report (2002).
Kenya	The Kenyan Code
Zimbabwe	The Reserve Bank of Zimbabwe Guidelines on Corporate Governance (2004), Zimbabwe Manual for Best Practice on Corporate Governance (1999)
Brazil	The Richardo L Claudialdo Oliveira Report (2003)

Source: Dube C. (2008)

This is a clear indication of the attention that corporate governance is receiving across continents.

3.4.1 What is corporate governance?

The definitions of corporate governance centre on the manner in which organisations are run and regulated, or the methods of management and systems of regulations. From the days of Tricker (1984) who is popularly known as the 'father of corporate governance', then concentrating on interaction between top management and owners, corporate governance definitions have been expounded to cover many perspectives. The table below provides some definitions.

Table 3.5: Definitions of corporate governance

Reference	Definition
The Cadbury Report (1992)	The system by which companies are directed and controlled
(Coyle 2006, .p4)	Corporate governance is concerned with the way organizations are led and directed, the practices that enable a company to meet its objectives subject to guidelines and restrictions in light of other stakeholders' interests, behaving in an ethical way and complying with regulations
Chambers (2012 , p.354)	Corporate governance is concerned with holding the balance between economic and social goals and between individual and communal goals. The governance framework is there to encourage the efficient use of resources and equally require accountability for the stewardship of these resources.
Reserve Bank of Zimbabwe (RBZ) corporate governance guidelines (2004, p.3)	The processes and structures used to conduct and manage the business affairs of organizations to ensure their safety and soundness and enhancing the wealth of the shareholders. The process and structure defines the sharing of power to maximise accountability between board of directors and management while protecting the interests of shareholders (RBZ 2004:3)
Daily, Dalton and Cannella (2003, p.371)	The way in which organizational resources are utilized and the authoritative settlement of disputes among the myriad organizational stakeholders.

Corporate governance is underpinned by the agency and stewardship theories. Agency theory, also known as the shareholder theory, is a relationship between a principal and the

agent where the shareholders are seen as the principals and the management as the agents. The theory as put forward by Jensen (1976), argues that agents act with self-interest, which may not be in tandem with what is necessary to maximise the principals' return. The theory advocates for incentives and financial reward for the agents to motivate them to maximise shareholder interests.

The stewardship theory also known as the stakeholder theory, as postulated by Donaldson (1985) departs from the idea of a manager being an opportunistic shirker, but rather that essentially a manager wants to do a good job, to be a good steward of the corporate assets. Thus, stewardship theory holds that the performance of the manager is influenced by the structures under which he or she has to facilitate the achievement of goals. The issue then becomes whether the organisational structure is conducive to formulate and implement plans for high corporate performance (Donaldson & Davis 1991, p.51). Corporate governance is then viewed as a necessary antidote for the problem of greed and as a catalyst for the creation of adequate organisational structures. Therefore, the definitions point to the fact that corporate governance upholds the protection of the stakeholders, taking cognisance of the fact that shareholders run the risk of financial loss, as opposed to management, who can easily jump ship and move on to greener pastures. Corporate governance compliance is necessary to create the requisite structures for better performance.

3.4.2 Importance of corporate governance

In the last 20 years the importance of corporate governance has been championed by government regulators and researchers. This can be attributed to the liberalisation and internationalisation of economies, which has brought with it the growth of institutional investors, privatisation, rising shareholder activism, as well as the integration of capital markets (Aguilera & Cuervo-Cazurra 2004, p.416). These developments in ownership structure have increased attention to the monitoring of overall corporate governance structures, financial controls and financial performance (Azim 2012, p.481). Research has shown that good corporate governance can serve as a tool for attracting better quality investors as well as influencing stock prices (Korac-Kakabadse, Kakabadse & Alexander Kouzmin 2001, p.24). In the same vein, the McKinsey 'Global Investor Opinion Survey' (2002, p.2) shows that 15% of European institutional investors consider corporate governance to be more important than a firm's financial issues, such as profit performance or growth potential in their investment decisions. Additionally, 22 % of European institutional investors

are willing to pay an average premium of 19 % for a well-governed company (Bauer, Guenster&Otten2004, p.92). In the same furrow, from an African perspective, Ehikioya (2009, p.232) states that “A well-defined and functioning corporate governance system helps a firm to attract investment, raise funds, and strengthen the foundation for firm performance”.

According to Naidoo (2009, p.10), the major advantage of good corporate governance is better access to capital as such companies can attract foreign and institutional investors. This aids in sustainable growth. Foreign ownership is one way of technologically upgrading organisations in emerging economies through import of new capital and new technologies (Haat et al. 2008, p.749). Naidoo (2009, p.10) further postulates that banks will most likely charge a lower interest rate to better governed firms, thus enhancing access to capital. In agreement, Klapper and Love (2004, p.705) confirm that firms with better governance mechanisms can significantly lower their cost of capital. Companies which are properly governed have the foresight to reduce risk as they are better able to attract top notch human resources which eventually translates into profit. Corporate governance also contributes towards creation of competitive advantage. By attracting better quality, larger and cheaper funding, a company can create trust, business confidence and indispensable social capital that affect performance (Naidoo 2009, p.22). (Haat et al. 2008, p.745) confirm this opinion and indicate that good corporate governance practices such as better financial reporting and transparency improve investor confidence.

In recognition of this fact, the government of Zimbabwe launched the Corporate governance code in April 2015 which provides sector specific corporate governance guidelines. Hitherto the government depended on the companies Act: 24 which has proved inadequate given the high level abuse of office by directors in both the private and public sector. Directors have been concealing their personal interests behind the corporate veil. Along with the code is corporate governance bill which is on the cards. The bill translates guidelines into law issues concerned with board appointments, representation and board tenure. This will enable government to have more impact on corporate governance as corporate governance guidelines will be tightened under a legal framework.

3.4.3 Firm type and corporate governance

It is noted that not all aspects of corporate governance matter to all firms since each entity will benefit from different corporate governance aspects. One determinant of this difference has been firm size. According to Black (2012, p.935), larger firms could need more formal governance to respond to their more multifaceted operations. Such firms have a higher reliance on agency and therefore could have greater potential for agency costs due to greater financial resources or less concentrated ownership. Invariably, larger firms would have more investors who are likely to be more attentive to how governance affects the value of the firm. Smaller firms, on the other hand, have lower institutional ownership and thus pay less attention to governance issues (Black 2012, p.935). In terms of profitability, highly profitable firms do not need outside capital and can afford to ignore corporate governance aspects as they have less need to comply for the sake of attracting investors. Klapper and Love (2004, p.716) note that manufacturing firms which have substantial tangible assets are more acquiescent to external oversight, including creditor monitoring. They may therefore have less need for equity governance, and benefit less from governance than other firms. Faster growing firms need external capital to prolong growth, and therefore might choose better governance to continue to attract investors.

The question to be asked perhaps is whether there should be universal corporate governance practices; or whether corporate governance also depends on the culture of the country. Black et al. (2011, p.935) posit that country characteristics strongly influence corporate governance determinants; what matters in corporate governance from country to country may not be fully captured in popularly used indices. Differing laws, ownership patterns, political orientations have an influence on the corporate governance framework of countries and their companies. It is suggested to have an index that takes into account the country characters of that country (Black et al. 2011, p.935).

3.4.4. Elements of corporate governance

3.4.4.1 Board independence

Corporate governance has myriad elements whose emphasis differs from country to country. Board independence is often considered to be a core element of corporate governance (Dahya et al. p.2) Board independence can be defined as real or supposed ability of the board to make decisions without being coerced by any party within or without the company (Dube

2008, p.31). A variety of corporate governance guidelines have advised organisations in ways to design and create independent boards and ensure that boards are composed of individuals who are competent and stoical enough to effectively discharge their duties (Daily, Dalton & Cannella 2003, p.374). They further point out that independent boards of directors are commonly believed to result in improved organisational financial performance, whether measured as accounting returns or market returns (Daily, Dalton & Cannella 2003, p.375; Ho 2005, p.245). Haat et al. (2008, p.747) strongly advocate that for the board to be independent; it has to be composed of mainly non-executive directors to act as the checks and balances because they are unlikely to be influenced by organisational machinations.

3.4.4.2 Existence of board committees

The other element is the existence of board committees. These assure shareholders that there is accountability in the major functions of the firm. They are advocated for in corporate governance literature and vary from firm to firm to include remuneration committee, risk committee, and more importantly, the audit committee. In the absence of a national corporate governance framework in Zimbabwe, these committees are not mandatory, but in some countries, board committees are a pre-requisite for listing (Chan & Li 2008, p18). The need to ensure that sound financial management is maintained and adequate accountability is upheld has given the audit committee centre stage. Independent financial reporting concerns are central to the corporate governance debate, and having these committees staffed with by largely independent directors, gives confidence to the stakeholders (Fich & Shivdasani 2006, p.699).

For a long time, the audit committee was mainly concerned with selection and monitoring of external auditors and ensuring their impartiality. But as financial concerns become more crucial, the mandate of audit committees has been expanded in recent years to include financial controls and risk management (Chambers 2012, p.379). Such a critical committee should be staffed in the main by independent directors, people conversant with auditing or financial matters and minority shareholder representative for transparency and proper disclosure (Black, de Carvalho and Gorga (2011, p.939) and Bouaziz (2012, p57). In terms of significance however, the presence of an audit committee was however found not to be

positively associated with firm performance in a study carried out by Lam& Lee (2012, p.360).

3.4.4.3 Separation of CEO and board chairman roles

The balance of power between different stakeholder groups and the way in which power is exercised are key issues in corporate governance. Shareholder concentration has an effect on this power sharing and thus on corporate governance. Agency theory advocates for the separation of roles of the CEO and the board chairman. The concentration of power in the duality of such a situation is subject to inherent conflict of interest which does not augur well with the current shareholder activism (Das 2009, p.12). In his study of corporate governance in Zimbabwe, Muranda (2006, p.653) confirms this; he postulates that power imbalances are most evident where the chairman of the board is the chief executive and also the major shareholder. Such duality of roles enables the chairman to exert undue influence to a large extent, even to the point of overriding board decisions. This concentration has an influence on decision, control and composition of the board (Coyle 2006, p.12). Dahya et al.(2008, p.2) further note that dominant shareholders have the power to misappropriate organisational resources for their own use and this reduces the market value of the firm. Thus the duality of the CEO doubling up as the board chairperson was noted to have a positive relationship with firm performance (Azim 2012, p.498; Ehikioya 2009, p.240). Separation of the roles provides for accountability and is widely advocated by regulatory bodies and financial gurus (Das 2009, p.12).

3.4.4.4 Disclosure

Disclosure has myriad elements, including whether financial statements are prepared according to international accounting standards. Do the statements disclose adequate information to make financial decisions? Is the shareholders privy to the statements and are they availed in the public domain (Black, de Carvalho &Gorga 2011, p.939)? The law, or accounting standards, generally prescribe the minimum disclosure requirements, but they do not deter managers from volunteering more information. Disclosures in financial statements can be a subtle strategy to provide investors with information to assess the true economic performance of the firm without necessarily revealing proprietary secrets about the firm's competitive position (Healy 2007, p.9).

Investors are on the receiving end of information that guides their investment decisions, which information is controlled by management. It is management's prerogative to transparently disclose material fact to the would-be investors and shareholders who are running the risk of investing in the company (Newquist & Russel 2006, p.164). If investors have misgivings about the honesty and transparency of the financial statements they will hold back on investment and this has a direct impact on the performance of the firm (Coyle 2006, p.136; Lopes et al. 2011, p21). Investor confidence is therefore boosted by honest and timely disclosure. Prior research finds that disclosure is associated with higher firm market value (Durnev and Kim, 2005, p.1476; Augustine 2012, p.672).

3.4.4.5 Ownership structure

Firm ownership and shareholder concentration are as varied as the laws that create them. Shareholders can be individuals, families, corporates, institutions or the government. Zimbabwe shows such a spread of shareholders and as stated by Millar et al.(2006,p166) family ownership is more prevalent in emerging markets. Since shareholder activism is gaining momentum as an important factor in corporate governance, more attention is now focused on the impact shareholder concentration has on firm performance. Shareholders with significant ownership positions have both the motivation to monitor executives and the influence to bring about changes they feel will be advantageous to the firm (Daily, Dalton & Cannella 2003, p.376). In tandem with this, higher shareholder concentration may lead to better monitoring mechanisms as interest is not dispersed. This may lead to better firm performance (Azim 2012, p.486; Grosfeld 2006, p.4; Ehikioya 2009, p.240). Shareholder concentration also has an impact on the independence, disclosure and conduct of the board (Daily, Dalton & Cannella 2003, p.376). Zimbabwean law permits concentration of up to 99% for private companies except banking institutions (Zimbabwe Companies Act: chapter 24). In terms of firm performance, Kumar and Singh (2011, p.96) have noted that shareholder concentration is positively associated with firm performance as ownership gives the promoter incentives to control and monitor the board and management, driving them to perform better.

Also under the ownership subject is the issue of identity of the shareholders. There are instances where shareholders are mysterious beings who protect their right to privacy to a large extent. Zimbabwe has propagated an indigenisation policy where all firms have to have an ownership structure of 51:49 between local and foreign respectively. The government is therefore keen to lift the corporate veil and identify the shareholders. Identification of the shareholders enables investors to analyse their risk attitude and likely bureaucratic tendencies associated with state owned enterprises for instance (Ongore & K'Obonyo (2011, p.111). They found no significant relationship between shareholder identity and firm performance. They suggested that for further studies researchers can go further to address ownership structures by critically looking into the type of owners, e.g. whether they are government, institutional or individual.



3.4.4.6 Board procedure and ethical conduct

The surge in corporate scandals has increased the drive for ethical conduct. Firms are continually enforcing a culture of corporate ethics evidenced by provision of codes of conduct and declaration of conflicts of interest (Coyle 2006, p.15). Closely related to this, is assessments of board procedures which are a common component of broad governance indices (Durnev & Kim 2005, p.1476). This entails assessing the number of times a board meets, whether a board regularly evaluates the CEO and other executives, whether board members receive materials in advance of board meetings, whether the board is well governed by some rules and regulations and whether the board has a code of ethics (Black, de Carvalho & Gorga 2011, p.939). Because of the different institutional contexts in developing and developed countries, the effectiveness of board meetings may differ. There appears to be consensus that frequency of board meetings is positively associated with firm performance. Ntim and Osei (2011, p. 94) found this result in a study of South African firms. This result was also confirmed by Mangena and Taurigana (2008, p.35) regarding Zimbabwean firms and (Fich & Shivdasani 2006, p.701) in relation to American firms.

3.4.4.7 Board size and board tenure

There is no one size fit all in terms of the size of the board and how long one can serve on the board as these differ across companies. Board size has an effect on the quality of decisions made. Board tenure has an effect on experience of the board and inadvertently, the decisions

made. Brown & Caylor (2009, p.137), have noted a significant relationship between board tenure and firm performance.

Research has not agreed on the optimum board size, but it has however been observed that too large a board (more than 10 members) creates a certain kind of chaos where decisions take too long to be reached, and it may reduce effective decision making due to potential free riding. On the other hand, a small board may not have the requisite resources to make optimum decisions (Azim 2012, p.486), but it could encourage cohesion and higher productivity (Coles et al. 2005, p.2). A study of Indian firms by Kumar and Singh (2011, p.92) suggests that a board size of not more than 10 members seems to be the optimum one for both decision making and remuneration. Furthermore, such a size was considered to be positive and significant for firm performance. Board sizes also differ according to the size of the firm, with larger organisations tending to have larger boards than small organisations.

3.4.5 Corporate governance and firm performance

Research from as far back as 1976 has indicated a positive relationship between corporate governance ratings and company performance (Jensen & Meckling 1976, p.310), as the ratings translate into improved operating performance and a higher market value. The role of corporate governance has generally been accepted as affecting performance, but empirical research has remained inconclusive regarding the degree to which individual governance monitoring mechanisms enhance firm performance and shareholder value (Pham et al. 2011, p.372). Although it is easier to show that adverse outcomes are associated with failures of corporate governance rather than the opposite, it is still arguable that entities collapse due to deficiencies in corporate governance (Chambers 2012, p.349). Firms with stronger governance structures are most likely to perform better than those with weaker structures. Corporate governance influences the ability of the firm to exploit opportunities, create effective strategies and develop technological capabilities (Chambers 2012, p.351). He further points out that in many cases when a firm has excellent results, the role of corporate governance is not applauded, but it is good corporate governance that positions these entities for competitive advantage.

The norm to determine the relationship between corporate governance and firm performance seems to be an examination of a subset of governance elements which results in some

provisions being linked to operating performance and others not. These provisions hover around board composition, board independence, presence of an audit committee and transparency in disclosure, to name the most popular. Results indicate that better corporate governance is associated with higher operating performance (return on assets, ROA) and higher Tobin's Q (Haat et al. 2008, p.756, Brown & Caylor 2009, p.132; Pham et al. 2011, p.372). Tobin's Q is generally used as the measure of firm valuation. Tobin's Q is defined as "the market value of assets divided by the replacement value of assets". Thus:

$$\text{Tobin's Q} = \frac{\text{Equity market value} + \text{Liabilities book value}}{\text{Equity book value} + \text{liabilities book value}}$$

Using Tobin's Q, a research carried out in Malaysia has shown that practising good corporate governance is an important factor that influences firm market performance (Haat et al. 2008, p.756). It also implies that the greater the real return on investment, the greater the value of Q. For the US market, Gompers et al. (2003, p.27) inquires about the relationship between corporate governance and long-term equity returns, firm value and accounting measures of performance. They found that well-governed companies outperform their poorly governed counterparts. Well-governed companies have higher equity returns, are valued more highly, and their accounting statements show a better operating performance. Thus the general consensus is that corporate governance has an impact on firm performance, but results across the world differ as to the significance of each of the corporate governance determinants. Given below is a summary of findings over the years on the significance of corporate governance variables.

3.5 FIRM PERFORMANCE

This literature review on the integration of three drivers of firm performance would not be complete without a review of literature on organisational performance. Organisational performances are the most important dependent variable as all firm activities are ultimately judged by their contribution to the bottom line. Organisational performance is influenced in the main by the industry structure, looking at it from the industrial organisation view first postulated by Mason (1939) and by the resources a firm possesses, from a resource based view posited by Nourse & Drury (1938); Pangarkar & Wu (2011, p.200).

Numerous studies have been undertaken, each focusing on how specific variables affect performance. A study carried out by Pangarkar and Wu (2011, p.10), found that industry globalisation, indicated by import intensity, has a positive and significant impact on the performance of a firm. The level of import intensity drives competitive pressures and in turn improves performance. They further noted that exports can enhance a firm's capability by serving new customers and competing in an unfamiliar environment. The level of foreign domestic investment (FDI) can also affect firm performance. Inward FDI can have productivity benefits as funds will be available for the targeted industry and other firms in the industry also gain from overspill (Bitzer&Gorg 2008, p.13).

Furthermore, country effects also influence firm performance. Country effects include a wide range of attributes which can be broadly stated as economic and institutional (Goldszmidt et al. 2009, p.273). Economic attributes focuses on economic integration of countries, foreign direct investment, price dispersion among countries and international flow of production factors. On the other hand, institutional factors include issues such as governments' influence on firms' performance in the form of political, economic and institutional arrangements.

Firm effects also affect firm performance. These are issues like heterogeneity in tangible and intangible assets, reputation, operational effectiveness, organisational processes and management skills (Chen 2010, p.473). He posits that firm related resources and capabilities have a significant influence on firm performance Chen (2010, p.475). In the same vein, Bobillo et al.(2010, p.608) cite them as organisational factors. In other words, social capital, human capital scope, financials issues, risk stance, strategies and firm leadership also affect firm performance. They further note the significance of diffusion of research, the augmented innovation of human resources and the acquisition of knowledge. This fits snugly into the present study of the integration of social capital, technological capabilities and corporate governance influencing performance in the Zimbabwean manufacturing sector.

Studies have also shown the effect of corporate attributes on performance as resources and capabilities do not operate in isolation. Corporate level factors that are believed to influence profitability include core competences, organisational structure, organisational climate, and corporate operational processes (Adner and Helfart 2003, p.1012). In their extensive studies of dynamic managerial capabilities, rooted in managerial human capital, managerial social capital and cognition (Adner and Helfart 2003, p.1012) conclude that the aforementioned

three attributes inform the strategies of the firm and therefore its performance. Human capital, which is the learned skills from on the job training, other knowledge acquisition mechanisms and experience, possessed by an individual viewed in terms of their value or cost to an organization. This is pooled with social capital which are the internal and external ties managers have. Crowned managerial cognition which are beliefs and mental models influencing managers' perceptions, the skills, drive and managerial decisions for performance. This in cognisance of the fact that the resources and capabilities firms have, can obtain and develop, are different between countries (Goldszmidt et al. 2011, p.274).

Added to that, Makadok (2003, p.1044) postulates that extraordinary performance of firms is frequently accompanied not only by superior capabilities, but by extraordinary governance. He adds that the synergy of these two attributes combined works better than each alone. He concludes that governance and competence are not just synergistic, but complementary. This means that being motivated to be effective is more profitable if the manager actually knows the right thing to do, which is competence. Conversely, knowing the right thing is more profitable if you are actually motivated to practise it. This is the governance end of it. Governance has an impact on the resources to acquire and in turn influences performance.

Measuring performance acts as an evaluation of management actions and eventually as a measure of the success of the organisation (Richard et al. 2009, p.719). Combs et al(2005, p.261) defined organisational performance as "the economic outcomes resulting from the interplay among an organisation's attributes, actions, and environment". Together with this definition, Richard et al.(2009, p.719), posit that organisational performance encompasses areas of financial performance denoted by profits, return on assets, return on investment, areas of product market performance such as sales, market share, and also by shareholder return denoted by total shareholder return and economic value added. It is around these areas that performance measurements are generally discussed.

3.5.1 Performance measurement

Yidliz et al. (2011, p.35) define performance measurement as "the process of regular and systematic data collection, analysis and reporting to be used by a firm to follow up the resources it uses, and the results it has obtained with the produced goods and services". As postulated in the definition of organisational performance, its measurement can hardly be a one-dimensional theoretical construct. A construct is a conceptual term, unobservable by nature, defined by researchers in order to demystify a real phenomenon and it is likely to be

characterizable with a single operational measure. In general, measurement of performance takes into account heterogeneity of environments, organisational strategies, and management practices (Richard et al. 2009:719).

There are a number of types of performance measures, the most used being accounting, financial market measures and mixed accounting and financial markets measures. Firstly, accounting measures include return on investment (ROI), return on assets (ROA), return on equity (ROE), return on sales (ROS), Tobin's Q, sales, market share, productivity are historical in nature although they can be relied upon because they have been verified by auditors (Richard et al. 2009, p.719). The method is not too complex to be understood and used by managers, and is an objective standardised method of measuring and comparing performance (Jusor & Parnell 2008, p.4). Financial measures, however, have a deficiency in anticipating and revealing expectations about future performance and do not take into account intangible assets (Richard et al. 2009, p.719; Jusor & Parnell 2008, p.4). Thus they are more useful in a stable environment and less valid in a turbulent economic situation.

Secondly, financial market measures are the preferred instrument for quantifying organisational performance. These include stock market prices and total shareholder returns (Richard et al. 2009, p.720). This has been noted as the most accurate method to predict shareholder wealth (Jusor and Parnell 2008, p.5). Stock prices react to the performance of the firm and they are the fastest mode by which investors can 'read' the likely way the firm is going (Dobbs & Koller 2005, p.1). However, capital market indicators are also influenced by a variety of factors such as market momentum, volatility of capital markets, the economy, psychological effects and whether the firm is listed on the stock exchange or not (Richard et al. 2009, p.720). The greatest strength of these measures is that they are forward looking, in theory representing the discounted present value of future cash flows. They also incorporate intangible assets more effectively than historical accounting data which may continue to celebrate success when that ship has since sailed.

Thirdly, a mixture of the two, financial and non-financial measures: These can be qualitative measures to include subjective areas of performance such as "ethical behaviour, stakeholder satisfaction with performance, customer satisfaction, and management satisfaction with performance, employee satisfaction, delivery performance, process improvement, measures of material and parts delivery time, throughout time, due-date performance, quality, machine

flexibility, and inventory levels” (Jusor& Parnell 2008, p.5). An advantage of mixed accounting/financial market measures is that they are better able to balance risk (largely ignored by accounting measures) against operational performance issues that are sometimes lost in market measures (Richard et al. 2009, p.720). However, neither measure reflects the full significance of these decisions, such as the costs of achieving market-share or different goals or their revenue implications. More importantly, they do not capture decisions other than customer acquisition and/or quality initiate (Moers 2006, p.901).

The question remains; “which performance measurement to use?” Performance measures to be used depend on the purpose of measurement. Financial measures are appropriate where firm performance is the subject matter, while non-financial measures or both measurements are more relevant for management or employee evaluation (Van Veen-Dirks 2010, p.160). In this study of the Zimbabwean manufacturing sector, Return on Assets (ROA) was utilised as the dependent variable as suggested by previous studies investigating the impact of corporate governance, social capital and technological capabilities on firm performance.

3.5.2 Chapter Summary

This chapter expands on the theoretical basis of dynamic managerial capabilities, which is the reconfiguration of present resources and capabilities into new competences in response to the environment. This case review of literature focused on the space of corporate governance, social capital and technological capabilities in the volatile and ever changing environment of globalisation.

The issue of performance and performance measurement also came to the fore. The aim was to determine and utilise the kind of measurement that most clearly indicates the use of resources and the subsequent results.

CHAPTER 4: METHODOLOGY

4.1 INTRODUCTION

Research methodology refers to the method by which data are described, gathered and analysed for a research project. It is the roadmap for the collection, measurement, and analysis of data in order to achieve the set research objectives. Research methodology is important in a research work because it specifies the research paradigm and the subsequent research design. Here the researcher explicitly defines the target population, the sampling method used and the motivation for choosing that particular sampling method. The researcher also specifies the data collection method used. Furthermore, the researcher identifies the methods of data analysis, describes data handling, statistical tests, the computer programs utilised and the rationale for using a particular method. Finally, the researcher focuses on the limitations of the research. The researcher identifies significant methodology or implementation problems such as sampling errors, response and non-response errors, and the constraints of cost and time (Cooper & Schindler 2003, p.663).

The chapter gives a concise description of how this study was carried out. This entails the description of the research design, the data set, the variables and the methodology employed in a bid to integrate Social Capital, Technological Capabilities and Corporate Governance for business performance in the manufacturing sector of Zimbabwe. The variables were described and the characteristics of the sample highlighted. The chapter also looks at the mode of analysis.

4.2 RESEARCH PARADIGM

A paradigm is a way of researching a phenomenon and a view of what counts as accepted knowledge or the truth that helps us to understand the environment around us (Adrian et al. 2007, p.605). A research paradigm is a belief about the way in which data about a phenomenon should be gathered, analysed and used. The paradigms include Positivism; Post-positivism; Social constructivism; Participatory research with its variant theories of Feminism and Critical theory; and Pragmatism. These paradigms generate scientific knowledge and each represents a different philosophy for making claims about scientific knowledge. "These paradigms have assumptions that consist of a stance towards the nature of reality(ontology);

how the researcher knows what she or he knows (epistemology); the role of values in the research(axiology); the language of research(rhetoric); and the methods used in the process(methodology)” (Creswell 2007, p.16). This study uses the post positivism paradigm, which challenges absolute truths based on careful observation and measurement of the objective reality in the world. The problem under study reflects a need to examine causes that influence outcomes of the research paradigm and fits well into the research. The table below presents a comparison of four of the research paradigms:

Table 4.1: Comparison of four research philosophies

	Positivism	Post-positivism	Constructivism	Pragmatism
Research methods	Quantitative	Primarily quantitative	Qualitative	Both qualitative and quantitative
Logic	Deductive	Primarily deductive	Inductive	Deductive and inductive
Epistemology	Objective point of view: knower and known are dualism	Modified dualism. Findings probably objectively "true"	Subjective point of view. Knower and known are inseparable.	Both objective and subjective points of view.
Axiology	Inquiry is value free	Inquiry involves values but they may be controlled	Inquiry is value bound	Values play a large role in interpreting results.
Ontology	Naïve realism	Critical or transcendental realism	Relativism	Accepted external reality. Choose explanations that best produce desired outcomes.
Causal linkages	Real causes temporarily precedent to or simultaneous with effects	There are some lawful, reasonably stable relationships among social phenomena. These may be known imperfectly. Causes are identifiable in a probabilistic sense that changes over time.	All entities simultaneously shaping each other. It is impossible to distinguish causes from effects.	There may be related causes, but we will never be able to pin them down.

Source: Tashakkori and Teddlie (2010)

4.3 RESEARCH DESIGN

Research design refers to the procedures used in research to investigate relationships between variables, to form participants into groups, administer the measures, apply treatment conditions and analyse the data (Groves et al. 2009, p.47). "A research design is a logical model of proof that allows the researcher to draw inferences concerning causal relations among variables under investigations" (Yin 2009, p.26). A research design guides the researcher in the process of collecting, analysing, and interpreting findings. This study undertook a quantitative research design. A quantitative approach uses a post positivism paradigm which employs enquiry that uses predetermined instruments that yield statistical data (Creswell 2007, p.20). The nature of the problem requires pooling of cross-section and time-series company data (panel data analysis). Panel data sets are suitable for studying micro units and this motivates its use in this case where the three subsets are being observed. The study involves data sets on multiple entities where each entity is observed at more than two points in time, a situation which suits well for panel data analysis. Panel data sets give more data points, more degrees of freedom, reduce co linearity among variables and therefore, produce more efficient estimates than pure cross-sectional or pure time-series data sets. Panel data methodology gives the researcher greater flexibility in controlling for the effects of firm heterogeneity (i.e. firm-specific variables) and time-specific variables which could bias estimates if omitted, as the case in pure cross sectional and time series studies (Ehikioya 2009, p.235).

The study sought to benefit from data triangulation by focusing on explanatory research and survey methods. Triangulation refers to the use of more than one approach to the investigation of a research question in order to increase confidence in the findings. The explanatory design formed the econometric investigation seeking to determine how the three drivers affect performance, while the survey method utilised the probit model, which captures heterogeneity of firms. The premise for each of the four research objectives is looked at in turn.

4.4 KEY DETERMINANTS OF CORPORATE GOVERNANCE

Corporate governance alludes to corporate performance and higher returns once a company adheres to certain rules. The main corporate governance variables used include ownership structure, board structure, presence of board committees and executive compensation. It has

been noted that by and large, there is a clear relationship between governance characteristics and performance (Aluchna 2009, p.187). In the absence of a governance framework or statutes that coerce certain governance provisions, the determinants stated were utilised in the econometric model in an effort to show which determinants were positive and significant on company performance.

In order to determine corporate governance factors influencing firm performance Brown and Caylor (2008, p.136) suggest 14 determinants which were regressed using a stepwise approach. The following econometric model was estimated

$$ROA = CG_{it}$$

Where

ROA= Performance measured by Return on assets

CG_{it} = Factors influencing corporate governance over time

These factors are elaborated in the expanded equation below.

$$ROA = \alpha + \beta_1 SC + \beta_2 SI + \beta_3 TO + \beta_4 BT + \beta_5 ID + \beta_6 CEO + \beta_7 BE + \beta_8 BS + \beta_9 BC + \beta_{10} AC + \beta_{11} SAC + \beta_{12} IA + \beta_{13} AS + \beta_{14} FS + \beta_{15} AFS + \beta_{16} T$$

Where

α and β = the parameters to be estimated

SC= Shareholder concentration

SI= Shareholder identity

TO= Transparency of ownership

BT= Board Tenure

ID= Independent directors

CEO= CEO chairing the board or not

BE= Board of directors' educational level

BS= Board size

BC= Presence of board committees

AC= Presence of an audit committee

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SAC= Selection of the audit committee

IA= Independence of the auditors

AS= Auditor selection

FS= Quality of financial statements

AFS= Access by the board to financial statements

TD= Timeous disclosure of financial statements

The table below gives a summary of the characteristics of the variables and support in the literature for the factors influencing corporate governance.

Table 4.2: Corporate governance variables

Variable	Description	Reference
Ownership structure	-Shareholder concentration -Shareholder identity -Transparency of ownership	Aluchna 2009, p.187 Pham &Zein 2011, p.375
Board structure	-Board composition -Board tenure -Proportion of independent directors -Is CEO chairman of the board	Aluchna 2009,p.187 Pham &Zein 2011, p.375
Board Size	- Number of board members	Black et al 2012,p.939
Board procedure and ethical conduct	-Number of board committees -Presence of an audit committee -Tenure of auditors -Independence of auditors -Selection of auditors	
Disclosure	-Quality of financial statements -Availability of financial statements -Access to information -Scope of the information -Timeous disclosure	Black et al 2012, p. 939

4.5 INTERVENTIONS AT FIRM LEVELS AIMED AT BUILDING SOCIAL CAPITAL FOR COMPANY PERFORMANCE

Although social capital has received scholarly attention in recent years, the direct effects of social capital on firm performance have remained debatable (Wu 2008, p.122). Studies of the social capital performance relationship have revealed insignificant or negative associations. As far back as 1993, Putnam has argued that social capital has an influence on government performance as reflected in his studies in Italy. Zhang and Fung (2006, p. 200) studied this relationship for Chinese firms using return on assets as a measure of performance and they utilised social capital variables at firm level such as trust, number of ties an organisation has, membership of business associations and entertainment issues. Following on this literature, the researcher has come up with the model below to isolate firm level interventions of social capital for firm performance.

$$ROA = SC_t$$

Where

ROA = Return on Assets measuring operating performance

The model was expanded to reflect the 11 social capital variables as suggested by Zhang and Fung (2006, p.200.)

$$ROA = \alpha + \beta_1 PN + \beta_2 BN + \beta_3 BT + \beta_4 ST + \beta_5 T + \beta_6 I + \beta_7 BA + \beta_8 DO + \beta_9 EN + \beta_{10} EB + \beta_{11} GL$$

Where

α and β = the parameters to be estimated

PN= Presence of networks in the firm

BN= Proportion of business from the networks

BT= Business ties a firm has

ST= Strength of the ties

T= Level of trust in the ties

I= Frequency of interaction

BA= Membership of business associations

D= Donations made

EN= Presence of an entertainment budget

EB= Entertainment budget as a proportion to the firm budget

GL= Government liaison

The characteristics of the variables, supported by the literature, are given in the table below.

Table 4.3: Social Capital variables

Variable	Description	Reference
Presence of networks	Identification of the relationships a firm has	Zhang and Fung 2008, p.200
Expenditure on network creation	-Donations -Purchase of gifts -Entertainment budget	
Number of ties	Quantifying the ties a firm has	
Strength of the ties	Dependability of the ties	Maurer et al. 2012, p.166
Frequency of interaction	Social capital is maintained by periodic interaction	
Level of trust	Trust is a backbone of social capital development	Maurer et al. 2012, p.166
Affiliation to industry associations	A fast way of obtaining bridging social capital	Zhang and Fung 2008, p.202

4.6 TO MEASURE TECHNOLOGICAL CAPABILITIES NECESSARY FOR IMPROVED PERFORMANCE

Technological capabilities are the skills required to identify, appraise, utilise and develop technologies and techniques; they have become a very important source of competitive

advantage. The measurement of technological capabilities that lead to firm performance has been a subject of scholarly studies for a number of years now. Because the technological factors are to do with knowledge, they are invariably intangible and in general, proxies are used. Different studies have focused on different proxies. This study was guided by the UNDP's Technology Achievement Index (TAI). This emphasises "the creation of technology (based on patents registered by residents at their national offices and receipts of royalty and license fees); b) diffusion of newest technologies (based on Internet hosts and high-medium technology exports); c) diffusion of oldest technologies (based on telephone mainlines and electricity consumption); d) human skills (based on years of schooling and tertiary science enrolment)". In addition Coombs & Bierly III (2006, p.428), suggest patents, technology diffusion, R&D and expenditure as dependent variables. Following on these studies, this research selected 15 measures of technological capabilities and Return on Assets as the dependent variable.

Thus

$$ROA = TC_t$$

Where

ROA = Return on Assets measuring operating performance

The model was expanded to reflect the 14 technological capabilities variables as suggested by Coombs and Bierly III (2006, p.428.)

$$ROA = \alpha + \beta_1 TCD + \beta_2 IC + \beta_3 PA + \beta_4 ISO + \beta_5 RD + \beta_6 SP + \beta_7 TL + STR + \beta_9 EL + \beta_{10} ITN + \beta_{11} TELE + \beta_{12} RI + \beta_{13} TT + \beta_{14} HRD$$

Where

ROA = Return on Assets measuring operating performance

α and β = the parameters to be estimated

TCD= Technological development

IC= Importation of technology

PA= Patent registration

ISO= ISO certification

RD= R and D expenditure

SP= Scientific publications

TL= Technology linkages

STR= Strength of the linkages

EL= Electricity for TC development

ITN= Internet for TC development

TELE= Telecommunications for TC development

RI= Relations with innovative institutions

TT= Technology transfer

HRD= Human resource development

The table below gives a summary of the characteristics of the technological capabilities variables

Table 4:4 Technological capabilities variables

Variable	Description	Reference
Patents registered	Company protection of innovations	Lall 1992, Archiburgi and Coco 2005, Wignaraja 2007
Expenditure on Research and Development	If the company carries out R&D how much they have spent in the years in question	
Scientific publications	Publications stemming from the firm	
Creation of technology	Technical knowhow from the company	
Human resource development	Development of HR in scientific areas	
Science qualifications	Number of people in the organisation with degrees in scientific disciplines	
Technology transfer	Technological development is normally accompanied by the transfer of technology	
Existence of a relationship with innovation institutions	Technology generally increases when firms are assisted by universities or some innovative body	

4.7 TO ASSESS THE CRITERIA THAT CAN BE USED IN INTEGRATING SOCIAL CAPITAL, CORPORATE GOVERNANCE AND TECHNOLOGICAL CAPABILITIES TO IMPROVE PERFORMANCE IN THE MANUFACTURING SECTOR

Studies have by and large focused on single or pairs of determinants for firm performance and the significance of the three drivers of performance has not been investigated. Zimbabwe, in the throes of recovery, would very much need such information in order to make informed decisions on which aspects of corporate governance, social capital and technological capabilities to invest in. Thus the culmination of the study was to create a model where the significance of all the performance drivers was examined. Below is the model:

4.7.1 The econometric model

The panel sample of n companies observed over t periods, the pooled regression equation can be written as:

$$P_{it} = \alpha + \beta_1 SC_{it} + \beta_2 TC_{it} + \beta_3 CG_{it} + \mu_{it}$$

Where

P_{it} = profitability for firm i over t periods

SC= the positive and significant social capital variables

TC =the positive and significant technological capabilities variables

CG =the positive and significant corporate governance variables

α and β = the parameters to be estimated

i = the i th firm (i.e. the cross section dimension)

t = t -the year (the time series dimension)

$$\mu_{it} = \omega_{it} + e_{it}$$

ω_{it} = firm specific effects

e_{it} = error term

Empirical literature concentrates on the regression of each of the drivers singly. This is weighed down with missing variable bias, which in many cases is lumped together with the

error term. This model therefore seeks to combine known variables of business performance to give a more complete view of what affects profitability.

4.8 FIRM PERFORMANCE

The Return on Assets, an accounting measure, was used as the dependent variable, the main advantage being its wide use by researchers (Coombs & Bierly III 2006, p.426.) in such types of studies that involve corporate governance and technological capabilities. It was selected above marketing measures, which even if it looks at the present value of the firm, is favoured in entrepreneurship and accounting research. The Zimbabwean scenario also favours return on assets as the country has adopted a multi-currency regime and assets had to be re-valued to show the \$US dollar value which is much more robust than the Zimbabwean dollar and the availability of data.

The table below shows the aspects of performance.

Table 4.5: Definition of performance

Formula	Definition	
ROE	$\frac{\text{Income before interest and taxes}}{\text{Total assets}}$	Brown and Caylor 2009, p.132
ROA	$\frac{\text{Income before interest and taxes}}{\text{Book value of equity}}$	Coombs and Bierly II 2006, p.428

4.9 THE SURVEY AREA

The study covered Harare City, where 46% of manufacturing firms are located. Harare is the capital city of Zimbabwe and it is also one of the ten administrative provinces in Zimbabwe. The private sector economy of Harare is dominated by manufacturing and service industries. Manufacturing provides approximately 20% of formal employment in the area. The map below shows the location of the study area.

Fig 4.1: Map of Zimbabwe showing Harare as the research area



Source: Education.randomcally.com

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4.10. THE POPULATION

According to Heiman (2009, p.902) any law of nature applies to a specific group of individuals. The entire group to which the law applies is called a population. The population contains all possible members of a group, so a population is usually considered to be infinitely large. Leedy(2009, p.90) notes that before a study is carried out, the population must be identified, and an analysis of its structure and characteristics are made. The study population includes all the registered companies in 6 manufacturing subsectors in Harare which have been earmarked by government to spearhead economic recovery in Zimbabwe. The subsectors are food and beverages, clothing, wood and furniture, pharmaceuticals, fertiliser and s. All these sectors were included in the study as elements of the sample. They were selected using a random computer number system where each element in the population was assigned a different number from 1 to 420. The table below gives the details of the population.

Table 4.6: Study population

Subsector	Study population Number of registered companies in Harare	Study sample 40% (those operating at 100% capacity)
Food and beverages	45	18
Clothing and textile	78	31
Timber and furniture	40	16
Fertiliser	2	2
Pharmaceuticals	4	4
Metals	16	6
Total	185	77

Source: Zimtrade (2011) www.zimtrade.co.zw

4.11 SAMPLING

A survey design provides a quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population. From sample results, the researcher generalises or makes claims about the population (Creswell 2007, p.174). A sample is a part of inferential statistics which is the portion of the population that is selected for analysis. The main purpose of sampling is to generalise to the whole population, as it is not possible to study the entire population. Thus the sample selection needs to be objective in order to avoid subjective inferences of the population of investigation (Groves et al.2009, p. 6). Judgemental sampling involves selection methods in which all the members of a sample are chosen through a subjective process. In that vein, the researcher collected data from all the companies in the sample given, the low numbers that met the selection criteria. A total of 77 questionnaires were administered to the companies. Data from 2009 to 2012 was used to analyse the relationship between firm performance and the three drivers to allow the study to isolate performance dynamics over a good clear objective

4.12 DATA COLLECTION

In order to assist in obtaining relevant and sufficient information for the study, the researcher collected both primary and secondary data. Secondary data, which can also be called desk data, is data that has been collected by other researchers, previously for a different purpose or in the normal course of business of the firms. In many cases, it is not research specific and might not be in the format required by the researcher (Smith 2006, p. 22). Primary data is field data that is collected at source for the specific purpose of the research. In this research, secondary data was collected from company financial reports in order to be able to calculate profitability ratios as measures of performance. Primary data was collected means of a questionnaire. This questionnaire had been developed and tested at three other firms before its use, as posited by Creswell (2007, p.184).

4.12.1 The Questionnaires

Questionnaires represent a vital part of the survey process. They are important in data collection, since they allow responses to be recorded in a consistent way to facilitate data analysis. A questionnaire is a document with questions designed to draw out information appropriate for analysis. According to (Krosnic& Presser 2010, p.266) questionnaires are data collection tools in which each person is asked to respond to the same set of questions in a predetermined order. Furthermore, a questionnaire is a structured sequence of questions intended to draw out facts and opinions and which provides a medium for recording the data (Tustin et al. 2005, p.385). A poorly constructed questionnaire would not supply the data that are required or, worse, cannot provide data that are correct and usable (Brace 2008, p.22). However, if the sample has subgroups, the questions asked of each group may vary. How the data are to be collated and analysed influences how the questionnaire is written and laid out, as well as determining some of the questions that need to be asked (Brace 2008, p.24).

4.12.2 Types of questions

The researcher has a choice of asking open or closed questions depending on the dictates of the research. Open-ended questions offer a free response, that is, they call for a respondent's unaided response or their own words. No set of optional responses is supplied. Using open-

ended questions can help a researcher obtain a wide variety of data and respondents can express opinions. Open-ended questions can enrich survey results that might otherwise be difficult, if not impossible, to achieve with closed questions. Using this response type, a variety of primary data can be collected, from demographic characteristics to opinions, attitudes and behaviour. Open-ended responses are of great value in exploring complex and variable topics. They are often used to probe for additional information through questions that require explanations (Tustin et al. 2005, p.396-97). Open-ended responses are very versatile, which makes analysis complex.

Closed-ended questions, on the other hand, can be dichotomous, multiple-choice or scaled responses. Dichotomous questions are the simplest form of closed-ended responses and only give two options for the respondents, options which normally oppose each other. Such questions create nominal data, for example, yes or no. For these responses to be valid, the answer must fall into one of the two categories (Tustin et al. 2005, p.398). Dichotomous questions are easy to analyse, but care should be taken that the situation in which they are used justifies a two way choice (Noble 2007, p.73).

Multiple choice is a fixed-alternative response that gives the respondents a choice of answers from a possible range. Respondents are requested to give one option that correctly expresses their opinion or, in some instances, to indicate all the alternatives that apply to a situation. These types of questions are used when information can be classified into predetermined fixed categories, or when the respondent's thoughts can be deliberately channelled in a certain direction. A researcher has to be careful that all possible options have been included (Noble 2007, p.73). Nominal data is generated through multiple choice questions.

Scaled questions seek to identify strength of feelings. Likert scale is the most popular form of scaled questions. Each response is given numerical values ranging from 1.00 to 5.00 so that all the numerical values could be calculated from all the responses. When using scales, the points offered should cover the entire measurement continuum, leaving out no regions. These points must appear to be ordinal: they must progress from one end of a continuum to the other, and the meanings of adjoining points should not overlap. Furthermore, each respondent needs to have a precise understanding of the meaning of each point on the scale. There must be a common understanding of interpretations of the meanings of each scale point. And a

researcher must know what those interpretations are. Short of these, the quality of the data is likely to suffer (Krosnic and Presser 2010, p.269). The researcher is able to employ far more powerful statistical tools by using some scaled-responses. In this study, the researcher used closed-ended questions which were suitable for collection of primary and secondary data as informed by literature. The questionnaires were self-administered by the researcher.

4.12.3 Advantages of using Questionnaires

Questionnaires can be completed at the respondents' place and at their own pace. The respondent is not put under pressure to respond to the questions at a time and place where he or she is tied up with other business. Biasing errors, which normally occur due to the interpersonal interaction in interviews, are eliminated if a mailed questionnaire is used. During an interview, a respondent may give an answer that he feels the interviewer wants to hear.

4.12.4 Disadvantages of using Questionnaires

The mailed questionnaires eliminate the chance for probing where one gives an ambiguous answer. The researcher has no chance to gather non-verbal behaviour of the respondents. There is no control on who answers the questions, since the respondents can just give the questionnaire to someone else to fill in.

4.12.5 How the weaknesses of the questionnaire were countered.

In order to counter the weaknesses of the questionnaire method, the researcher conducted semi-structured interviews on all those who were given questionnaires, after the receipt of the completed questionnaires. The interviews were therefore used as a triangulation tool that checked the consistency of evidence across the source of data. The researcher also tried to counter the weaknesses associated with the use of questionnaires by distributing questionnaires and then collecting them from the respective respondents personally.

4.13 VALIDITY AND RELIABILITY OF INSTRUMENTS



A pre-test of the questionnaires was conducted using manufacturing firms in Gweru, which is 300km from the research area. None of these subjects were part of the target cases. This was done to find out the validity and reliability of the questionnaires. Diagnostic tests were also run to confirm validity of the data. The following tests were used:

- **Model specification:** This was used to determine if the models were in the right form.

- Multicollinearity to find out the closeness of the association between variables. The nature of the data, being panel data, provided for this.

4.14 DATA PRESENTATION AND ANALYSIS PROCEDURES

The collected data was subjected to quantitative analysis. It was presented in the form of tables, bar graphs and pie charts. The collected data was analysed according to the study objectives using the Chi-squared test and the Pearson Correlation Coefficient method. This was done to establish whether there was any association between performance measuring variable data and the variables presented by the three drivers. An analytical programme, STATA, was used for the regression analysis.

4.15 SUMMARY

This chapter has examined the research methodology, the research paradigm which informs the research design. It also outlines the scope of the survey, the sampling method and the organisation of the survey. In addition, the data gathering technique to be used for the research study, especially the rationale for choosing the self-administered questionnaire, was comprehensively discussed. Furthermore, the chapter focused on the editing, coding and processing of data and the statistical packages to be used to analyse data. Finally, the chapter examined the reliability of the results. The errors that can affect the validity of the results, and the techniques that were used by the researcher to minimise such errors were touched on.

CHAPTER 5: FINDINGS OF QUESTIONNAIRE

5.1 INTRODUCTION

This chapter focuses on the findings obtained from the administration of the study questionnaire (see appendix 1). The researcher examined the data which, was then broken down into elements addressing the four research objectives and translated into meaningful results. The chapter is divided into sections, each focusing on different aspects of the findings. The first section focused on the companies' demographic data, and subsequent sections dealt with interpretation and discussion of the results for each of the research objectives. It is worthy of note that the findings tracked the research objectives to ensure success of the study.

Descriptive statistics were used as illustrations for relations and trends. Charts, tables and graphs were used for analysis. A total of 88 questionnaires were administered, forming the sample from the population of all the registered manufacturing entities in Harare Zimbabwe operating at 100% capacity. A total of 62 questionnaires were usable, giving a response rate of 72%. The respondents were wary of releasing some information, especially financial data, given the data collection period's proximity to the elections held in July 2013. The researcher used analytical software, STATA, for data analysis. Stepwise regression analysis was used resulting in bivariate and multivariate results for each section. The findings are in four sections following the division of the questionnaire and each section was discussed individually. Justification was provided for the variables selected.

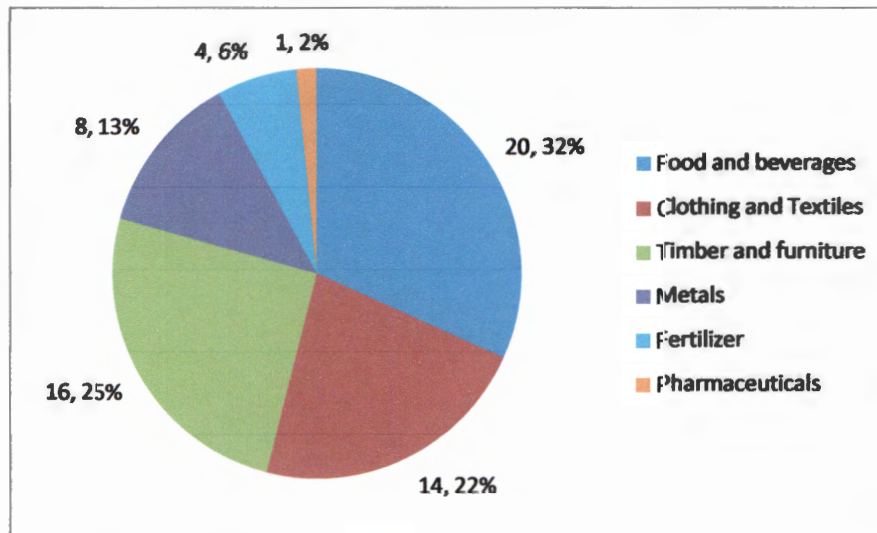
5.2 SECTION A: COMPANYDEMOGRAPHIC DATA

This section presents descriptive statistics on the Zimbabwean manufacturing sector. The researcher computed the mean, the standard deviation, frequencies of the size, composition and age of the firms in the sector. These descriptive statistics give a snapshot of the profile of the manufacturing industry in Zimbabwe. It gives the basic information about the companies selected such as age of the companies, their pursuits and size. It puts the manufacturing entities into perspective and gives the reader a greater understanding of the firms under review

5.2.1 Sectors

Data were obtained from six subsectors which have been earmarked for economic recovery in Zimbabwe. The pie chart (Fig 5.1) below shows the sectorial distribution of companies in the sample in 2012.

Fig 5.1: Sectorial distribution of the companies



Source: Primary data May to June 2013

Food and beverages accounted for the largest proportion of firms at 20.32% and the other were fairly represented in the sample (14.22% in clothing and textiles; 16.25% in timber and furniture; 8.13% in metals; 4.6% in fertiliser manufacturing and 1.2% in pharmaceuticals). The distribution is a fair reflection of the players in the industry and each sector was evenly represented according to the population statistics noted in the methodology chapter. Most of the companies (62%) are in the three subsectors of food and beverages (32%), clothing and textiles (14%), and timber and furniture (16%). The other three subsectors are very complex and very few companies venture into them. A case in point is the pharmaceuticals subsector with a total of nine companies and eight of them operating in Harare. The drivers of performance have sectorial idiosyncrasies as noted by Black (2012, p.935) and such a spread would be appropriate for the study.

5.2.2 Size of the companies

The size of the companies, measured by the number of employees each one had, as posited by the Ministry of Small and Medium Enterprises on inception in 2005 . The companies ranged from small, having one to 20 employees, to very large, those with more than 100 employees. The table below shows this distribution.

Table 5.1: Size of the companies

Company Size(Denoted by number of employees)	Frequency	Percentage
1 to 20	14	23
20 to 40	8	13
40 to 60	10	1
60 to 80	4	6
80 to 100	3	5
More than 100	23	37
Total	62	100

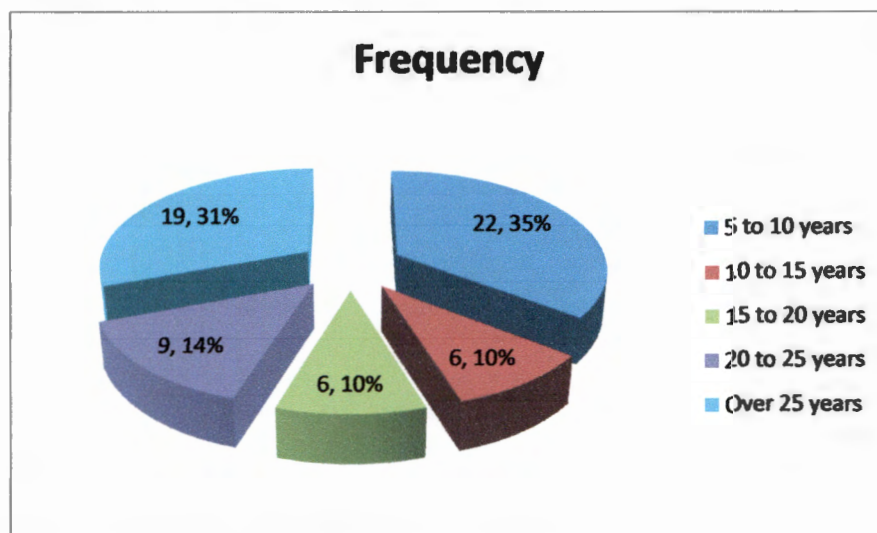
Source: Primary data May to June 2013

Over a third of the companies (37%) in the sample were large, with more than 100 employees, showing that Zimbabwe still has large operators and these could benefit from the research. Added to that, a total of 36% of the companies in the sample employed up to 40 people. All the other sizes were evenly distributed. This means that the results can be generalised over a wide spectrum of company sizes. Furthermore, according to (Iammarino et al. 2008, p.1993) the size of the firm is positively correlated to the development of technological capabilities and thus the size of the firm is relevant to this study.

5.2.3: Age of the companies

The age of the firm has a bearing on learning curve effects and was thus an important demographic aspect for the study. Figure 5.2 below shows the company ages and descriptive comparisons.

Fig 5.2: Age of the company in 2013



Source: Primary data collected May to June 2013

As this table shows, the oldest companies (31%) are still part of the Zimbabwean scene. This is in line with the fact that the manufacturing industry started in the 1940s in Zimbabwe, then Rhodesia, when manufacturing was propelled by the federation of Rhodesia and Nyasaland and where Zimbabwe was selected as the industrial hub (Chiripanhura2010, p.154). Younger companies, below 10 years, are also coming in strong with 35% forming part of the sample. It can be concluded that both old and young companies that survived the economic meltdown from 1999 to 2008 will aid in the recovery of Zimbabwe. A comparison of age and size was also carried out to determine any significant relationships between the two aspects.

Table 5.2: Comparison of company age and size May to June 2013

	age				
Size	5 to 10 years	10 to 15 years	15 to 20 years	20 to 25 years	More than 25 years
1 to 20	12	1	1	0	0
20 to 40	5	1	1	1	0
40 to 60	0	2	1	2	5
60 to 80	2	0	0	1	1
80 to 100	0	1	1	1	0
More than 100	3	1	2	4	13

Source: Primary data May to June 2013

The data indicates that the older companies, above 25 years, are larger and the reverse is true – that smaller companies are younger. This might show exponential growth over the years. Age and size have a bearing on all three drivers of performance, corporate governance, social capital and technological development. According to Wignaraja (2007, p.5) firm size is significantly linked to the development of technological capabilities. On the other hand, (Zhang & Fung 2006, p.205) posit that social capital is invested in overtime, implying that the older a company is the more social capital it would have accumulated. On corporate governance, Black (2012, p.935) notes that larger firms would be best served by more formal governance to respond to the multifaceted nature of such businesses. Further analysis using the Pearson correlation is shown in table 5.3 below.

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Table 5.3: Correlation between company age and size

	Size of the firm	Firm age
Size of the firm	1.0000	
Firm age	0.6065	1.0000
P value	0.00000	

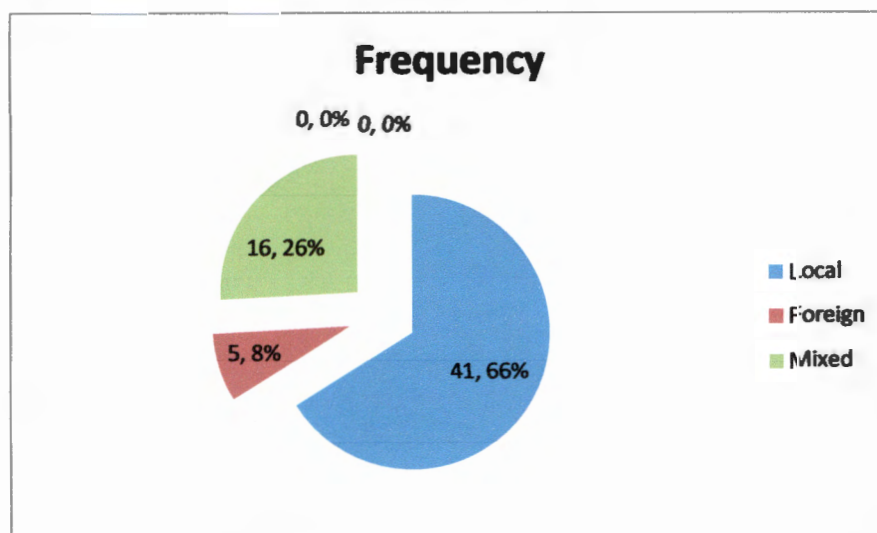
Source: Primary data May to June 2013

As indicated, the correlation value between size of the company and age is + 0.6065 with significant value 0.0000. From this result it can be clearly revealed that there is positive and significant relationship between company size and age. Firms grow as they get experienced and get older and this is so in the Zimbabwean manufacturing sector.

5.2.4: Firm ownership

Ownership of the firms was another demographic aspect which was noted. Firm ownership has a bearing on the development of technological capabilities and therefore performance (Choi & Williams 2011, p.448). The figure below (Fig 5.3) shows whether firms have local, foreign or mixed ownership.

Fig 5.3: Firm ownership May to June 2013



Source: Primary data May to June 2013

Worthy of note is the fact that only 8% of the companies are foreign. This is probably because Zimbabwe embarked on an indigenisation exercise in 2012 across the whole economy where companies have to have at least 51% local ownership. Consequently the local and mixed ownership makes up the combined majority of 91.94% in 2013. Also worthy of note is the fact that the majority (59%) of the locally owned firms are private companies.

Company ownership has a bearing on all the study variables of development of technological capabilities, issues of corporate governance and social capital. Studies have shown a positive correlation between company ownership and level of technological capabilities with foreign enterprises indicating higher levels of technology than locally owned firms (Wignaraja 2007, p.7; Choi and Williams 2011, p. 448). They note that foreign owned firms invest more in innovation and modern equipment than locally owned ones.

A comparison of size and ownership was also done and the table below shows the results.

Table 5.4: Comparison of company size and ownership 2013

Size, number of employees	Local	Foreign	Mixed	Total
1 to 20	11	0	3	14
20-40	7	1	0	8
40-60	8	1	1	10
60-80	3	0	1	4
80-100	3	0	0	3
More than 100	9	3	11	23
Total	41	5	16	62

Source: Primary data May to June 2013

Local firms span the size spectrum as they are in the majority. Foreign firms and mixed ownership firms seem to be generally large. Wignaraja (2007, p.5) noted that large firms take advantage of their size and rely more on technology diffusion from sister companies. The table below (5.5) shows further analysis.

Table 5.5: Correlation between firm ownership and firm size

	Size of the firm	Ownership
Size of the firm	1.0000	
Ownership	0.3490	1.0000
P value	0.00000	

Source: Primary data

The results indicate a positive correlation of 0.3490 and a Pearson score of 0.0000 which confirms that ownership of a firm affects the level to which it grows.

5.2.5 Company registration

In Zimbabwe companies can be registered as private, public, state or cooperatives. None of the companies in the sample were cooperatives. The table below shows the range of registration of the companies.

Table 5.6: Company registration 2012

Type of registration	Frequency	Percentage
Private	54	88.52
Public	6	9.84
State	1	1.64
Total	61	100

Source: Primary data May to June 2013

The form of registration generally influences corporate governance issues such as board composition, size and concentration of shareholding. This demographic variable is very important to the study. The majority of the companies (88.52%) were privately owned and 6% are registered on the stock exchange. The low percentage of state enterprises stems from the fact that State Owned Enterprises are not largely in the manufacturing sector. They are players in areas of a strategic nature or areas that provide public services. There are a total of 78 companies on the Zimbabwe stock exchange, nine of which are in the selected manufacturing subsectors. Thus it can be concluded that public companies have been well represented in the sample.

A comparison between company registration and size was carried out and it was noted that 27% of the private companies have more than 100 employees; these can be regarded as large enterprises. The table below indicates this comparison.

Table 5.7: Comparison of size and type of registration

Size, number of employees	Private	Public	State
1 to 20	14	0	
20-40	8	0	
40-60	9	0	
60-80	3	1	
80-100	3	0	
More than 100	17	5	1
Total	54	6	

Source: Primary data May to June 2013

The rest of the public companies range from small to medium, enabling the results to be generalised across the majority of the type of companies existing in Zimbabwe manufacturing sector at present. Further analysis is depicted in table 5.8 below.

Table 5.8: Correlation between firm registration and firm size

	Size of the firm	Registration
Size of the firm	1.0000	
Registration	0.3413	1.0000
P value	0.00000	

Source: Primary data

The results show a correlation of 0.3413 and a significant value of 0.0000. This confirms that there is a relationship between the size of the firm and whether it is private, public or a cooperative. This is in agreement with Wignaraja (2002, p.96) who noted that firms with foreign components tend to be larger than locally owned firms. Added to that, type of registration has a bearing on acquisition of technology.

5.2.6 Education level of the CEO

The educational level of the chief executive officer (CEO) has an influence on the three study variables. Better educated CEOs understand corporate governance aspects better and have a higher appreciation of financial reports (Zahra et al 2000, p.955). Added to that, social capital expands as the CEO moves in different circles which should aid in getting information on technological capabilities; this eventually affects firm performance. The table below shows the nature of educational level of CEOs of the companies in the sample.

Table 5.9: Education level of the CEOs2013

Education level	Frequency	Percentage
Ordinary level	1	1.61
Advanced level	4	6.45
First degree	26	41.94
Master's degree	25	40.32
Doctorate	6	9.68
Total	62	100

Source: Primary data May to June 2013

One of the methods of building social capital is for the CEO to be a board member of other firms, thus creating linking social capital, links formed in communities (Szreter & Woolcock 2004, p.655). It is best accumulated when players have similar backgrounds and education is held in high esteem in Zimbabwe and can create such a link. In this way, similarly educated CEOs will tend to have similar institutions and social circles. Technological capabilities involve innovation and the creation of knowledge and it takes CEOs with high levels of education to fully appreciate issues such as investment in research and development, patent registration and ISO certification (Kylaheiko et al. 2011, p.511).

5.3 SECTION B: CORPORATE GOVERNANCE FACTORS ASSOCIATED WITH FIRM PERFORMANCE

This section dwells on the first objective, which focused on identifying corporate governance factors that influence firm performance. Descriptive statistics concerning the corporate governance variables were computed. Following Brown and Caylor (2008, p.136), fourteen

corporate governance variables were included in the regression model in an effort to identify critical corporate governance factors that influence company performance.

5.3.1 Descriptive statistics on corporate governance variables

The dependent variables used to identify the determinants of corporate governance were a mix ranging from ownership aspects, to board composition, monitoring mechanisms and disclosure issues postulated by several researchers on the relationship between corporate governance and firm performance (Kumar & Singh 2011; Brown & Caylor 2008; Ongore & K'Obonyo 2011; Azim 2012) amongst others. The descriptive statistics for corporate governance are given in the following section.

5.3.1.1 Shareholder concentration

Shareholder concentration shows/has been defined as the spread of shareholding in the company and it is responsible for the power sharing between managers and shareholders (Azim 2012, p.486). The higher the concentration of shareholding in one person, the more likely the corporate governance issues to be spearheaded by that person (Daily, Dalton & Cannella 2003, p.376). The table below shows shareholder concentration for the companies in the study sample.

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Table 5.10: Shareholder concentration 2013

Percentage shares held by majority shareholder	Frequency	Percentage
Less than 10%	2	3
10 to 20%	0	0
20 to 30%	9	15
30 to 40%	7	11
40 to 50%	17	27
More than 50%	27	44
Total	62	100

Source: Primary data May to June 2013

The majority of firms have very high shareholder concentration with 82% holding more than 30% of the shares. This seems to fit in very well with the ownership model in the sampled firms where 89% of the companies are privately owned. There are no hard and fast rules as to the level of allowable shareholder concentration in Zimbabwe except in the banking sector where one shareholder cannot hold more than 10%. This is in sync with Ehikioya's observation (2009, p.233) that ownership /shareholder concentration is high in developing countries because of the relatively poor legal system, which fails to protect shareholders and interests of investors.

5.3.1.2 Shareholder identity

The question being looked at here is whether the shareholder can be identified or not given that shareholding can be shrouded in mystery at times. This has a bearing on corporate governance as shareholders who cannot be identified can hardly have an influence on the corporate governance issues of an organisation. This applies to 8% of the firms. Most of the firms, 92%, can identify shareholders.

5.3.1.3 Transparency of ownership

The nationality of the owners of some companies can be shrouded in secrecy for a variety of reasons. The transparency of ownership affects corporate governance in the sense that where

a lot of secrecy exists, corporate governance issues may also be affected. No transparency was noted in 2% of the cases, while nationality was known for 98% of the companies. The table below shows shareholder identity and transparency of ownership.

Table 5.11: Shareholder identity and transparency of ownership 2013

Shareholder identity		Transparency of ownership		
57	92%	61	98%	Yes
5	8%	1	2%	No
62	100	62	100	Total

Source: Primary data May to June 2013

This may be attributed to the fact that the majority of the firms are locally owned. With the indigenisation drive, from 2012 an effort by the government to increase local ownership of individual firms to a ratio of 51% local and 49% foreign, transparency of ownership has come to the fore.

5.3.1.4 Board tenure

These are the number of years a board member is allowed to stay on the board. Some companies specify this period so they have a chance of having new ideas from new people. The law in Zimbabwe does not specify this duration and it is left to the vote by public companies and in-house selections by private ones. The table below shows the results.

Table 5.12 Board Tenure 2013

Board tenure	Frequency	Percentage
Less than 5 years	11	18
5 to 10 years	15	24
More than 10 years	35	56
Indefinitely	1	2
Total	62	100

Source: Primary data May to June 2013

The results show that there seemed to be no specified time set for the period in which a board member can serve. The majority of the companies, 89%, were privately owned, and selection and tenure of boards is different from public firms, where directors are chosen by

shareholders. This result seems to confirm the fact that board tenure is related to ownership of the firm.

5.3.1.5 Proportion of independent directors

This variable seeks to determine the proportion of directors who are independent, that is, those who do not work in the organisation and have had no previous connection to the firm. The figure below shows the distribution of independent directors for the firms in the sample.

Table 5.13: Proportion of independent directors 2013

Percentage of independent directors	Frequency	Percentage
Less than 20%	22	68
20 to 30%	10	16
30 to 40%	3	5
40 to 50%	4	6
More than 50%	3	5
Total	42	100

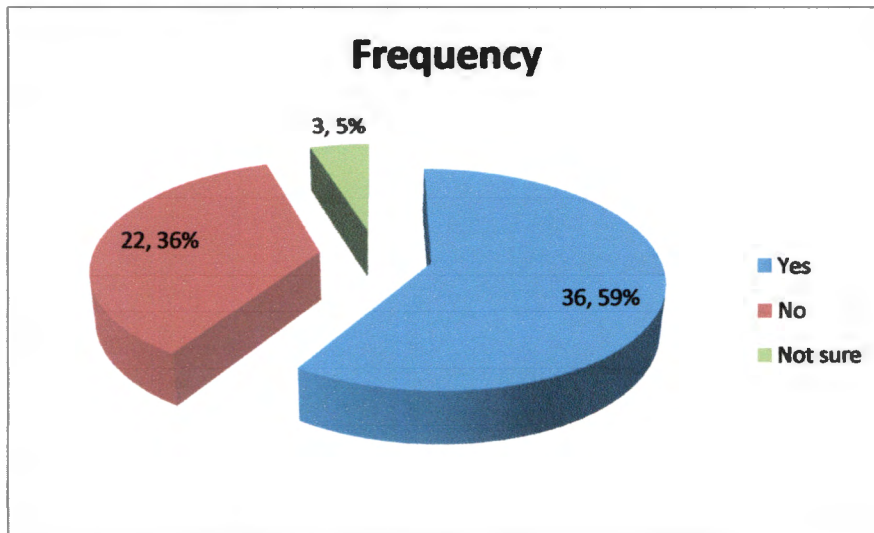
Source: Primary data May to June 2013

The results show that all the firms have independent directors. This aspect of corporate governance has been revered as a critical influence on corporate governance (Black et al. 2011, p.936) as it is believed that the more independent the board, the more it will be able to make objective decisions without being coerced by any party within or without the organisation.

5.3.1.6 Role of the CEO

This variable focused on determining whether the CEO was the chairman of the board or not. This duality of roles could have a negative effect on corporate governance. Separation of the roles is highly advocated by the agency theory as there may be conflict of interest inherent in such a situation, which does not go with contemporary views of shareholder activism (Das 2009, p.12). Figure 5.4 below shows the proportion of firms with CEOs as board chairpersons.

Fig 5.4: CEO as board chairman



Source: Primary data May to June 2013

The majority of the CEOs have this dual role which might be affected by the ownership structure of the firms. The majority of the firms are privately owned and since there is no law against the creation of such duality, it is not surprising that at least 36% of the organisations' CEOs chair their own boards. Literature points out that there is a danger in this dual relationship, where the CEO can exert undue influence and to some extent even override board decisions (Muranda 2006, p.653). A comparison of the duality status and ownership was also carried out to establish the type of companies most prone to it. The table below shows the result.

Table 5.14: CEO as chairman of the board and firm ownership

CEO as chairman of the board ↓	Firm ownership →			
	Local	Foreign	Mixed	Total
Yes	23	5	8	36
No	14	0	8	11
Not sure	3	0	0	3
Total	40	5	16	

Source: Primary data May to June 2013

The statistics indicate that at least a third of the firms in the sample are locally owned and these are by and large privately owned, as indicated in table 5.12 and they have the CEO as the chairman of the board. This intricate relationship has an influence on the three drivers of performance which might depend on the attitude of the CEO.

A chi square test was performed and a relationship was found between firm ownership and CEO duality: $X^2(2, N = 62) = 23.64, p = 0.001$.

Table 5.15: CEO as chairman of the board and firm registration 2013

CEO as chairman of the board ↓	Firm registration →			
	Private	Public	State	Total
Yes	35	1	0	36
No	16	5	0	21
Not sure	2	0	1	3
Total	53	6	1	

Source: Primary data May to June 2013

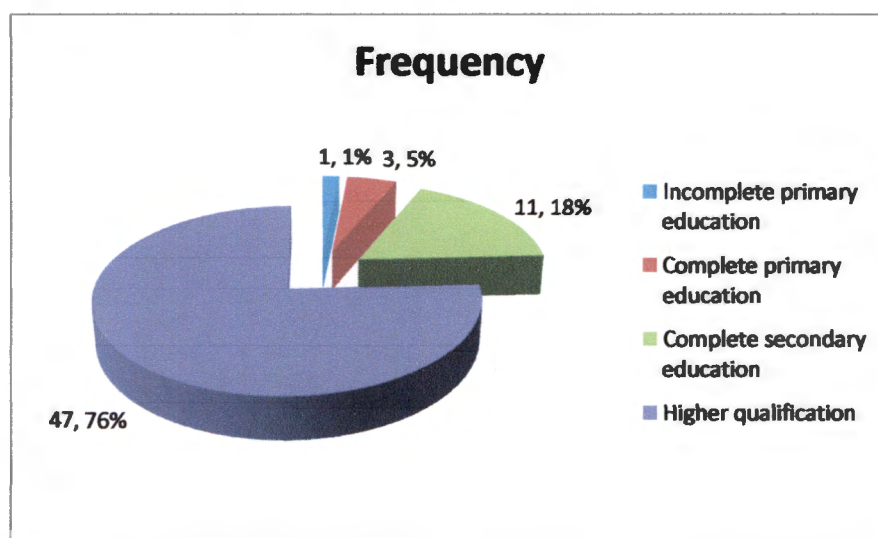
Worthy of note is the fact that out of the six public firms in the sample, five of them have a separation of roles. Probably this means that public firms are more inclined towards the agency theory than privately owned firms.

Further to that a chi square test was performed and a relationship was found between firm registration whether it was public, private or cooperative and CEO duality: $X^2(2, N = 60) = 104,058$ $p = 0.001$.

5.3.1.7 Educational levels of board members

The level of education has a bearing on board members' appreciation of corporate governance aspects. The figure below shows the level of education of board members of the firms in the study.

Fig 5.5: Educational levels of board members



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Source: Primary data May to June 2013

The results cut across six subsectors whose quest for educational qualifications differ. Over all, the majority of the directors (76%) have higher than secondary school education. Zimbabwe has a deliberate education policy which has resulted in 96% literacy level (ZIMSTAT census report 2012, p.12) meaning everyone should have at least completed primary level education and this is well reflected in the results.

5.3.1.8 Effect of Board size

The board of directors is a major decision making body and its size has an influence on the quality of decisions made and the adherence to corporate governance issues (Kumar & Singh 2013, p.89). The results below show the spread of board sizes for the respondents.

Table 5.16 Board size

Board size	Frequency	Percentage
Less than 5 members	33	53
5 to 10	25	40
10 to 15	4	6
More than 15	0	0
Total	62	99

Source: Primary data May to June 2013

Most of the boards (93%) do not exceed 10 in membership. It should be noted that board size has a bearing on the amount of money spent by the organisation on board remuneration. Research has indicated that a board size of more than 10 members become counter-productive and does not add value to the firm (Dahya et al. 2006, p.22). Membership of 10 was viewed as optimum (Kumar & Singh 2013, p.94).

Ownership structure also affects board size as indicated by the table below, which shows that the majority of privately owned companies (68%) have boards with fewer than five members, while those listed on the stock exchange have between 5 to 10 members.

Table 5.17: Board size and firm registration

Board Size 	Firm registration 			
	Private	Public	State	Total
Less than 5 members	32	1	0	33
5 to 10 members	20	4	0	24
More than 10 members	2	1	1	16
Total	54	6	1	

Source: Primary data May to June 2013

This is in sync with the findings of Kumar and Singh (2013, p.92). In a research they carried out on Indian companies, it was found that public firms have larger boards than private companies. A chi square test was performed and a relationship was found between firm ownership and board size, where $X^2 (2, N = 62) = 32.37, p = 0.001$.

5.3.1.9 Board committees

This variable focused on the evidence of board committees in the responding firms. Corporate governance is seen in better light if there are a number of board committees so that decisions are not vested in individuals. The level of accountability is higher in such situations. The results below show the number of committees in organisations in 2013.

Table 5.18: Presence of board committees

Board committees	Frequency	Percentage
Less than 2	30	48
2 to 4	25	40
4 to 6	4	6
6 to 8	2	3
More than 8	1	2
Total	62	99

Source: Primary data May to June 2013

Most of the firms (88%) have four or less board committees, which shows a level of trust in the committees system. Literature abroad generally does not indicate the number of committees, but rather the types of committees, the audit committee being cited as the most critical (Azim 2012, p.488). This was duly noted in the research and one of the variables seeks to determine the presence of an audit committee.

5.3.1.10 Presence of an audit committee

The presence of committees, especially audit committees, has received extra attention, given the need to provide sound financial statements to stakeholders (Azim 2012, p.488). Would be shareholders make their decisions based on financial statements in the main and thus the role and presence of audit committees has increasingly become crucial. The results below show the presence of committees and the presence of an audit committee in particular.

Table 5.19: Presence of audit committees 2013

Presence of an audit committee	Frequency	Percentage
Yes	36	58
No	25	40
Not sure	1	2
Total	62	100

Source: Primary data May to June 2013

The audit committee should ideally be staffed by independent directors for greater transparency as suggested by Black et al. (2011, p.939). The composition of the committees was beyond the scope of this research, however.

5.3.1.11 Selection of auditors

This variable focused on the level of independence employed when auditors are being selected. These are external auditors who ideally should provide an independent opinion of the finances of the organisation. The results below show the nature of this selection.

Table 5.20: Level of independence of auditors

Level relationship company	auditors with the	Frequency	Percentage
Great extent		30	49
Fair extent		29	48
No relationship		2	4
Total		61	101

Source: Primary data May to June 2013

The results indicate that the auditor selection is not independent as (49%) of the firms' auditors had relationship with the firm to a great extent. At least (48%) had relationships with the firm to a fair extent. Consequently the totals (97%) of the firms have no independent auditors.

5.3.1.12 Financial statements standard and disclosure

Ideally, financial statements should be prepared in accordance with prevailing financial standards and should also adhere to the laws of the land. They should disclose enough for a would-be shareholder and even board members to make informed decisions. That is why these variables are important and were selected. The results below show three aspects of financial statements, their quality, access by shareholders and timeous disclosure, are critical in corporate governance according to Coyle (2006, p.136).

Table 5.21: Financial statements

Quality of financial statements		Access to financial statements		Timeous disclosure of financial statements		
57	92%	61	98%	52	84%	Yes
5	8%	2	2%	10	16%	No

Source: Primary data May to June 2013

The results indicate that 98% of the companies expressed satisfaction with the ability to access financial statements while just 2% did not have access; 84% of the companies

disclosed their financial statements on time. The rest (16%) did not disclose their financial statements on time. Financial statements standards were met 92% of the time, while 8% of companies did not meet standards. This positive conduct may be because companies in Zimbabwe are mandated to report every year in tandem with the tax laws, which are very stringent, to the point of instituting heavy penalties for late reports from companies.

5.3.2 Regression model results

The corporate governance variables discussed above were all included in the regression model given below.

$$ROA = \alpha + \beta_1 SC + \beta_2 SI + \beta_3 TO + \beta_4 BT + \beta_5 ID + \beta_6 CEO + \beta_7 BE + \beta_8 BS + \beta_9 BC + \beta_{10} AC + \beta_{11} SAC + \beta_{12} IA + \beta_{13} AS + \beta_{14} FS + \beta_{15} AFS + \beta_{16} TD$$

Where

α and β = the parameters to be estimated

SC= Shareholder concentration

SI= Shareholder identity

TO= Transparency of ownership

BT= Board tenure

ID= Independent directors

CEO= CEO chairing the board or not

BE= Board of directors' educational level

BS= Board size

BC= Presence of board committees

AC= Presence of an audit committee

SAC= Selection of the audit committee

IA= Independence of the auditors

AS= Auditor selection

FS= Quality of financial statements

AFS= Access by the board to financial statements

TD= Timeous disclosure of financial statements

Table 5.22 below shows a summary of the characteristics of the variables and the possible expected signs.

Table 5.22: Corporate governance variables

Variable	Description and possible sign	Reference
Ownership structure	-Shareholder concentration +ve	Aluchna 2009, p.187 Pham &Zein 2011, p.375
	-Shareholder identity -ve	
	-Transparency of ownership -ve	
Board structure	-Board composition +ve	Aluchna 2009, p.187 Pham &Zein 2011, p.375
	-Board tenure -ve	
	-Proportion of independent directors +ve	
	-Is CEO chairman of the board +ve	
Board procedure and ethical conduct	- Number of board members +ve	Black et al. 2012:939
	-Number of board committees -ve	
	-Presence of an audit committee +ve	
	-Tenure of auditors -ve	
	-Independence of auditors +ve	
	-Selection of auditors +ve	
Disclosure	-Quality of financial statements +ve	Black et al. 2012: 939
	-Availability of financial statements +ve	
	-Access to information +ve	
	-Scope of the information +ve	
	-Timeous disclosure +ve	



5.3.3 Correlation matrix

The correlation matrix seeks to examine the inter-correlations between the variables of interest: in this case, the correlation between corporate governance variables. Results of Table 5.23below show that all the correlations are within the acceptable range of 0.01-0.775 as suggested by Kumar and Singh (2011, p.92). The degree of correlation between independent variables is either low or moderate, suggesting absence of multicollinearity between these variables.

Table 5:23 Correlation matrix

	Profit	Concentration	Identity	Transparency	Tenure	Ind D	CEO	B Edu	B/size	B/comm	Aud comm/sel	Ind/aud	Aud/sel	Quali stats
Profit	1.0000													
Concen	0.0746	1.0000												
Identity	0.0625	0.3668	1.0000											
Trans	0.0276	0.0938	0.4302	1.0000										
Tenure	0.0804	-0.0008	0.0743	0.0320	1.0000									
Ind/Dir	-0.0054	0.1480	0.1119	0.0739	-0.0971	1.0000								
CEO	-0.0666	0.1858	0.1177	0.1052	0.2870	-0.0921	1.0000							
B/Edu	0.0615	-0.1248	0.1515	0.0977	-0.2554	-0.1188	-0.4572	1.0000						
B/Size	-0.0409	0.0510	0.0585	-0.1191	0.0981	0.1895	0.0018	-0.0969	1.0000					
B/comm	0.0364	0.0004	0.1367	-0.0230	-0.937	0.1264	0.0129	-0.0838	0.3361	1.0000				
Aud/comm	0.0703	-0.0722	0.2171	0.0934	-0.177	0.2242	-0.1245	-0.581	0.2536	0.1538				
Audi/comm sel	-0.0196	-0.2248	0.1739	0.1199	0.0711	0.1531	-0.0860	0.0386	0.2987	0.0652	1.0000			
Ind/aud	-0.0647	0.2340	-0.0469	-0.0883	-0.0088	-0.1466	-0.1422	0.1284	-0.1908	0.0209	-0.0836	1.0000		
Aud/sel	-0.0591	-0.3386	-0.0168	-0.0621	-0.1802	0.1876	-0.1496	0.0427	0.1493	0.0196	0.4486	-0.2035	1.0000	
Fin stat	0.0522	0.1383	0.1543	-0.0385	0.0023	0.1521	-0.3456	0.0338	0.1260	0.1348	0.1308	0.3442	0.0134	1.000
Access	-0.0371	-0.0592	-0.0216	-0.0093	-0.9329	0.1007	-0.2868	0.2099	-0.1785	0.0781	-0.1642	-0.0438	0.1508	-0.015
Disclosure	0.0628	-0.1976	-0.1366	-0.0588	-0.1960	0.297	-0.4015	0.3221	-0.0855	0.1656	0.1686	0.1635	0.1599	0.266

Source: Primary data May to June 2013

5.3.4 Regression results

Given below are the results of the stepwise regression approach to identifying which factors are positive and significantly related to operating performance. A bivariate and multivariate regression analysis was used and the results are reflected in the table below. All regressions are estimated using the random effects method. Table 5.24 below gives a summary of the results.

Table 5.24: Bivariate and multivariate analysis

Variable	Bivariate analysis			Multivariate		
	Coeff	Z	P	Coeff	Z value	P value
Shareholder concentration	0.227116	2.31	0.021	0.4260	2.72	0.007
Shareholder identity	0.521468	1.11	0.916	-0.3653	0.52	0.606
Transparency of ownership	0.475324	0.07	0.948	0.9121	0.08	0.935
Board tenure	0.019681	0.35	0.730	0.4126	1.92	0.055
Proportion of independent directors	0.273544	2.41	0.016	0.1983	1.41	0.159
Role of the CEO	-0.04201	-0.32	0.745	0.0966	-0.56	0.579
Education levels of board members	-0.19787	-1.32	0.187	0.1068	-0.49	0.621
Board size	-0.00288	-0.01	0.990	-0.2724	-0.83	0.406
Board committees	0.023060	0.24	0.811	0.0889	0.74	0.460
Audit committee	0.276029	1.06	0.289	-0.1454	-0.36	0.716
Selection of the audit committee	0.118008	0.55	0.579	0.3986	1.27	0.204
Independence of auditors	0.032943	0.20	0.838	-0.1550	-0.70	0.418
Selection of auditors	0.021231	0.24	0.810	0.1052	0.89	0.375
Quality of financial statements	0.531834	1.10	0.270	0.0922	0.15	0.884
Access to financial statements	0.74081	0.04	0.968	0.4180	1.74	0.082
Timeous disclosure	0.211501	0.59	0.553	0.4180	0.94	0.347

Source: Primary data

5.3.5 Results and Discussion

5.3.5.1 Shareholder concentration

Various studies using different samples have come up with differing results, at times contradictory, on the impact of shareholder concentration and firm performance. Both the bivariate and multivariate regression analyses found that shareholder concentration is positive and significant at 5% level of significance. This implies that as shareholder concentration

increases, performance also improves. This is probably because a majority shareholder who has a high proportion of shares has more control over corporate governance influences, and therefore performance. A study carried out by Kumar & Singh (2011, p.96) concurs with this result and they state that ownership drives the promoter to seek more control of the company and gives the major shareholder an incentive to monitor, and thus enhance, firm value. Emerging markets generally have family owned businesses and corporate governance is greatly influenced by majority shareholders who are family members (Millar et al. 2005, p.166). However, these results were contradicted by the findings of Ongore and K'Obonyo (2011, p.110) in their study of Kenyan companies listed on the stock exchange, who noted a negative and significant relationship. Their sample was a mixture of public and private companies and the results seem to agree with the fact that Zimbabwean companies are privately owned and generally have high shareholder concentration and therefore control is likely to lie in one person.

5.3.5.2 Shareholder identity

An effort to identify corporate governance factors that affect firm performance also included an ability of stakeholders to identify shareholders. Shareholders come from a variety of nationalities and beliefs which affect the decisions that are made and followed. In Zimbabwe, shareholders can be private institutions such as insurance companies, the government or individuals. The question sought to determine if the stakeholders could identify the shareholders as this has a bearing on decisions of investors, who are then able to assess risk attitude, focus on profits or policy and level of bureaucracy and thus on firm performance. The bivariate regression analysis indicated that shareholder identity is not significantly related to firm performance; therefore this variable (or shareholder identity) was not included in the multivariate analysis. Ongore and K'Obonyo (2011, p.111) do not find a significant relationship between shareholder identity and firm performance. The most likely explanation for this difference was the focus on different types of company registration. This study focused on both private and public firms, while most country studies focus on public companies (Black et al. 2012, p.936).

5.3.5.3 Transparency of ownership

The issue at hand in this variable was whether the nationality of the owners could be identified, in a bid to understand the transparency of the nationality of the owners. This factor affects the way firms do business, which affects performance. The bivariate and multivariate regression (analyses) both show that this variable does not significantly explain firm performance in Zimbabwe. This result was also noted by Ongore and K'Obonyo (2011, p.111); they found that there was no positive relationship between transparency of ownership and firm performance. For the Zimbabwean scenario, the issue of transparency is very topical, given the indigenisation agenda; 98% of the responding firms were well aware of the nationality of the owners and thus the variable did not significantly affect firm performance.

5.3.5.4 Board tenure

This variable captured the effect of the length of time a board member can stay on the board. Board tenure has an impact on experience: the more experienced the board members, the more robust the decisions they are likely to make. Therefore, it is hypothesised that there is a positive relationship between board tenure and firm performance (Aluchna 2009, p.187). The results show that the variable board tenure has a positive and significant coefficient, implying that experienced board members are an asset to the company. Brown and Caylor (2008, p136) also reached the same conclusion.

5.3.5.5 Proportion of independent directors

A preference for independent directors is largely grounded in the agency theory, which posits that agents act according to self-interest, which may not go with maximising the owners' return (Jensen 1976). Independent directors protect the shareholder interests better and are therefore more trusted for this mandate than executive directors. Furthermore, independent directors allow for more firm monitoring and thus improve firm performance. The results show that board independence significantly influences firm performance. The majority of studies seem to find board independence having a positive and significant relationship with performance. Dahya et al. (2006, p.25; Ho(2005, p.245) studied multiple companies in the developed world; they all agree that having independent directors is positive and significant for performance. The reason for this is probably that independent board members have experience from elsewhere as they

may be CEOs of other companies or influential people. Added to that, firms in the developed economies attach a lot of weight to structures that increase the independence of the board as it increases unbiased thinking. On the contrary, however, Azim (201, p.:498) researched Australian firms and did not find the independence of the board affecting firm performance a finding which is a rare feat in the studies across economies.

In the Zimbabwean situation, most companies are privately owned. Because of high shareholder concentration and no legislated method of selecting board members, independent directors may be the linchpin to firm performance, which might be viewed as providing shareholder protection. The disparity of countries and companies might be an explanation for the difference in results.

5.3.5.6 Role of CEO

One of the mandates of the CEO is to spearhead the implementation of the organisational strategy and the board is responsible for monitoring progress and ensuring that the shareholders' expectations are met. For purposes of accountability and responsibility, therefore, it was critical to establish whether the CEO had a dual relationship as the head of the organisation and also the head of the board. It is quite legal to have the CEO double up as the chairman of the board, meaning that he/she virtually monitors himself, since that is one of the board of directors' mandate. The duality of the CEO role has had mixed results across many studies. The results of this study show a positive but not significant relationship between "role of CEO" variable and firm performance. The theoretical implication in the Zimbabwean context is that whether the CEO is the chairman of the board or not, there is no association with the performance of the firm. Azim (2012, p.498) however, found to the contrary that the relationship was positive and significant. The probable reason for the difference is that Azim concentrated on listed firms, while this research used both private and public firms, most of which (89%) were privately owned.

5.3.5.7 Education levels of board members

Conventional wisdom suggests that the higher the level of education of the board of directors, the better they can comprehend corporate governance issues as it has a bearing on the ability of the members to read, understand and make decisions on financial statements in particular. The question sought to determine the educational attainment of the board members. The results show

that education levels of the members is not significantly related to firm performance. This was in tandem with Azim (2012, p.498) who found similarly. This was probably because the majority of the firms are privately owned and the selection of board members can be largely subjective; it is not necessarily based on educational level. Furthermore, this is a peripheral matter to corporate governance per se and significance would therefore be minimal.

5.3.5.8 Board size

The complexity of decision making and the quality of these decisions lies largely with the board constitution, which stems from its size (Kumar & Singh 2011, p.89). There have been mixed results on the effect of board size on firm performance, but popular sentiment has been that there is no one size fits all. There is merit in small boards for cohesiveness and productivity (Coles et al. 2005, p.2). A board membership which was too small would not have the necessary resources to enhance firm performance and somewhat larger boards, (8 to 10) were viewed as the optimum board size. Zimbabwean firms in the manufacturing sector fall within international contemporary board size given their size of not more than 10 members. The results show that board size has a negative but insignificant coefficient. A study of Indian firms by Kumar and Singh (2011) concurred with these results. However, a study of firms in the developed world by Ho (2005, p.247) contradicted this when he found board size positive and significant to performance. Azim (2011, p.498) studied Australian firms and found board size positive and significant to performance. The probable explanation for this difference is that developed countries have different country nuances from developing countries, and this is reflected by similar results in developed countries.

5.3.5.9 Board committees

The question sought to determine whether firms had board committees and the number of such committees each board had set up. Boards can set up different committees for the execution of their mandate and these indicate the level of accountability of the firm. They differ from board to board although some commonalities can be found. Ideally the committees should be staffed by independent directors (Cole et al. 2005; p. 1). The results show that presence of board committees was positive but not significant to performance. Contrary to this finding was that of Azim (2012, p.498) that presence of board committees was negative and significant to

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performance. In the Zimbabwean scenario the majority of the firms (88%) have four or less board committees, which is on the low side, and this slow uptake of the committee system may have influenced this result.

5.3.5.10 Audit Committee

The audit committee is revered in corporate governance literature as 'crucial' to maintaining investor confidence; independent financial reporting and selection of independent auditors is central to investment decisions (Chambers 2012, p.379). The audit committee is ideally staffed by independent directors and should include a person conversant in auditing matters (Bouaziz 2012, p.57). The results indicate that audit committee is negative and not significant to performance. Contrary to this, Ho (2005, p.246) found that audit committees are positive and significant to performance. This significance may be explained by the fact that companies in the survey hail from those countries with historical corporate scandals, thus the mandate to have audit committees which ideally should strengthen audit independence and the public views the companies with such a committee as having integrity. This builds investor confidence. Added to this, the audit committees' existence and composition has in some cases been enacted into law, making it a prerequisite for listing (Chan and Li 2008, p.18). In the Zimbabwean manufacturing sector only a small majority (58%) of the firms indicated that there was an audit committee, showing a lack of belief in such a committee which factor probably contributed to the non-significance of the presence of the audit committee.

5.3.5.11 Selection of auditors

The audit committee of the board goes beyond the general advisory stance but is a full-fledged organ with its duties and responsibilities, one of which is to select company auditors (Bouaziz 2012, p.57). Selection of auditors has to be independent and take into consideration the size of the audit firm as this has a bearing on auditor performance, as suggested by Haat et al. (2008, p. 751). Further to that, an independent audit committee is associated with independent auditors, who generally improve monitoring of the financial reporting process. In the Zimbabwean manufacturing sector, however, selection of the auditors is positive but not significant to firm performance. This is in sync with corporate governance literature, which indicates that the selection has to be transparent, but hardly relate this variable to firm performance.

5.3.5.12 Quality of financial statement, access and disclosure

The quality of financial reporting has become pivotal in the years following the demise of huge corporations worldwide. The question sought to establish whether firms had satisfactory reporting standards as the financial statements are investors' first port of call. In the Zimbabwean manufacturing firms, the quality of the financial statements according to the bivariate and multivariate regression analyses is not associated with firm performance. This result concurs with Lopes et al. (2011, p.21) who noted that inasmuch as accounting information guides investment and financial decisions, it has a negative impact on firm performance. This is probably because (unless backed by a strong and reputable audit firm), financial statements are by and large subjective and may not have full disclosure of the situation on the ground.

Access to financial statements helps investors to trust that they are not being manipulated and it gives them an assurance that they can get firms' inside information from public financial data (Healy 2007, p.9). The question sought to determine if investors have access to financial statements to enable them to understand where their money was going. The majority of the respondents (98%) confirmed that firm shareholders have access to the company financial statements, so investors in the Zimbabwe manufacturing sector have information for decision making. The multivariate regression analysis found this variable positive and significant to firm performance. This was in tandem with Augustine (2012, p.672) who also found access to financial statements positive and significant to firm performance.

Improved and timeous disclosure has been noted to contribute to lowering transaction costs and has an impact on cost of capital. It is said to improve the demand for firm's stock and this mitigation of information asymmetry reduces the danger of periodic surprises in financial markets (Haat et al.2008, p.746). Timeous disclosure contributes to a firm's transparency, which is important for corporate governance. This variable was included in an effort to determine what matters for corporate governance in the Zimbabwean manufacturing sector. The results noted that timeous disclosure of financial statements is not positively associated with firm performance in both the bivariate and multivariate regression analyses. Haat et al. (2008, p.746) also found similar results. What matters in corporate governance is probably 'what' is disclosed rather than 'when' it is disclosed.

5.4 SECTION C: INTERVENTIONS AT FIRM LEVEL AIMED AT BUILDING SOCIAL CAPITAL

This section concentrates on the second research objective, which is to isolate interventions at firm level, aimed at building social capital for company performance. It will go further to give results stemming from the correlation matrix and the bivariate and multivariate regression analysis in an effort to isolate those critical variables that can build social capital for Zimbabwean companies.

The net effect of social capital depends on the balance of the social capital variables. Following the study of Chinese firms by Zhang and Fung (2006, p.200), the variables of networks, investment in social capital and membership of business associations were selected and included in the regression model. These form the backbone of social capital. Worthy of note is the fact that empirical studies around the world have not come up with conclusive results on the effect of social capital on firm performance (Wu 2008, p.122). The majority of studies hardly find any social capital variables significantly explaining firm performance.

5.4.1 Descriptive statistics for social capital variables

The descriptive statistics stem from the results of the administered questionnaire and seek to place the social capital variables in perspective. A total of 10 variables were discussed and the details of each are given below.

5.4.1.1: Does the company have business from their networks?

Networks had been revered in social capital literature as the mainstay in creating and maintaining high social capital. As postulated by Putnam (2000, p.20) social capital is built over time; the extension of the networks span longer and further over time. Generally, firms in similar pursuits network together and connect with their suppliers, bankers, key customers and other key stakeholders. The question sought to determine whether the firms were part of any networks at all.

Table 5.25: Network possession 2013

Possession of networks	Frequency	Percentage
Yes	52	84
No	10	16
Total	62	100

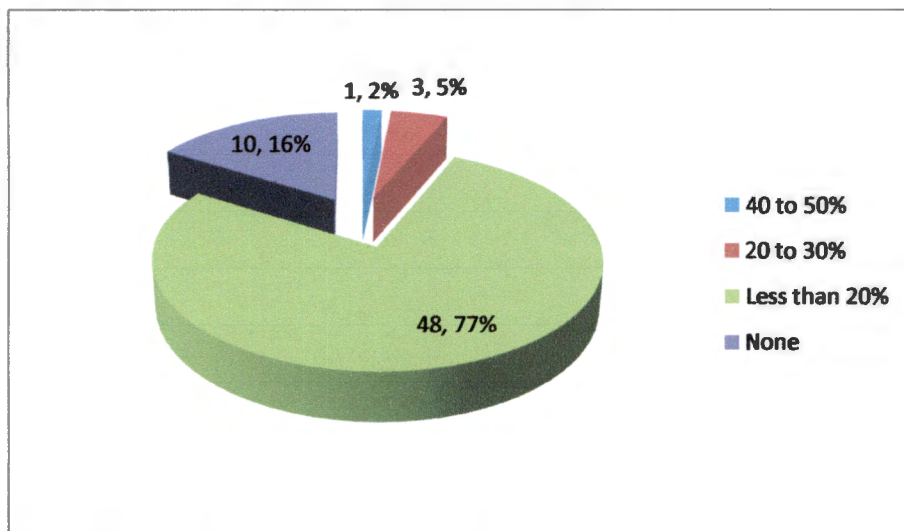
Source: Primary data May to June 2013

It was encouraging to note that the majority of businesses were networked. Networks provide organisations with information, ideas and resources to perform better (Wu 2008, p. 121; Gulati & Sytch 2007, p.42). It can be posited that the more networks the business has the higher the probability of it performing better.

5.4.1.2 Business stemming from networks

Business networks open opportunities for trade and it was imperative to note how much business organisations had gleaned from the networks. The idea was to find out if the firms in the Zimbabwean manufacturing sector had managed to attain business from their networks. The pie chart below (Fig 5.6) shows the percentage of the total business that networks had influenced in acquiring.

Fig 5.6: Business stemming from networks 2013



Source: Primary data date May to June 2013

Surprisingly the majority of the respondents (49%) got less than 20% of their business from networks. This could be a typically Zimbabwean phenomenon as organisations are known to keep information close to their chest and networking is closely associated with corruption which has been rife during and after the economic challenges from 1999 to 2008. Foreign firms are by nature more exposed than local firms (Wignaraja 2007, p.5). Further analysis was therefore carried out to determine the correlation between ownership and business from networks. Table 5.26 below shows the result.

Table 5.26: Correlation between firm ownership and business from networks

	Ownership	Business from networks
Ownership	1.000	
Business from networks	0.1687	1.000
Pearson correlation	0.0078	

Source: Primary data May to June 2013

Together with empirical evidence, Zimbabwean manufacturing firms show a significant relationship between firm ownership and business from networks.

5.4.1.3 Business ties possessed by the company

This variable was focused on determining the number of ties possessed by the organisation.

These are the number of relationships at an informal level which a business has and they can be deemed weak or strong. The stronger they are the more influence they would have on the firm performance. The following table (table 5.27) indicates the distribution.

Table 5.27: Possession of business ties 2013

Number of ties	Frequency	Percentage
None	6	10
1 to 3	24	39
3 to 6	17	27
6 to 9	5	8
More than 10	10	16
Total	62	100

Source: Primary data May to June 2013

There seems to be distribution of the number of ties possessed by the firms in the sample range from none to more than 10. The sample was across 6 subsectors in the manufacturing sector involved in producing more than 6000 products, thus the ties would be few and difficult Chiripanhura (2010, p.154) . It was further noted that those firms who are locally owned have more ties than those which are foreign owned or with mixed ownership. This is depicted in the table (5.28) below.

Table 5.28: Network ties and firm ownership 2013

Ownership	Local	Foreign	Mixed
Ties			
None	6	0	0
1 to 3	14	1	9
3 to 6	11	1	5
6 to 9	4	0	1
More than 10	6	2	1

Source: Primary data May to June 2013

5.4.1.4 Strength of ties

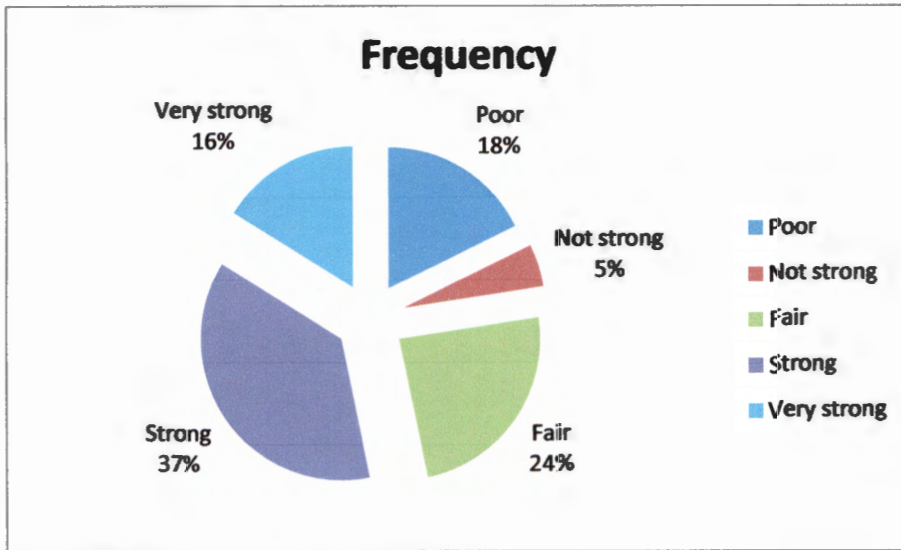
The value of the ties is in their strength. This refers to the intensity of reciprocal obligations of the network players as it provides the necessary lubrication for transactions and exchange of information and resources. Business decisions are driven by these obligations (Szeto, Wright and Cheng 2006, p.426). The table below (5.29) shows the levels of network strength.

Table 5.29: Strength of network ties 2013

	Frequency	Percentage
Poor	11	18
Not strong	3	5
Fair	15	24
Strong	23	37
Very strong	10	16
Total	62	100

Source: Primary data May to June 2013

Fig 5.7: Strength of the ties 2013



Source: Primary data May to June 2013

The figure (5.7) shows that even though the ties are few, they are strong. This might mean that they have an influence on the operations of the firm. The manufacturing firms in Harare which is the study area located by default under the local authority namely the Harare City Council. The council dictates land use in terms of where types of firms are to be located. In that case land use laws and not by design as in the case of deliberate clusters industrial parks where similar firms are grouped together. . Therefore knowledge may not be transferred or available to all as a public good; therefore, the strength of the ties is on the poor side.

5.4.1.5 Level of trust in the networks

Social capital by and large involves relationships. The issue of trust is at the fore of the interdependence and sharing of information and experiences. Trust was defined by Zaheer et al. (1998, p. 209) as the belief that the players are dependable and can be relied upon to fulfil their promised obligations. The question was seeking to ascertain the level of trust in the network relationships. The table (table 5.30) below shows the level of trust in the networks.

Table 5.30: Level of trust in the networks 2013

Level of trust in the networks	Frequency	Percentage
Very high	9	15
High	14	31
Fair	30	48
Low	3	5
Very low	1	2
Total	57	100

Source: Primary data May to June 2013

The level of trust ranges from fair to very high in the main and this may indicate an ability to work together. This result seems to be confirming that all the companies are in the manufacturing sector and the bonding social capital is in sync with high levels of trust.

5.4.1.6 Level of interaction

The level of interaction has a bearing on the extent to which organisations can exploit networks. The more interaction between network players, the more exposure there is to new ideas, new opportunities and new knowledge. The more interaction there is with the focal firms in the sector that generally have higher levels of networking ability, the more the accumulation of social capital (Zhang and Fung 2006, p.200). The respondents were asked how frequently network players interact with other players. Table 5.31 below shows the level of interaction.

Table 5.31: Level of interaction 2013

Level of interaction	Frequency	Percentage
Very low frequency	3	5
Not frequently	4	13
Fairly frequently	13	29
Frequently	27	44
Very frequently	6	10
Total	55	101

Source: Primary data May to June 2013

The majority of the firms interact fairly frequently, which would benefit their performance.

5.4.1.7 Business associations of a firm

Organisations join different business associations which have a myriad of functions, from advocacy, linkages and to voicing concerns to government. In many cases there are umbrella associations like the Confederation of Zimbabwe Industries (CZI) in Zimbabwe which takes care of the interests of all member manufacturing companies. Added to that, firms in the same subsector may also have more specific associations dealing with their subsector idiosyncrasies. Given below is the distribution of membership to associations.

Table 5.32: Membership of business associations 2013

Number of associations	Frequency	Percentage
None	17	10
1	4	39
2	15	27
3	19	8
4	4	16
5	3	
6	2	
Total	62	100

Source: Primary data May to June 2013

The array of membership is influenced by the spread of the subsectors. Also worthy of note is the fact that some industries coerce players to join associations and this inflates membership figures. In some subsectors membership is truly voluntary and consequently some firms do not find it necessary to join them. This is the probable reason why some firms are not members of any association.

5.4.1.8 Donations

Donations that are made to different institutions and to different causes have been viewed in social capital literature as investment in social capital (Zhang& Fung 2006; Putnam 2000). This phenomenon is not new to firms in Zimbabwe as donations are regularly requested for causes ranging from charitable to political. The respondents were requested to state whether the organisation donated to any cause from 2009 to 2012. The table below (table 5.33) shows whether firms donated anything in the four year period.

Table 5.33: Donations by companies 2009 to 2012

Donations done	Frequency	Percentage
Yes	60	96
No	2	4
Total	62	100

Source: Primary data

Almost all the companies (96%) donated something in the four year period. In Zimbabwe, it is prudent to donate to such national events as the Independence Day celebrations, Heroes' Day, President's birthday celebrations and Christmas Cheer fund for the less privileged. Companies feel that they are seen in a good light by the government if they 'participate' in politically driven donations as well. The donations recorded ranged from \$100 to \$300 000 per year, with larger firms tending to spend more than smaller firms.

5.4.1.9 Presence and proportion of entertainment budget

Entertainment is also viewed as investment in social capital (Zhang and Fung 2008, p. 200). This variable looked at the number of organisations that had entertainment budgets as this has a

bearing on network building activities and the capacity to create profitable relationships. The table below (5.34) indicates the number of players with or without entertainment budgets in the period 2009 to 2012.

Table 5.34: Presence of an entertainment budget 2009 to 2012

Entertainment	Frequency	Percentage
Yes	55	97
No	7	3
Total	62	100

Source: Primary data May to June 2013

The majority of organisations (97%) have allocated funds for entertainment. Table 5.35 below shows the proportion of the entertainment budget to the total company budget. This probably indicates the seriousness attached to building social capital by the firms.

Table 5.35: Proportion of company budget allocated to entertainment

Budget allocated to entertainment	Frequency	Percentage
None	5	8
1%	47	76
2%	7	11
3%	1	2
4%	1	2
5%	1	1
Total	62	100

Source: Primary data May to June 2013

The majority of the firms allocated at least 1% of their total budgets to entertainment. This will translate into quite a substantial amount of money for larger firms with high turnovers.

5.4.1.10: Extent of government liaison

Although institutions in emerging markets are not fully functional, liaison with government officials can be a source of valuable information and policy shifts that can affect organisations. Larger organisations in Zimbabwe are known to employ government liaison officers whose mandate is to create very close and profitable relationships with relevant government ministries. It is thus a form of investment in social capital as government decisions have a potentially serious effect on the operations of firms. Zimbabwe has witnessed its greatest policy shifts since independence in 1980. These have heralded a lot of uncertainty in the economy and such liaisons have become priceless; businesses need up to the moment information to maintain competitive advantage. The table below (5.36) shows the level of liaison with government in 2013.

Table 5.36: Extent of government liaison

Extent of government liaison	Frequency	Percentage
Not at all	4	2
Poor extent	3	5
Fair extent	24	39
Good extent	16	26
Great extent	14	29
Total	61	100

Source: Primary data May to June 2013

It is evident that the majority of the firms (93%) liaise with government from a fair to a great extent: fair extent (39%), good extent (26%) and to a great extent (29%). In Zimbabwe government is the largest consumer of both goods and services and such capital can stand organisations in good stead.

5.4.2 Results and discussion

The relationships between social capital variables and organisational outcomes using return on assets as a proxy were tested using stepwise bivariate and multivariate linear regression analysis.

The following model was estimated:

$$ROA = SC_t$$

Where

ROA = Return on Assets measuring operating performance

The model was expanded to reflect the 11 social capital variables as suggested by Zhang and Fung (2006, p.200.)

$$\text{ROA} = \alpha + \beta_1 \text{PN} + \beta_2 \text{BN} + \beta_3 \text{BT} + \beta_4 \text{ST} + \beta_5 \text{T} + \beta_6 \text{I} + \beta_7 \text{BA} + \beta_8 \text{DO} + \beta_9 \text{EN} + \beta_{10} \text{EB} + \beta_{11} \text{GL}$$

Where

α and β = the parameters to be estimated

PN= Presence of networks in the firm

BN= Proportion of business from the networks

BT= Business ties a firm has

ST= The strength of the ties

T= Level of trust in the ties

I= Frequency of interaction

BA= Membership of business associations

D= Donations made

EN= Presence of an entertainment budget

EB= Entertainment budget as a proportion to the firm budget

GL= Government liaison

The characteristics of the variables and the literature support are given in the table below.

Table 5.37: Social Capital variables

Variable	Description	Reference
Presence of networks	Identification firm's social capital	Zhang and Fung 2008,p.201
Expenditure on network creation	-Donations	
	-Purchase of gifts	
	-Entertainment budget	
Number of ties	Quantifying of the ties a firm has	Maurer et al. 2012,p.166
Strength of the ties	Dependability of the ties	
Frequency of interaction	Social capital is maintained by periodic interaction	
Level of trust	Trust is a backbone of social capital development	Maurer et al. 2012,p.166
Affiliation to industry associations	A fast way of obtaining bridging social capital	Zhang and Fung 2008,p.202

5.4.3 Multicollinearity for social capital variables

Linear regression requires the absence of a problem of Multicollinearity between the independent variables introduced in the same model (Bouaziz 2012, p.59). As validity of the data is indicated by a lack of Multicollinearity, the correlation matrix shows that the Pearson correlation between the different independent variables is moderate: the correlation is not more than 0.8. This result was suggested by Kumar and Singh (2011, p.92) who noted that acceptable range is not less than 0.8 as indicated by the table (5.38) below. This implies the absence of Multicollinearity problem between the variables.

Table 5.38: Correlation matrix for social capital variables

	Profit	nbusiness	Ties	Var43	Trust	Interact	Associations	donations	entertainment	Budget	gvtliaison
Profit	1.0000										
nbusiness	0.1618	1.0000									
Ties	0.0747	0.1063	1.0000								
Var43	-0.0404	-0.1843	0.4782	1.0000							
Trust	0.1470	0.2149	0.1160	0.3145	1.0000						
interact	0.0406	0.2793	0.1983	0.4437	0.4235	1.0000					
Associations	-0.0788	0.1139	0.0374	0.0667	0.1840	0.1595	1.0000				
donations	0.0226	-0.0196	-0.0185	-0.0315	-0.0442	-0.0474	-0.0103	1.0000			
Entertainment	-0.1504	0.0373	-0.1756	-0.1881	-0.0963	-0.0116	0.0770	-0.0353	1.0000		
Budget	-0.1047	0.0580	0.0756	0.1213	0.3683	0.0831	0.3456	-0.1227	0.1665	1.0000	
gvtliaison	0.0946	0.1551	0.1211	0.2526	0.4199	0.6365	0.1902	-0.1326	0.0738	0.1538	

Source: Primary data

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The table below shows the results.

Table 5.39: Bivariate and Multivariate regression results

	Bivariate analysis			Multivariate analysis		
	Coeff	Z	p> z	Coeff	Z	p> z
profit						
Nbusiness	0.512992	1.71	0.087	0.7444159	1.38	0.167
Ties	0.0937587	0.087	0.385	0.1717482	0.94	0.348
Strength of ties	-0.0153387	-0.15	0.882	-0.1716176	-0.87	0.386
Trust	0.2626041	1.78	0.075	0.4504325	1.97	0.049
Interact	0.0638382	0.50	0.614	-0.3098879	-1.18	0.239
Association	-0.0338353	-0.98	0.325	0.0280156	-0.78	0.438
Donations	0.4707993	0.74	0.457	0.6095788	0.29	0.772
Entertainment	-0.3317818	-1.97	0.048	0.3482575	-1.44	0.151
Budget	-0.263772	-1.20	0.229	-0.6877001	-1.92	0.055
Gvtliason	0.0443869	0.33	0.738	0.4915136	1.70	0.090

Source: Primary data

5.4.3.1 Presence of Business Networks

Networks are the backbone of Social Capital theory as they can provide avenues that lead to new investments, new business, access to valuable resources and information that is not in the public eye, thus reducing transaction costs (Arregle et al. 2007, p.73). Networks differ in structure and importance across countries. In western Africa networks with local traditional leaders are deemed important, while in the Chinese context networking with government is critical. This type of networking is seen as corruption by the Western countries (Zhang and Fung 2008, p.200; Acquah 2007, p.1238; Szeto & Wright 2006, p.426). The statistics indicate that business networks exist and there is some business stemming from these networks, which make them important in the Zimbabwean context. The result found business from networks positively associated with firm performance. Dicko et al.(2010, p.16) found the same result. Kirchmaier (2008, p.24) noted a negative and insignificant association between the CEO's networks and firm performance positing that the CEO's networks do not necessarily further the interests of the stakeholders, rather, his own.

5.4.3.2 Trust within the networks

Trust is viewed as the glue that holds interacting firms together as it builds confidence in the exchange among network members. This shows confidence in the players' intentions, in the information passed, in the reliability of the information and confidence in the capabilities of the associates. An inquiry into the levels of trust in the networks sought to establish the strength of the bonds as it is one of the core aspects of social capital. Regarding empirical evidence, as far back as 1998, in a study carried out by Zaheer (1998) it was revealed that there is a positive relationship between trust and firm performance. He pointed out that trust reduces transaction costs as the legal system only becomes the call of last resort where trust is high. The results confirmed this as trust is positive and significant to firm performance. Later studies by Fussel et al. (2006, p.158), Wu (2008, p.140) and Berulava (2013, p.15) also found the same result. Interestingly, these studies were carried out in different economies: Fussel (2006) in United States of America, Wu (2008) in China and Berulava across 28 transitional economies. All have the same outcome, which seems to make trust a universal attribute in social capital construct.

5.4.3.3 Network ties

Ties are developed through informal, interpersonal mechanisms to circumvent the limitations of institutions, especially in emerging markets (Sheng et al.2012, p.1). Ties can be political or business-related and this study sought to determine if such ties existed in the Zimbabwean manufacturing scenario. As it is a developing country in which institutions have several limitations it was interesting to note the role and strength of such substitutes as informal ties. The statistics indicate a lack of commitment to ties as the majority of firms have fewer than five such ties. This agrees with Kirchmaier (2007, p.21) who noted that ties are generally personal and mainly connected to the CEO. It was noted that network ties are negative and not significant to firm performance. When individuals in a firm are well connected it may not necessarily translate into benefits to the firm. Sheng et al. (2012, p.3) in a study of Chinese firms, found to the contrary that ties are positive and significant to firm performance. In agreement, Fussel et al. (2006, p.158) found the same result, as well as Wu (2008, p.140) and Peng and Luo (2000, p. 495). Interestingly, most studies that noted a positive and significant association were carried out

in China, where the concept of *guanxi* (personal connections, especially with government officials) is highly regarded as a critical means of opening 'closed doors', a concept based on favour, trust and unwritten norms of reciprocity (Szeto, Wright & Cheng 2006, p.426).

5.4.3.4 Frequency of interactions

Interactions are on-going repeated transactions between network players. This interplay provides an interface for the growth of trust and exchange of business codes and resources (Wu 2007, p.129). The frequency of interaction has a bearing on the amount of information, resources and knowledge exchanged. Continued interaction also builds reciprocity, which is a critical aspect in sustainability of relationships and therefore the increase in social capital. The examination of the frequency of interaction was an attempt to determine how this social capital intervention was viewed in the Zimbabwean manufacturing sector. Statistics indicate fairly high frequency of interaction, but the analyses found no positive association between interactions and firm performance. Zimbabwe being a highly political country, it seems as if the interactions may be on other issues which do not necessarily have a bearing on aspects that affect the bottom line and are thus not significant to firm performance.

5.4.3.5 Entertainment

Earlier work by Putnam (2000) and later work by Zhang and Fung (2006) agree that investment in social capital takes place over a period of time. Having an entertainment budget is noted by Zhang and Fung (2006, p. 200) as one that bears fruit in the form of exchanges of information and resources and generally strengthens ties. It was noted that entertainment is not significantly related to firm performance. Contrary to these findings, Zhang and Fung (2006, p.204) found entertainment positive and significant to firm performance. Allocating funds for entertainment can be viewed as investment in social capital, but investments are known to bear fruit only after a period of time. So even though larger firms in Zimbabwe allocate at least 1% of their budgets to entertainment, the exact impact on performance may never be known. The Chinese firms on the other hand are likely to follow the norms of gift giving and entertainment so revered in that culture in their development of *guanxi*.

5.4.3.6 Donations

This is another form of investment in social capital as pointed out by Putnam (2000) and later work by Zhang and Fung (2006). The researcher sought to examine the level at which firms were investing in social capital because donations is a probable intervention. Statistics indicate that donations are seen in a positive light: 96% of the firms donated something in the four year period. However, no positive association was found between donations and firm performance. This is contrary to findings of Zhang and Fung (2006, p.204) in their study of Chinese firms, where donating was seen as positive and significant to firm performance. Business donations in Zimbabwe have been closely associated with political favour-seeking and may not be regarded as a means of building social capital. It is an investment which may or may not bear fruit. This is a probable explanation for this insignificant relationship.

5.4.3.7 Membership of associations

Organisations can build their social capital by being members of industry associations, which in Zimbabwe can cover particular subsectors, and at other times, industry as a whole. The majority of firms belong to one association or another, the most being 10. In Zimbabwe, associations are mainly for advocacy and lobbying and their direct influence on firm performance may not be quantifiable. Membership of associations was not positively associated with firm performance. This confirms Zhang and Fung (200, p.202) who also found membership negative and not significant for firm performance. The result seems to imply that membership of associations was viewed as a means of having the voices of the manufacturing industry heard, but not a genuine network for business development or an investment in building social capital.

5.4.3.8 Government liaison

The government of Zimbabwe is responsible for all legislation, policy setting and interpretation. It is also one of the largest consumers of goods and services. Consequently, liaison with government can have profound effects on being favourably viewed by 'the powers that be'. The multivariate regression analysis noted that government liaison was positively associated with firm performance. This was in tandem with Peng and Luo (2000, p.495) whose study of Chinese

firms found government liaison positive and significant to firm performance. Contrary to this, Dicko and Breton's (2012, p.16) Canadian study noted that government liaison is negative, although significant to firm performance. The probable reason is that in China, having the culturally based *guanxi*, is actually good for business, while in Canada, having political affiliations influences the firm negatively.

5.5 SECTION D: ASSESS TECHNOLOGICAL CAPABILITIES NECESSARY FOR IMPROVED PERFORMANCE

This section deals with the third objective, which is to measure technological capabilities for firm performance. Technological capabilities are the elements, processes and knowledge that enable organisations to produce new products, improve old ones and in general create an organisation's competitive advantage. Descriptive statistics from the research are presented, followed by the discussion of the bivariate and multivariate regression results.

5.5.1 Descriptive statistics

This section dwells on the descriptive statistics for technological capabilities. These are the descriptive statistics that put the research variables into perspective and are an appropriate prelude to the model estimation. Each variable is presented in turn.

5.5.1.1 Technological development

Coming up with innovative ways of doing things is critical for firms in the manufacturing sector as some world renowned technologies may not work very well in the Zimbabwean context. For instance, plants for large scale operations may not be conducive in an environment which has relatively small markets. It is therefore imperative to develop appropriate technology which can be viewed in a positive light in terms of firm performance, diminishing the need and cost of importing technology which might not work. The idea was to find out if firms in the manufacturing sector are developing technology. Table 5.40 below shows the results from 2009 to 2012.

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Table 5.40: Technological development 2013

Technological development	Frequency	Percentage
Yes	20	32
No	42	67
Total	62	99

Source: Primary data May to June 2013

Most of the firms (67%) do not develop their own technology. As expected, larger organisations are at the forefront of developing technologies rather than smaller ones.

The table below (5.41) indicates that phenomenon.

Table 5.41: Firm size and technological development 2013

	Technological development	
Firm size 9 number of employees	Yes	No
1 to 20	7	7
20 to 40	1	7
40 to 60	2	8
60 to 80	0	4
80 to 100	1	2
More than 100	9	14
Total		

Source: Primary data May to June 2013

Further analysis indicates that there is a positive and significant relationship between technology development and ownership as depicted in table 5.42 below.

Table 5.42: Correlation between technological development and firm ownership

	Technological development	Ownership
Technological development	1.000	
Ownership	0.2009	1.000
Pearson correlation	0.0015	

Source: Primary data

Wignaraja (2007, p.5) also found that foreign owned firms have newer technology than local firms. This may account for the positive association.

5.5.1.2 Importation of technology

The diffusion of technology has become easier with the advent of the internet. When firms do not develop their own technologies, importation becomes the one alternative. The question sought to establish whether firms got technology from outside the country or not. Table 5.43 below shows the result.

Table 5.43: Importation of technology 2009 to 2012

Importation of technology	Frequency	Percentage
Yes	43	69
No	19	31
Total	62	100

Source: Primary data May to June 2013

As indicated in the table 5.43 the majority of the firms (69%) import technology. Surprisingly, it was noted that the majority of the firms that imported technology were locally owned. It might be expected that foreign owned and those with mixed ownership would be supported by their sister companies, while locally owned firms would develop their own technology. The table below shows the ownership, importation scenario.

Table 5.44: Importation of technology and firm ownership

Importation	Ownership	Local	Foreign	Mixed
Yes		27	2	14
No		14	3	2

Source: Primary data May to June 2013

Conventional wisdom notes that the proliferation of technology firms can benefit from importation of technology, and in some cases it might be cheaper and faster to purchase than to create your own. Firms in the developing world tend to benefit from technology from the

developed countries with positive results (Benedetto and Zhang 2003; Bilgin et al. 2012; Hu et al. 2003).

5.5.1.3 Patent registration

The registration of patents is an indication of the development of technology in firms. It would be evident that an innovation of international acclaim has been discovered and the firm is ready to publicly celebrate it (Lee, Lee & Penning 2001, p. 626). Patent registration is an important milestone in building firm technological capabilities and understanding whether firms have registered patents or not. This is well within conventional wisdom. The table 5.45 below indicates the firms that have registered patents in the years from 2009 to 2012.

Table 5.45: Patent registration 2009-2012

Any patents registered	Frequency	Percentage
Yes	11	18
No	51	82
Total	62	100

Source: Primary data May to June 2013

Only 11 firms registered patents in the period 2009 to 2012, which is a drop in the ocean. However, given the low level of local technology development in the country patent registration cannot be expected to be that high. The results confirm that at least 69% of the firms import their technology as per table 5.45 above.

5.5.1.4 ISO Certification

This is an internationally recognised quality certification looking at various aspects of the organisation. It is not mandatory for firms in Zimbabwe to garner this kind of certification; firms with international interests or those that want to use it for marketing actively seek the certification. ISO certification is a mark of quality and the researcher wanted to know whether firms were certified or not. Table 5.46 below shows the level of ISO certification.

Table 5.46: ISO certification 2009 to 2012

ISO Certification	Frequency	Percentage
Yes	19	31
No	43	70
Total	62	101

Source: Primary data May to June 2013

The majority of the firms have no ISO certification. According to the ISO survey of certification conducted yearly from 1992 to 2012, there is a worldwide total of 1 504 213 certificates across 191 countries. Zimbabwean manufacturing firms received a total of 16 certificates in 2012 as opposed to a world total of 914 910 (ISO survey 2012). This may have an impact on their ability to export and in turn may affect performance.

5.5.1.5 Research and Development

Research and development is the foundation of innovation and investment; it is an indication of a firm's commitment to do things better or in a different way (O'Regan et al. 2006, p.251). Innovation can lead to better products or more efficient production processes that have an impact on firm performance. The question sought to establish whether firms had spent money on research and development. R&D is an important indicator of building technological capabilities. Table 5.47 below shows the results.

Table 5.47: Scientific publications 2013

Research and Development Expenditure	Frequency	Percentage
Yes	34	55
No	28	45
Total	62	100

Source: Primary data May to June 2013

At least 55% of the respondents indicate that they have spent money on research and development. In a study of Zimbabwean manufacturing firms, Teitel (2000, p.516) stated: (quote should continue on this line) “Very little research and development (R&D) activity takes place, and the results of such work in terms of patents and publications are quite meager, though not below African regional standards.” From 2000 to 2012 the expenditure on R&D has improved a little.

5.5.1.6 Contribution to scientific publication

An assessment of firm technological capabilities is incomplete without examining whether firms contribute to scientific publications or not (Archiburgi and Coco 2005, p.183). In Zimbabwe publication of research output seems to be a preserve of academics. Firms are not by nature inclined towards broadcasting their achievements as those are likely to be innovations in the main and are regarded as company secrets. Table 5.48 below shows the proliferation of publications.

Table 5.48: Scientific publications 2009 to 2012

Scientific Publication	Frequency	Percentage
Yes	6	10
No	56	90
Total	62	100

Source: Primary data May to June 2013

Only a small number (10%) of firms published something of a scientific nature. This agrees with the findings of Teitel (2000, p.516) who noted that there were meagre contributions to scientific publications. It was beyond this study to determine whether the publications were international or local as the further afield the publication goes, the higher its impact.

5.5.1.7 Presence of technological linkages

Firms in the manufacturing sector which need technology capabilities utilise linkages for the diffusion of knowledge and technology. This variable looked at the presence of such linkages

since they have a bearing on levels of technology as suggested by Lee, Lee and Penning (2001, p. 626). Table 5.49 below shows the results.

Table 5.49: Technological linkages 2013

Technological linkages	Frequency	Percentage
Yes	28	45
No	34	55
Total	62	100

Source: Primary data May to June 2013

Only half of the firms have some kind of linkages. The manufacturing sector in Zimbabwe is highly heterogeneous, producing in excess of 6000 different products (Chiripanhura2010, p.154) and some firms might not be able to have linkages. Others may be unwilling as linkages would mean sharing with the competition. Unfortunately the majority of the linkages which existed among companies were not very strong, as indicated in table 5.50 below.

Table 5.50: Strength of linkages 2013

Strength of technological linkages	Frequency	Percentage
Very poor	39	55
Not strong	1	2
Fair	14	19
Strong	9	15
Very strong	6	10
Total	69	101

Source: Primary data May to June 2013

Strong linkages provide tremendous opportunities for firms to improve their technological capabilities and their products. They also increase local procurement, which eases operational issues for the large companies and increases capacity utilisation, which has been bedevilling the manufacturing sector. Furthermore, linkages can also help to stimulate the local economy by

building the capacity of local manufacturing firms, making them more competitive. More importantly, it increases level of preparedness for future challenges such as increased globalisation (Jaspers and Mehta 2007, p.5).

5.5.1.8 Electricity for technological development

Technological development requires certain levels of infrastructure such electricity. Zimbabwe is in the throes of recovery in terms of electricity generation and distribution, but there is a general shortage of electricity. Rud (2011, p.2) indicates that inadequate electricity hinders the growth of the manufacturing sector and it was necessary to determine the adequacy of electricity for technological development. Table 5.51 below shows availability of this infrastructure in terms of technological development.

Table 5.51: Electricity for technological development 2013

Electricity for technological development	Frequency	Percentage
Very poorly adequate	3	5
Poorly adequate	4	5
Fairly adequate	16	26
Moderately adequate	18	29
Very adequate	21	34
Total	62	99

Source: Primary data May to June 2013

At least half of the firms confirmed that their electricity requirements were adequate in 2012. The government of Zimbabwe embarked on an electricity sharing strategy since 2009. This entails striving domestic users for the benefit of industrial consumers resulting in skewed distribution. Given the absence of robust technological developments, the electricity available in 2015 under this power sharing strategy may be considered low by international standards but adequate for the firms' needs.

5.5.1.9 Internet for technological developments

The advent of the internet has increased the diffusion of technology and has reduced the time it takes to come up with innovations and to transfer them. Internet in Zimbabwe accessibility has improved considerably from the year 2000 to 2012 with 11.5 % of the population now having internet access according to the World Bank internet Statistics (2014). The question sought to determine the adequacy of internet accessibility for technological development. Table 5.52 below shows the adequacy of internet for technological development 2009 to 2012.

Table 5.52: Internet adequacy of internet 2009 to 2012

Internet for technological developments	Frequency	Percentage
Very poorly adequate	3	5
Poorly adequate	3	5
Fairly adequate	11	18
Moderately adequate	22	35
Very adequate	23	37
Total	62	100

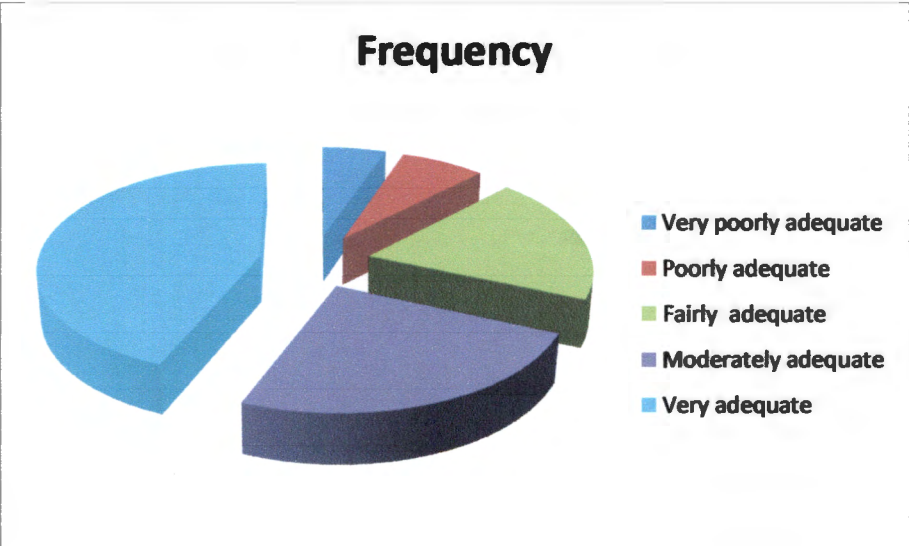
Source: Primary data May to June 2013

At least half the firms indicated that they had adequate internet for technical development. With the availability of internet providers and the price of data manipulation and distribution going down every year this is a plausible result. The role of ICTs in development has been recognised by the Zimbabwean government through the creation of a Ministry of Information, Communication Technology, Postal and Courier services and such landmark measures as the e-Readiness Survey (2004), the National ICT Policy Framework (2005), and in 2015 the launch of the High Performance ICTs centre at the University of Zimbabwe. So firms seem to be following on to the government's initiatives.

5.5.1.10 Telecommunications for technological development

This variable focused on finding out about the telecommunications resources necessary for technical development. Telecommunications is the backbone of interaction and information sharing as it is used to connect innovators and users of knowledge. Fig 5.8 below shows adequacy of telecommunications from 2009 to 2012.

Fig 5.8: Telecommunications for technological development



Source: Primary data May to June 2013

Most firms indicated that the telecommunications were adequate. This sector now boasts of new privately owned players who are boosting the access to telecommunications.

Telecommunications are the conduit for internet accessibility and its proliferation affects access to the internet and in turn technological development. This is probably supports the telecommunications 2014 first quarter report which states that there are over 13 million mobile lines in circulation (POTRAZ 2014 p.3). The three mobile service providers have virtually covered every corner of Zimbabwe.

5.5.1.11 Relations with innovative institutions

Relations with innovative institutions has been noted in technological development literature as critical for the quick transfer of knowledge and also for cooperation in research and development (Lee, Lee and Penning 2001, p.621; Lall 1992, p.172; Szogs 2010, p.32; Iammarino et al. 2008, p.1995). Some countries have deliberately set up such institutions whose mandate is to track technologies and adopt them for local firms. Zimbabwe has one such institution known as the Scientific and Industrial Research and Development Centre (SIRDC) set up in 1993 although its achievements have been minimal. Added to that, three state universities, namely, National University of Science and Technology (1992), Bindura University of Science Education(1996) and Chinhoyi University of Technology (2002) have been mandated to focus on science and technology. It was important to know therefore if the firms had any relations with such institutions. Table5.53 below indicates the presence of such relationships.

Table 5.53: Relations with innovative institutions 2009 to 2012

Relations with innovative institutions	Frequency	Percentage
Yes	28	45
No	39	55
Total	67	100

Source: Primary data May to June 2013

At least 28% of the firms have such relations with innovative institutions. Universities can also be roped into such relations and as suggested by Szogs (2010, p. 33) institutions of higher learning are critical participants in the creation and dissemination of technological knowledge. Up until 2014, universities have been concentrating on academic papers as opposed to applied research and the value from them is still negligible. The government launched the national strategy, Zim-Asset which urges universities to write application papers relevant to their disciplines, those who have the relations can be content because the relationships are strong as noted in the table 5.54 below.

Table 5.54: Strength of relations 2013

Strength of relations	Frequency	Percentage
Very poor	31	50
Not strong	24	37
Fair	3	5
Strong	2	4
Very strong	2	4
Total	62	100

Source: Primary data May to June 2013

As the relations strengthen, they provide an opportunity for organisations to continuously refresh their technical and managerial skills given that technology is by no means static (Wignaraja 2007, p.8).

5.5.1.12 Transfer of technology

One way developing countries can catch up with developed countries in productivity and technological strength is through transfer of technology (Hu et al. 2003, p.2). This aspect is used to assess technological capabilities because if a firm is able to transfer technology, it is a developer of such technology. Transfer can of course also occur from an organisation that has procured it. Linkages provide an appropriate environment for such transfers (Jonker et al. 2006, p.126). It was interesting to note the extent to which firms transferred technology. Table 5.55 below shows extent of technology transfer.

Table 5.55: Extent to which firms transferred technology 2009 to 2012

Extent of technology transfer	Frequency	Percentage
Not at all	4	2
Poor extent	12	5
Fair extent	24	39
Good extent	16	26
Great extent	14	28
Total	60	100

Source: Primary data May to June 2013

Transfer of technology was distributed in amounts from not at all to a great extent. A lot more firms (39%) transfer technology to a fair extent. This is in sync with literature which notes that developing countries do not transfer technology as much as developed countries. In fact, developing countries are known as net recipients of technology (Hu et al. 2003, p.1).

5.5.1.13 Human resource development

The development of human resources has a huge impact on the development of technological development as knowledge and intelligence reside in people and exposure brings out the innovations in them. It can be considered an investment in technological development. It was important to note whether firms have some form of human resource development programme for technological development as innovations are created by people. The following table (5.56) indicates whether firms developed human resources or not.

Table 5.56: Human resource development 2009 to 2012

Human resource development	Frequency	Percentage
Yes	57	91
No	5	9
Total	62	100

Source: Primary data May to June 2013

The majority of the firms (91%) have some form of human resource development in place. Zimbabwe has a deliberate mechanism for the training of apprentices where companies are compelled by law to contribute 10% of their labour bill for the training of human resources. The contributions go to the Manpower Development Fund to support apprentices through their training. This probably contributes to the high positive response. Human resource development is regarded as critical for technological development (Palacios-Marque's et al. 2013, p.976).

5.5.2 Regression results and discussion

5.5.2.1 Regression analysis estimation

This section examined the impact of technological capabilities on firm profitability using bivariate and multivariate regression analysis as suggested by Coombs and Bierly III (2006, p.428). The regression model was specified as follows:

$$ROA = TC_t$$

Where

ROA = Return on Assets measuring operating performance

The model was expanded to reflect the 14 technological capabilities variables as suggested by Coombs and Bierly III (2006, p.428.)

$$ROA = \alpha + \beta_1 TCD + \beta_2 IC + \beta_3 PA + \beta_4 ISO + \beta_5 RD + \beta_6 SP + \beta_7 TL + \beta_8 STR + \beta_9 EL + \beta_{10} ITN + \beta_{11} TELE + \beta_{12} RI + \beta_{13} TT + \beta_{14} HRD$$

Where

ROA = Return on Assets measuring operating performance

α and β = the parameters to be estimated

TCD= Technological development

IC= Importation of technology

PA= Patent registration

ISO= ISO certification

RD= R and D expenditure

SP= Scientific publications

TL= Technology linkages

STR= Strength of the linkages

EL= Electricity for TC development

ITN= Internet for TC development

TELE= telecommunications for TC development

RI= Relations with innovative institutions

TT= Technology transfer

HRD= Human resource development

The table below gives a summary of the operational definitions of the variables of the technological capabilities variables

Table 5.57: Technological capabilities variables

Variable	Description	Reference
Patents registered	Company protection of innovations	Lall
Expenditure on Research and Development	If the company carries out R& D how much they have spent in the years in question	1992;Archibugi and Coco 2005;Wignanaraja 2007
Scientific publications	Publications stemming from the firm	Coombs and
Creation of technology	Technical knowhow from the company	Bierly III 2006
Human resource development	Development of HR in scientific areas	Palacios-Marques' et al.2013, .976
Science qualifications	Number of people in the organization with degrees in scientific disciplines	Teitel 2000,pg 520
Technology transfer	Technological development is normally accompanied by the transfer of technology	Hu et al.2003,p.2
Existence of a relationship with innovation institutions	Technology generally increases when firms are assisted by universities or some innovative body	Szogs 2010,p.33

5.5.2.2 Validity of data

The validity of the data is indicated by the acceptable correlations within the range of 0.01-0.775 as suggested by Kumar and Singh (2011, p.92). Table 5.58 below shows the correlation. The degree of correlation between independent variables is either low or moderate, suggesting absence of multicollinearity between these variables.

Table 5.58: Correlation matrix

	Profit	techdev	Import	Patent	iso	rd	publication	linkages	strength	ictstructure	internet	Telecom comm-s	relations	transfer	hrdev
Profit	1.0000														
Techdev	0.1011	1.0000													
Import	0.0520	0.0789	1.0000												
Patent	0.1673	0.2391	0.3036	1.0000											
Iso	0.1779	0.1298	0.1355	0.2399	1.0000										
Rd	-0.0005	-0.0566	0.4730	0.0782	0.3868	1.0000									
publication	-0.0716	0.0073	0.0568	-0.0817	0.0234	0.1398	1.0000								
Linkages	0.0362	-0.0439	0.0547	0.1146	-0.1548	0.1368	0.0774	1.0000							
Strength	0.0280	0.0232	0.0980	0.0930	-0.0774	0.2029	0.0183	0.8689	1.0000						
ictstructure	0.0793	0.3416	-0.0891	0.1532	0.2897	-0.0623	0.1813	-0.0150	-0.0467	1.0000					
Internet	0.1201	0.3743	0.1061	0.2537	0.4859	0.0028	0.1002	0.0143	-0.0316		1.0000				
Telecomm-s	0.0658	0.3674	0.1937	0.1509	0.3800	0.0109	0.0363	-0.2067	-0.1974			1.0000			
Relations	0.0621	0.3355	0.1013	0.1752	0.2161	0.1145	0.2063	-0.0523	0.0775			0.2008	1.0000		
Transfer	0.2436	0.3294	0.1104	0.1704	0.1781	0.0905	-0.0189	-0.1018	-0.0268			0.1303	0.3831	1.0000	
Hrdev	0.0142	0.1108	0.0573	-0.0061	0.1109	0.2184	0.4747	0.2078	0.1505			0.1450	0.2085	-0.2655	1.0000

Source: Primary data

Table 5.59: Bivariate and Multivariate regression analysis

profit	Bivariate analysis			Multivariate analysis		
	Coef	Z	p> z	coef	Z	p> z
Techdev	0.4159566	1.47	0.141	-0.880957	-0.27	0.790
Import	0.2056129	0.75	0.451	0.2323339	0.68	0.496
Patent	0.844786	2.46	0.014	0.3655033	0.93	0.350
Iso	0.7517696	2.62	0.009	0.7791325	1.95	0.051
Rd	-0.0018963	-0.01	0.994	-0.5499539	-1.61	0.107
Publication	-0.4882866	-1.04	0.298	-0.7974106	-1.49	0.137
Linkages	0.1369859	0.53	0.599	0.3688968	0.62	0.534
Strength	0.0379769	0.41	0.685	-0.0651452	-0.32	0.745
Tctrcuture	0.1316444	1.15	0.249	-0.0090501	-0.05	0.959
Internet	0.2029513	1.75	0.079	0.0673489	0.25	0.804
Telecommun~s	0.1023233	0.95	0.340	-0.1233716	-0.58	0.562
Relations	0.2332938	0.90	0.367	-0.308598	-0.98	0.326
Transfer	0.3868849	3.64	0.000	0.4794325	3.62	0.000
Hrdev	0.0629996	0.21	0.837	0.7515039	1.83	0.067

Source: Primary data May to June 2013

5.5.2.3 Technological development

Technological development is a process of discovering, inventing and applying a new idea (Van Kleef &Roome 2007, p.39). Technological development, which has its backdrop in innovation, has an impact on the firm's performance. In most cases, the more effective the innovations are, the more successful the business will be (O'Regan et al. 2006, p.251). The results indicate that the majority of the firms in Zimbabwe (67%) do not develop their own technology, which is a typical scenario of developing countries; they are consumers, rather than creators of technology, as postulated by Wang (2007, p.36). The regression results indicate that innovation is not positively related to firm performance. Similar results were noted by Hatzikian (2012, p.15); Darroch (2005, p.111) and Choi & Williams (2013, p.437). The studies were carried out across developed and emerging economies, namely Greece, United States of America and Korea and China respectively, so country effects may not influence innovation. The results may be in line with the fact that very few firms (33%) in the sample developed their own technology. Together with this Shiferaw 2007, p.130), in a study of Ethiopian manufacturing companies, noted that

relatively few firms embark on innovative activities. On the contrary Atalay et al. (2013, p.232) and Li et al. (2006, p.692) found that technological development was positive and significant to firm performance. Since country effects do not seem to matter, perhaps innovation significance and support differs from industry to industry.

5.5.2.4 Importation of technology

This is the acquisition of technology in the international arena. In a study of Sri Lankan firms, Wignaraja (2007, p.4) noted that foreign owned firms import more equipment than local owned ones. If countries import adequate technology their operations would be at par with the supplier of the technology, and both players can compete in the global scenario. It was therefore important to establish whether firms imported technology, since it can indicate levels of technological capabilities in the firm. In the Zimbabwean manufacturing scenario, (69%) of the respondents, mainly locally owned firms, indicated that they import technology. Regression results indicate no association between importation of technology and firm performance. Contrary to this, Branstetter & Chen (2006, p.190); Bilgin et al. (2012, p.495) and Hu et al. (2003, p.13) noted that importation of technology was positive and significant for firm performance. This may be because the studies were conducted in the Far East where importation of technology was instrumental in their huge leap into the international trade arena.

5.5.2.5 Patent registration

Patents are registered at national and international level, but not all innovations are registered. The reason is that some organisations fear to register because it draws attention to projects they would have funded before they gain the full benefit from them. Archibugi and Coco (2005, p.183) have stated that registration of patents shows the level at which firms are creating their own innovations. Accordingly, the researcher sought to assess the level of technological capabilities for firm performance by measuring whether firms had registered patents. The results indicated a positive association between patent registration and firm performance. This is probably because patents are an indication of innovation, and innovation boosts the technological capabilities of the firm, and in many cases, performance as well. Simeth & Cincera (2013, p.16) concur that patent registration is positive and significant for firm performance. Contrary to this,

Decarollis& Deeds (1999, p.964); Choi and Williams (2013, p.438); Coombs & Bierly III (2006, p, 433)) did not find a positive association between patent registration and firm performance. Inasmuch as total number of patents is indicative of technological activity, some studies found patent registration negative and not significant to firm performance. The probable reason for these differences is that emerging economies are in the throes of upgrading their technologies and patent registration is a critical indicator of technology development, whereas developed countries have reached a higher level of technological capabilities and patent registration is no longer as revered; not all innovations directly affect firm performance.

5.5.2.6 ISO Certification

Obtaining quality certification from the International Organization for Standardization (ISO) has gained popularity the world over including in Zimbabwe. It sends a positive signal that a firm has specific quality targets in the making. Zimbabwean firms are struggling for initial or re-registration as the country is recovering, but companies are operating far below ISO certification international standards in Zimbabwe. The regression analysis found a positive and significant association between ISO certification and firm performance. This finding was in agreement with several studies across the globe. In emerging economies, Lafuente et al.(2009, p.650) analysed Spanish firms; Al Refaie et al.(2012, p.2012) studied Jordanian firms, Starke et al.(2012:991) looked at Brazilian firms and Corbett (2005 et al., p.1055) examined United States firms. They all noted a positive and significant association between ISO certification and firm performance. The reason for this result could be that ISO certification entails improvement in production processes, cost, waste reduction, better management control and quality enhancement, all of which affect performance. A study done by Simmons and White (1999, p.339) was an isolated example of a contrasting view that ISO certification was positive but not significant to firm performance. Since ISO certification was popularised only after 2000 Simmons and White's result might make sense in the pre-2000 era.

5.5.2.7 Research and Development expenditure

Research and development is viewed as a major source of technology generation. Firms may intensify their internal R&D expenditure especially for new products or be financed by other

firms to carry out R&D. It was therefore deemed necessary to find out whether firms expended money and therefore carried out research and development. It was encouraging to note that at least 55% of the firms had invested in R&D. Research and development, however, was shown to have no positive significance on firm performance. This result is in agreement with Shiferaw (2007, p.132) who found R&D expenditure negative and not significant to firm performance. The reason is likely because it is not necessarily the expenditure on research and development that matters, but the effectiveness and relevance of the development that will affect firm performance. Other researchers have, however, found different results. Some found that expenditure on research and development is positive but not significant to firm performance (Coombs & Bierly III 2006, p.433; Branstetter & Chen 2006, p.190, and Yam et al. 2011, p.397). Others noted that expenditure on R&D was positive and significant to firm performance (Decarolis & Deeds 1999, p.964 and Hu et al. 2003, p.13). Worthy of note is the fact that earlier studies have quite a different view to later studies. And that all these are researches carried outside Africa as opposed to Shiferaw's study of Ethiopian manufacturing firms as far back as 2007.

5.5.2.8 Scientific publications

Publications in scientific journals can be considered as an output variable. It is a platform to share results of R&D and technology creation. This well justifies it as a variable of importance in the technological capabilities and performance conversations (Archibugi & Coco 2005, p.183). Very few firms in 2013 (10%) had contributed to scientific publications, a fact also noted earlier by Teitel (2000, p.516). The regression analysis found no significant relationship between scientific publications and firm performance. The probable reason is that there are costs associated with publications and the Zimbabwean companies are not yet ready for them. Added to that, firms might think that they do not have much to contribute as this is generally an area for academics; they might not see the benefit of publishing. Added to that, as pointed out by Simeth & Cincera (2013, p.6), there are costs of producing the papers, costs associated with easier imitation by the competition and costs of the loss of the scientists to competitors who in publishing, have advertised themselves. Other authors however found a positive and significant

association between firm publication of scientific material and firm performance (Simeth & Cincera 2013, p.6 and Decarolis & Deeds 1999, p.964).

5.5.2.9 Technological linkages

Linkages provide a forum for technological learning in firms and can add as much as 30% to a firm's value addition efforts. Linkages stem from a variety of relationships ranging from customers to suppliers and industry counterparts. These networks enhance a firm's ability to gather information and resources pertinent to the development of the organisation (Carmeli and Azeroual 2009, p.156 and Chen and Branstetter 2006, p. 187). The researcher inquired after the existence of such linkages. At least 45% of the firms in the manufacturing sector had technological linkages, which were noted as being quite strong. The regression analysis found technological linkages positive but not significant to firm performance. A study of Korean firms in 2001 found technological linkages positive and significant to firm performance (Lee et al. 2001, p.630) and similarly, a study of Mexican manufacturing firms later in 2008 also had the same result (Iammarinno et al. 2008, p.1993). The probable reason for the different results in Zimbabwe is that the culture of linkages is not popular; organisations strive to shield their technologies from competitors. Added to that, the Zimbabwean manufacturing sector is highly heterogeneous, at one point producing up to 6000 different products at its peak in 2000 and linkages under such circumstances can be difficult. The sector remains heterogeneous even though production had gone down considerably.

5.5.2.10 Infrastructure for technological development

Information technology has become a critical variable in the creation and diffusion of technology and also in the development of other firm capabilities. According to the resource based view, information technology is considered a valuable organisational resource that can enhance organisational capabilities and invariably lead to higher firm performance. Early contentions by researchers like Wernerfelt (1984, p.174) postulated that technological advancement allows the firm higher returns and later works (Tanriverdi 2005; Liang & Liu 2010) closely support this view. At least 37% of the firms indicated that their information technology, electricity and telecommunications were adequate for technological development. The regression analysis found



a positive association between information technology and firm performance. But there was no positive association between electricity resources and telecommunications with firm performance. Similar results were noted by Liang and Liu (2010, p.115). On the contrary, (Huang et al. 2009, p.15) noted that information technology was negative and not significant to firm performance. The reason cited for the variance in these studies with the research study is that information technology acts as a conduit for improvement of technological capabilities and directly relating it to firm performance might be difficult (Huang et al. 2009, p.6).

5.5.2.11 Relationship with technological institutions

Technological institutions can be developed to deliberately encourage innovations in countries and a relationship with companies can be beneficial to a firm's technological developments as they can share R&D costs, for instance. Such technological institutions can be dedicated to research or they can be universities which carry out research as part of academia. Such relationships are important as they can lead to valuable technological breakthroughs and it was in the researcher's interest to determine the existence of the partnerships. It was noted that some 45% of the companies were linked to a technological facility. The regression analysis found the relationship positive but not significant to firm performance. A similar result was found by Lee et al. (2001, p.630) in a research on Korean firms. Iammarino et al. (2008, p.1992) also noted that relationship with technological institutions had no positive significance to firm performance when they researched Mexican firms. The probable reason for the lack of significance was that research institutions are generally involved in general, basic research, which might not be specific to the needs of the firms. In Zimbabwe for instance, a lot of research is academic in nature and collaboration with firms is not prominent.

5.5.2.12 Technological transfer

This is the diffusion of technological knowledge where innovations are spread through the purchasing of machinery, components or equipment. Firms benefit from technological transfer as it reduces their R&D expenditure. Transfer can be in the form of direct diffusion from one company to another, especially between sister companies, or through licencing or through foreign direct investment. Technology transfers generally flow from developed to developing

countries (Palacios-Marque's et al. 2013, p.975). Technology transfer is taking place to some extent in the firms (39%) indicating that even though the firms are not net creators of their own technology, they can still transfer that which they have. The regression analysis found that transfer of technology is positively associated with firm performance, a result shared by Hu et al. (2003, p.20) and Palacios-Marque's et al.(2013, p.981). This is probably because Zimbabwe, being a developing country, benefits tremendously from transfer of technology, especially for multinational companies.

5.5.2.13 Human resource development

Human resource development for technological capabilities is a prerequisite for building appropriate skills to handle innovations or acquired technology. . Knowledge resides in people and enhancing human resources would be critical to the processes, transactions and operations of the organization. Zimbabwe faced a serious skills flight from 2000 to 2008 and skills development was one way organisations could improve performance. It was critical to note the extent to which firms were involved in developing these skills. The majority of firms (91%) are developing skills, a high figure. The regression analysis shows a positive association between human resource development and firm performance. In agreement with these results (Thang&Buyens 2008, p.14) found training positive and significant to firm performance. This is probably because no amount of technological capabilities can function on their own, which necessitates the human resource element. Contrary to this result, Schwager et al.(2000, p.101) noted that skills development was positive but not significant to firm performance. This is probably a Zimbabwean phenomenon where capacity building is a key issue, making it very significant. The government still supports universities, technical colleges and vocational colleges to a great extent.

5.6 SECTION D: INTEGRATED MODEL

This section focused on the integration of all the variables noted as positive and significant to firm performance for the three drivers of performance in an effort to determine which of the aspects of corporate governance, social capital and technological capabilities should be built on in order to perform better for economic recovery. The integrated model sought to confirm the

robustness of the significant variables and confirm which of the corporate governance, social capital and technological capabilities variables firms can seriously invest in for better performance. Firms therefore have the option to go for those variables that remain significant for performance. Therefore, some aspects are clearly more critical to recovery than others.

The following model was estimated.

$$P_{it} = \alpha + \beta_1 SC_{it} + \beta_2 TC_{it} + \beta_3 CG_{it} + \mu_{it}$$

Where

P_{it} = profitability for firm i over t periods

SC= positive and significant social capital variables

TC = positive and significant technological capabilities variables

CG = positive and significant corporate governance variables

α and β = the parameters to be estimated

i = the i th firm (i.e. the cross section dimension)

t = t -th year (the time series dimension)

$$\mu_{it} = \omega_{it} + e_{it}$$

ω_{it} = firm specific effects

e_{it} = error term

The table below shows the regression results.

Table 5.60: Integrated analysis

Prof	Coeff.	Z	P>z
concentration	.2167343	2.20	0.027
Tenure	.1581629	1.00	0.315
Access	5.669203	1.10	0.270
inndirectors	.222647	1.81	0.070
Patent	.401691	1.11	0.266
ISO	.3870374	1.26	0.208
Transfer	.4376818	3.75	0.000
Hrdev	.6007946	1.66	0.096
trust	.0994224	0.57	0.569
Entertainment budget	-.4652416	-1.94	0.052
Gvt liaison	-.1813431	-1.25	0.211

Source: Primary data

5.7 MERIT OF FOCUS ON THREE DRIVERS

The regression analysis indicates that five variables remain positive and significant to firm performance after the integrated estimation::

- Shareholder concentration and independent directors as corporate governance variables
- Transfer of technology and human resource development as technological capabilities variables
- Presence of an entertainment budget as the social capital variable.

Interestingly the regression analysis brings out at least one variable from each of the three drivers of firm performance, indicating that there is merit in organisations investing time and money in the five aspects which positively affect firm performance. This indicates that the focus on the

three drivers is not misplaced, but is worthwhile in pointing firms in the right direction to concentrate their efforts.

5.7.1 Shareholder concentration

This variable has remained positive and significant, probably because most companies in the Zimbabwe manufacturing sector are privately owned: only 6 out of 78 manufacturing companies are listed on the Zimbabwe stock exchange, a tiny percentage of 0.076. These generally have high shareholder concentration, which according to the companies Act Chapter 24, No. 03 maybe up to 99%, except for banking institutions. Such concentration has an impact on all the other corporate governance aspects such as selection of board members, size of the board and its chairmanship. Its influence therefore remains significant.

5.7.2 Independent directors

Independent directors, have been revered as critical for objective board decisions. Corporate governance literature extensively discusses the importance of independent boards. Most of the literature agreeing in the belief that independent boards create better and more objective decisions for the firm. This invariably leads to better performance. That is probably why it remained positive and significant to firm performance. Given the support of the literature and study statistics, and the high shareholder concentration in Zimbabwe manufacturing firms, which tend to influence boards, this extended significance of board independence goes to show that uncompromised boards do exist and have a positive impact on firm performance.

5.7.3 Technology transfer

Ability to receive diffused technology is the backbone of technological capabilities accumulation. In the rapidly developing world, acquisition of state of the art technology is a step in the right competitive advantage direction as postulated by the resource based view which argues that firms fare better with the appropriate resources. This variable remained significant, indicating the need to cultivate an appetite for innovative technologies which are critical for firm performance.

5.7.4 Human resources development

The recognition of human resources as an important aspect of organisation has also spread to technological capabilities. Human resources contribute to firm performance as the best of technological capabilities and strategies are implemented by human beings. Human resources development therefore remains significant as the acquisition, diffusion of, accumulation of and use of technological capabilities would require the human element, just as much in a developing as well as developed economies.

5.7.5 Entertainment budget

The setting aside of funds for entertainment indicates a willingness to invest in social capital. Firms recognise that in order to grow social capital, they have to consciously and deliberately go out to do so; the variable has remained significant as an indication that investment in social capital has to be done for better firm performance. In the final analysis, the firm will benefit from the domino effect where investment is undertaken, which leads to acquisition of information and resources, impacting positively on firm performance.

5.8 ACHIEVEMENT OF OBJECTIVES



The study set out to identify the corporate governance variables significant to firm performance, to isolate those social capital interventions at firm level that affect firm performance, and to measure the technological capabilities for improved performance. The aim was to combine these in an integrated model using the most important variables affecting firm performance.

The objectives were determined empirically through a questionnaire containing Likert-scale and closed-ended questions (refer to Appendix 1). The questionnaire was composed of four sections which contained questions formulated to gather demographic data on the manufacturing sector as some aspects had a bearing on the objectives. It was also intended to gather data for the measurement of the objectives. The objectives of this study were achieved by focusing on the following aspects:

- A comprehensive empirical literature review was provided on the profile of the manufacturing sector in Zimbabwe, its importance to the economy in the throes of recovery and its contribution to GDP and national employment. The theoretical literature

review also pointed out the place of corporate governance, social capital and technological capabilities in firm performance.

- The empirical study estimated the corporate governance variables significantly associated with firm performance.
- The empirical study estimated those social capital interventions at firm level that affect performance.
- Empirical study measured the technological capabilities that influence firm performance.
- An empirical culmination of the three drivers was estimated to indicate the most important variables associated with firm performance.

Conclusions can therefore be drawn from the demographic data, empirical estimations and discussions.

5.9 CHAPTER SUMMARY

Through the results, the research has discovered that the majority of firms in the manufacturing sector are privately owned. There is a huge discrepancy in size from very small to very large. The results indicate that not all corporate governance, social capital and technologies aspects positively affect firm performance, but twelve variables are positively associated. Further regression resulted in five aspects remaining positively associated with firm performance. These are fairly spread across all three drivers of firm performance. These are the aspects firms can concentrate on investing in for their recovery agenda from 2009 onwards.

CHAPTER 6: CONCLUSIONS, RECOMMENDATIONS AND AREAS FOR FURTHER RESEARCH

6.1 INTRODUCTION

The purpose of this study has been fourfold. Firstly, to identify critical determinants of corporate governance; secondly, to isolate interventions at firm level aimed at building social capital; thirdly, to measure technological capabilities necessary for improved performance; and finally, to design a model that combines corporate governance, social capital and technological capabilities in order to facilitate performance improvement in the Zimbabwean manufacturing sector. This chapter focuses on the conclusions emanating from the findings and will offer recommendations and suggestions for further study.

6.2 CONCLUSIONS ON DETERMINANTS OF CORPORATE GOVERNANCE

The relationship between corporate governance and company performance has been documented across a number of economies. Although the combination of variables under scrutiny may differ from research to research and country to country, there is evidence of common variables which can be posited as the pillars of corporate governance determinants for firm performance.

These variables hover around issues of ownership structure, board composition, board procedures, board decision making structures in the form of committees, and financial disclosure. Research has noted that not all of them are significant to firm performance and in that vein, this study also comes to a similar conclusion. Added to that, it was noted that corporate governance is endogenously determined as there seem to be so many country effects associated with the significance of variables.

In this study four corporate governance aspects were noted as positive and significant to firm performance: shareholder concentration, proportion of independent directors on the board, board tenure and access to financial statements. Interestingly, these determinants stem from the aforementioned pillars of corporate governance. For instance, shareholder ownership hails from ownership structures, proportion of independent directors is in the context of board composition,

board tenure from board procedures in terms of experience to make decisions, and access to financial statements is in the context of disclosure. It can be concluded that the results bring out a seemingly natural selection in flagging a variable stemming from all four corporate governance pillars as significant to firm performance; which covers the whole corporate governance spectrum. It provides a form of representation for all the corporate governance pillars. In essence therefore, inasmuch as not all variables are significant to firm performance, this fits with research worldwide. Consequently for the Zimbabwean manufacturing sector there is a unique factor of corporate governance pillar representation.

Further to that, the majority of the companies in the Zimbabwe manufacturing sector are privately owned, which would greatly influence the significance of the variables. Privately owned firms in general have high shareholder concentration, more-so in the Zimbabwean situation, where one person can hold up to 99% of the shares. Therefore the corporate governance initiatives would be spearheaded by a few people, if not just one person, who can motivate for corporate governance determinants that are in sync with high firm performance. This ownership structure also influences board structures and board tenure as the shareholder has free reign in the selection of board members and the length of time they can serve. Under such circumstances, issues of transparency come to the fore, hence the significance of access to financial statements.

Conclusions on each of the variables are discussed below to give a comprehensive picture of the corporate governance determinants for firm performance.

6.2.1 Shareholder concentration

The descriptive statistics show that firms in Zimbabwe have a high shareholder concentration with 82% of the respondents holding from 30 to 50% of the firm's shares. Studies suggest that shareholder concentration is positive and significant to firm performance as it motivates the majority shareholders to monitor the business more closely to ensure good results. This research concurs with those studies and it can therefore be concluded that as the shareholder concentration increases, firm performance will go up. This augurs well for the Zimbabwean situation, where the majority of firms are privately owned.

6.2.2 Shareholder identity

It can be concluded that firm performance is not dependent on the identification of the shareholders. Knowledge of the shareholders is used to assist potential shareholders to identify risk factors associated with personalities or with companies. But it seems that firm financial aspects are a better indicator of future performance than just the face behind the money. For Zimbabwe, 92% of the respondents indicated that they could identify the shareholders, a result which was in tandem with research from Kenya. Thus knowledge of the shareholder provides no assurance of the performance of the organisation.

6.2.3 Transparency of ownership

Zimbabwean companies are currently being requested to declare the identity of the shareholders under the indigenisation drive, and in many cases this requirement has been misconstrued as having political connotations. This could have implications for firm performance, but this study has shown that transparency of ownership does not seem to have any effect on the performance of the firm. Transparency of ownership is strongly appreciated by investors as it gives them assurance that the firm has no invidious intentions, such as improper handling of funds or the many possible forms of mismanagement; in terms of firm performance it is not a critical determinant of corporate governance.

6.2.4 Board tenure

In Zimbabwe there is no law that prevents an individual from being on a board in perpetuity. On the positive side it brings stability, commitment, posterity and history to the board. However, on the negative side, it means the board may have no new ideas coming in. The descriptive statistics indicate that most firms allowed one to be on the board for up to 10 years. The experience of Zimbabwe firms actively agrees with research that board tenure had a positive effect on firm performance. The majority of the firms in Zimbabwe are privately owned and the tenure of the board is therefore privately determined in the main, based on the individual's ability to meaningfully contribute to a myriad of boards and manage their time. It can be concluded that as tenure increases, so does the performance of the firm.

6.2.5 Proportion of independent directors

The issue of independent directors is very pertinent in corporate governance literature and results indicate that the majority of firms have a proportion of independent directors, although the percentages differ across firms. Company failures in the developed world influenced the spotlight on board independence; this focus also seems to be increasing greatly in the developing economies. It can be concluded that Zimbabwean firms have embraced the need to protect shareholder interests as postulated by the agency theory. Board objectivity has been noted in this study as critical and the bivariate analysis further cements this by confirming that the more independent directors a firm has, the better it performs.

6.2.6 Role of CEO

The majority of the firms have a dual relationship, where the CEO is chairman of the board. This aspect has been noted in literature to have both negative and positive effects on the functioning of the board. It can be concluded that the public companies are the ones who heed the negative aspects of a dual relationship. The CEO does not head the board in five out of the six companies. Public companies probably have more knowledge of the value of board independence. In the majority of the companies, which are privately owned, the CEO is also the chairman of the board. It can be concluded that ownership structure has an influence: at least 35% of the respondents in privately owned entities indicated that their CEOs are also the chairman of the board.

6.2.7 Education levels of board members

The educational level of members of boards in Zimbabwean manufacturing companies is generally above secondary school level. This might give them a more insight into board procedures. The results indicate that board educational level is not consequential to firm performance. This seems to be in sync with the fact that the majority of the firms are privately owned and appointment to the board may not be along educational lines, but are influenced by other factors not revealed in the study.

6.2.8 Board size

The results indicate that privately owned firms have boards not exceeding five members and public firms have boards not exceeding 10 members. In developing countries, board size does not seem to affect firm performance as it does in developed countries. It can be concluded that

firms in the Zimbabwean manufacturing sector are in sync with research on two levels: that board sizes are optimum and that as the size of the board increases beyond 10, firm performance decreases.

6.2.9 Board committees

Board committees give the assurance to shareholders that there is accountability of decisions made by the board. Some committees, such as the audit committee and the remuneration committee, are regarded as critical for corporate governance conformance. It can be concluded that the firms in this study uphold this corporate governance requirement as they all have board committees, even though they are not uniform in number or activities. There is a legal mandate to set up committees in companies and therefore their presence can be said to be a wholly corporate governance determinant.

6.2.10 Audit Committee

The presence of an audit committee has been noted in literature as a critical corporate governance determinant. The research however concluded that this applies mainly to international companies, which were the worst affected by international financial scandals. For firms in the Zimbabwe's manufacturing sector, the presence of an audit committee does not increase performance. This is reflected in the results, where just over half of the companies have audit committees. It might be that the duties of such a committee are carried out by other committees.

6.2.11 Audit selection

The idea of audit selection is to appoint auditors that are independent of the firm so that their review of the accounts can be seen as fair. This follows on the transparency and objectivity argument of corporate governance. It can be concluded that the firms did not value this independence as the majority of the auditors selected had some relationship to the company. Furthermore, firm performance was not positively affected by the transparency of the audit selection. Zimbabwe being a highly relational society, total independence might be very difficult to achieve.

6.2.12 Quality of financial statement, access and disclosure

Zimbabwean laws provide for the production of financial statements and the dissemination of information. Thus the level of quality and access to financial statements is very high. It can be concluded that companies are complying with the Zimbabwe Revenue Authority (ZIMRA) the revenue collection body of Zimbabwe's requirements, and section 140 to 149 of the Zimbabwe Companies Act (Chapter 24, p.93). Access to financial statements is critical to firm performance as it allows decisions on firm financing to be made. Investors seek this information to make informed decisions and the majority of the firms (98%) avail this information to shareholders. The significance to firm performance can be concluded to stem from the transparency with which financial information is afforded.

6.3 SOCIAL CAPITAL INTERVENTIONS

In the absence of a well-developed theory about the multidimensional nature of social capital, variables suggested by several studies were utilised to establish the social capital interventions at firm level for business performance. There were however common threads among the variables and those selected pertained mainly to the existence of networks, network management in terms of interactions and trust, and investment in social capital. Performance was noted to be influenced by three of the variables: presence of business from networks, trust in the network and presence of an entertainment budget. The results showed that the social capital variables that are significant to firm performance act in a virtuous cycle which has a direct impact on the inflows to the firm and are thus critical to firm performance.

Business from networks ensures that the network is beneficial to the firm in providing profitable relationships. On the aspect of trust, literature notes that the higher the trust the lower the transaction costs. This clearly affects the firm's bottom line. Furthermore, having available funds for entertainment denotes investment in social capital, which increases the number of networks. This in turn increases interaction, which is necessary for building of trust. This virtuous cycle finally affects firm performance. The detailed conclusions for each variable are provided in the discussion below.

6.3.1 Presence of business networks

The majority of the respondents (84%) indicated that they had business networks which provide necessary contacts to build business. Although the types of networks may differ in focus and structure across economies, the Zimbabwean firms in the manufacturing sector value all networks and are deliberate in being part of them. This is a very positive indicator for Zimbabwean firms as the better networked a company is, the higher the chance to obtain information, resources and ideas, which a firm would otherwise miss; these might not be available outside the network. This is also according to social capital literature, which states that networks affect business performance positively.

6.3.2 Trust within the networks

Respondents felt that the level of trust was high and this compares well with studies carried out across several economies. It can be concluded that business transactions are still based on trust, which might have been damaged during the years of economic meltdown from 1999 to 2008. Trust reduces transaction costs as strict contractual relationships can be circumvented and costly litigation avoided if parties are trustworthy. Without these added costs, profitability is higher, thus contributing positively to firm performance.

6.3.3 Network ties

All but a small minority of the firms (six) had a number of ties and this was closely associated with whether the firm was a locally or foreign owned. Locally owned firms tend to have more ties than their foreign counterparts, probably because of the location and distance from sister companies. It was also concluded that ties are strong, giving efficacy to the firms. Western researchers have associated ties with corruption, which has been the scourge of many African economies. Transparency International ranked Zimbabwe at 157th out of 177 countries with a score of 21 out of 100 under the Corruption Perceptions Index (2013) suggesting high corruption in the country. As previously mentioned, this is contrary to the Chinese economy, where 'guanxi' (ties) especially with government officials, is regarded as normal business practice.

6.3.4 Frequency of interactions

Players interact fairly frequently with their network members showing the importance that firms place on continued interplay to gain more resources, information and ideas. The more the organisations interact, the more the better the chances of acquiring useful remedies for their firms. Though the interaction is very frequent in the Zimbabwean manufacturing context, there is no evidence to suggest that the interactions have any bearing on firm performance. It can be concluded that interactions may not necessarily be focused on the bottom line, but might be along other non-business or monetary lines.

6.3.5 Entertainment

From a cultural perspective in Zimbabwe a lot of intercompany discussions are carried out around food and entertainment of outsiders indicate willingness to invest in building social capital according to Putnam (2000) and Zhang and Fung (2006). The majority of Zimbabwean firms in the manufacturing sector (55%) have an entertainment budget and in 47% of these firms the budget is at least 1% of the total budget which can be quite substantial for larger firms. Entertainment has been noted in literature as enhancing the building of social capital as it is financing the noted interactions of firms. It can be concluded that this investment has borne fruit as having an entertainment budget is positively associated with the performance of the firm.

6.3.6 Donations

These are gifts given by companies, especially to the needy or to a cause. They are another form of building social capital. In Zimbabwe, donations are generally made to political events and can be deemed goodwill towards the ruling party. The majority of the firms (96%) appear to believe in this investment as they made some form of donation in the four year period 2009 to 2012. Thus some form of social capital might have been built up, but the return on investment is not positively associated with firm performance.

6.3.7 Membership of associations

Membership of associations in Zimbabwe is not compulsory and some associations are umbrella bodies which might not necessarily deal with the needs of individual subsectors. Firms in the manufacturing sector range from members of none to at least six associations, probably depending on the industry subsector. Although membership can be sometimes viewed as

investment in social capital, in this study it can be concluded that the investment was not positively associated with firm performance.

6.3.8 Government liaison

Liaison with government can take many forms, from casual relations to customer supplier relations since it is the largest consumer of goods and services. Interaction with government can be a form of investment in social capital. In this study, it can be concluded that such investment is fruitful as it is positively associated with firm performance. This differs significantly across economies as Western ones view government liaison negatively, while the Eastern economies view it positively. Zimbabwe is leaning towards the emerging economies on this score.

6.4 ASSESSING TECHNOLOGICAL CAPABILITIES FOR FIRM PERFORMANCE

Technological capabilities afford a firm the opportunity to use technology to create competitive advantage as is well postulated in the theory of dynamic managerial capabilities. The development and adoption of technological capabilities is a must for Zimbabwean firms at this critical stage of their history. These capabilities differ very much between developed and developing countries, the former being largely the innovators heavily involved in creation of technological solutions and the latter adopting them to their needs. It can be concluded that in line with the deficiency in Zimbabwe, the results showed that significant technological capabilities variables centred on the development of technology. These are ISO certification, patent registration, presence of adequate internet resources and human resource development.

Research has shown that firms that register patents invest heavily in research and development, which results in technological breakthroughs. These require patent protection as a source of competitive advantage. ISO certification is a step up from development, where a firm requires a stamp of quality by the international body. Added to that are internet resources, which are necessary for diffusion of technology. Since Zimbabwe is on the receiving end of technological developments, it is necessary to have the internet resources to search for and find appropriate technological capabilities for competitiveness. Human resource development goes hand in hand with acquiring new technologies. Knowledge resides in people and competent human resources

are irreplaceable. This fits very well in the Zimbabwean manufacturing sector, where firms were recovering and these variables are necessary for technological development.

There has not been empirical research to come up with a technological index for Zimbabwe, but it can be concluded that the antiquated manufacturing equipment has negative effects on the competitiveness of Zimbabwe manufacturers. Thus technological development is right down the alley for most of the firms in the manufacturing sector to improve performance and to be able to offer goods on the international market.

6.4.1 Technological development

Although research has shown the importance of developing technological capabilities, the majority of Zimbabwean firms (67%) do not pursue this. This concurs with research that shows that developing countries acquire technologies already developed and convert them to suit their needs. The companies were a mixture of large and small companies and any technological development at all is generally associated with larger firms. Surprisingly, large firms who are by and large foreign owned were not developing technologies either from 2009 to 2012 probably because they depend on technologies from sister firms or centralised research and development. The fact that little development was undertaken from 2009 to 2012 reflected in the fact that the variable is not positively associated with firm performance.

6.4.2 Importation of technology

Firms in the Zimbabwean manufacturing sector import technology since they do not develop their own. The majority of firms (69%), mostly local and mixed firms, import technologies. This research could not confirm the cost benefit of technology production and importation, but it can be concluded that source of technology does not affect firm performance.

6.4.3 Patent registration

Literature shows that the culmination of technology creation is the registration of patents. Not all firms register their innovations however, as it becomes easier for competition to copy or simply wait for the protection period to run its course before they can jump onto the bandwagon at the least cost. Only 18% of the firms registered patents from 2009 to 2012 and although they are in

the minority, patent registration can be concluded to be positively associated with firm performance.

6.4.4 ISO Certification

ISO certification is an indication that a firm is looking for international recognition for its production process and is sought after by thousands of firms the world over. It can be concluded that Zimbabwean firms in the manufacturing sector are well aware of this accreditation as 31% of the firms registered for one certification or another in the years 2009 to 2012. ISO certification also sends quality improvement signals which may draw more customers to the firm's products. This affects the firm's bottom line and thus ISO certification is positively associated with firm performance in the Zimbabwean manufacturing sector.

6.4.5 R and D expenditure

Literature has shown minimum research and development on the African continent and although funding is allocated to research in the manufacturing sector, the question of effectiveness of the research output still lingers. At least 55% of the firms have spent some money on research and development in the years 2009 to 2012, but since few patents have been registered, and resultant technological development has been minimal, it can be concluded that the R&D has had very little effect on the performance of firms in the Zimbabwean manufacturing sector. R&D comes at a cost to the organisation and large firms might be tempted to have centralised R&D rather than individual centres in a developing country.

6.4.6 Scientific publications

Publications in scientific journals is another output variable of the development of technological capabilities. Scientists might feel the need to be noted for innovations; also, having such papers peer reviewed and brought to the public arena gives a lot of satisfaction. This is true for the developed world, but in Zimbabwe only 10% of the respondents had any scientific output published. It can be concluded that since there is little R&D, no publicised technological development, there is meagre scientific material for publication. Generally, firms in Zimbabwe do not invest in publications, being inclined more towards production. This is at variance with the literature, which advocates for a close relationship between scientific institutions and manufacturing firms.

6.4.7 Technological linkages

Technological linkages are an excellent platform for sharing information and boosting technological knowledge among peers. Zimbabwean firms are largely heterogeneous and there might be limited scope for linkages. Therefore only 50% of the firms have some form of linkage. This would have led to technological linkages being insignificant to firm performance and there is limited knowledge stemming from such relationships.

6.4.8 Infrastructure for technological development

Adequate infrastructure is a prerequisite for technological development and its sufficient presence enables firms to access new developments speedily. In Zimbabwe, access to electricity has remained limited from 2005 to 2015 and became very expensive with power outages prevalent in some areas. Zimbabwe has not achieved 100% ICT penetration although mobile networks claim to have reached in excess of 80% coverage. Wireless technology has become a major source of information and data transfer and on average, 35% of the firms have indicated adequacy of infrastructure. Due to the importance of information technology, it may be concluded that it is critical for firm performance.

6.4.9 Relationship with technological institutions

Relationship with technological institutions can enhance a firm's R&D capability and also helps to share costs of research. Such institutions can be considerably focused and produce new products and technological capabilities for firms. Zimbabwe has very few of such institutions for the manufacturing sector and only 45% of the companies have some form of relationship with technologically inclined universities and the Scientific and Industrial Research and Development Centre (SIRDC). To this end the contribution to firm performance is not significant.

6.4.10 Technological transfer

Technology transfer can only take place when it has been developed or acquired and where the recipients are able to accept it. At least half of the firms transfer technology, showing that Zimbabwean firms in the manufacturing sector have the technology, whether bought or developed, to transfer. It can also be concluded that the firms are up to date with what is going on in their sectors to be able to accept the transfer. It can also be concluded that Zimbabwe has benefited from its colonial past by having relationships with developed nations, which improved

technology to an extent where there is more renewal rather than creation. This has contributed to performance of the organisation.

6.4.11 Human resource development

Knowledge resides in people and no technology can be developed or used without human presence. Human resources need to be developed to create the technology, to transfer and to utilise that which have been created. It can be concluded that the deliberate Zimbabwean technology capacitation through the apprenticeship programme goes a long way towards gaining adequate human resource. Furthermore, it can be concluded that human resource development significant for firm performance as its absence will be detrimental to the availing of and maximum usage of the necessary technology.

6.5 INTEGRATED MODE

The regression analysis indicates that 5 variables remain positive and significant to firm performance after the integrated estimation. Antecedent studies on the three drivers of firm performance have tended to discuss each individually and at best combined two drivers(Murphy 2002; Wu and Choi 2004; Wang 2006; Carey and Lawson 2009; and Moon 2010). The uniqueness of this study is the bringing together of these known associations in an effort to ameliorate the firm performance discourse.

Thus it can be concluded that the five variables remaining are the most important variables after controlling for many other variables which previous studies have been devoid of. Worthy of note is the fact that all the three drivers of firm performance have a representative significant variable supporting the following fact: in order to recover, firms in Zimbabwe need to focus on corporate governance issues, social capital and technological capabilities, with the 5 variables taking the lead. It can therefore be concluded that there is merit in viewing critical aspects of firm performance in an integrated mode as it enables organisations to firmly prioritise aspects to invest in.

6.6 RECOMMENDATIONS

- The study goes a long way in indicating the most important variables companies can invest in. It is recommended that in policy discussions, the three drivers can be considered in a holistic manner rather than individually to enable a forceful policy framework.
- Companies avoid looking at drivers of performance singly. It is evident that an integrated approach can bring about optimum returns as all aspects will be dealt with.
- In terms of learning, the drivers of performance are dynamic and consistent revisiting of the not just these three but adding other drivers of performance are recommended.

6.7 SUGGESTIONS FOR FURTHER RESEARCH

- Further research would be to investigate the significance of shareholder concentration on firm performance for listed companies since they have more complex corporate governance scenarios. This contrasts with private organisations, where the majority shareholder is likely to direct the corporate governance aspects.
- There is also room to revisit other combinations of drivers of firm performance, including those not reviewed in this study. Aspects such as legislation may bring out interesting results and also point out the impact of new laws like indigenisation.
- Investigation of individual drivers of firm performance can provide a foundation for comparative studies between drivers and with the integrated model.
- There is also room for inter-country studies for comparison purposes, especially in the southern African region, where the countries have a measure of homogeneity. Such comparisons could contribute to a critical wealth of literature on the manufacturing sector which by and large is interdependent in this region.
- Regression analysis could also be expanded, for instance, splitting it into types of owners, e.g. whether they are governmental, institutional or individual.

BIBLIOGRAPHY

- Acquaah, M 2007**, 'Managerial social capital, strategic orientation, and organizational performance in an emerging economy', *Strategic Management Journal*, vol.28, pp. 1235–1255.
- Adler, P & Kwon, SW2002**, 'Social Capital: Prospects for a new concept', *Academy of Management Review*, vol. 27, no. 1, pp. 17 – 40.
- Adner, R& Helfat, C 2003**, 'Corporate effects and dynamic managerial capabilities', *Strategic Management Journal*, pp.1011–1025.
- Aguilera, RV & Cuervo-Cazurra, A 2004**, 'Codes of good governance worldwide: what is the trigger? *Organization Studies*, vol. 25, pp. 415–443.
- Al-Refaie, A Ghnaimat, O& Li, MH 2012**, 'Effects of ISO 9001 Certification and KAAE on performance of Jordanian firms', *Jordan Journal of Mechanical and Industrial Engineering*, vol. 6, no. 1, pp. 45 – 53.
- Aluchna, M 2009**, 'Does good corporate governance matter? Best practice in Poland', *Management Research News*, vol. 32, no. 2, pp. 185–198.
- Archibugi, D& Coco, A 2005**, 'Measuring technological capabilities at the country level: A survey and a menu for choice', *Research Policy*, vol. 34, pp. 175–194.
- Arregle, J, Hitt, MA, Sirmon, DG & Very, P2007**, 'The development of organizational social capital: Attributes of family firms', *Journal of Management Studies*, vol. 44, no.1, pp. 73–95.
- Atalay, M, Anafarta, N& Sarvan, F 2013**, 'The relationship between innovation and firm performance: an empirical evidence from Turkish automotive supplier industry', *Procedia-Social and Behavioural Sciences*, vol. 75, pp. 226–235.
- Augustine, D 2012**, 'Good practice in corporate governance: transparency, trust, and performance in the microfinance industry', *Business & Society*, vol. 51, no. 4, pp. 659– 676.
- Azim, MI 2012**, 'Corporate governance mechanisms and their impact on company performance: a structural equation model analysis', *Australian Journal of Management*, vol.37, no.3, pp. 481–505.
- Banker, R Liu, FC, Ou, CS & Wattal, S 2009**, 'Education, R&D and firm performance in information technology industries: An empirical examination', *Annual meeting and conference on teaching and learning in accounting*, American Accounting Association, August 1 to 5 2009, New York.

Bauer, R Guenster, N& Otten, R 2003, 'Empirical evidence on corporate governance in Europe: The effect on stock returns, firm value and performance', *Journal of Asset Management*, vol. 5, no.2, pp. 91–104.

Bebchuk, L, Cohen, a& Ferrell, a 2009, 'What matters in corporate governance?' *The Review of Financial Studies*, vol. 22, no. 2, pp.783-827.

Bechara, J& Van de Ven, AH 2011, 'Triangulating philosophies of science to understand complex organizational and managerial problems', *Philosophy and Organization Theory*, vol.32, pp. 343-364.

Berulava, G 2013, 'Do trust-based relations improve firm's performance? Evidence from transition economies', Munich Personal RePEc Paper No. 48430, posted 19 July 2013, Online at <http://mpira.ub.uni-muenchen.de/48430/>

Bhonyongwa V. 2011, 'Processed foods report Zimbabwe', viewed 5 April 2012, <http://www.zimtrade.co.zw>

Bilgin, MH, Lau, CKM &Karabulut, G 2012, 'Technology transfer and enterprise performance: a firm-level analysis in China', *Journal of Business Economics and Management*, vol.13, no.3, pp. 489-498.

Bitzer, J &Gorg, H2008, 'Foreign direct investment, competition and industry performance', *Kiel institute for the world economy*, working papers.

Black, BS, de Carvalho, AG &Gorga, E 2011, 'What matters and for which firms for corporate governance in emerging markets? Evidence from Brazil and other BRIC countries, *Journal of Corporate Finance*, vol.18, pp. 934–952.

Bobillo AM, Lopez-Iturriaga, F& Tejerina-Gaite, F 2010, 'Firm performance and international diversification: the internal and external competitive advantages', *International Business Review*, vol. 19, pp.607–618.

Bouaziz, Z 2012, 'The impact of the presence of audit committees on the financial performance of Tunisian companies', *International Journal of Management & Business Studies*, vol. 2, no. 4, pp.57-64.

Bourdieu, P 1986, 'The forms of capital', in John, G Richardson(eds), *Handbook of theory and research for the sociology of education* , Greenwood New York.

Brace, I 2008, 'Questionnaire design: How to plan, structure and write survey material for effective market research', 2nd edn, Kogan Page Publishers, London, United Kingdom.

Branstetter, L& Chen, JR2006, 'The impact of technology transfer and R & D on productivity growth in Taiwanese industry: micro-econometric analysis using plant and firm-level data', *Japanese and International Economies*, vol.20, pp.177–192.

Brown, LD &Caylor, ML 2009, 'Corporate governance and firm operating performance', *Review of Quantitative Financial Accounting*, vol.32, pp.129–144.

Cadbury Report, 1992, The report of the Committee on the Financial Aspects of Corporate Governance, Gee, London UK.

Carey, S&Lawson, B 2011, 'Governance and social capital formation in buyer-supplier relationships', *Journal of Manufacturing Technology Management*, vol. 22,no. 2, pp. 152-170.

Carmeli, A &Azeroual, B 2009, 'How relational capital and knowledge combination capability enhance the performance of work units in a high technology industry', *Strategic Entrepreneurship Journal*, pp. 83-103.

Chambers, a 2012, *corporate governance handbook*, 5thedn, Bloomsbury Professional, London UK.

Chan, KC & Li, J, 2008, 'Audit committee and firm value: Evidence on outside top executives as expert-independent directors', *Corporate Governance: An International Review*, vol. 16, no.1, pp. 16-31.

Chen, J, Chen, Y& Vanhaverbeke, W 2011, 'The influence of scope, depth, and orientation of external technology sources on the innovative performance of Chinese firms', *Technovation*, vol.31,pp. 362–373.

Chikuku, T, Chinguwa, S &Macheka, M 2012, 'Evaluation of the impact of obtaining ISO9001:2008 quality management system(QMS) certification by manufacturing companies in Zimbabwe', *International Journal of Engineering Science and Technology*, vol.4, no.9, pp. 4168-4186.

Chipika, S & Wilson, G 2006, 'Enabling technological learning among light engineering SMEs in Zimbabwe through networking', *Technovation*, vol.26, pp. 969–979.

Chiripanhura, B 2010, 'Sneaking up and stumbling back: textile sector performance under crisis conditions in Zimbabwe', *Journal of International Development*, pp.153 to 175.

Choi, SB& Williams, C 2013, 'Innovation and firm performance in Korea and China: a cross-context test of mainstream theories', *Technology Analysis & Strategic Management*, vol.25,no.4,pp. 423-444.

Cohen, D. & Prusak, L 2001, *'In good company: how social capital makes organizations work'*, Harvard Business School Press, Boston, MA.

Coles, JL, Daniel, N & Naveen, L 2005, 'Boards: does one size fit all?' Working Paper, Arizona State University, Tempe, United States of America.

Coleman, JS 1988, 'Social Capital in the creation of Human Capital', *American Journal of Sociology*, vol. 94, pp. S95-S120.

Combs, JG, Crook, TR & Shook, CL 2005, 'The dimensionality of organizational performance and its implications for strategic management research', *Research Methodology in Strategy and Management*, vol. 2, pp. 259-286.

Confederation of Zimbabwe Industries (CZI) 2010, *Manufacturing survey report*, viewed May 2012, <http://www.czi.co.zw/>

Confederation of Zimbabwe Industries (CZI) 2011, *Manufacturing sector survey report*, viewed June 2012, <http://www.czi.co.zw/>

Confederation of Zimbabwe Industries (CZI) 2014, *Manufacturing survey report* viewed January 2015, <http://www.czi.co.zw/>

Coombs, JE & Bierly III, PE 2006, 'Measuring technological capability and performance', *R&D Management*, vol.36, no.4, pp.421-438.

Cooper, DR & Schindler, PS, *Business research methods*, McGraw-Hill, Irwin:

Corbett, C, Montes-Sancho, MJ & Kirsch, DA 2005, 'The financial impact of ISO 9000 certification in the United States: an empirical analysis', *Management Science*, vol.51, no.7, pp.1046-1059.

Coyle, B 2006, *Corporate governance*, Institute of Chartered Secretaries and Administrators, 4th edn, ICSA Publishing limits: London.

Creswell, J W 2007, *Qualitative inquiry and research design: Choosing among five approaches*, 2nd edn, Sage Publications, Thousand Oaks, CA.

Creswell, JW & Plano Clark, VL 2007, *Designing and conducting mixed methods research*, Sage, Thousand Oaks CA.

Dahya, J, Dimitrov, O & McConnell JJ, 2006, 'Dominant Shareholders, Corporate Boards and Corporate Value: A Cross-Country Analysis'. Purdue CIBER Working Papers, Paper 41.

Daily, CM, Dalton, DR & Cannella, AA Jr 2003, 'Corporate governance: decades of dialogue and data', *Academy of Management Review*, vol.28, no.3, pp.371-382.

Darroch, J 2005, 'Knowledge management, innovation and firm performance', *Journal of Knowledge Management*, vol. 9, no. 3, pp. 101-115.

Das, DK 2010, 'Another perspective of globalization', *Journal of International Trade Law and Policy*, vol. 9, no. 1, pp. 46-63.

Davidsson, P & Honig, B 2003, 'The role of social and human capital among nascent entrepreneurs', *Journal of Business Venturing*, vol.18, no.3, pp. 301-331.

Decarolis, DM & Deeds, DL 1999, 'The impact of stocks and flows of organizational knowledge on firm performance: an empirical investigation of the biotechnology industry', Entrepreneurship Faculty Publications, Paper 4, <http://ir.stthomas.edu/ocbentrpub/4/>, Viewed 6 April 2011.

Dicko, S & Breton, G 2010, 'Social network and firm performance: an empirical analysis of Canadian boards', PhD thesis, accounting department, École des sciences de la gestion, Université du Québec à Montréal.

Dobbs, R & Koller, T 2005, 'Measuring long term performance in value and performance', *Special edn McKinsey Quarterly*, pp.16-27.

Donaldson, L 1985, *In defence of organization theory: a reply to the critics*, Cambridge University Press, Cambridge.

Donaldson, L & Davis, JH 1991, 'Stewardship theory or agency theory: CEO governance and share- holder returns', *Australian Journal of Management*, vol.16, pp. 49-64.

Duan, J & Chen, Z 2009, 'The technological system of Chinese manufacturing industry: A sectorial approach to enterprises', *Journal of Small Business and Enterprise Development*, vol. 13, no.2, pp. 198 – 207.

Dube, CF 2008, *Corporate governance: non-executive directors' independence, fact or fiction*, Mambo Press, Gweru.

Durnev, A & Kim, EH 2005, 'To steal or not to steal: Firm attributes, legal environment, and valuation', *The Journal of Finance*, vol.60, no.3, pp. 1461-1493.

Ehikioya, BI 2009, 'Corporate governance structure and firm performance in developing economies: evidence from Nigeria', *Corporate Governance*, vol.9, no.3, pp. 231-243.

Fich, EM & Shivdasan, A 2006, 'Are busy boards effective monitors?' *The Journal of Finance*, vol. 16, no. 2, pp.689-724.

Francis, D & Bessant, J 2005, 'Targeting innovation and implications for capability development', *Technovation*, vol. 25, pp. 171–183.

Friedrich-Ebert-Stiftung 2006, 'The textile and clothing industry in Zimbabwe', in *The future of the textile and clothing industry in Sub-Saharan Africa*, Kanyenze, Herbert Jauch / Rudolf Traub-Merz eds, Bonn Germany.

Fussell, H, Harrison-Rexrode, J Kennan, WR& Hazleton, V2006, 'The relationship between social capital, transaction costs, and organizational outcomes: a case study', *Corporate Communications: An International Journal*, vol. 11, no 2, pp. 148 – 161.

Garcia-Muina, F E & Navas-Lopez, JE 2007, 'Explaining and measuring success in new business: the effect of technological capabilities on firm results', *Technovation*, vol.27, pp.30–46.

Global Agricultural Information Network (GAIN) report 2009, USDA Foreign Agricultural service, Global Agricultural Information Network.

Goldschmidt, R G B, Burstein, R G, Brito, LAL & de Vasconcelos, 2011, 'Country effect on firm performance: a multilevel approach', *Journal of Business Research*, vol.64, no.3, pp.273–279.

Gompers, PJ, Ishii, LA & Metrick, A 2003, 'Corporate governance and equity prices', *Quarterly Journal of Economics*, vol.118, pp.107–55.

Goriwondo, WM, Zimwara, D, Mhlanga, S, Mutopa, CT, Nkomo, F, Gutu, T & Ngwenya, P 2012, 'Challenges faced by manufacturing companies in sustaining conformance to ISO9001:2008 in Zimbabwe: a case study of a textiles manufacturing company', *International Journal of Innovative Technology and Exploring Engineering*, vol.2, no.1, pp.31–37.

Greener, S 2008, *Introduction to business research method*, Ventus Publishing, London.

Grimpe, C & Kaiser, U 2010, 'Balancing internal and external knowledge acquisition: the gains and pains from R&D outsourcing', *Journal of Management Studies*, vol.47, no.8, pp. 1484–1509.

Grosfeld, I 2006, Ownership concentration and firm performance: evidence from an emerging market, William Davidson Institute Working Paper Number 834.

Groves, RM, Fowler, FJ, Couper, MP, Lepkowski, JM, Singer, E & Tourangeau, R 2009, *Survey methodology*, 2nd edn, John Wiley and sons, Hoboken, New Jersey.

Guan, JC, Yam, RCM, Mok, CK & Ma, N 2006, 'A study of the relationship between competitiveness and technological innovation capability based on DEA models', *European Journal of Operational Research*, vol.170, pp.971–986.

Gudyanga, F 2011, 'Science and Technology, key to Africa's development', *Herald*, 26 September 2011, viewed 2 November 2011, www.herald.co.zw/index.php

Gulati, R & Sytch, M 2007, 'Dependence asymmetry and joint dependence in inter-organizational relationships: effects of embeddedness on a manufacturer's performance in procurement relationships', *Administrative Science Quarterly*, vol. 52, no. 1, pp. 32-69.

Haat, MHC, Rahman, RA & Mahenthiran, S 2008, 'Corporate governance, transparency and performance of Malaysian companies', *Managerial Auditing Journal*, vol. 23, no. 8 pp. 744 – 778.

Hatzikian, Y 2012, 'Exploring the link between innovation and firm performance', *Journal of Knowledge Economics*, pp. 1-20.

Healy, PM 2007, Business analysis and valuation, IFRS edn <http://docs.lib.purdue.edu/ciberwp/41>, Access March 2012.

Hu, AGZ, Jefferson, GH, Xiaojing, G & Jinchang, G 2003, 'R&D and technology transfer: firm-level evidence from Chinese industry', *The Review of Economics and Statistics*, vol. 87, no. 4, pp. 780-786.

Huang, M, Ahn, J & Lee, D 2009, 'IT capabilities and firm performance: the moderating role of institutional pressures and the mediating role of IT', *Americas Conference on Information Systems (AMCIS)*, *AMCIS 2009 Proceedings*, Innovation Success AIS Electronic Library (AISeL) <http://aisel.aisnet.org/amcis2009/653>, Accessed April 2013.

Huergo, E 2006, 'The role of technological management as a source of innovation: Evidence from Spanish manufacturing firms', *Research Policy*, vol. 35, pp. 1377–1388.

Iammarino, S, Padilla-Pérez, R & von Tunzelmann, N 2008, 'Technological capabilities and global-local interactions: the electronics industry in two Mexican regions', *World Development*, vol. 36, no. 10, pp. 1980–2003.

International Finance Corporation 2007, 'Developing SMEs through Business Linkages –The MozLink experience', Jaspers, FJ & Mehta, I Mozambique.

ISO certification survey, 2012, viewed November 2013 www.iso.org/iso/news.htm?refid=Ref1686

Jensen, M & Meckling, W 1976, 'Theory of the firm: managerial behaviour, agency costs, and ownership structure', *Journal of Financial Economics*, vol. 3, pp. 305– 360.

Jonker, M, Romijn, H& Szirmai, A 2006, 'Technological effort, technological capabilities and economic performance: a case study of the paper manufacturing sector in West Java', *Technovation*, vol.26, no.1, pp.121–134.

Jusoh, R& Parnell, JA2008, 'Competitive strategy and performance measurement in the Malaysian context: An exploratory study', *Management Decision*, vol. 46, no. 1, pp. 5-31.

Kaplan, S 2011, 'Research in cognition and strategy: reflections on two decades of progress and a look to the future', *Journal of Management Studies*, vol.48, pp. 665–695.

Karaoz, M& Albeni, M 2005, 'Dynamic technological learning trends in Turkish manufacturing industries', *Technological Forecasting & Social Change*, vol.72, pp. 866–885.

Kirchmaier, T& Stathopoulos,&K2008, From fiction to fact: the impact of CEO social networks, Discussion papers no 608, Discussion paper series, London School of Economics.

Klapper, LF & Love, I 2004, 'Corporate governance, investor protection, and performance in emerging markets', *Journal of Corporate Finance*, vol.10, pp. 703– 728.

Koka, BR& Prescott, J E 2002, 'Strategic alliances as social capital: a multidimensional view', *Strategic Management Journal*, vol. 23, no. 9, pp. 795-816.

Konje, P 2011, Furniture brief Zimtrade,
<http://www.zimtrade.co.zw/site/site.asp?section=2&page=2>, viewed 9 March 2012.

Korac-Kakabadse, N Kakabadse, AK & Kouzmin, A 2001, 'Board governance and company performance any correlation?', *Corporate Governance*, vol. 1, no.1, pp.2 4 -3 0.

Krosnic, J A& Presser, S 2010, 'Questionnaire design', in JD Wright and PV Marsden (eds), *A handbook on survey research*, 2nd edn, Emerald Publishing Group, Bingley West Yorkshire United Kingdom.

Kumar, N& Singh, JP 2011, 'Effect of board size and promoter ownership on firm value: some empirical findings from India', *Corporate Governance*, vol.13, no.1, pp. 88-98.

Kurfi, AK 2009, 'Leadership styles: the managerial challenges in emerging economies', *International Bulletin of Business Administration*, EuroJournals, Inc.
<http://www.eurojournals.com>

Kylaheiko, K, Jantunen, A, Puumalainen, K, Saarenketo, S & Tuppur, A2011, 'Innovation and internationalization as growth strategies: The role of TCs and appropriability', *International Business Review*, pp.508-520.

Lafuente, E, Bayo-Moriones, A& Cestona, MG2009, 'ISO-9000 certification and ownership structure: effects upon firm performance', *British Journal of Management*, vol. 21, pp 649–665.

Lall, S 1992, 'Technological capabilities and industrialization', *World Development*, vol.20, no.2, pp. 165–186.

Lam, T& Lee, S 2012, 'Family ownership, board committees and firm performance: evidence from Hong Kong', *Corporate Governance*, vol. 12, no. 3, pp. 353-366.

Lee, C, Lee, K& Pennings, JM 2001, 'Internal capabilities, external networks, and performance: A study on technology-based ventures', *Strategic Management Journal*, vol.22, pp.615-640.

Lee, J 2010, 'Emerging need: How companies in developing markets can cultivate the leaders they lack', *Wall Street Journal*, May 24 2010.

Leedy, PD &Ormrod, JE 2010, *Practical research planning and design*, 9thedn, Pearson Education publishing, Upper Saddle River, New Jersey.

Li, Y, Zhao, Y& Liu, Y 2006, 'The relationship between HRM, technology innovation and performance in China', *International Journal of Manpower*, vol. 27 no. 7, pp. 679-697.

Liang, T & Liu, C 2010, 'A resource-based perspective on information technology and firm performance: a meta-analysis', *Industrial Management & Data Systems*, vol. 110, no. 8, pp. 1138-1158.

Lin, ZJ, Yang, H &Arya, B 2009, 'Alliance partners and firm performance: resource complementarity and status association', *Strategic Management Journal*, vol.30, pp. 921–940.

Lopes, CM F P, Cerqueira, A &Brandão, E 2011, The financial reporting quality effect on European firm performance, FEP working papers research, Work in Progress No. 403.

Maak, T 2007, 'Responsible leadership, stakeholder engagement, and the emergence of social capital', *Journal of Business Ethics*, vol. 74, no. 4, pp. 329-343.

Makadok, R 2001, 'Towards a synthesis of the resource-based and dynamic-capability views of rent creation', *Strategic Management Journal*, vol. 22, no.5, pp.387-401.

Mangena, M &Taurigana, V 2008, 'Corporate boards, ownership structure and firm performance in an environment of severe political and economic uncertainty', *British Accounting Association Conference*, April 2008, Blackpool.

Marisa, L 2004, 'The impact of commercial Forest areas on nearby Rural communities in the Eastern highlands of Zimbabwe', *Social Science Research Report Series - no. 32, Organisation for Social Science Research in Eastern and Southern Africa (OSSREA)*.

Masundire S. 2011, Pharmaceuticals Zimbabwe, Zimtrade, viewed 9 March 2012, <http://www.zimtrade.co.zw/site/site.asp?section=2&page=2>

Mauer, I & Ebers, M. 2006, 'Dynamics of social capital and their performance implications: lessons from biotechnology start-ups', *Administrative Science Quarterly*, vol.51, pp.262–9.

Ministry of Finance and Economic Development Zimbabwe 2014, Midterm fiscal policy review 2014.

Minde, IJ, Mazvimavi, K, Murendo, C & Ndlovu, PV 2010, 'Supply and demand trends for fertilizer in Zimbabwe: 1930 to date: Key drivers and lessons learnt', Paper presented at the Joint 3rd African Association of Agricultural Economists (AAAAE) and 48th Agricultural Economists Association of South Africa (AEASA) Conference, Cape Town, South Africa, September 19-23, 2010.

Millar, CCJM, Eldomiaty, T I, Choi, CJ & Hilton B 2005, 'Corporate governance and institutional transparency in emerging markets', *Journal of Business Ethics*, vol. 59, no. 1/2, pp. 163-174.

Ministry of Industry and Commerce 2010, Zimbabwe industry development framework

Ministry of Industry and Commerce 2011, State of the manufacturing sector report.

Ministry of Industry and Commerce 2014, State of the manufacturing sector report.

Ministry of State Enterprises and parastatals handbook Zimbabwe, 2010, p.10.

Moers, F 2006, 'Performance measure properties and delegation', *The Accounting Review*, vol. 81, no. 4, pp. 897-924.

Moon, T 2010, 'organizational culture intelligence: dynamic capability perspective', *Group and Organizational Management*, vol.35, no.4, pp. 456-493.

Moran, P 2005, 'Structural vs. relational embeddedness: social capital and managerial performance', *Strategic Management Journal*, vol. 26, no.12, pp. 1129–1151.

Muranda, Z 2006, 'Financial distress and corporate governance in Zimbabwean banks', *Corporate Governance*, vol. 6, no.5, pp. 643 – 654.

Nahapiet, J & Ghoshal, S 1998, 'Social capital, intellectual capital, and the organizational advantage', *Academy of Management Review*, vol. 23, no.2, pp. 242-266.

Naidoo, R 2009, 'Corporate governance: an essential guide for South African Companies', 2nd edn, Double Storey Books, a Juta Company, South Africa.

Narayanan, K & Bhat, S 2009, 'Technology sourcing and its determinants: a study of basic chemical industry in India', *Technovation*, vol. 29, pp.562–573.

Nkala S. 2011 Textile and clothing sector write up Zimbabwe, Zimtrade, and <http://www.zimtrade.co.zw/site/site.asp?section=2&page=2> viewed 9 March 2012.

Nourse, E G& Drury, HB 1938, *Industrial price policies and economic progress*, The Brookings Institution, Washington D.C.

Ntim, CG& Osei, KA 2011, 'The impact of corporate board meetings on corporate performance in South Africa', *African Review of Economics and Finance*, vol. 2, no.2, pp.83-103.

O'Regan, N, Ghobadian, A& Sims, M 2006, 'Fast tracking innovation in manufacturing SMEs', *Technovation*, vol. 26, pp 251–261.

Ongore, VO& K'Obonyo, PO, 2011, 'Effects of selected corporate governance characteristics on firm performance: empirical evidence from Kenya', *International Journal of Economics and Financial Issues*, vol.1, no. 3, pp.99-122.

Palacios-Marqués, D, Peris-Ortiz, M& Merigo', JM 2013, 'The effect of knowledge transfer on firm performance: an empirical study in knowledge-intensive industries', *Management Decision*, vol. 51, no. 5, pp. 973-985.

Pangarkar, N& Wu, J2012, 'Industry globalization and the performance of emerging market firms: evidence from China', *International Business Review*, vol.21, no.2, pp.196-209.

Paradzayi, P 2012, Evaluation of survival strategies employed by foundry shops in Zimbabwe from 2009 to 2012. MBA dissertation Midlands State University, Gweru, Zimbabwe.

Patulny, R V & Svendsen, G L H 2007, 'Exploring the social capital grid: bonding, bridging, qualitative, quantitative', *International Journal of Sociology and Social Policy*, vol. 27, no.1, pp. 32 – 51.

Peng, MW & Luo, Y 2000, 'Managerial ties and firm performance in a transition economy: the nature of a micro-macro link', *The Academy of Management Journal*, vol. 43, no. 3, pp. 486-501.

Pham, PK, Suchard, J& Zein, J 2011, 'Corporate governance and alternative performance measures: evidence from Australian firms', *Australian Journal of Management*, vol.36, no.3, pp. 371–386.

POTRAZ Zimbabwe 2014, Postal and Telecommunications sector performance report, 1st quarter report.

Prashantham, S & Dhanaraj, C 2010, 'the dynamic influence of social capital on the international growth of new ventures', *Journal of Management Studies*, vol. 47, pp. 967–994.

Putnam, RD 2000, *Bowling Alone: The collapse and revival of american community*, Simon & Schuster, New York.

Putnam, R.D 2004, 'Bowling together', *The Organisation for Economic Cooperation and Development Observer*, Paris, March, pp. 14-16, viewed April 2012, http://www.oecdobserver.org/news/archivestory.php/aid/1215/Bowling_together.html

Reserve bank of Zimbabwe, 2004, Reserve Bank of Zimbabwe guidelines on corporate governance, No.1, 2004.

Richard, PJ, Devinney, TM, Yip, GS & Johnson, G 2009, 'Measuring organizational performance: towards methodological best practice', *Journal of Management*, vol. 35, no. 3, pp. 718-804.

Roberts-Lombard, M 2002, *Marketing research- a Southern African perspective*, Routledge, South Africa.

Rostila, MA 2011, 'Resource-based theory of social capital for health research: Can it help us bridge the individual and collective facets of the concept?' *Social Theory & Health*, vol. 9, no.2, pp.109–129.

Rothaermel, FT & Alexandre, MT 2009, 'Ambidexterity in technology sourcing: the moderative role of absorptive capacity', *Organization Science*, vol.20, no.4, pp. 759–780.

Rud, JP 2011, 'Infrastructure regulation and reallocations within industry: theory and evidence from Indian firms', October 2011, International Conference on Infrastructure Economics and Development World Bank and TSE <http://www.internetworldstats.com/af/zw.htm>

Sachikonye, LM 2002, 'Whither Zimbabwe? Crisis and democratization', *Review of African Political Economy*, no. 91, pp. 13- 20.

Saungweme, T 2011, 'Building and construction brief', Zimtrade, <http://www.zimtrade.co.zw/site/site.asp?section=2&page=2viewedviewed> 9 March 2012.

Schwager, PH, Byrd, TA & Turner, DE 2000, 'Information technology infrastructure capabilities impact on firm financial performance: An exploratory study', *Journal of Computer Information Systems*, pp.98-105.

Sheng, S, Zheng Zhou, K & Li, JJ 2011, 'The effects of business and political ties on firm performance: evidence from China', *Journal of Marketing*, vol. 75, no. 1, pp.1-15.

Shi, Y 2009, 'Technological capabilities and international production strategy of firms: the case of foreign direct investment in China', *Journal of World Business*, vol.36, no.2, pp. 184–204.

Shiferaw, A 2009, 'Survival of private sector manufacturing establishments in Africa: the role of productivity and ownership', *World Development*, vol.37, no.3, pp.572–584.

Simeth, M& Cincera, M 2013, 'Corporate science and voluntary disclosure: analyzing determinants and firm performance', Thèse EPFL, Ecole Polytechnique Federale de Lausanne n° 5934.

Simmons, BL & White, MA 1999, 'The relationship between ISO 9000 and business performance: does registration really matter?' *Journal of Managerial Issues*, vol. 11, no. 3, pp. 330-343.

Smedlund, A 2008 'The knowledge system of a firm: social capital for explicit, tacit and potential knowledge', *Journal of Knowledge Management*, vol. 12, no. 1, pp.63 – 77.

Smith, M L 2006, 'Multiple methods in education research', in J. Green, G. Camilli& P. Elmore (eds), *Handbook of complementary methods in educational research*, Lawrence Erlbaum Associates Inc., Mahwah, New Jersey.

Starke, F, Eunni, R, Dias Fouto, NMM & de Angelo, CF 2012, 'Impact of ISO 9000 certification on firm performance: evidence from Brazil', *Management Research Review*, vol. 35, no.10, pp. 974-997.

Stock Exchange handbook 2013, The New Zanj, Harare

Szeto, R, Wright, PC& Cheng, E 2006, 'Business networking in the Chinese context: Its role in the formation of guanxi, social capital and ethical foundations', *Management Research News*, vol. 29, no.7, pp. 425 –438.

Szogs, A 2010, Technology transfer and technological capability building in informal firms in Tanzania, PhD thesis, Lund University.

Szreter, S& Woolcock, M2004, 'Health by association? Social capital, social theory, and the political economy of public health', *International Journal of Epidemiology*, vol.33, no. 4, pg 650-667.

Tanriverdi, H 2005, 'Information technology relatedness, knowledge management capability, and performance of multi-business firms', *MIS Quarterly*, vol. 29, no. 2, pp. 311-334.

Tashakkori, A & Teddlie, C 2010, *Handbook of mixed methods in social and behavioral research*, 2ndedn, Sage, Thousand Oaks, CA.

Teece, D J 2010, 'Technological innovation and the theory of the firm: the role of enterprise-level knowledge, complementarities, and dynamic capabilities', in *Handbooks in Economics, Volume I* Elsevier.

Teece, DJ, Pisano, G & Shuen, A 1997, 'Dynamic Capabilities and Strategic Management', *Strategic Management Journal*, vol.18, no.7, pp.509-33.

Teitel, S 2001, 'Technological competence and firm economic performance in Zimbabwe's manufacturing industry', *Economics of Innovation and New Technology*, pp.513-526.

Thang, NN & Buyens, D 2008, 'Training, organizational strategy, and firm performance' *Economics & International Business Research Conference*, December 10-13, 2008, Miami, U.S.

Tian, J, Haleblan, J & Rajagopalan, N 2011, 'The effects of boards on human and social capital on investor reactions to new CEO selection', *Strategic Management Journal*, vol. 32, no.7, pp. 731-747.

Timber industries statistics, 2011, The timber producers' federation Zimbabwe, Harare.

Tödtling, F, Lehner, P & Kaufmann, A 2008, 'Do different types of innovation rely on specific kinds of knowledge interactions?' *SRE - Discussion Papers*, 2008/01, University of Economics and Business, Vienna. Transition Economies, Online at <http://mp.ra.ub.uni-muenchen.de/48430/>

Tsai, W 2000, 'Social capital, strategic relatedness and the formation of intra-organizational linkages', *Strategic Management Journal*, vol. 21, no. 9, pp. 925-939.

Tsai, W & Ghoshal, S 1998, 'Social capital and value creation: the role of intra-firm networks,' *The Academy of Management Journal*, vol. 41, no. 4, pp. 464-476.

Tricker, RI 1984, *Corporate governance: practices, procedures, and powers in British companies and their boards of directors*, Gower Publishing, Aldershot UK.

Tunzelmann, VN & Wang, Q 2007, 'Capabilities in production theory', *Structural Change and Economic Dynamics*, vol.18, pp.192-211.

Tustin, D, Ligthelm, AA, Martins, JH & Van Wyk, H de J 2005, *Marketing Research in Practice*, Unisa Press Pretoria, South Africa.

UNDP, 2012, Zimbabwe millennium development goals progress report, United Nations Harare Zimbabwe.

UNIDO, 2011, 'Pharmaceutical sector profile Zimbabwe, Global UNIDO Project: Strengthening the local production of essential generic drugs in least developed and developing countries', United Nations Harare Zimbabwe.

Van Kleef, JAG &Roome, NJ 2007, 'Developing capabilities and competence for sustainable business management as innovation: a research agenda', *Journal of Leaner Production*, vol. 15, pp. 38- 51.

Van Oorschot, W, Arts, W& Gelissen, J2006, 'Social capital in Europe: measurement and social and regional distribution of a multifaceted phenomenon', *Acta Sociologica*, vol. 49, no. 2, pp. 149-167.

Van Veen-Dirks, P 2010, 'Different uses of performance measures: The evaluation versus reward of production managers', *Accounting, Organizations and Society*, vol.35, pp. 141–164.

Vardiman, PD, Houghton, JD &Jinkerson, DL 2006, 'Environmental leadership development: toward a contextual model of leader selection and effectiveness', *Leadership & Organization Development Journal*, vol. 27, no. 2, pp. 93-105.

Voudouris, I, Lionkas, S, Iatrelli, M &Caloghirou, Y 2012, 'Effectiveness of technology investment: impact of internal technological capability, networking and investment's strategic importance', *Technovation*, vol.32, pp. 400–414.

Wallis, J, Killerby, P &Dollery, B2004, 'Social economics and social capital', *International Journal of Social Economics*, vol. 31, no. 3 pp. 239 – 258.

Wang, C Lu, I& Chen, C 2008, 'Evaluating firm technological innovation capability under uncertainty', *Technovation*, vol.28, pp.349–363.

Wang, Y Lo, H, Zhang, Q &Xue, Y 2006, 'How technological capability influences business performance: an integrated framework based on the contingency approach', *Journal of Technology Management in China*, vol.1, no.1, pp. 27-52.

Wernerfelt, B 1984, 'A resource-based view of the firm', *Strategic Management Journal*, vol. 5, no. 2, pp. 171-180.

West, A 2006, 'Theorising South Africa's corporate governance', *Journal of Business Ethics*, vol. 68, no. 4, pp. 433-448.

Wignaraja, G 2002, 'Firm size, technological capabilities and market-oriented policies in Mauritius', *Oxford Development Studies*, vol.30, no.1, pp.87-104.

Wignaraja, G 2007, 'Foreign ownership, technological capabilities, and clothing exports in Sri Lanka', ADB Institute discussion paper number 82.

Wignaraja, G 2008, 'Foreign ownership, technological capabilities and clothing exports in Sri Lanka', *Journal of Asian Economics*, vol.19, pp. 29–39.

Wright, M, Buck, T, Liu, X & Filatotchev, I 2008, 'Returnee entrepreneur characteristics, science park location choice and performance: an analysis of high technology SMEs in China', *Entrepreneurship Theory and Practice*, vol.32, pp.131–55.

Wu, W 2008, 'Dimensions of social capital and firm competitiveness improvement: the mediating role of information', *Journal of Management Studies*, vol.45, no.1 pp.122–46.

Yam, RC Lo, W Tang, E, Lau, A 2011, 'Analysis of sources of innovation, technological innovation capabilities, and performance: an empirical study of Hong Kong manufacturing industries', *Research Policy*, vol.40, pp.391–401.

Yildiz, F & Mustafa, H Ali, E 2011, 'Construction of multi-dimensional performance measurement model in business organizations: an empirical study', *Journal of Economic and Social Studies*, vol. 1, no.1 pp.33 -51.

Yin, RK 2009, *Case study research design and methods*, 4th edn, Sage publications, Thousand Oaks, CA.

Yli-Renko, H, Autio, E & Sapienza, HJ 2001, 'Social capital, knowledge acquisition, and knowledge exploitation in young technology-based firms', *Strategic Management Journal*, vol. 22, no. 6/7, pp. 587-613.

Zahra, SA, Neubaum, DO & Huse, M 2000, 'Entrepreneurship in medium-sized companies: exploring the effects of ownership', *Journal of Management*, vol. 26, no. 5, pp.947–976.

Zaheer, A, Gozubuyuk, R & Milanov, H 2010, 'It's the connections: The network perspective in inter-organizational research', *Academy of Management Perspectives*, vol.24, no.1, pp. 62-77.

Zhang, Q & Fung, HG 2006, 'China's social capital and financial performance of private enterprises', *Journal of Small Business and Enterprise Development*, vol. 13 .no. 2, pp. 198-207.

Zimbabwe Companies Act 24:03, 2003, pp.90

Zimbabwe Cotton Manufacturers Association, 2014, The Cotton to Clothing Strategy of Zimbabwe 2014 to 2019.

Zimbabwe Fertilizer Industry report 2010, Agricultural Coordination Working Group meeting, September 2010, www.fao.org

Zimbabwe Population Census Report 2012, www.zimstat.co.zw, viewed May 2013

Zimbabwe Statistics Agency 2011, National accounts, viewed March 2012, www.zimstat.co.zw
Zimbabwe statistics Agency 2010, Zimbabwe National Accounts, viewed April 2012, www.zimstat.co.zw

Zimtrade<http://www.zimtrade.co.zw/site/site.asp?section=2&page=2> viewed 9 March 2012.

Zimtrade<http://www.zimtrade.co.zw/site/site.asp?section=2&page=2> viewed 9 March 2012.

Zunguze, M 2009, 'Contextualizing ICT for development in Zimbabwe', SANGONET regional ICT development forum, E-Knowledge for Women in Southern Africa (EKOWISA).

Zwizwai, B, Kambudzi, A & Mauwa, B 2004, 'Zimbabwe: economic policy-making and implementation: a study of strategic trade and selective industrial policies', in C Chukwuma-Soludi, M Osita-Ogbu & C Ha-joon (eds), *The politics of trade and industrial policy in Africa forced consensus*, Trenton NJ, Africa World Press, Ottawa, Canada.

APPENDIX 1

Questionnaire

	Demographic factors		
	Variable	Description	Code
1	Name of the company		
2	Sector	One of 6 subsectors	1=food and beverage 2=clothing and textiles 3=timber and furniture 4=s 5=fertilizer 6=pharmaceuticals
3	Number of employees	Size of company determined by number of employees	1 = 1 -20 2 = 20-40 3=40-60 4=60-80 5=80-100 6=more than 100
4	Age of the company	How long the company has been operating	1 =5-10 years 2 =10-15 years 3 = 15 -20 years 4=20-25 years 5 = More than 25 years
5	Type of registration	Companies in the sample have to be registered	1=Private 2=Public 3=State

			4=Cooperative
6	Ownership structure	Shareholding	1=Local 2=Foreign 3=Mixed 4=Unknown
7	Profit before interest and taxes	To measure performance	2009= 2010= 2011= 2012=
8	Total assets	For performance measurement	2009= 2010= 2011= 2012=
9	Book value of equity	For performance measurement	2009= 2010= 2011= 2012=
10	Education level of CEO	Affects drive towards investment in training	1='O' levels 2='A' level 3=1 st degree 4=Masters 5=PhD

Corporate governance variables

	Variable	Description	Code
11	Shareholder concentration	Percentage of shares held by majority shareholder	1=Less than 10% 2=10-20% 3=20-30%

			4=30-40% 5=40-50% 6= more than 50%
12	Shareholder identity	Can the shareholders be identified	1=Yes 0=No
13	Transparency of ownership	Can the nationality of owners be identified	0 = no 1 = yes
14	Board tenure	How many years can you continually be on the board of directors	1=Less than 5 years 2=5-10 years 3= more than 10 years
15	Proportion of independent directors	Percentage of directors who have no relations or previous connections with the company	1=Less than 20% 2=20-30% 3=30-40% 4=40-50% 5= more than 50%
16	Role of the CEO	Is the CEO chairman of the board	1=Yes 0=No
17	Education levels of board members	Educational attainment of the least educated	0 = no education 1= incomplete primary 2 = complete primary 3 = incomplete secondary 4 = complete secondary 5 = higher
18	Board size	How many members does the board of directors have	1=Less than 5 2=5-10 3=10-15

			4=More than 15
19	Board committees	How many board committees are they	1=Less than 2 2=2-4 3=4-6 4=6-8 5=More than 8
20	Audit committee	Is there an audit committee	1=Yes 0=No
21	Selection of the audit committee	Is the selection of the audit committee transparent	1=Yes 0=No
22	Independence of auditors	To what extent do the auditors have any relationship with the company	1 =Great extent 2=Fair extent 3=No relationship at all
23	Selection of auditors	To what extent are the auditors selected by independent board members	5=Great extent 4=Good extent 3=Fair extent 2=poor extent 1=Not at all
24	Quality of financial statements	Do the financial statements meet the disclosure standards of Zimbabwe	1=Yes 0=No
25	Access to financial statements	Do shareholders have access to financial information	1=Yes 0=No
26	Timeous disclosure	Do the financial statements produced at the stipulated time	1=Yes 0=No

Technological capabilities variables

	Variable	Description	Coding
27	Technology development	Has the company developed its own technology	1 =Yes 0 = No
28	Importation of technology	Has the company imported technology from 2009 to 2012	1=Yes 0=No
29	Patent registration	Has the technology been registered for patent protection	1 =Yes 0 = No
30	ISO certification	Does the country have ISO quality certification	1 =Yes 0 = No
31	R&D expenditure	How much has the company spent on R&D	2009 2010 2011 2012
32	Scientific publications	Has the company published anything scientific	1 =Yes 0 = No
33	Technology linkages	Does the company have any technology linkages	1 =Yes 0 = No
34		If yes how strong are there	5=Very strong 4=Strong 3=Fairly strong 2=Not strong 1=Very poor
35	Infrastructure for TC development	Adequate electricity for TC development	5=Very adequate 4=Moderately adequate 3=Fairly adequate 2=Poorly adequate

			1=Very poorly adequate
36		Adequate internet for TC development	5=Very adequate 4=Moderately adequate 3=Fairly adequate 2=Poorly adequate 1=Very poorly adequate
37		Adequate telecommunications for TC development	5=Very adequate 4=Moderately adequate 3=Fairly adequate 2=Poorly adequate 1=Very poorly adequate
38	Relations with innovation institutions	Does the company have relations with innovative institutions e.g. university	1= Yes 0=No
39		If yes, how strong are the relations	5=Very strong 4=Strong 3=Fairly strong 2=Not strong 1=Very poor
40	Technology transfer	Measures technological development. Has the company diffused technology	1= Yes 0=No
41	Human resource development	Proportion of workers with science degrees	1=Less than 20% 2=20-30% 3=30-40% 4=40-50%

			5= more than 50%
42		Does the company have any in-house TC training	1= Yes 0=No

Social capital variables

	Variable	Description	Code
43	Presence of networks	Does the company possess any networks	1 =Yes 0 = No
44		What proportion of business has come from the networks	1=Less than 20% 2=20-30% 3=30-40% 4=40-50% 5= more than 50%
45		How many business ties does the company have	1=1-3 2=3-6 3=6-9 4=More than 10
46		How strong are the ties	5=Very strong 4=Strong 3=Fairly strong 2=Not strong 1=Very poor
47	Level of trust	On average, what is the level of trust in the network	5=Very high 4=High 3=Fair 2=Low 1=Very low
48	Frequency of	How frequently do the network members	5=Very frequently

	interaction	interact	4=Frequently 3=Fairly frequently 2=Not frequently 1= Very low frequency
49		How many business associations did a company belong to	2009 2010 2011 2012
50	Investment in networks	How much was spent on donations	2009 2010 2011 2012
51		Does the company have an entertainment budget	1=Yes 0=No
52		Proportion of the company budget that is allocated to entertainment	1=1% 2=2% 3=3% 4=5% 5=More than 5%
53	Liaison with government	To what extent does the company liaise with government	5=Great extent 4=Good extent 3=Fair extent 2=poor extent 1=Not at all