

Firm Performance as an Outcome of Human Capital: A Review of Literature

Vincent Alwaka Matsalia

vamatsalia@gmail.com

Department of Business Administration
School of Business, Economics and Tourism
Kenyatta University

Godfrey Muigai Kinyua, PhD

kinyua.godfrey@ku.ac.ke

Department of Business Administration
School of Business, Economics and Tourism
Kenyatta University

ABSTRACT

Human capital, which is grounded in human capital theory, resource-based view, and knowledge management view, is the fulcrum in the acquisition of knowledge, skill, abilities, and other characteristics. Accordingly, human capital has the potential of helping firms to be able to achieve capabilities that translate to competitive advantage. These capabilities assist firms to remain competitive; leading to sustained performance which is modeled using the balanced scorecard, performance prism framework, Malcom Baldrige model and performance pyramid model. The overall objective of the study was to review conceptual, theoretical as well as empirical literature on the relationship between human capital and firm performance so that research gaps could be identified to inform future studies. Reviewed literature on human capital conceptualises the construct based on individual production, societal wellbeing and at the organisational level. At the individual level, human capital determines job seeking behaviours while at the societal level human capital aid the synthesis of both individual and organizational perspectives. The organizational view argue that human capital has the capability of giving a firm competences and competitiveness in an industry. Empirical studies reviewed show that human capital is positively related to firm performance with performance curve depicting curvilinear trait regardless of the type of data used. Reviewed literature brings out a contradiction in that firm specific human capital enhances performance and at the same time increases costs in terms of incentive costs to employees. Literature reviewed demonstrates that management of enterprises are unwilling to commit vast specific human capital notwithstanding the assumption in order to buttress competitive advantage. Based on the gaps identified, the study proposes a theoretical framework on the relationship between human capital and firm performance. The study further proposes the need for future research to validate the conceptualized link using empirical data.

Keywords: Human Capital, Firm Performance, Competitive Advantage

1.0 Introduction

A firm is both an administrative organization and a pool of productive resources including human resources (Penrose, 1959). The term human capital was widely used by economists whose concerns are the inclusion of human beings and their skills in the meaning of capital that firms possess (Spiceland & Zaunbrecher, 1976). In 1940s, economists called for tentative socio-economic characterization of income recipients who are generally the human capital (Leven, 1938). The socio-economic definition of human capital would pave way to causal explanations for certain pattern of income distribution, which eventually highlighted the role of education. The Schultz presidential address to the American Economic Association (AEA) in 1960 stressed the role of human capital as a major contribution to western economies past performance (Schultz, 1961). Schultz emphasized on a broad concept of human capital, with the maldistribution of resources and specifically highlighting labour. Schultz (1975) emphasized the role of knowledge embodied in technical advances and especially in people's capabilities as a powerful instrument for understanding and promoting the development and modernization of agriculture, the main engine of economic growth.

The second major impulse to research on human capital came with Mincer's 1957 dissertation. In the thesis, the author tried to apply and develop the concept of human capital as a theory of personal income distribution and the role played by education and on-job training. Mincer demonstrated the causal relationship between amount of training and inter-occupational differentials in personal income. Mincer also showed that labour contributed to the increase in the growth rate of real national income while the contribution of physical capital was decreasing. The explanation of this phenomenon attracted further research on human capital.

In 1957, Becker analysed the monetary rates of return for different levels of education especially college education hence contributed to the development of human capital. Further, Becker (1964) developed an explanatory framework for the shape of age-earning profiles, the time distribution of human capital investment and the personal distribution of income based on the process of accumulation of human capital. Becker also introduced the classic distinction between specific and general human capital and used human capital more and more as a building block for the "economic approach" to social behaviour. Becker therefore contributed to human capital in ways to promote its circulation in other areas of social sciences such as strategic management. Strategic human capital consists of four attributes and include; usefulness of strategic human capital present in firms and which can create efficiencies and help firms operate effectively; behavioural uncertainty where human capital is difficult to imitate by a competitor if the tasks and work performed can not be observed by competitors; firm-specificity of human capital which is a situation where the level of firm-specific knowledge is high and the spread of strategic human capital which is the coverage of knowledge and skill of human capital across firms (Barney, Wright & Ketchen, 2001).

Scholars such as Robert Solow and Jan Tinbergen building on Harod-Domar framework assumed substitutability between factors and introduced a third factor normally denominated total factor productivity. Total factor productivity as a factor captures a complex and variegated set of forces that endorse the search for alternative sources of growth. This broadened the definition of capital namely encompassing certain kind of expenses such as education and health as types of human capital. It also promoted a redirection of resources focus from an essentially quantitative perspective

to a more qualitative one. Other professions interested in investigating the role of human capital in early 20th century were actuaries whose work in insurance analysis was concerned with the economic value of human life and the impact that disability, death, and retirement would have in the economic condition of the individuals in terms of economic value of life on aspects such as health conditions, personal character and education and training (Dublin & Lotka, 1930).

Several neoclassicals argued that despite the existence of institutional dimension of labour markets, pervasiveness of the market factors in labour contexts were overlooked (Rottenberg, 1956). Human capital theoretical frameworks were being weakened by criticisms from the marginalism controversy (McNulty, 1986) and the analysis of union behaviour (Kaufman, 1993). Clarification from such criticism led to unequal endorsement of price theory as the basis for labour economics. The microeconomic impact of human capital research was far beyond labour economics extending its influence through multiple applications in various applied fields such as economic history, health economics or the economics of households. Human capital become the harbinger of the changes in microeconomics and application to a broader set of topics in human and social behaviour (Margo, 1997).

From the foregoing historical development of human capital, it is apparent that human capital was more concerned with the performance of the economy and was more focused on the income of individual players in the economy based on choices made regarding investment in education which Rumelt (1984) agrees and avers "... it appears obvious that the study of business strategy must rest on the bedrock of foundation of economist's model of the firm". The emphasis of resources or bundle of resources as a source of positive organisational outcomes is well documented with Penrose (1952) arguing that value creation does not come from possession of resources but from their use. How much value is created would depend on how the resources are deployed i.e., combined within the firm through value chain activities. Penrose (1959) introduced the resource-based view (RBV) in the book 'The Theory of Growth of the Firm (TGF)' in which firm resources were highlighted. Penrose together with other researchers, regard knowledge as a generic resource, while others like Teece, Pisano and Shuen, (1997); Murray, 2014 content that knowledge has special characteristics that make it the most valuable and hence important resource. On the other hand, Hamel and Prahalad (1994) argue that knowhow, knowledge, competencies, and intellectual assets are the main drivers of superior performance in the information age. Evans (2015) also suggest that knowledge is the most important resource of a firm and argues that while material resources decrease when used in the firm, knowledge assets increase with time. This assertion agrees with the observations made by Mincer (1957) who demonstrated that the contribution of labour toward the growth rate of real national income was increasing as a percentage while the percentage contributed by physical capital was decreasing. This could be explained by the fact that physical capital, technology, product sources and market share are easier to imitate by other firms while knowledge is the only resource that is difficult to emulate (Murray, 2014).

Black and Boal (1994) citing Bromiley (1993) notes that RBV theory requires concrete definition of resources that is less than "anything that leads to performance". The basic argument of the RBV is that rare, specialized, inimitable resources and resource market imperfections cause firm heterogeneity, and that successful firms are those that acquire and maintain valuable idiosyncratic resources for sustainable competitive advantage (Oliver, 1997). Sustainable competitive advantage thus allows firms to be unique in their value chain activities and therefore able to achieve desirable performance. Information technology (IT) helps firms to attain a sustainable competitive advantage

by providing companies with new ways of organizing resources so that they can outperform rivals, through lowering costs and/or enhancing differentiation, building barriers to entry, building switching costs, and sometimes completely changing the basis of competition and spawning entirely new businesses (Porter & Millar, 1985).

Ployhart, Nyberg, Reilley and Maltarich (2013) while analysing unit level human capital resources (HCR), contend that as part of the intangible organizational resources, human capital has characteristics such as knowledge, skills, abilities, and other characteristic (KSAOs) which can give a firm a competitive advantage. The KSAOs coupled with opportunity to contribute and motivate in the firm are associated with positive outcomes. These outcomes include greater commitment and lower turnover (Batt, 2002), higher quality and productivity (MacDuffie, 1995) better service performance (Jiag, Lepak, Hu & Baer, 2012), enhanced safety performance and better financial performance (Zacharatos, Barling, & Iverson, 2005). Skills development and perception of possibilities enables enterprises to grow. The growth is facilitated within and between firms by management which is driven by human purpose of seeking to discover and exploit causal relationships in the production process (Marris, 1998). The causal relationships in the human capital theory (HCT) are such that human beings can increase their productive capacity through greater education and skills training.

The Organization for Economic Cooperation and Development (OECD) (2001) define human capital as productive wealth embodied in knowledge, labour, and skills. It is any stock of innately acquired characteristics or knowledge a person has that contributes to productivity in the economy (Garibaldi, 2006). Barney (1996) refined the RBV by defining the key attributes that make resources “strategic”. These traits are valuable, rare, inimitable, and non-substitutable (VRIN) and as strategic resources, have a role in helping firms attain sustained competitive advantage. When a resource possessed by a firm exhibits VRIN attributes, it enables the firm to gain and sustain competitive advantage. The VRIN later was transformed to VRIO (valuable, rareness, inimitable and organisation orientation) framework (Barney & Griffin, 1992, Barney, 1992). This framework was used to assess the economic performance implication of resources by evaluating the resources characteristics of VRIO and their capacity to lead to competitive advantage. Value refers to the ability of an organizational resource to support strategies intended to capitalize on market opportunities or fend off threats. Rarity is a measure of the relative unavailability of an organizational resource to current and potential rivals. Inimitability reflects the costs and difficulties associated with attempts to duplicate an organizational resource. Non-substitutability is a property that evaluates the nonexistence of strategically equivalent organizational resources (Wernerfelt, 1984; Barney 1991).

In the context of the firm environment, human capital operates in the internal environment of the firm and is equally influenced by the external environment (Echdar, 2013). The tendency of the firms’ resources toward conformity with main norms, social influences and traditions in their internal environments lead to similarity among firms in their structures and activities, and that successful firms are those that gain legitimacy and support by conforming to social pressures, which are better managed through organisational culture.

2.0 Statement of the Problem

It has been recognized that human capital has potentially important competitive implications for firms (Barney, 1986). Empirical studies have shown that the contribution of firm performance at

aggregated level may have positive outputs and at the same time negative outputs depending on the characteristics of the human capital. The analysis of human capital based on whether it is general or specific (Chadwick, 2016; Hatch & Dyer, 2004; Lepark, Takeuchi, & Swart, 2011; Molly & Barney, 2015; Ployhart & Moliterno, 2011; Wang, He & Mahoney, 2009; Wright, Dunford & Snell 2001) is inconclusive in that other extant studies indicate that firm specific human capital signal the existence of valuable but often difficult to observe general human capital (Campell, Coff & Kryscynski, 2012; Lazaar 2003, Hatch & Dyer, 2004). Strategy literature assumes firm specific human capital to be a source of sustained competitive advantage, yet employees are reluctant to invest in firm specific skills (Coff & Raffice, 2015).

From the literature reviewed, human capital is conceptualized differently by scholars on human capital. This presents a problem in that there is no strategic clarity on the conceptualization of human capital and hence its contribution to firm performance. There are several classes of research, yet this study identified only two classes that were applied in the empirical reviews undertaken. Therefore, the classes of research were inexhaustive in determining the relationship between human capital and firm performance (Crook, Todd, Comb, Woehr & Ketchen Jr, 2011). Moreover, the conceptualization of firm performance is varied depending on the point of reference for performance with business unit performance and overall organizational performance prioritized. The reviewed empirical literature indicates contradiction in the findings in that on one hand specific human capital enhances firm performance and at the same tends to increase costs due to incentives motives that reduce firm financial performance (Frank & Obloj, 2014). These are the research gaps identified and the proposed theoretical literature is designed to address them.

3.0 Conceptual Literature

3.1 Concept of Human Capital

Human capital conceptually and semantically is the mixture of human and capital. In the perspective of economics, capital refers to ‘factors of production which are used to create commodities that are not themselves factors of production i.e., are insignificantly consumed in the production process)’ (Boldizzoni, 2008). Human capital has been accepted by most researchers as conceptualized by Schultz as capacity of human being in terms of knowledge and skills embedded in an individual (Beach, 2009). A few researchers agree with Schultz and contend that human capital can be closely linked to knowledge, skills, education, and abilities (Youndt, Subramaniam & Snell, 2004). Rastogi (2002) conceptualizes human capital as ‘knowledge, competency, attitude and behavior embedded in an individual’ while Coff (2002) conceptualizes it as the knowledge, skills, and abilities (KSAs) embodied in people. Human capital is also conceptualized as that part of the intangible form of firm resources that according to Ployhart, Nyberg, Reilley and Maltarich (2013), is a unit-level resource that is created from the emergence of individual’s knowledge, skills, abilities, and other characteristics (KSAOs). It also includes not just factual “how-to” KSAs that can be made explicit but also tacit KSAs which can often be difficult to articulate (Polanyi, 1966). According to Goode (1959), human capital is knowledge, skills, attitudes, aptitudes, and other acquired traits that aid production. Frank and Bemanke (2007) define human capital as ‘an amalgam of factors such as education, experience, training, intelligence, energy, work habits, trustworthiness, and initiative that affect the value of a worker’s marginal product’. According to OECD (1998), human capital is defined as knowledge, skills, competencies, and other attributes, embodied in individuals or groups of individuals acquired during their life and used to produce goods, services, or ideas in the market. In all the conceptualizations of human capital, knowledge embodied in individuals is prominent.

3.1.1 Perspectives of Human Capital

Human capital accumulation takes place in three ways. The first is formal schooling whereby the individual devotes his whole time to learning. Becker (1994) developed a model of individual investment in human capital and Weisbrod (1966) argues that human capital investments are expenditures on education, training, health, information, and labor mobility. These investments involve initial cost (direct tuition expenditure, foregone earnings during schooling, and reduced wages during training) to gain a return on this investment in the future (Becker, 1992). The second is on-the job training whereby post school training is provided by current employers. Mincer (1992) notes that more than half of total expenditure on education are investments on-the job training. The third is off-the job training whereby post school training is provided by “for-profit” proprietary institutions (Lynch, 1991).

Further, human capital can be categorized by each perspective of academic fields. The first viewpoint is based on the individual aspects where the role played by individual choices is emphasized, through individual choices in earning conditions and the role of education among these choices (Friedman, 1953). The second viewpoint focuses on human capital itself and its accumulation process. This perspective stresses on knowledge and skills obtained throughout educational activities such as compulsory education, postsecondary education, and vocational education (Allen, Robbins, Casillas & Oh, 2008). Despite of the extension of human capital concept, this perspective neglects that human beings would acquire knowledge and skills throughout their own experience. The third is closely linked to the production-oriented perspective of human capital and Romer (1990) refers to human capital as ‘a fundamental source of economic productivity’. Rosen (1999) states that human capital is ‘an investment that people make in themselves to increase their productivity’. Considering the production-oriented perspective, human capital is ‘the stock of skills and knowledge embodied in the ability to perform work for economic value realization (Sheffrin, 2003).

The impact of human capital can be viewed in three perspectives, individual, organisational and societal. In the perspective of individual in the external market, an unemployed individual’s human capital affects his/her job-seeking and employable opportunities (Vinokur, Schul, Vuori, & Price, 2000). On the internalized human capital, an individual easily holds the possibility to access job related information with high level of human capital, and thereafter can easily obtain the occupational chances compared to without. With respect to organizational perspective, Lepak and Snell (1999) suggest that the potential of human capital is closely linked to core competences and competitiveness of organization. Moreover, Edvison and Malone (1997) argue that individual human capital can affect organizational human capital such as ‘collective competences, organizational routines, company culture and relational capital’. Finally, the social perspective of human capital is the synthesis of both individual and organizational perspective. Patton and McMahon (1999) depict the possibility of human capital for ‘democracy, human rights, and political stability’ on common consciousness of social constituents. According to Beach (2009), human capital can spread social consciousness of members of a community. Consequently, the link between human capital and social consciousness is based on a close inter-relationship resulting in socio-political development (Alexander, 1996; Grubb & Marvin, 2004; Sen, 1999). Furthermore, scholar with social perspective to human capital define it as ‘the knowledge, skills, competencies and attributes in individuals that facilitate the creation of personal, social and economic well-being’ (Rodriguez & Loomis, 2007).

Consequently, human capital simultaneously includes both the instrumental concept to produce certain values and the 'endogenous' meaning to self-generate it. To create these values dependently or independently, learning through education and training is significant in terms of defining the concept of human capital. Considering that experience can be included as a category of knowledge, human capital is a synonym of knowledge embedded in individuals. Two components of human capital that have strong complementarity have been identified by Blundell, Dearden, Meghir and Sjaresi (1991) as early ability (whether acquired or innate) and skills acquired through formal education or training on the job.

3.1.2 Dimensions of Human Capital

Becker's 1964 model distinguishes between general and specific human capital. General human capital is that which is useful not only to the current employer but also to other potential employers. General human capital is defined by generic knowledge and skill, not specific to a task or a company, usually accumulated through working experiences and education (Alan, Altman & Roussel, 2008). The general human capital holds 'transferable' characteristic across jobs, firms, and industry and has characteristics which are useful across a broad range of economic settings. An example is the general mental ability (Schmit & Hunter, 2004). General mental ability is equated to intelligence and conscientiousness (Barrick & Mount 1991; Hurtz & Donovan 2000). There is inefficiently low investment in general training and Malcomson, Maw and McCornick (2003) attribute this to imperfect capital markets i.e., the workers are credit constrained with incomplete contracts. Thus, the desired level of training cannot be specified by a contract and in the absence of labour market friction i.e., the hold-up problem and positive external effects, human capital investments lead to a positive probability of exogenous separation after the training period.

Specific human capital on the other hand increases the productivity of the worker only in his current job (Becker, 1964). As pointed out by Becker (1976), the specific human capital is rarely transferable to be applied to other jobs, firm, and industry, and thus it is impossible to transfer much income in the labour market. Furthermore, human capital is 'specific if it increases a worker's productivity only at the firm. Specific human capital is usually accumulated through education, training, working experience on 'knowledge specific to a firm' (Alan, Altman & Roussel, 2008). Parsons (1974) notes that this specific human capital is analytically equivalent to transfer costs for adjusting a worker to the other firm. Morris, Alvarez, Barney and Molloy (2014) argue that specific human capital is developed and necessary for satisfactory completion of tasks, duties and responsibilities outlined in one's job description e.g. knowledge of resources available in various departments and expertise in the firm. It is valuable in more limited circumstances. In essence, Becker argues that an individual can create this type of human capital only on the job and this human capital can create the most value in the firm in which it was developed by aligning role behaviours. Teece (2009) avers that specific human capital is developed on the job as individuals learn about and gain expertise in working with other firm resources thus, occurs when the value of the whole (the human capital and the paired resources) is greater than the individual parts.

Different scholars define human capital based on knowledge, skills, abilities, education competency, talent, attitudes and behaviour, aptitudes, education, experience, training, intelligence, energy, work habits, effort, trustworthiness, and initiative inherent in people. Knowledge includes theoretical concepts and ideas in addition to practical understanding based on the experience of having performed certain tasks. The OECD Learning Compass 2030 recognises four types of knowledge: disciplinary, interdisciplinary, epistemic, and procedural. Skills are individual

capacities contributing to production as an argument in the production function (Bowles, Gintis & Osborne, 2001). Skill is expertise used in working, including the physical body, and movement of the job. The OECD (2023) distinguishes between three types of skills: cognitive and metacognitive skills; social and emotional skills; and practical and physical skills. Talent is a personal characteristic which is innate and can be improved by development. Behaviour on the other hand is an expression and visible conduct, norm, ethics, and personal belief. The OECD consider effort in terms of people trying to use their innate or personal resources including their talent, experience, knowledge, and ability to work. The OECD define ability as capacity to carry out processes and be able to use one's knowledge in a responsible way to achieve a goal. Ability involves mobilising knowledge, skills, attitudes, and values to meet complex demands. Attitudes refer to the principles and beliefs that influence one's choices, judgements, behaviours, and actions on the path towards individual, societal and environmental well-being. Other dimensions of human capital are communication skills, technical skills, creativity, experience, problem-solving, mental health, and personal resilience.

3.1.3 Measuring Human Capital

The measurement of human capital has been proposed and used by many countries by trying to efficiently and effectively measure their human capital stock to understand their contemporary status for future policy direction on its improvement. Traditional measurement indicators of human capital such as a worker's wage according to Wolf (2002) are incomplete and suggests the use of authentic human capital measures. Several scholars have measured human capital using two traditional methods, cost of production based (input based) and by considering capital earning (output based) (Kiker 1966). Other scholars argue that the conventional standard to measure human capital stock is by use of three methods: output, cost, and income-based approaches.

Some economists have analyzed the relationship between human capital and economic growth. The stock of human capital was measured using 'school enrollment rates' as a proxy (Barro, 1991; Barro & Lee, 1993). This measurement method has a drawback in that a student's effectiveness can only be recognized after participating in production activities but many of adults tend to participate in formal education and training activities while working to improve their productivity. Besides measuring the stock of human capital with school enrollment rates and educational attainment, Romer (1990) suggested the ratio between skilled-adults and total adults to measure the stock of human capital in the national economy. Furthermore, OECD utilizes International Adult Literacy Survey (IALS), the ratio between literate adults and total adults, to measure the stock of human capital. However, the method of IALS includes a few drawbacks in that literacy can be slightly related to labor productivity, and the productivity can be increased by informal/non-formal learning activities such as personal learning and on-the-job training. Lastly Psacharopoulos and Arriagada (1986) suggested the average years of schooling to measure the stock of human capital. They argue that the average years of schooling is meaningful to measure the stock of human capital as a proxy. The assumption here is that an individual's productivity is increased in proportion to his/her average years of schooling, for instance someone's productivity with completing twelve years of schooling is twelve times compared to productivity with schooling for one year. The drawback of this method is that an individual's years of schooling can slightly be related to his/her productivity.

Cost-based approach of measuring human capital is grounded on calculating costs paid for obtaining knowledge that is the stock of human capital is measured by summing up costs invested for one's human capital. For calculating the invested costs, Kendrick (1976) utilized an individual's

investment costs considering depreciation, while Jorgenson and Fraumeni (1989) presented discounted income in the future. The drawback of this measure is that since it is based on indirect measurement of stock of human capital, it is difficult to precisely demarcate the boundary between investment and consumption in the perspective of costs for the human capital. The income-based approach is closely linked to an individual's benefits obtained by investment in education and training. This approach is based on the returns an individual gets from a labor market throughout their education investment. Mulligan and Sala-i-Martin (1995) consider aggregate human capital as the sum of quality adjustment of everyone's labor force and presents the stock of human capital utilizing an individual's income. The criticism of this approach is advanced on the basis that human-unrelated factors can influence an individual's income; hence this approach may not measure human capital completely.

From the preceding reviews, traditional measures of human capital ignore the contribution of the social and political contexts firms operate and the influence on the health of workers (Wilson, Elliot, Law, Eyles, Jerret & Keller-Olaman, 2004). This has necessitated the use of contemporary measures of human capital. The pertinent question to be asked is, what are the more precise proxies for human capital measurement? To begin with, the new approach of human capital measurement partially needs to accept the conceptual framework of human development. Since 1990, United Nations Development Programme (UNDP) has used Human Development Index (HDI) in investigating most of countries' human development and well-being (<http://hdr.undp.org/en/statistics/indices/hid>). The structure of the index has health, knowledge, and standard living with many sub-variables such as life expectancy at birth, adult literacy rate, gross enrollment ratio, and GDP per capita as indicators. Considering that the HDI index includes quality aspects, the approach of HDI focuses on all of individuals' life quality and economic situation.

Furthermore, International Labour Office (ILO) tends to utilize the similar index considering the quality aspects such as the Key Indicators of the Labour Market (KILM). Therefore, it is necessary that the contemporary measurement of human capital considers the concept of 'human development' if the concept of development includes both of quantitative growth and qualitative progress while paying more attention to social capital. An individual's social capital is closely linked to his/her human capital which is more focused on the stock of knowledge. The core of the social capital is networking among constituents which increases human capital owing to transportable and shareable characteristics. Therefore, the accumulation of one's human capital is easily performed through social capital. Someone's level of knowledge and skills can be more improved by the networking of family, colleagues, social and constituents rather than in isolated situation (Coleman, 1988). This assumption can provide an important clue in terms of understanding how human capital can play a role in social progress. It is likely that the conventional measurement of human capital utilizes proxies such as an individual's productivity. The OECD considers that the measurement of human capital is closely linked to education-related factors such as high-level qualification, graduation and enrollment rates, time invested in education, and investment in education (Hansson, 2008). The assumption is that these proxies correctly predict the possibility that human capital development takes place.

3.2 The Concept of Firm Performance

Firms grow out of management and are driven by human purpose, seeking to discover and exploit causal relationships by producing new goods for new markets (Penrose, 1959). Most firms are seeking to advance their performance in all manners. Those firms which innovate to obtain

sustained performance hold the victorious card (Taouab & Issor 2019). Taouab and Issor further aver that continuous performance is the objective of any firm because through performance firms experience development. Therefore, the significance of measuring and assessing firm performance for efficiency and effectiveness is of paramount importance. However, due to the nonexistence of any operational definition of firm performance upon which most of the academicians' consent, there are diverse interpretations of firm performance based on their personal perceptions. Definitions of this concept may be general or abstract, less, or clearly defined.

In the 1950s, firm performance was considered equal to organizational efficiency; the degree to which an organization, as a social system with scarce resources and means, achieves its goals. Interorganizational tension, productivity and flexibility were used to assess performance (Georgopoulos & Tannenbaum, 1957). In 1960's and 1970's, firms explored new ways of evaluating their performance which was defined as an organization's ability to access and use the scarce resources obtained from environmental exploitation (Yuchtman & Seashore, 1967). Jensen and Meckling (1976) define performance as "maximizing profits, or more accurately, present value". Lupton (1977) treated the notion of organizational performance carefully and clearly compared with other scholars in the same period by asserting that in an effective organization, the productivity rate and levels of motivation and satisfaction of its workers are high, while rates of costs, turnover, and labour unrest are low or absent. However, according to Katz and Kahn (1978), the terms effectiveness and efficiency of a firm were alike and when combined, were crucial components of the global organizational performance, which is assessed via maximizing all kinds of returns.

In the 1980s, scholars such as Wernerfelt (1984, p.172) considered firm performance as "high returns over longer periods of time" while Porter (1986) argue that firm performance depended on a firm's ability to create value for its customers and "fulfillment of the economic goals of the firm" (Venkatraman & Ramanujam, 1986, p. 803). Robbins (1987) defined performance as the extent to which as a social system, an organization considers its means and ends. Cherrington (1989) considered performance as a concept of effectiveness or success of an organization in achieving its goals. During the following decade, Rumelt (1991, p. 167) defined firm performance as "rate of return on assets" while Adam (1994) considered firm performance as deeply dependent on the employees' performance quality. Adam believed that a high-quality organizational performance could be guaranteed if workers were regularly exposed to new and updated knowledge and skills, which would, in turn, help to keep them up to speed with new changes happening in the market, and, ultimately, increase the quality of firm performance. Cohen (1994) distinguishes between performance and efficiency, by considering the results obtained by the firm in relation to resources deployed. According to Bourguignon (1997) performance is synonymous with an "action", with a certain "behavior" (in terms of a dynamic view, meaning, "to perform") and not just as a "result" (in terms of a static view). Harrison and Freeman (1999) introduces the notion of stakeholders in firm performance by arguing that an effective organization is one with high standard levels of performance by ensuring that the demands of its stakeholders are satisfied.

Between 2000 and 2010, firm performance was viewed as "the value that an organization creates using its productive assets [in comparison] with the value that owners of these assets expect to obtain" (Barney, 2001, p. 26). Other scholars defined firm performance by basically focusing on the capability of a firm to efficiently exploit the available resources to accomplish consistently their set objectives, as well as considering their relevance to its users (Peterson, Gijsbers, & Wilks, 2003).

Verboncu and Zalman (2005) avers that performance is a particular result attained in management, economics, and marketing that indicate efficiency, effectiveness, and competitiveness, in the firm together with its procedural and structural components. To illustrate the concept of firm performance, Lebens and Euske (2006) provided a set of definitions: performance is a set of financial and nonfinancial indicators that offer information on the level of accomplishment of objectives and results; performance is dynamic, requiring judgment and interpretation; performance may be illustrated by using a causal model that describes how future results can be affected by current actions; performance may be understood differently depending on the person involved in the assessment of the firm performance; to define the concept of performance, it is necessary to know its fundamentals characteristics to each area of responsibility and to report a firm's performance level, it is necessary to be able to quantify the results.

On the other hand, Siminica, Dorel and Daniel (2008) consider firm performance in terms of time efficiency and effectiveness. These scholars argue that firm performance is a function of two variables, efficacy, and efficiency. Colasse and Tabără (2009) consider the word performance as a bag-word since it covers various and different notions such as return, growth, efficiency, competitiveness profitability and productivity. Thus, according to Bartoli and Blatrix (2015) performance in a firm should be achieved through things such as piloting, evaluation, efficiency, effectiveness, and quality. From the foregoing discussions, the definitions of firm performance are similar on the surface but differ in terms of time horizon, stability, types of returns, and focus on absolute versus expected versus relative returns. Against this backdrop, it is not surprising that no clarity exists regarding the term “firm performance.”

3.2.1 Measuring Firm Performance

Firm performance is a measure of how well a firm can meet its goals and objectives compared with its primary competitors (Cao & Zhang, 2011). Performance measures are expected to provide managers incentives to work towards the accomplishment of firm objectives and to promote cooperation within the firm (Bouwens & Van Lent, 2007). Performance evaluation measures should fulfil two purposes, to give managers incentives to use their authority optimally and to disaggregate the firm's total economic performance into a summary estimate of each manager's contribution to firm value (Zimmerman, 1997; Routh, 2005). In general, superior firm performance is typically characterized with profitability, growth, and market value (Cho & Pucik, 2005).

Performance measures according to Black (1994) and Atkinson, Banker, Kaplan and Young (1995) can be classified as stock price related; profit measures; disaggregated measures which use accounting measures (return on investment, return on assets, return on capital employed, residual income, economic value added, cash flow, return on investment, shareholder value added) and non-financial measures. Further the authors aver that detailed performance evaluations should include quality, material use (yield), labour use (yield) and service measure that the business unit manager can control. Kunc and Morecroft (2010) elaborate on performance measure and contend, ‘Performance of the team is captured by the variable “total asset” – the sum of the bank account balance and the salvage value of the team's fleet’. Thompson, Peteraf, Gamble and Sickland (2018) in their book titled grafting and executing strategy identify three indicators of performance i.e., whether it is achieving its stated financial and strategic objectives; whether its financial performance is above the industry average and whether it is gaining customers and gaining market share.

Performance dimensions according to Wiklund and Shephend (2003) include the following: sales growth; revenue growth; growth in number of employees; net profit margin; product/service innovation; process innovation; adoption of new technology; product/service quality; product/service variety and customer satisfaction. Bouwens and Van Lent (2007) identify four types of performance measure, accounting return; profit; disaggregated measures and non-financial measures. They argue that firms use aggregated measures relatively more than disaggregated measures when more authority is delegated to business unit managers and the use of disaggregated, and non-financial measure gain more weight as interdependencies increase. According to Bouwens and Van Lent theory, performance measure has very distinct role with non-financial measures being used in response to increasing interdependencies because they can reduce the noise in accounting measures. Performance metrics used at lower levels in the firm hierarchy become increasingly noisy as interdependencies among units within the firm increases (Bushman, Indjejikian & Smith 1995; Keating 1997; Van Lent, 2007). Accounting return measures are designed to capture the economic value generated from specific resources (Scapens 1997; Anthony & Gorindarajan, 2004).

Hirsch (1995) notes that nonfinancial measures can be used in an integrated way to show how managers are achieving the goals and objectives of the company rather than how they might optimize some local measure irrespective of global company outcomes. In essence, strategic management researchers that have used non-financial measures of performance contend that financial measures by themselves do not provide incentives for success but merely focus on historical data that may not have any relevance to the current and future performance especially in respect to creation of value (Kinyua, 2015; Muthoni & Kinyua, 2020; Chesire & Kinyua, 2021; Kimathi & Kinyua 2021; Njiru & Kinyua, 2022; Odhiambo & Kinyua, 2022) According to Abernethy, Bouwens and Van Lent (2004), the indivisibility of certain resources makes the attribution of performance to individual managers or units within the firm increasingly difficult. If the appropriate allocation of indivisible resources to a business unit is the main difficulty, then profits are a better summary measure of performance. However, interdependencies can also arise due to joint production functions or joint demand functions (Milgrom & Roberts, 1992) in which case further disaggregation of profit into expenses and revenues may be needed. From the above discussion, it is evident that the most important function of performance measurement is to evaluate the attainment of the firm strategy.

4.0 Literature Review

A review of relevant theoretical and empirical literature was done with the key constructs as identified serving as the guide. This section presents the theories and models that underpin the construct of human capital and firm performance and the relevant empirical literature as well.

4.1 Theoretical Review

Three theories and four models that underpin the key concepts identified are presented. The key theories that support this study are human capital theory, resource-based view, and knowledge-based theory. The models reviewed include the balanced scorecard model, performance prism model, Malcolm Baldrige model and performance pyramid.

4.1.1 Human Capital Theory

Capital theory as posited by Irving Fisher (1906) is the basis of modern human capital theory. Fisher emphasized that all types of stocks including human beings would be capital when yielding services. The term human capital was introduced by Theodore W. Schultz in 1961 through

publication in the American Economic Review, called investment in human capital. This gave the impetus to the development of human capital theory (HCT) which is attributed to the collective and articulated research effort by a group of authors pioneered by Schultz, Mincer and Becker. These authors represented the convergence of several different trends in human capital research that initially to a large extent were unplanned and non-coordinated (Wuttaphan, 2017).

Human capital was thereafter widely used after Gary Backer won the nobel prize. Human capital theory states that, a different level of education and training contribute to a different level of wages and salaries, the more knowledge, skill and ability, the more likely one is to get a better job (Blair, 2012). Human capital is likened to “physical means of production” and investing in human capital means “all activities that influence future real income through the embedding of resources in people” (Becker, 1962). According to Backer (1964), human capital is a physical means of production and organizations invests in it through education, training, and health. Human capital can be accumulated in different forms of education, training, migration, and health. Through such forms, employees gain knowledge, skills, and abilities in different ways. Firms invest in human capital because they view humans as an asset and expect that what the firm has invested will be returned and provide a positive value in the future. In other words, an individual invests in their schooling or training and anticipate that the knowledge and skills earned will enhance their career advancement.

Later, Thomas Davenport (1999) advanced the human capital theory by arguing that the elements of human capital consisted of abilities, knowledge, skill, personal talent, behaviour, effort, and time. Noting that HCT derives from the neoclassical school of thought in economics, the neoclassical economic model, and its basic assumptions about human behaviour applies. Marginson (1989, 1993) described the line of assumptions in HCT as follow: the individual acquires knowledge and skills through education and training, (human capital). Human capital will increase productivity in the workplace. This increased productivity will bring a higher salary to the individual since the wage of a person, in the ideal labour market is determined by the person’s productivity. Therefore, people would invest in education up to the point where the private benefits from education are equal to the private costs. The theory of human capital has received a lot of criticism from many people who work in education and training. In the 1960s, the theory was attacked primarily because it legitimized bourgeois individualism, which was seen as selfish and exploitative. The bourgeois class of people included those of the middle class who were believed to exploit those of the working class. The theory was also believed to blame people for any defects that happened in the system and of making capitalists out of workers. This theory underpins human capital variable.

4.1.2 Resource Based View

The Resource-based view (RBV) of the firm is an approach to business strategic management that emerged in 1980s and 1990s. The first proponent of RBV is Penrose in the 1959 book entitled “The Theory of the growth of the firm” in which it is argued that the resources possessed and deployed by the organization are more important than the industry structure. Wernerfelt (1984) recognizes the contribution of Penrose by stating that, “viewing the firm as a collection of resources can be traced back to the work of Penrose (1959)”. The term “resource-based view” was brought to light by Wernerfelt (1984), scholarly work titled “The Resource View of the Firm” where a firm was viewed as having a bundle of assets or resources which are tied semi-permanently to the firm.

Other important contributors to the RBV are Barney who advanced the “Firm Resources and Sustained Competitive Advantage”. Barney (1991) opined that the RBV “examines the link between a firm’s internal characteristics and performance”. Barney views resources as assets, capabilities, firm attributes, organizational processes information and knowledge controlled by a firm that enables it to improve its efficiency and effectiveness. Barney further categorizes resources as tangible (equipment, machinery, inventory, vehicles, land, buildings, and cash) and intangible (trademarks, copyrights, brand reputation, patents, licenses, organizational culture, and knowhow). According to this theory, firm resources are also categorized as physical capital, human capital, and organizational capital (Barney, 1991).

According to Barney (1991), the RBV suggests that for firms to transform its resources into sustained competitive advantage, they must possess Valuable, Rare, Inimitable and Non-substitutable (Organization)(VRIN/VRIO) characteristics. Resources are said to be valuable when they enable a firm to implement strategies that improve efficiency and effectiveness by exploiting opportunities or mitigating threats by increasing revenues or decreasing cost. The value of resources can be calculated using the net present value (NPV) approach where any investment in a resource with a NPV greater than 0 is supposed to add value to a firm hence it is valuable. Rare resources are those that can be acquired by one or few firms in the industry. Valuable and rare resources may help a firm to engage in activities other firms may be unable to pursue hence first mover advantage is realized but short-lived. This is because other firms can duplicate and or get substitutes as well. Therefore, resources should be hard and costly to imitate due to unique historical conditions such as location and time; causal ambiguity (where the link between firm resources and sustained competitive advantage is not understood either by the firm itself and the competitors) and social complexity which is an asset that is generally difficult to imitate such as organizational reputation, teamwork and friendship and organizational culture. Then the firm must be well organized to exploit resources in ways that their true value is realized, and this can be done by having clear formal reporting structure (fair division of labor), fair compensation policies and a good management control system (Barney, 1991).

The core argument of RBV is that instead of looking at the external business environment for competitive advantage, the firm should be inward looking for the available resources and their potential to create the desired competitive advantage. In other words what matters in the RBV of the firm is the organizational internal environment which acts as a competitive advantage driver with emphasis on the resources that firms have developed internally to compete in the external environment (Hoskisson, Hitt, William & Daphne, 1999). Scholars supporting the RBV contend that sources of competitive advantage are inherent in strategically important and useful resources and competencies (Barney, 1991). Terms such as core competencies (Barney 1991; Prahalad & Hamel, 1994), strategic assets (Amit & Shoemaker, 1993) and distinctive competencies (Pap & Luftman, 1995) have been used by the scholars to indicate the strategically important resources and competencies, which afford a firm a possible competitive advantage.

The main assumptions of the resource-based view are that all the resources of the organization should be heterogeneous and immobile. Heterogeneousness refers to the variation in skills and capabilities between firms (Furrer, Thomas & Goussevskaia, 2008). Several RBV criticisms have been alluded to such as value conundrum, the tautology problem in the identification of resources, and the absence of a chain of causality related to the RBV's and VRIO's failure to provide an adequate conceptual basis for identifying strategically valuable resources (Kraaijenbrink, Spender &

Groen, 2010). In the sense that different resource configurations can generate the same value for firms and thus would not offer a competitive advantage.

Also, the role of product markets is underdeveloped in the RBV argument (Markides & Williamson, 1994). The uniqueness dilemma, the cognitive impossibility dilemma, and an asymmetry in assumptions about resource factor markets result in an inability of the VRIO framework to support identification of resources that can be sources of sustained competitive advantage. More fundamentally, the core proposition of the RBV – that resources that are strategically valuable, rare, inimitable, and organizationally embedded are sources of sustainable competitive advantage as argued result directly in the epistemological impossibility problem that precludes use of the scientific method in RBV research (Sanchez, 2009). This theory underpins human capital and firm performance variables.

4.1.3 Knowledge Based View

Knowledge based view explains how the choices of firms, particularly the choice of whether to integrate or outsource an activity influences the efficient production and protection of valuable knowledge and capabilities (Felin & Hesterly, 2007). The constructs “knowledge worker” and “knowledge work” are attributed to Drucker (1993). “Knowledge creating company” is a construct introduced by Nonaka, Toyama and Nagat (2017) who argue that a knowledge creating company is one that has ability to create new knowledge, distribute it rapidly in the organization while exemplifying the knowledge into commodities and technologies. The common argument in KBV is that firms exist to economize on exchange of knowledge rather than to weaken opportunism.

It has been argued that RBV was extended to form KBV (Felin & Hesterly, 2007) by suggesting that knowledge is the primary resource underlying new value creation, heterogeneity, and competitive advantage (Barney, 1991; Grant, 1996; Kogut & Zander, 1992). Most scholars subscribing to the RBV regard knowledge as a generic resource except some like Teece, Pisano and Shuen (1997) and Tiwana (2016) who propose that knowledge has special features that make it the main and valued resource in human capital. According to Prahalad and Hamel (1994), Evans (2015) and Tiwana (2016), knowledge, know-how, competencies, and intellectual assets are the main drivers of superior performance for organizations in the information age. Evans (2015) indicated that while physical and organizational capital resources diminish with use in organization knowledge assets domiciled in human capital resources increase with usage. According to Tiwana (2016) physical capital, technology, market share or product sources can be duplicated or substituted by other firms while knowledge is the only resource that is hard to imitate.

Knowledge based view has been contested on the premise that it can be independent of opportunism (Foss 1996; Heiman & Nickerson 2002; Mahoney 2001). Another major weakness of existing knowledge-based perspectives is the definitional ambiguity when it comes to the construct, knowledge. There is disagreement about the level of analysis at which knowledge is a valid construct with for example Grant (1996), postulating that knowledge resides in an individual. However, Levitt and March (1988) contend that organizations accumulate knowledge beyond that which is embodied in individuals through organizational learning and is applied at the organizational unit level. This perspective is relevant in the study because the knowledge first is acquired by individuals but eventually exemplified in other areas such as organizational culture and identity, policies, routines, documents, systems, and employees. This perspective supports human capital variable.

4.1.4 The Balanced Scorecard Model

The Balanced Scorecard (BSC) model was developed in the early 1990's by Robert Kaplan and David Norton. It is a tool used for describing, elaborating, and implementing a vision and the strategy of a firm into fixed targets and clear set of financial and nonfinancial performance indicators. The BSC model is applied by firms to align their team's daily work with their company's strategy; communicate goals; prioritize products, services, and projects and monitor their progress toward their strategic objectives. The introduction of BSC means that the goals, the indicators, and the strategic actions are assigned to concrete perspectives (Horvath et al., 2004). The BSC translates the mission and the organization strategy into a set of performance indicators that offer a model for the performance measurement system. Figure 3.1 is the BSC model and shows the organizational performance through four perspectives: financial, customer, innovation and learning, and internal processes.

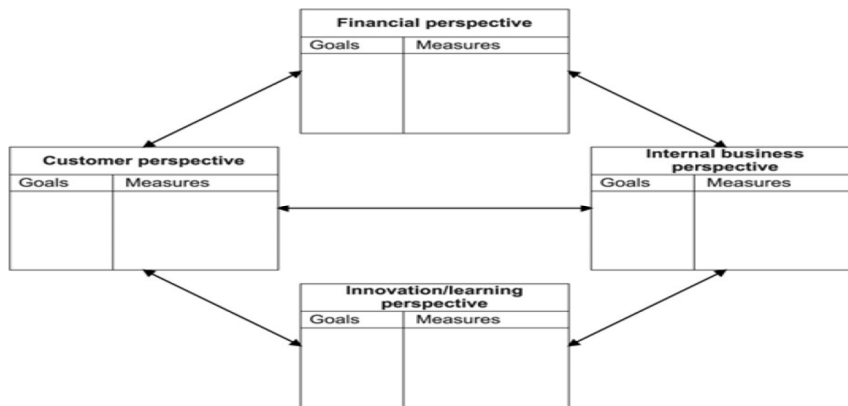


Figure 3.1. Balanced Scorecard (BSC) (Kaplan et al., 1992)

The financial perspective is shareholders focused (How do we look at shareholders?). Kaplan and Norton note that although controlling financial resources is very important for the success of the firm, it is not the only crucial resources hence firms should not focus on financial results at the expense of the other perspectives. Therefore, effectiveness in using resources and financial performance really counts. Customer perspective is clients focused (How do customers see us?). Firms must know the preferences of their customers in terms of quality, costs, and distribution, and most importantly their future expectations from the firm. This means that their value, satisfaction, and/or retention is important. Internal processes perspective is inward looking (What must we excel at?). Internal processes should lead to business quality and efficiency. To achieve its goals, a firm's understanding of how internal processes work is very essential for the firm's goals to be achieved and to know how to add the expected value to the products or services that the customers purchase.

Finally, we have innovation and learning perspective (Can we continue to improve and create value?). Also referred to as organizational capacity, meaning your organizational culture, infrastructure and technology, and human resource. This perspective is of the view that the achievements from the customer, internal processes, and financial perspective are strictly linked to the organizational capabilities to train and develop its human resources and innovation system. The BSC framework use a strategy map, to visualize and communicate how the firm is creating value. A strategy map is a simple graphic that shows cause-and-effect connections between strategic objectives. The BSC framework is an amazing tool to use, from outlining the firm's mission, vision, and values all the way to implementing the strategic plan, thus, it is a tool that allows organisations to translate strategy into achievable objectives (Garengo, Biazzo & Bititci, 2005).

The important assumption of BSC is that each measure of performance is part of a balanced relationship of cause and effect, in which principal measures (non-financial – drivers of future financial performance) drive lagging measures (financial results of past actions) by following a firm's improvement against these measures. Employees and managers can realise the firm's mission by recognizing and correcting underperforming perspectives. The framework has been criticised on the premise that adoption of BSC does not imply that it is revealed in more than a ritual or that it is practised by firm performance contributors (Garengo & Sharma, 2014). This framework underpins the variable of firm performance. This model underpins firm performance variable.

4.1.5 Performance Prism Model

The Performance Prism (PP) was developed by a team of experienced consultants and researchers in performance measurement field (Neely, Adams, & Kennerley, 2002). They described a comprehensive measurement system that addresses the main business issues to which a wide variety of organizations (profit and non-profit) will be capable to relate (Neely, Adams & Crowe, 2001). The performance prism is considered as a second-generation performance management system (Michaela, 2012). It is a tool used by the management teams to influence their thinking when the strategic questions that need to be asked are established. Figure 3.2 illustrates the performance prism framework in which, five interrelated perspectives are presented.

The first perspective is stakeholder satisfaction where firms ask, “Who are the stakeholders and what do they want and need?”. What should be noted is that employees, suppliers, alliance partners, intermediaries, local community, pressure groups and regulators are explicitly included in this perspective. All these parties can have a substantial impact on the performance and success of an organization. The second perspective concentrates on strategies. The only reason an organisation has a strategy is to deliver value to some set of stakeholders. Therefore, by answering the question “Who are the stakeholders and what do they want and need?”, it makes it possible to start to explore the issue of what strategies should be put in place to ensure the wants and needs of the stakeholders are satisfied. Therefore, the second facet of the prism asks: “What are the strategies required to ensure the wants and needs of the stakeholders are satisfied?”

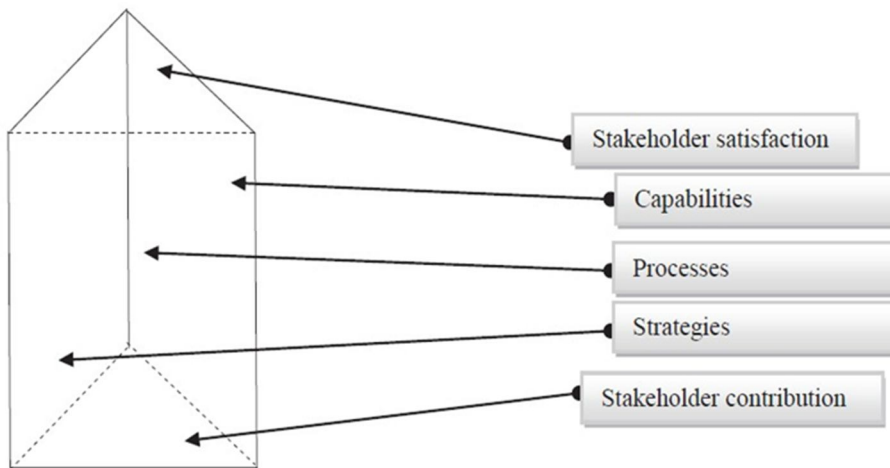


Figure 3.2 The Performance Prism (Neely et al., 2002)

The third perspective of the PP is the processes facet which leads firms to ask the question: “What are the processes we have to put in place in order to allow our strategies to be delivered?” The processes are, develop new products and services, generate demand, fulfil demand, plan, and manage the enterprise. For each of these (normally cross-functional) processes, it should be possible to identify specific measures that allow management to address questions associated with each one. For example, it might be necessary for an operation executive to ask: “Are the firm's demand processes working efficiently and effectively?” and “If not, how will I know which sub-components of it are the cause of its inefficiency or ineffectiveness?”, and so on through the other processes and their sub-sets.

The fourth perspective of PP is the capabilities facet and perhaps, the least understood. Capabilities are the combination of people, practices, technology, and infrastructure that together enable execution of the organisation's business processes currently and in the future. They are the fundamental building blocks of the organisation's ability to compete. Without the right people, practices, technology, and infrastructure in place, it is impossible to execute or improve the processes. The key question associated with this facet becomes: “What are the capabilities we require to operate our processes?”. As soon as this question has been answered, then it becomes possible to identify measures that allow the firm to assess whether it has the required capabilities in place now, or has plans to implement them, and whether they are being sufficiently nurtured and protected.

The final perspective of the PP is the stakeholder contribution facet. This facet has been included as a separate component since it recognises the fact that not only do organisations have to deliver value to their stakeholders, but also that organisations enter asymbiotic relationship with their stakeholders which should involve the stakeholders contributing to the firm. The stakeholders include employees, suppliers, and regulators. This model underpins firm performance variable.

4.1.6 Malcolm Baldrige Model

Malcolm Baldrige National Quality Award (MBNQA) was instituted in 1987 by the USA commerce department. Its creation was to offer an excellence quality standard and to help firms to reach a high level of performance (Garvin, 1991). The role of the model is to encourage the businesses and all the other organizations in the USA, to practice an efficient control of quality for products and services, to evaluate quality improvement efforts, and to reward and publicize the efforts of successful organizations. The MBNQA is a set of interrelated fundamental values and concepts found in high performing firms, which are illustrated by seven linked categories as shown

in figure 3.3.

Leadership shown in figure 3.3, is supposed to examines how senior executives lead and maintain the organization and how the organization addresses governance, ethical, legal, and community responsibilities. Strategic planning on the other hand examines how the organization sets strategic guidance and how it identifies and deploys key action plans.

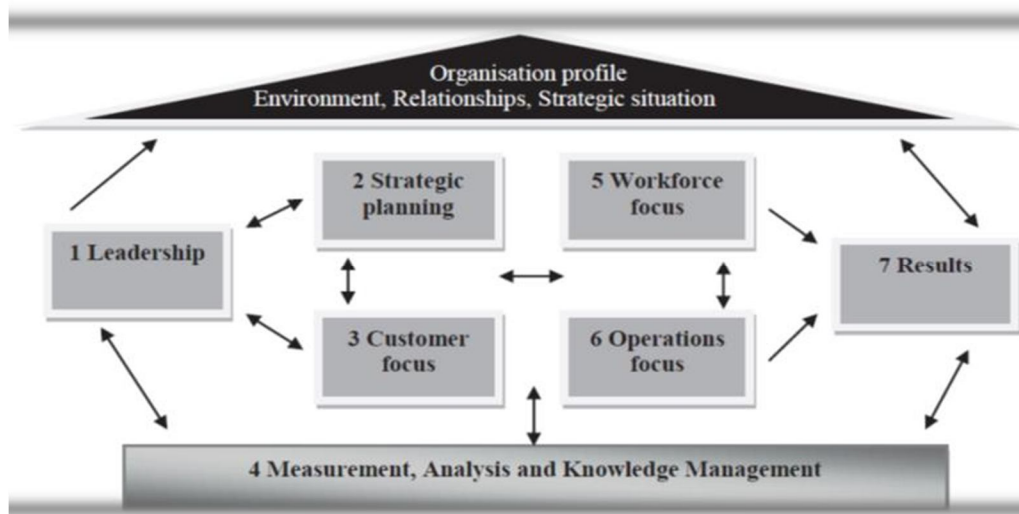


Figure 3.3. Malcolm Baldrige model – Criteria for performance excellence (US Commerce Department, 1987)

The aspect of customer focus examines how the organization identifies expectations and requirements of customers and markets and builds relationships with customers to satisfy and retain them. Measurement, analysis, and knowledge management on the other hand examines the management, use, analysis, and development of data and information to support key organization processes as well as how the organization evaluates its performance. Workforce focus examines how the organization engages, organizes, and develops all those who are actively involved in accomplishing the work of the organization to improve full potential, and how the workforce is aligned with the organization's goals.

Operations focus examines aspects of how key production/delivery and support processes are designed, managed, and developed. Lastly, results examine the improvement of the organization's performance in its key business areas such as: customer satisfaction, financial and marketplace, workforce, product/service, operational effectiveness, and leadership. The model allows any organization to attain its objectives, to improve its results and become more competitive, and work in alignment with its plans, processes, decisions, peoples, actions, and results. This model underpins firm performance variable.

4.1.7 Performance Pyramid Model

Performance pyramid is another important model explaining firm performance. It was proposed by Lynch and Cross (1992). The main aim of the performance pyramid is to link the strategy of the organization with its operations by translating objectives from the top down (based on customer priorities) and measures from the bottom up (Tangen, 2004). Figure 3.4 show the performance pyramid model.

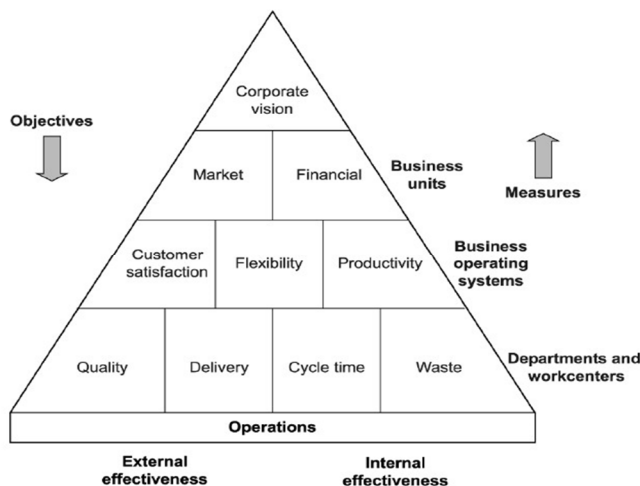


Figure 3.4: Performance Pyramid (Tangen, 2004)/ The SMART System (Cross & Lynch, 1991).

The performance pyramid contains four levels of objectives that affect the external effectiveness of the organization (left side of the pyramid) and simultaneously its internal effectiveness (right side of the pyramid). At the first level, the development of a company's performance pyramid starts with defining an overall corporate vision, which is then translated into individual business unit objectives. At the second level of the pyramid, short-term goals of cash flow and profitability are set as well as long-term targets of growth and market position. The third level contains day-to-day operational measures (customer satisfaction, flexibility, and productivity). The last level includes four key performance measures (quality, delivery, cycle time and waste). This model underpins firm performance variable.

4.2 Empirical Literature Review

With respect to the role of human capital on firm performance, Newbert (2007) reported that of the 35 tests of human capital-performance relationship identified in the literature, 11 tests (35%) supported the notion that human capital is positively and significantly related to firm performance. This finding suggests in contrast to RBV and micro-research that human capital might be path dependent with investment in training designed to build human capital's influence on performance (Combs, Liu, Hall & Ketchen, 2006).

In the study to track human capital and firm performance undertaken by Hitt, Bierman, Shimizu and Kochhar (2001), panel data was used from 100 selected large law firms in the USA, with the hypothesis that there is a curvilinear relationship between human capital embodied in partners and firm performance, it was found that the relationship is negative early in the partners' tenure but progressively becomes positive with higher levels of human capital. This finding supports recent argument by some scholars regarding the importance of human capital on firm outcomes (Barney & Zajac, 1991; Lepak & Snell, 1999; Pfeffer, 1994; Sherer, 1995). The results also provide a strong support for the RBV of the firm and arguments presented by several strategy scholars relating human capital and firm performance (Barney 1991; Peteraf, 1993; Robin & Wiersema, 1995).

In a meta-analysis of the relationship between human capital and firm performance, Crook, Todd, Comb, Woehr and Ketchen Jr (2011) using secondary data and hypotheses testing, it was found that human capital was positively related to performance ($r = 0.11$, $p < 0.01$); $r_c = 0.21$). The study did not support the hypothesis that human capital-firm performance relationship would be stronger when studies used lagged performance than when studies relied on cross-sectional data ($r = 0.10$, $p < 0.01$); $r_c = 0.19$).

In a study conducted by Frank and Obloj (2012) in retail banking on firm specific human capital, organizational incentives and agency costs and using panel data from secondary sales data, several findings were presented. Managers with high firm specific human resources are more productive in their primary task of customer acquisition but are also more likely to engage in costly loan term manipulation that boast their incentive payouts. The net effect of this is a two percent point reduction in the bank's profit. Lost profit increase rapidly overtime for managers with superior firm specific human capital suggesting that adverse learning is greater for the high firm specific human capital managers.

In an integrated analysis using a matched pair statistical design and non-parametric statistical measures to test hypotheses, Baily and Helfat (2003) sought to find out external management succession, human capital, and firm performance. The results indicated that there was no support for the hypotheses that external successors with industry specific skills perform better and that external successors without industry specific skills perform better. Further the results in this study supported the hypothesis that variance of firm performance is greater for external successors with less full complement of transferrable skills.

In a meta-analysis of the relationship between human capital and firm performance, Crook, Todd, Comb, Woehr and Ketchen Jr (2011) using secondary data supported the hypothesis, that human capital-performance relationship would be stronger among specific measures of human capital than general measures ($F = 0.24$ versus 0.14 $p < 0.1$). This implies that specific human capital is more strategic in nature since it produces greater value relative to its costs and it is impossible for competitors to purchase in strategic factor market for human capital (Amit & Shoemaker 1993; Barney 1986).

Manchester (2010) carried out a study on investment in general human capital and turnover intention using longitudinal data of student pursuing MBA at the University of Minnesota. It was found that increasing general human capital has a strong positive effect on turnover intention and since turnover is a measure of firm performance, the result show that complementarities are the main channel by which investment in general human capital occur. Tuition reimbursements decrease turnover intention, and this leads to high firm performance.

Similarly, Ployhart, Van Iddekinge and Mackenzie (2011) designed a study on acquiring and developing human capital in service industry using latent growth structural growth equation modelling. The study found that both generic and unit specific human capital are important for unit effectiveness although their effects are not equally direct. That unit-specific human capital is a more proximal determinant of unit service performance behavior than generic human capital which is equally important because it contributes to development of unit-specific human capital. This study result is important because it shows that the interconnectedness of generic and unit-specific human capital hence makes the combined resources even more inimitable than each in isolation as argued by the RBV. The mediating role of information technology system on firm performance with human capital as the independent variable is presented in a study by Ray, Xue and Barney (2013). This study looked at asset characteristics and the impact of information technology capital on firm scope and performance. Data used in this research was panel data which tested several hypotheses relating information technology capital, asset characteristic and firm performance. The study found that with more information technology capital, narrowly valuable assets are associated with lower levels of vertical integration and lower levels of diversification. Secondly the study found that with more information technology capital, broadly valuable relational assets are associated with an increase in vertical integration and higher levels of diversification. Thirdly the study found that the less vertically integrated firm's electronic brokerage effect of information technology capital enhances the performance contribution of narrowly valuable assets to a greater extent. Also, in less diversified forms the electronic brokerage effect of information technology capital enhances the performance contribution of narrowly valuable assets to a great extent. Lastly the study found that in more vertically integrated firms, the electronic integration effect of information technology capital enhances the performance contribution of broadly valuable assets to a greater extent. This study shows that by reducing coordination costs, information technology capital such as enterprise resource planning (ERP) systems enables firms to realize economies of scale and scope from their broadly valuable relational and organizational assets including human capital. The implications are similar to those of firm-specific resources in the RBV where a firm with broadly valuable assets may integrate vertically or diversify, because it is in the best position to generate and appropriate value from its broadly valuable resources (Madhok, 1997). In this regard, by reducing coordination costs, the electronic integration effect of IT capital enables firms with broadly valuable assets to realize the full economic value of these assets.

In a meta-analysis of the relationship between human capital and firm performance, Crook, Todd, Comb, Woehr and Ketchen Jr (2011) used secondary data to test hypothesis. The study found that positive relationship between human capital and performance would be stronger for studies relying on operational performance measures than studies relying on global performance measures ($r = 0.26$ versus 0.15 ; $p < 0.5$). Powell and Dent-Micallef (1997) show that when human capital is joined with fundamentally sound business practices like those exhibited by most global organizations, high performance follows.

Another study indicating the moderating effect of organization orientation on firm performance amid human capital application is by Wiklund and Shephend (2003). In this study, the moderating effect of entrepreneurial orientation on knowledge-based resources on firm performance is presented. Entrepreneurial orientation refers to a firm's strategic orientation capturing specific entrepreneurial aspects of decision-making styles, methods, and practices (Lumpkin & Dess, 1996). Data used in this study was cross-sectional data obtained from stratified sample and was analyzed using hierarchical regression to test three hypotheses. The study found that the model (control variable only) explains a statistically significant share of the variance in firm performance ($r^2 = 0.09$, $p < 0.001$). The main effect model makes a significant contribution over and above the base model ($\Delta r^2 = 0.12$, $p < 0.001$). With this finding, the positive and significant effect of knowledge-based resources and entrepreneurial orientation supports the argument that a bundle of knowledge-based resources applicable to the discovery and exploitation of opportunities is positively related to firm performance and entrepreneurial orientation is positively related to firm performance. Since $\Delta r^2 > r^2$, it implies that the interaction term makes a significant contribution over and above the main effect.

Plotting the effect of the bundle of knowledge-based resources on performance for value of entrepreneurial orientation set at the mean and one standard deviation above and below the mean as suggested by Cohen and Cohen (1993) indicates that entrepreneurial orientation enhances the positive impact that the bundle of knowledge-based resources had on firm performance supporting the hypothesis that entrepreneurial orientation moderates the relationship between a bundle of knowledge-based resources and firm performance. Thus, entrepreneurial orientation enhances the positive relationship that a bundle of knowledge-based resources has with firm performance. Given the importance of entrepreneurship to firm performance (McGrath, Tsai, Venkataraman, & MacMillan, 1996), entrepreneurial orientation is an important measure of the way a firm is organized, one that enhances the performance benefit of a firm's knowledge-based resources by focusing attention on the utilization of these resources to discover and exploit opportunities.

4.3 Proposed Theoretical Model

The proposed theoretical framework for this study shows the relationship between human capital and firm performance. Figure 1 is the proposed theoretical model.

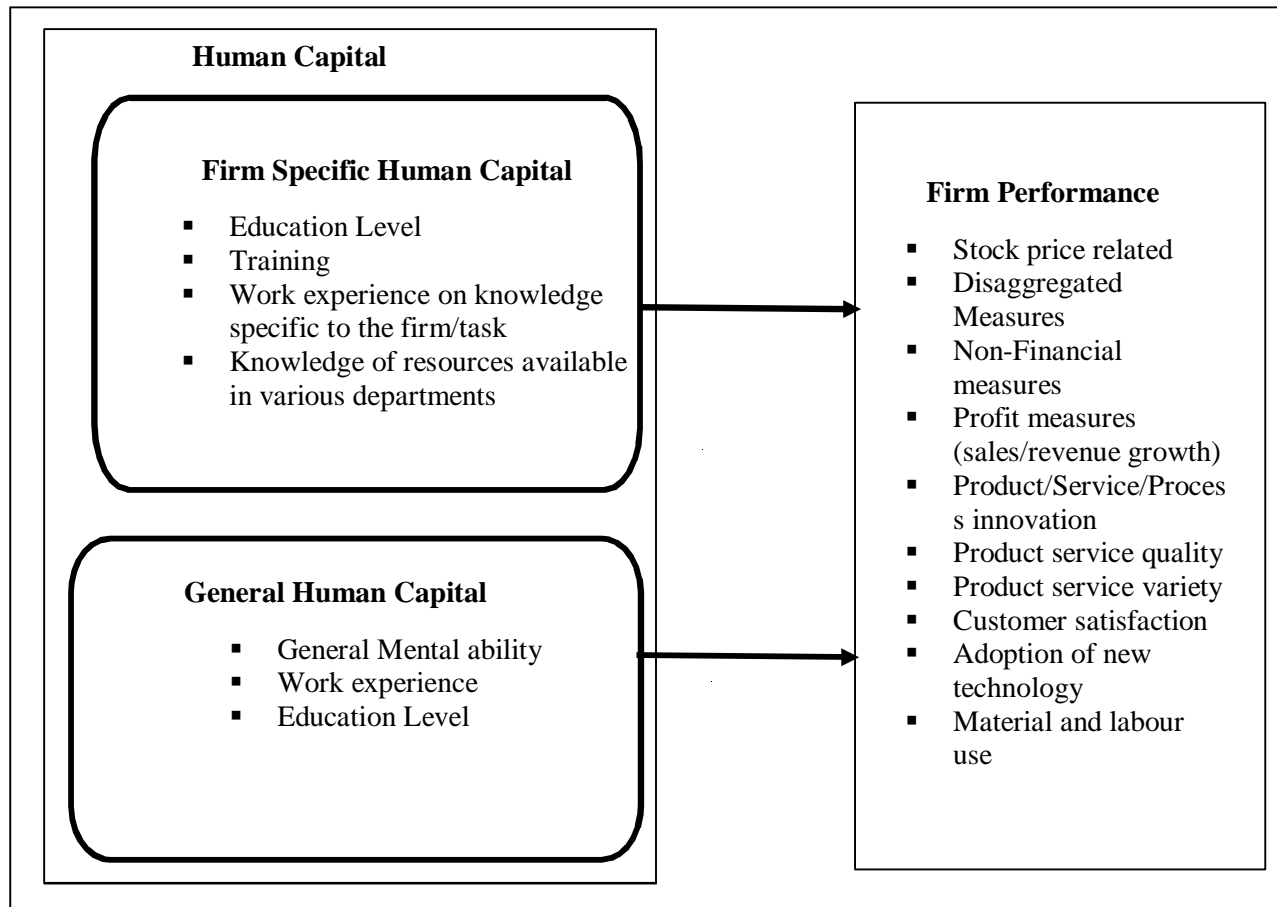


Figure 1: Proposed Theoretical Model

Source: Author (2023)

The theoretical framework presented in figure 1 shows that human capital is the independent variable while firm performance is the dependent variable. The predictor variables are described through several constructs which include general human capital, specific human capital and firm performance which is the proposed output variable and is measured using different parameters including disaggregated measures, non-financial measures, sales/revenue growth, product/service/process innovations, product service quality, service variety and customer satisfaction. General human capital is measured using mental ability, work experience and education level. Firm specific human capital is measured using training, education level, work experience on knowledge specific to the firm/task and knowledge of resources available in various departments.

5.0 Conclusion

This study explored the association between human capital and firm performance. The theoretical model proposed in this chapter was developed to show the relationship between human capital and firm performance. Conceptual and empirical reviews undertaken in chapter two and chapter four were able to identify and indicate the relationship between firm performance and human capital. With the grounding in the theoretical reviews undertaken, the basic principles and constructs were identified from several theories and models. The theories included human capital theory, resource-based view, knowledge-based theory, organizational orientation theory and unified theory of acceptance and use of technology. The models identified in this review are balanced scorecard model, performance prism model, Malcolm Baldrige model, performance pyramid model and technology acceptance model. The model and theories helped in identifying the perspectives, dimensions, and measures of the variables.

From the reviewed literature, empirical evidence points to the general acceptance that indeed human capital with all its perspectives have a relationship with firm performance. For instance, it is clear from the reviewed literature that general human capital enhances firm productivity. Secondly, the strategic role of specific human capital which has its foundation in general human capital in firm performance is blurred. This study being merely a review of literature proposes the need for empirical verification of the conceived relationship between human capital and firm performance in order to avail field based insights as per the proposed framework.

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