LEAGILE STRATEGY, STRATEGIC PARTNERSHIP, FIRM INNOVATION AND COMPETITIVE ADVANTAGE OF CONSTRUCTION COMPANIES SUPPLY CHAINS IN NAIROBI CITY COUNTY, KENYA.

BY

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A THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS ADMINISTRATION, FACULTY OF BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF NAIROBI

AUGUST 2023

DECLARATION

I, the undersigned, proclaim that this thesis is my work and to the best of my knowledge it has not been offered for academic fulfilment in any University for award of a degree.

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DEDICATION

This work is dedicated to my loving husband, Dr. Fred Oyombe, my beloved children, Okech, Adoli, Akonde, Abonyo, Dennise, Angela and Claris and to my adorable grandchildren, Julian, Gabriel, Jesse, Jeremy and Amara. You were my principal source of inspiration throughout the PhD journey and heightened my motivation to keep on striving higher for distinctive excellence. It is my prayer that this PhD thesis will motivate you to strive to achieve even higher than this when your right time comes. God bless you all abundantly my family.

ACKNOWLEDGEMENTS

Special salutations to my supervisors; Professor Zachary Bolo Awino, whose continued guidance helped me complete this Ph.D., Prof. Ogutu, and Prof. Njihia for support, guidance, commitment, knowledge shared and imparted. I appreciate your academic and scholarly input throughout this work. You have surely increased my knowledge, molded me into a scholar, and prepared me in readiness for the next level. No human being can ever sufficiently reward your sincere selfless efforts and commitment except the one God who watches from a distance above. God bless you plentifully and recompense the works of your hands my supervisors.

I express gratitude to the Management of the businesses from where I collected data, and especially to those who responded to my questions. I give appreciation because it was in the middle of the Covid-19 pandemic and you still provided the answers to my questions. It is from the information you provided that I managed to accomplish this research study. God continues blessing your organizations with success.

I recognize the entire Faculty of Business and Management Sciences, and Chairperson, Department of Business Administration. The Ph.D. Coordination Office for facilitating the processes. Graduate School, for consenting to my data collection after successfully defending the doctoral proposal.

I give gratitude to all my doctoral program lecturers for imparting the necessary knowledge, attending the defense meetings, and critiquing my proposal and thesis. The Lord God bless you all abundantly.

I acknowledge my sisters Jane Alice Agutu and Evelyne Awuor for the support, encouragement, and prayers. The good Lord God Almighty bless you all abundantly. I give thanks to my parents, the late Martin and Joanne Olum whose early counselling and guidance inculcated confidence, focus and steadfastness in me. I hope that this Ph.D. will inspire my children, nieces, nephews, and grandchildren as well as members of the larger society.

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ABBREVIATIONS AND ACRONYMS

4PL	Fourth -Party Logistics
AHP	Analytical Hierarchy Process
CA	Competitive Advantage
CAK	Competition Authority of Kenya
CC	Construction Companies'
CICS	Construction Industry Capacity Survey
CODP	Customer Order Decoupling Point
CSCMP	Council of Supply Chain Management Professionals
DC	Dynamic Capabilities
DV	Dependent Variable
EDI	Electronic Data Interchange
ERP	Enterprise Resource Planning
FI	Firm Innovation
GDP	Gross Domestic Product
IND. V	Independent Variable
IV	Intervening Variable
IO	Industrial Organization
IS	Information Systems
ICT	Information & Communication Technology
IJV	International Joint Ventures
KAM	Kenya Association of Manufacturers
KNBS	Kenya National Bureau of Statistics

KT	Knowledge Transfer
KPDA	Kenya Property Developers Association
LS	Leagile Strategy
MV	Moderating Variable
MRP	Materials Requirements Planning
NACOSTI	National Commission for Science Technology and Innovation
NCA	National Construction Authority
NCA1-8	National Construction Authority Category 1-8
NCC	Nairobi City County
OECD	Organization for Economic Co-operation and Development
OEM	Original Equipment Manufacturers
RBV	Resource Based View
R&D	Research and Development
SC	Supply Chain
SCS	Supply Chain Strategy
SCs	Supply Chains
SCM	Supply Chain Management
SE	Standard Error
SP	Strategic Partnership
SPSS	Statistical Package for Social Sciences
TQM	Total Quality Management
VRIN	Valuable Rare Inimitable Non-substitutable

ABSTRACT

The broad aim of this research was to measure the influence of leagile strategy, strategic partnership, and firm innovation on competitive advantage of construction companies' supply chains in Nairobi City County, Kenya. Four specific goals were articulated: to determine the influence of leagile strategy on competitive advantage; to assess the moderating influence of strategic partnership on the relationship between leagile strategy and competitive advantage; to explore the intervening influence of firm innovation on the relationship between leagile strategy and competitive advantage; to determine the joint influence of leagile strategy, strategic partnership and firm innovation on competitive advantage. The research employed a cross-sectional descriptive survey methodology. Stratified sampling procedure was utilized to obtain a sample size of 323 construction companies from the entire population of 4,015. Information was gathered from 260 construction companies via questionnaire achieving a response rate of 80.50 percent. Statistical package for social sciences (SPSS) version 22 was utilized for information processing to produce both descriptive, and inferential statistics. Correlation, regression analyses, and the interaction term for the moderating effect were exploited to determine the hypotheses. Decisions were made at 5% significance level. It was discovered that leagile strategy has a significant influence on competitive advantage. Results showed strategic partnership has no moderating influence on the relationship between leagile strategy, and competitive advantage. It was further revealed that strategic partnership has a direct effect on competitive advantage as though it was an independent variable. It was established that firm innovation has significant partial intervening influence on the relationship between leagile strategy, and competitive advantage. Results also showed a significant joint influence of leagile strategy, strategic partnership, and firm innovation on competitive advantage. Conclusions were made that there are supplementary sources of competitive advantage besides leagile strategy, strategic partnership, and firm innovation in construction companies' supply chains in Nairobi City County. This research has added to theory development by ratifying the suppositions of dynamic capabilities, network, and institutional theories towards achievement of competitive advantages. Furthermore, it has supplemented knowledge in strategic management about the influence of strategic partnership, and firm innovation on the relationship between leagile strategy, and competitive advantage. These findings are useful to policymakers who may use it as a basis for organizational and sector reforms. Also in the formulation, and implementation of policies and legislation which lead to change, competitiveness, and survival. Practitioners are guided on the aspects of leagile strategy, strategic partnership, and firm innovation which can lead to competitive advantages as well as those which help in alleviating the myriad organizational problems. Company executives are directed to focus on continuous sensing to recognize opportunities, and swiftly react to the shifting competitive environments. The occurrence of COVID-19 pandemic was a limitation to this research, especially the restrictions placed on the access of business premises and staff. Further research is recommended to include other conceptual variables which may have influence on competitive advantage. Future research should expand the context to include transportation companies as well as other industries to determine if the findings of this study are replicable.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Companies adopt a combination of approaches like leagile strategy, strategic partnership, and firm innovation to achieve competitive advantages. Leagile strategy, similarly known in this study as leagility, is an amalgamation of lean and agile models through the utilization of the customer order decoupling point (CODP) model whereby a supply chain (SC) switches from one paradigm to the other (Goldsby et al., 2006). Companies develop a leagile strategy by mixing the useful features of lean and agile paradigms in the SC to competently satisfy comsumers' requirements (Steele, 2001). Leanness concentrates on realization of efficiency, elimination of waste, value creation, and supporting the synchronization within and among the companies (Womack & Jones, 2003).

In a leagile SC, agility is considered a strategic and possible enabler of the company's attractiveness (Mathiassen & Pries-Heje, 2006), but may be hindered by the absence of strategic partnerships (Arbussa, Bikfalvi & Marque, 2017). Strategic partnerships (SP), herein also referred to as strategic alliances, coalitions, collaborations, joint ventures, coalitions, associations or agreements are long-term mutually beneficial relationships amongst companies that promote joint efforts in planning and solving problems (Gunasekaran et al., 2011). Strategic partnerships warrant stoppage of intercompany competition and usage of newfound synergistic strengths to improve commodities and infiltrate fresh marketplaces to boost growth as well as profits (Dacin et al., 1997).

The strategic partnership's strength ranges from that of loose cooperation such as sharing information, coordinating programs, and planning jointly to a tightly recognizable organizational alliance, and joint programming towards comprehensive assimilation through mergers (Arsenault, 1998; Kohm, La Piana, & Gowdy, 2000). The functions of SP include offering part of a service, supply of materials, supporting a resolution, provision of labor, funding, and technical backing on product usage among others (Maase & Doorst, 2007). To be successful, strategic partnerships need to foster synergy, cooperation, clarity of purpose, accountability, embracing a win-win strategy, and support from top management which motivate the teams in the execution (Child et al., 2001).

According to the Oslo Manual, the Organization for Economic Co-operation and Development (OECD) (2005), firm innovation (FI) is defined as the creation and implementation of fresh or greatly enhanced product or process, marketing technique, new organizational method in business practice, workplace organization or external affiliations. Schumpeter (1977) first mentioned the significance of innovation in progression of businesses and differed from those theories supported by classical economists, which foretold that enterprises functioned in static markets, enabling them to have their space in the operative environment. The scholar emphasized innovation is of immense significance for the growth of businesses. Giget (1997) also suggested innovation is emerging to be critical for business competitiveness. Innovation facilitates firms to differentiate their products, and exploit market opportunities and is considered the main competitive advantage creation component (Porter, 1999).

The study of firm level competitive advantage (CA) has acknowledged the highest attention from researchers and practirioners (Arsian & Tatlidil, 2012; Ambastha & Momaya, 2004) due to the rapid shift in the competitive arena. Competitive advantage is a benchmark for assessing competitiveness and validating the industry position of a business entity (Porter, 1985). At firm level, competitiveness is the capability of a company to always be ahead of the competition for survival and prosperity (Hoefter, 2001). From the supply chain management (SCM) view, competitive advantage is described as attaining a position ahead of rivals with respect to the product price, quality, delivery dependability, innovation, and time to market *(*Li et al., 2006; Zhang, 2001; Koufteros et al., 2002). Low assembly cost and commodity differentiation are the two key bases of competitive advantage (Porter, 2000).

This study is anchored on the Dynamic Capabilities (DC) approach, Network, and Institutional theories. A company's DC is an essential source of CA (Hou & Chien, 2010). They are influential in determining the company's capacity to effectively implement activities that result in sustainable competitive advantage (Aguirre, 2011). As the competition intensifies, companies are seeking survival avenues via expansion to new terrestrial areas and penetration of fresh markets, new product development, better pricing, improvement of customer satisfaction, as well as the adoption of new experiences, and development of innovative strategies. DC philosophy clarifies exactly how companies succeed in the marketplace (Teece et al., 2008; Augier & Teece, 2006). DC theory provides a holistic view of how a firm whose aim is to attain optimal growth and performance should tie its assets, processes, and management that possesses capability and competencies leading to CA.

According to Teece et al. (1997), the theory of DC provides explanations of a longer term competitive advantage which surpasses the resource-based view (RBV) based on a firm's acquisition of VRIN resources. The scholars assert that DC facilitates firms to react to the swiftly varying commercial environment through the incorporation, construction, and reconfiguration of core and external assets. Network theory enlightens on the numerous supportive affiliations amongst the associates in the SC (Oliver, 1990; Haakanson & Ford, 2002). Within the network system, business organizations are beheld as heterogeneous, where customers and suppliers negotiate with each other forming relationships. Business relationships are seen as interdependent continuous processes taking place between companies forming a web (Anderson et al., 1994; Håakanson & Snehota 1989; Snehota 1990).

Institutional theory affirms that the environment (normative pressures) holds profoundly greater impact regarding enhancement of formal structures in organizations than technical pressures for economic performance (Meyer & Rowan, 1977). The theory emphasizes the result of environmental influences concerning diffusion of innovative institutionalized practices among companies. The normative pressures are capable of reducing efficiency, hence hampering the competitive position of the company in the technical environment. The institutional theory describes the adoption and spread of formal organizational structures, containing written policies, standard practices, and new forms of organization (David, Tolbart & Boghossian, 2019).

A SC consists of a net of businesses involved in activities such as the flow of products, services, finances, and information from a source to the customer (Mentzer et al., 2001). Construction supply chains (SCs) consist of bigger ventures which interlock varied contractors of raw materials, components, and a wide range of services (Dainty et al., 2001). Most contractors function as elastic companies categorized by widespread subcontracting, and entirely concentrating on supervision and synchronization tasks (Arkinson, 1984; ILO, 2001). The SC entities consist of manufacturers, suppliers, transporters, warehousing firms, retailers, and customers. In a company, the SC includes all functions involved in receiving and filling customer orders such as new product development, marketing, operation, distribution, finance, customer service, etc. (Chopra & Meindl, 2007).

SCM practices are a set of methodologies and processes, which efficiently incorporate suppliers, manufacturers, distributors, and customers to improve their performance (Tseng, 2010). The SCs of construction companies are fragmented unstable environments known for poor integration of contractors, suppliers, and coexisting projects (Gosling & Naim, 2009; Dainty et al., 2001). The existence of construction companies in Kenya is monetarily beneficial because they help in reducing unemployment and contribute to gross domestic product (GDP). Enormous ventures in infrastructure involving buildings, restoration and upgrading of roads, railways as well as waterways were greatly sponsored by the government of Kenya. The major internal concerns of construction companies include distribution of assets, usage of technical innovations, as well as adoption of management strategies that focus on flexibility, efficiency, responsiveness, quality, cost savings, integration, and innovation.

Outwardly, construction companies have to contend with the rapidly changing multifaceted settings, globalization, and steep competition. Notwithstanding the complications faced by construction companies, it is of essence to develop SC practices that fulfill customers' desires better instead of just pursuing short-range cost savings (Lockamy & Smith, 1997). A well-concerted effort, comprehensive strategy, and investment are needed to enhance capacity development in Kenya's construction companies (CICS, 2014). It is apparent construction companies need to achieve competitive advantage if they are to meet those myriad challenges. Hence, it is time to place more emphasis on strategies that lead to competitiveness in construction companies' SCs.

Carrying out the investigation in this context was envisaged to assist in unearthing if leagile strategy, strategic partnership, and firm innovation contribute in creating value, lessening the countless impediments, and ultimately enhancing their probabilities of thriving in the ever-changing business arena. This study was motivated by the view that, whereas construction companies are continuously striving to become competitive, there was a gap in determining the effect of LS, SP, and FI on competitive advantage in their SCs. While some early studies suggested affirmative association of LS and CA (Tanvir & Yoshi, 2012; Arasa, Mwaura, & Ngui, 2013; Pono et al., 2020), there was no known effort by researchers to examine the association concerning LS and CA utilizing strategic partnership and firm innovation as the moderating and intervening variables respectively in the context of this research.

1.1.1 Leagile Strategy

Leagile strategy is the incorporation of agility and leanness in an SC through the utilization of CODP (Naylor et al., 1997). Lean and agile philosophies are mutually supportive of SCS (McCullen & Towill, 2001; Gunasekaran et al., 2008). Supply chain management incorporates those plans, which need implementation to deliver continuous satisfaction of the customer's desires (Seferlis & Giannelos, 2004). Richards (1996) suggests the agile strategy is the successive level of leanness. Once a lean strategy is realized, the SC ensures agility is achieved (Marion-Jones et al., 2000). Lean strategy is important for cost reduction while agile strategy was vital in cases where market demand increased and quick response to customers was vital (Cozzolino et al., 2012). Agile strategy is appropriate for the attainment of competitive advantage in terms of quick response to changes in customers' demands (Ambe, 2010).

Consequently, considering both strategies can be valuable. Leagility is a SCS that involves ensuring a sense of balance concerning use of dominant resources and building new resources (Wernerfelt, 1995; Penrose, 1959). Leagile strategy is achieved by holding strategic inventory in uncompleted form and then quickly reconfiguring them once actual demand is established. Bruce et al. (2004) argued that leagility was a strategy for optimizing the management of the SC by conjoining lean and agile strategies. Hines (2006) established leagile strategy (lean & agile) is a key success factor for present-day businesses and non-profit making organizations. Naylor et al. (1999) proposed leagile SCS by applying customer order decoupling point (CODP) where leanness is practiced up to the CODP and agility thereafter.

Olhager (2003) also proposed a distinction between lean and agile methodologies using the CODP which divides leanness (upstream) and agility (downstream) operations in supply chains or manufacturing. Agile and lean philosophies could successfully be mutually amalgamated by considering customers' requests and incorporating them into plans of designing suitable SC strategies (Towill & Christopher, 2002). Fischer (1997) advanced the two different strategies of leanness and agility aimed at developing a well-organized and receptive SC concerning products, functional operations, and the innovative capacity of a business organization. An efficient SC is fit for functional commodities characterized by anticipated and stable needs, whereas a responsive network is appropriate for innovative goods with a short product lifecycle and unpredictable customer needs.

Efficient SC concentrates on providing the lowermost price to the clienteles, whereas the market-responsive one aims to swiftly react to clienteles' requests. Lean activities aim at improving process efficiency and maintaining firm competitiveness in a stable and predictable environment (Cousins & Menguc, 2006). Although beneficial to firms, lean strategy has been disapproved for being devoid of human integration and characteristic of repetitive manufacturing procedures (Hines, Holweg & Rich, 2004). An agile SC strategy aims at growing a flexible and reconfigured partnership network that enables sharing of competencies as well as knowledge to ensure continued survival and prosperity through the achievement of quick reactions to market fluctuations (Ismail & Sharifi, 2006; Duarte & Machado, 2011). Agile strategy is centered around competition, strategic reaction, and flexibility, building defense mechanisms against competitors, innovation, and a business environment hinged on collaboration among others (El-Tawy & Gallear, 2011).

Martinez et al., (2018) posited that a key enabler of agility in the SC is the establishment of a virtual enterprise centered on the development of strategic partnerships. Agility relies more on partnerships to realize speediness and flexibility. In the virtual enterprise, the dynamic alliances go further to assist agility in becoming more capable of coping with the rapid response, especially under immense environmental tumult. Leagility is a new paradigm that is suitably applicable to manufacturing and service industries (Vaishnavi & Suresh, 2019). Leagile strategy has similarly been applied by various companies in Australia in optimizing distributions of pre-fabricated construction projects (Mostafa et al., 2020) and in supplier selection processes in Chinese textiles industries (Li et al., 2020).

It is necessary for firms located in different positions along the SC to develop dissimilar designs and functional strategies supporting the spectrum (Chopra & Meindl, 2010). Companies with the aspiration of enhancing performance vide cost-efficiency need to function at the point of low cost and cultivate lean SC strategies. Ramana (2013) recommended the scales of evaluating a leagile SC as consumer service, flexibility, operation, and company performance.

1.1.2 Strategic Partnership

Strategic partnership herein denotes all strategic alliances, coalitions, collaborations or any other form of inter-organizational relationships generating opportunities that foster resources and competencies sharing, forming new bases of competitive advantages. A strategic partnership (SP) is a jointly advantageous affiliation involving various entities sharing inputs while preserving their identities (De Man & Duysters, 2011). SP are inter-organizational relationships whose aim is to decrease aggregate cost of sourcing, and storage as well as disposal (Li et al., 2006).

They are planned agreements amongst businesses covering sharing, joint development, and exchange of information, products as well as technologies (Gulati, 1998). Strategic partnerships are vehicles through which companies pool resources and expertise to jointly solve problems or develop innovations (Maurrassee, 2013). In SP, partners trade, and obtain ease of access employees; amenities, official papers, and information vide continuous collaboration (Hamel, 1991). The establishment of strategic partnership is prompted by several motives such as environmental fluctuations, entering fresh markets, defending competing positions, overcoming entry obstacles, gaining different skills, growing product lines, and increasing efficient use of resources.

Firms combine resources under SP to jointly attain compatible goals that cannot be achieved with ease individually (Wittmann et al., 2009). Strategic partnerships perform the essential task of guaranteeing companies' existence and afford them utilization of dire assets, which permit attainment of longer-term competitive advantages under unpredictably changing environments (Cobeña et. al., 2017). Lubello et al. (2015) posit partnerships are essential avenues through which businesses are guaranteed advancement of knowledge and complementary assets accessibility.

Strategic partnerships have become essential as companies continue to embrace cooperative approaches because competition is no longer between enterprises but alliances (Brondoni, 2010). Some of the functions of strategic partnerships include offering partial services, material supplies, support of resolutions, provision of labor, funds, and technical backup on the product (Maase & Doorst, 2007). Strategic partnerships help most businesses overcome internal resource weaknesses and enable them to access needed resources.

Likewise, strategic partnerships enable businesses to protect other resources by denying external firms the chance of imitating them (Makadok, 2001; Das & Teng, 2000). SP facilitates shared effort in creating core value activities such as manufacturing, selling, negotiating deals, sales, delivery, research, and development (Gajda, 2004). Strategic partnerships are regarded as key success factors in a dynamic environment since they enable networking amongst companies and suppliers leading to the attainment of mutually beneficial goals (Gattorna, 1998).

Gaining new markets is an expensive investment that involves expansive capital and requires a company to partner with others (Depamphilis, 2008). SP support businesses in the development of strategic direction, resource accumulation, risk, and investment sharing thus resulting in the achievement of competitive advantage (Eisenhardt & Schoonhoven, 1996; Ring & Van de Ven, 1992). Businesses under strategic partnerships are capable of gaining access to more financial, human, and equipment, as well as markets consequently warranting success and the ability to outperform competitors (Preston & Donaldson, 1999; Kale, Dyer, & Singh, 2001).

Doz and Hamel (1998) assert strategic partnerships facilitate organizational learning by exchanging skills and knowledge, they allow the development of economies of scale (Mohr & Spekman, 1994), dynamic capabilities, and new competencies. Formation of SP in the supply chain provides enterprises with many prospects that enhance the way they conduct their businesses (Spekman, Kamauff & Myhr, 1998). To be successful, strategic partnerships need to foster synergy, cooperation, clarity of purpose, accountability, embracing a win-win strategy, and support from top management which motivate the teams in the execution (Child et al., 2001).

Trust, commitment, communication, collaboration competence, and conflict resolution are key factors for strategic partnerships (Jonathan & Soldi, 2011). Strategic partnerships permit the realization of competitive advantages, which would otherwise be elusive because a single company cannot have all the essential resources to be innovative in the face of market dynamism. Sustainable competitive advantage is only attainable through a strategic partnership in circumstances where pooled resources that are similar are exploited to design a new strategy (Varadarajan & Cunningham, 1995). Reasons for the formation of strategic partnerships by companies are diverse. Some companies create strategic partnerships to achieve growth and entry into new markets (Elmuti & Kathawala, 2001). In some instances, a strategic partnership is formed with another company that is already in a particular market because it is more appealing than penetrating new ones (Coopers & Lybrand, 1997; Ohmae, 1992). Other companies enter into strategic alliances due to technological reasons. Firms need adequate and appropriate technology to compete in the marketplace.

Teaming up with other companies possessing adequate resources to provide the technology or those willing to pool up assets with others to offer needed know-how together is a common reason for forming strategic partnerships (Hsieh, 1997). Quinn (1995) suggests that some companies enter into strategic alliances by outsourcing some of their business functions to partners with the best technology, cheapest labor and production costs. Some of the outsourced functions to companies with the capabilities of performing them better and affordably are marketing, accounting, and sales. Other companies enter into these strategic partnerships with a view of reducing financial risks and sharing the research and development costs (Wheelen & Hungar, 2000; Das & Teng, 1999).

1.1.3 Firm Innovation

Schumpeter in the wake of the 20th Century described innovation as product, process, and organizational changes that do not necessarily emanate from new scientific discoveries. The inventive part of innovation is based on the human factor such as people's knowledge, skills, and experience making it an indispensable element of the process. Innovation involves creating and implementing fresh or better products, processes, methodologies, and other activities geared towards improving a firm's competitiveness (Forsman, 2010).

Zemplinerova (2010) asserts innovation correspondingly emanates from the inventiveness of human resources and it is of importance to follow suit those large organizations which set the innovative pace and direction. Skarzynski and Gibson (2008) emphasize one part of innovation involves the initiation of concepts while the other implements and markets. Schumpeter, the father of innovation, emphasized that for innovation to occur in an organizational domain, a blend of materials and strengths must be present. Schumpeter also expounded on discoveries revealing entrepreneurs' participation as very important in maintaining the cycle of economic development.

In support of Schumpeter's ideas, Nelson and Winter (1982) incorporated factors that were considered essential for innovation such as procedures, capabilities, and knowledge. Nelson and Rosenberg (1993) posit that innovation is the procedure through which firms implement new products and manufacturing processes. The authors argue that innovation is the introduction of a new technology resulting in economic and financial growth in an organization. A firm is considered to be innovative if it continuously develops new products using fresh organizational methods (Pelegrin & Antunes, 2013).

According to Finep (2004), firm innovation focuses on maximization of profit and achievement of a competitive advantage that is more than those of competitors. The innovative firm's main goal is to become a leader in its segment, setting the pace for competitors to follow. Innovation is a method of transformation in the activities of the organization, aimed at creating competitive advantages (Paiva et al., 2008). According to Giget (1997), innovation has become more crucial for business competitiveness.

Product innovation is the improvement and application of fresh or greatly enhanced products. It embraces the fabrication of innovative products, altering their existing design and exploitation of changed manufacturing components (Kirill, 2018). Process innovation is an approach to doing jobs differently in an enhanced way to increase efficiency and effectiveness (Davenport, 1993). Fitfield (2000) argues to be successful, process innovation requires a conducive environment, the building of capacity and ensuring customers' wants directs the development.

The improvement and application of fresh or greatly enhanced marketing systems is referred to as marketing innovation. Marketing innovation calls for the identification of prospective markets and determining how best they should be served (Swaminathan & Mitchell, 1996). Organizational innovation searches for new business models, management techniques, strategies, and structures (Hamel, 2006). The formation of a new or improved organizational culture with better business practices, workplace arrangements, and improved external and internal relationships is referred to as organization innovation. This type of innovation is realized through efficiency and effectiveness of administrative efforts, better remuneration, and relations with employees.

Superior innovativeness of a firm occurs when it maximizes all the dimensions of innovation activity (Zahra & George, 2002). Carayannis (2008) offered a 3P innovation measurement construct including Posture, Propensity, and Performance. Some scholars have measured firm innovation in terms of input indicators such as intellectual, human, and technological capital (Hagedorn & Cloodt, 2003). Yet others have utilized indicators such as the number of patents, new products, and sales percentage (Baruk, 1997; Michalisin, 2001). Centered on the early research work, the present study measured firm innovation in relation to product, process, marketing techniques, and organizational practices.

1.1.4 Competitive Advantage

A nation's competitiveness is significantly dependent on having competitive firms (Chikan, 2008). This study is focused on examining competitive advantage at company level in construction companies' SCs in NCC, Kenya. The concept of competitive advantage could be viewed as an outcome (Sachitra, 2017). The important competitive advantages are determined by internal and external success factors of a firm (Wang et al., 2010). A company achieves competitive advantage when it is capable of providing similar gains to consumers as rivals but at lesser cost, or those which surpass rival commodities.

Porter (1985) posits CA as a key determinant of superior performance which arises from either Monopoly, Ricardian, or Schumpeterian rents. Monopoly rents are attained from protected markets devoid of competition whereas Ricardian rents accrue through using firm-specific idiosyncratic, intangible resources. Schumpeterian rents are obtainable from dynamic capabilities of modernizing the benefits over some time through innovation (Peteraf, 1993; Powell, 2001).

Barney (1997) revealed four parameters for a company's strong resources which create a competitive advantage as including; valuable, rare, not easily imitable, and difficult to substitute. Competitive advantage (CA) was well described by Christensen (2010) as the worth which enthuses clients to acquire a company's commodities, and creates imitation hurdles. A company experiences competitive advantage when its products are perceived by customers to be better than rivals' (Hosseini & Moghaddam, 2014). Competitive advantage is realized by a firm possessing the capability of creating a higher product or process value that exceeds its production costs and impossible to be concurrently attained by industry competitors (Porter, 1989; Barney, 1991). Companies that possess dominance in terms of innovation, efficiency, customer responsiveness, and quality are capable of realizing competitive advantage (Hill & Jones, 2002).

Competitive advantage denotes the bundle of competencies which empower companies to exhibit superior performance compared to their opponents (Bobillo et al., 2010). Organizations yearning to attain CA must fulfill the customer needs and realize a strategic fit. The application of a suitable competitive strategy depends on the size of the targeted market which could be broad or narrow. The customers on the other hand expect lower costs or product differentiation. The very essence of business is to create competitive advantage that comes at a low cost of production or market differentiation (Hines, 1996). Hence a non-competitive supply chain that incapable of fulfilling customers' wants loses its stake in the marketplace to the more robust ones. It is necessary for firms at different locations along the SC to design diverse functional strategies supporting the spectrum (Chopra & Meindl, 2010).

Competitive advantage is that benefit achieved by ensuring configuration between SCS and competitive strategy as well as providing greater value to customers through lower cost or benefits and service that validates higher prices. The SC is considered part of a company's CA due the fact that companies cannot function in isolation. Companies in an SC influence customers' choices, and behavior in a manner that improve their financial performance vide consumer fulfilment thereby realizing CA. No company can isolate itself and work independently from its SC because every organization works in teams such that if any part of the chain is weak then the whole business model becomes weak. Porter (1995) posits that the firm's choice of competitive advantage and scope determines its relative position within the industry. The scholar further explains that the competitive scope differentiates between those firms targeting broad and the ones focusing on narrow industry segments.

Companies targeting a wide marketplace where customers' expectation is for distinctive products should utilize a differentiation strategy which entails offering unique products throughout the industry. However, companies that adopt a focus strategy compete in dedicated market segments with narrow scope. Choice of appropriate management priorities in the supply chain must therefore be pursued as they are considered a huge success factor for improving performance and increasing competitiveness (Greis & Kasarda, 1998). The scholars posit that the changing priorities provide companies with competitive advantage in the marketplace. The measurements of CA are classified as cost, product, and service oriented (IsmailAl et al., 2010).

The operationalization of competitive advantage could be done via price, quality, delivery dependability, and exploitation of market opportunities (Newbert, 2008; Sigalas et al., 2013). According to Vinayan et al. (2012) and Sidik (2012), competitive advantage is examined by determining superiority in SCM, commodity differentiation, novelty, receptiveness, and price. The dominant CA measurements are commodity price and features (D' Souza and Williams, 2000). Holweg (2005) postulates that timeliness in meeting consumers' orders acceptable as basis for evaluating competitive advantage.

1.1.5 Construction Companies in Kenya

Kenya has a well-developed construction industry which rose to be among the top-performing sectors coupled with financial services, transport, and communication. The contribution of Kenya's construction industry toward Gross Domestic Product (GDP) has been immense. The building and construction sector thrived in 2015 which contributed 7 percent to GDP. Prospects for investing in Nairobi City County, Kenya exist in transport, slum up-gradation, and manufacture of building commodities among others. The construction industry has a high potential of propelling Kenya toward becoming Africa's industrial hub, creating employment, and providing the required stimulus for growth.

In Nairobi City County, contractors are the major players in construction projects ranging from persons who offer their labor to capital intensive ones worth millions of US dollars (KNBS, 2017). Design and build sub-contracting is the commonest form of building contracts employed in Nairobi City County's construction industry. Subcontracting helps in providing skilled labor, and reducing overhead costs. Most construction projects subcontract up to 90 percent of the work to subcontractors.

In Nairobi City County, contractors are controlled by the National Construction Authority (NCA), and Engineers Registration Board among others. The construction businesses are majorly comprised of small and medium enterprise contractors accounting for 79 percent of the total players distributed in the following categories: NCA5, 11.0 percent; NCA6, 22.0 percent; NCA7, 31.0 percent; and NCA8, 15 percent. Large establishment construction companies (contractors) account for 21.0 per cent spread as follows: NCA4, 13.0 per cent; NCA3, 4.0%; NCA2, 2.0 %; and NCA1, 3.0 % respectively. In terms of distribution by county in Kenya, Nairobi City County accounts for 23 percent of registered contractors in category NCA1-8 (NCA, 2018). The construction companies' SCs in Nairobi City County consist of myriad networks of contractors, architects, engineers, quantity surveyors, environment experts, clients, independent project managers, material manufacturers and suppliers, financial institutions, and property developers (customers) as well as property managers.

The survival and success of these businesses are very crucial for Kenya's economic development. Around 55% of the contractors in the construction industry are reliant on leasing or hiring equipment because do not own them. The construction companies are required to use heavy equipment and therefore require a high initial capital outlay to purchase own or lease the equipment. The majority of the contractors in this sector, approximately 80% depend on credit financing facilities from banks and other financial institutions. The availability of most of the construction materials locally is one of the beneficial factors to these contractors.

1.2 Research Problem

Attaining and sustaining competitive advantages has been at the heart of strategic management scholars. 21st-century businesses face complex, turbulent and competitive environments arising from globalization, shifts in demand, regulatory constraints, and constantly evolving technologies as well as practices (Fiksel, Goodman & Hecht, 2014). It is necessary for businesses to react in the constantly altering business environment to achieve competitive advantages. Business reengineering may be necessary for their supply chains for leanness and agility to achieve the desired levels of leagility (Mason-Jones, Naylor & Towill, 2000). Successful strategic partnerships are vital to enhancing resources and positional advantages through value creation as well as determination of cost and differentiation drivers (Wu & Barnes, 2010). Innovation is necessary for firms to sustain competitiveness even in the wake of growing worldwide pressure from competitors, short product lifespans, and imitation (Hamid & Tasmin, 2013).

World wide, companies are unceasingly revising their attractiveness because of the quickly adjusting business arena. It is vital for companies to undertake an evaluation of commodities' cost, gather and explore marketplace statistics to increase awareness on purchasers' desires, project as well as accomplish CA in their operative undertakings (Afonina, 2015). Possessing competitive advantage is an important challenge for all companies because it determines their growth. According to Wang (2014), competitive advantage is realized if the organization implements approaches which assist it to gain superiority over rivals. It is essential for companies to strive to retain superiority in invention, proficiency, consumer reaction, and product excellence to realize extensive competitiveness (Hill & Jones, 2002).

Kenya's construction industry is experiencing a boom (Competition Authority of Kenya, 2017). As a result, there was rapid growth reflected in companies involved in production of indigenous commodities such as cement, steel, paint, roofing sheets, and tiles (KAM, 2016). The contribution of Kenya's construction industry toward Gross Domestic Product (GDP) has been immense. Construction industry has a high potential of propelling Kenya toward becoming Africa's industrial hub and provides formal employment and the much-needed inducement for the agricultural sector's growth.

However, the performance of building businesses in NCC is dismal. With time, majority of projects have great probabilities of heightened costs (Nyangilo, 2012). A great number of the projects encounter completion delays, and are deprived of quality excellence leading to buildings collapsing as well as unfulfilled clienteles (Kibuchi & Muchungu, 2012). The construction companies' SCs encounter complications such as rushed orders, elongated lead times, and unexpected shifts in specifications as well as delivery times, ending up in clientele disgruntlement. There is limited information flow and irregular availability of material orders, and production schedules in construction companies' SCs, which lead to unsatisfied customers.

Similar prior research work has concentrated on the direct association concerning LS, SP, firm innovation, and CA (Tanvir & Yoshi, 2012; Nyeadi et al., 2018; Gachengo, 2018). While other researchers have been in favor of a unification of a number of strategies (Krishnamurthy & Yauch, 2007; Denise, 2012). Yet other studies on leagile strategy are based on assessing its applicability, and developing and proposing frameworks for evaluating the operational activities in the SCs (Rehimnia & Moghadisian, 2010; Rahimnia, Moghadasian & Castka, 2009).

Arasa et al. (2016) investigated the relations concerning supply chain strategies and CA in seed manufacturing companies in NCC, exposing a conceptual gap. Their study established a positive correlation. However, the current investigation sought to seal the gap by evaluating the effect of SP and firm innovation on the association concerning LS and CA in construction companies' SCs in NCC. In 2017, Watiri and Kihara evaluated the impact of strategic supplier partnership and customer relationship on CA in East African Portland Company Ltd, Kenya adopting descriptive research design, Yemane's formula (2007) for determining the sample size, and SPSS version 21 to analyze data, exposing a conceptual gap. The findings revealed both strategic supplier partnership and customer relationships influenced CA. However, it is of interest to study strategic partnership involving firm innovation and leagile strategy to unravel their probable joint impact on competitive advantage.

Durmuş-Özdemir et al. (2017) examined the competitive position of an international joint venture operating a luxury destination in the Antalya region, Turkey, and who formed strategic alliances. The scholars utilized a case study methodology and in-depth discussions involving the general manager and nine others. In addition, semi-structured interviews were conducted with information technology, quality, food and beverage, marketing, human resources, and general managers who had active roles in the strategic alliance process at the resort hotel. The study was based on RBV as the anchoring theory. Outcomes showed establishment of international joint ventures leads to attainment of competitive advantage in the Turkish hospitality industry. Their research unearthed conceptual gaps worth sealing.

The research utilized strategic alliances as the IV as well as RBV Theory which were different from the current investigation which employed strategic partnership as the MV in the association concerning LS and CA. Kariuki and Nafula (2020) analyzed innovative strategies'impact on performance of cement production companies in Athi River Zone discovering a positive and significant association. Yet, conducting further studies on the effect of SP, and FI on the association concerning leagile strategy and CA could reveal different outcomes and fill the conceptual gap exposed.

Khouroh, Abdalla, and Handayani (2019) examined the mediating role of strategic alliance on the correlation concerning environmental dynamism and sustainable CA among 130 SMEs in Indonesian Creative Industries. Outcomes uncovered that environmental dynamism did not greatly affect sustainable competitive advantage. Further outcomes showed that strategic alliance has a mediating role in the correlation concerning environmental dynamism and sustainable CA. These findings determined that strategic alliances support SMEs to build a well-maintained environment and sustainable competitive advantage. The investigation employed a survey approach in gathering information vide questionnaires.

It utilized a seven-point Likert scale to measure the constructs different from the current investigation which used a Five-point Likert Type scale for constructs measurement. Data were analyzed using Smart Partial Least Squares (PLS) approach. Their study exposed methodological gaps which the current investigation sought to seal. Although the PLS approach is useful, it is known to have major disadvantages. The present study exploited a different data analysis software, SPSS version 22 revealing methodological gaps.

The current study utilized a cross-sectional survey to gather information vide questionnaires from NCA (1-8) registered construction companies, KAM members (2018), and KPDA members (2019) in Nairobi City County. It also employed disproportionate stratified and simple random sampling procedure. Cross-sectional surveys are known to properly describe the characteristics of the population, enabling reliability and generalization of findings (Owens, 2007). Furthermore, the present study assessed the effect of SP, and FI on the association concerning leagile strategy and CA.

Franco (2011) investigated the success factors of strategic alliances in Portuguese firms confirming they are; a good relationship with partners, mutual trust, a minimum commitment, clear objectives, and strategy. That study employed a descriptive research approach and convenience sampling procedure hence exposing methodological gaps. Convenience sampling cannot be statistically useful in making generalizations. The current study utilized a different methodology which is disproportionate stratified and simple random sampling techniques, thereby sealing the exposed methodological gaps.

Rahimnia and Moghadisian (2010) did a case study of a specialized health institution in Iran to determine the applicability of leagile strategy revealing the concept of leagility is applicable in hospitals. While case studies are useful, they are a proposition upon which other studies can be conducted and the results cannot be generalized. The present exploration exploited a cross-sectional survey to obtain information. An investigation carried out by Pono et al. in the year 2020 concentrated on unearthing the effect of SCS on CA and company performance in Indonesian 210 SME industries using descriptive statistics and Structural Equation Modeling (SEM) for information processing.

Slovin formulation was employed in arriving at the size of the sample and procedure of purposive sampling technique exploited. Information had been collected vide descriptive methodology using observation, questionnaires, interviews, and documentation. A Five-point type Likert scale was utilized and data was processed via SEM. Outcomes showed that SCS has important impact on CA as well as company performance. The findings showed that SCS has important impact on CA as well as company performance. Further results indicated competitive advantage significantly influenced company performance. The investigation's IV was supply chain strategy evaluated via information sharing, integration, agility, and adaptability different from the current investigation. Although the dependent variable was competitive advantage, its measurement factors of cost, quality, flexibility, and product innovation were dissimilar from the present study. This research explored the association concerning LS and SP on CA by utilizing descriptive statistics and linear regression models as methods of analysis. Formula for sample size and sampling procedure for the two studies were equally dissimilar.

Data collection and analysis methodologies were different from the present investigation which utilized questionnaires and linear regression respectively. Previous studies on the direct association concerning LS, SP, firm innovation, and CA were based on different contexts revealing contextual gaps. Tanvir and Yoshi (2012) surveyed the apparel industry in Bangladesh, India to unravel the effect leagile manufacturing system on industrial up-gradation revealing a positive influence. The present investigation was carried out in the construction sector in NCC offering a diverse context. Atiang' and Nafula (2020) assessed the effect of competitive strategies on the firm performance of the Textile Industry in NCC unearthing they were positively and significantly correlated.

Pono et al. (2020) examined the outcome of SCS on CA, and company performance in Indonesia's 210 SME industries. Yet, conducting this study assessed the effect of LS, SP, and firm innovation on CA in construction companies' SCs, presenting a different context, could reveal dissimilar conclusions. In summary, the reviewed related studies presented wide knowledge gaps which were: These studies had utilized varied, and dissimilar methodologies; The investigations were conducted in economies and sectors different from the present research. Concerning the association involving LS and CA, SP and firm innovation's impact in the building sector was yet to be effectively investigated; and No known study had been done concerning the joint effect of LS, SP and firm innovation on CA. The current study endeavored to seal the knowledge gaps by: Adding new empirical evidence on association concerning LS and CA by testing the moderating and intervening influences of strategic partnership and firm innovation respectively; Extending existing knowledge on LS, SP and firm innovation's impact on CA in the context of this research; and Extending existing knowledge on research methodology by employing cross-sectional survey strategy, disproportionate stratified and simple random sampling technique, linear regression models as well as version 22 of SPSS for information processing.

It was therefore against this background that the current research was done in the search for the answer to this question: What influence does leagile strategy; strategic partnership and firm innovation have on CA in construction companies' SCs in NCC, Kenya? It was expected to help construction companies recognize, understand, and apply strategies with capabilities of enhancing efficiency, competitiveness, and survival.

1.3 Research Objectives

The main objective of this study is to assess the influence of strategic partnership and firm innovation on the relationship between leagile strategy and competitive advantage in construction companies' supply chains in Nairobi City County.

The specific objectives include;

i. To determine the influence of leagile strategy on competitive advantage in construction companies' supply chains in Nairobi City County.
ii. To assess the moderating influence of strategic partnership on the relationship between leagile strategy and competitive advantage in construction companies' supply chains in Nairobi City County.
iii. To explore the intervening influence of firm innovation on the relationship between leagile strategy and competitive advantage in construction companies' supply chains in Nairobi City County.
iv. To determine the joint influence of leagile strategy, strategic partnership and firm innovation on competitive advantage in construction companies' supply chains in Nairobi City County.

1.4 Value of the Study

The investigation adds to existing theory and literature through expanding the understanding of scholars, policy makers, government, and industry managers on the joint effect of LS, SP, and firm innovation on CA in construction companies' SCs in NCC. This study adds value and builds the Theory of DC (Teece et al., 2008), Networks Theory (Anderson et al., 1994; Håakanson & Snehota 1989; Snehota 1990), and Institutional Theory (Meyer & Rowan, 1977) in certifying or invalidating the propositions by the proponents in enlightening the crucial constructs of the investigation. This study's verdicts motivate new researchers involved especially regarding capacity survey on concepts of LS, SP, firm innovation, and CA in construction companies' SCs NCC.

The study findings are informative and provide reference materials for new researchers, scholars, and practitioners on additional empirical information in the field of strategy and management of the construction companies' supply chains. The scholars are assisted in explaining the association concerning LS, SP, firm innovation, and CA in the Kenyan context. The research gaps have been filled especially in assessing elements influencing the attainment of CA in construction companies' SCs in NCC. Strategic organizations in the construction industry such as NCA, KPDA, and KAM, find this study useful in developing policy guidelines, regulations, and approaches to reform the businesses. In addition, the study is useful to stakeholders in providing appropriate solutions to some of the sector's myriad problems, thus guaranteeing management efficiency and achievement of competitive advantage.

The findings and recommendations are useful in providing guidance and understanding to top management and line managers regarding the adoption of a blend of strategies that enhances competitiveness in the wake of a tumultuous global business environment. Customers in the industry benefits when they experience added value from the improved service delivery, quality products, and overall efficient management in the construction supply chains. The government of Kenya treasures the implementation of these findings as beneficial in enhancing infrastructural development, leading to industry's GDP growth. This study also contributes to the realization of Kenya's vision 2030 by increasing the generation, utilization, and commercialization of research and development results in target sectors such as building as well as in achieving the government's objective of affordable housing for all.

The study provides value-added in the construction industry because the information assists in accumulating a credible database regarding the correlation concerning LS and CA which is, in turn, beneficial for purposes of efficient allocation and management of available resources. This chapter introduced the concepts of LS, SP, firm innovation, and CA which were explained in detail as the fundamental constructs of of this investigation. Further, the impetus of the study was clarified and an analysis of the construction industry in Nairobi City County was duly provided, pointing out its contribution to the economy.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This part introduces the Dynamic Capabilities (DC), Networks, and Institutional theories anchoring this study. The DC approach is essential in helping the researcher to understand the dynamic environment in which entities function. The dynamic capabilities theory explains how the concepts of leagile strategy, strategic partnership, and firm innovation helps in creating competitive advantage in companies in a speedily changing business environment.

Key dynamic capabilities, organizational resources, competencies, which are sources of competitive advantages as well as their importance are identified. Network theory informs on the complex relationships designed amongst partners in the supply chain. Networks are of extreme benefit to companies linked via the resources as well as activities in the system. The key benefits of network theory which leads to creation of CA in the SC have been delivered.

Institutional theory has been explored further to show the source of innovative change in organizations. Equally discussed in this chapter is the relationship of study variables (LS, SP, FI and CA). The study variables have been empirically reviewed, revealing the extant gaps. A conceptual model explaining relationships amongst the study variables, and hypotheses are derived.

2.2 Theoretical Foundation

The study's underpinning theory is dynamic capabilities approach, because the concept forms the main standard for the justifications for competitive advantages. The theory of DC emphasizes the way high-ranking managers modify prevailing prototypes and standards to adjust to changes in the environment. Network theory explains the cooperation existing amongst competitive firms with other entities like suppliers, producers, and customers throughout their SCs. Network theory has been used in management research to understand innovation (Obstfeld, 2005) and creativity (Burt, 2004) among other organizational issues. A key insight of institutional theory is imitation whereby organizations look to peers to signal them to appropriate behavior instead of firms boosting their own internal management efficiency (Scott, 2008). Institutions start, become institutionalized, and then persevere unquestioned despite being inefficient.

2.2.1 Dynamic Capability Theory

Dynamic capabilities theory mainly addressed shortfalls of the RBV, which was mainly concerned with tangible assets, ignoring the intangible ones. The DC concept draws its theoretical basis on RBV (Wernerfelt, 1984) and market positioning (Porter, 1996). The DC theory endeavored to disentangle the multifaceted difficulty of attaining sustainable CA in the firm's volatile arena (Eisenhardt & Martin, 2000). DC refers to processes that facilitate businesses to reconfigure its plan as well as resources in a tumultuous environment to achieve sustainable CA and superior performance. The fundamental postulation of DC theory is that firms with ability to transform assets and competencies to tackle prospects and shifting scenarios are capable of creating and sustaining competitive advantages (Teece, 2012).

Six abilities have been acknowledged as specifically relevant to a firm in the utilization of DC: managers' central role in developing dynamic capabilities, marketing competency as a durable source of competitive advantages, R & D, technological capacity, acquisition of knowledge, and human resources capability. Managers' capabilities are specifically vital in transforming the firm's asset range (Ambrosini & Bowman, 2009). Marketing capability supports companies in tackling target marketplaces, addressing shifting business scenarios and creating competitive advantage (Bruni & Veronica, 2009; Kor & Mahoney, 2005). Technological capability is of special importance to firms in the IT industry. It is seamlessly interrelated to research and development as they together are considered fundamental to firms in navigating through the swiftly changing environment and breeding innovation potential.

Firms regard innovative capacity as the most valuable (Verloop, 2004; Birchall & Tovstiga, 2005). Human resources proficiency has been acknowledged as a vital source of CA (Barney & Clark, 2007). Keeping up with the continuous adaptation to survive becomes even more challenging for firms. Teece (2007) immensely influenced the theory of dynamic capability when he explained micro-foundations, the analytical perspective of detecting, grabbing, and transforming competencies. Seizing capability sets in by selecting appropriate technology and recognizing the target customers. Reconfiguration capability recombines and reconfigures the firm's asset range. Dynamic capabilities include the intelligent capacity of seizing fresh environmental opportunities, reconfiguring, and protecting information as well as corresponding possessions to attain permanent CA (Augier & Teece, 2009). Firms that are highly dedicated to using their DC become more prosperous in achieving competitive advantage.

They argued these dynamic capabilities aid organizational units to spread, adjust and reconfigure current operating activities into fresh ones that match the environment better. Saebi (2011) states that under unpredictable market conditions, resources endowed to companies are no longer sufficient to explain heterogeneity in a company's performance. The author further contends that the DC are heterogeneously spread among companies and causes CA. Duysters et al. (2011), posit DC theory lends itself to strategic relationships and managerial capabilities specific to a single company.

Strategic alliance management competencies are specific types of dynamic capabilities (Heimericks & Schreiner, 2010). DC theory proposed the key factors for business success as sustenance of incentives, strategic alignment, ownership of tangible assets, cost controls, quality assurance, and optimization of inventories as essential but insufficient in sustaining superior performance under fluctuating environment (Helfat et al., & Teece 2007). The scholars high-pointed that DC is centered on assets critical for survival of the company. Accumulation of assets and competencies is of great significance for companies in addressing the external environmental challenges culminating in attainment of CA.

The opponents of DC Theory maintain that although beneficial to businesses, does not have a strong appreciation of the antecedents and consequences of its operationalization (Barreto, 2010; Prieto et al., 2009). Therefore, the lack of distinctive models for measuring capabilities and how competencies influence the entity's outcome is a real problem and setback to the DC theory (Zott, 2003). Zahra et al (2006) leveled intense criticisms against the theory particularly on the difficulties of understanding its nature and outcome evaluation. Zollo and Winter (2002) disapproved of the DC theory for being repetitive.

Further collective efforts from researchers are still required to improve the DC theory in the areas of criticism (Wang & Ahmed, 2007). Leagile strategy, strategic partnership, and firm innovation practices include some of the dynamic capabilities companies need to be adaptive to the fast shifting business environments. The practices such as strategic planning, environmental scanning, mobilization and transformation of resources, integration, learning quickly, building of strategic assets, responsiveness, innovativeness, flexibility, product quality improvements, and negotiations are capabilities needed by companies to realize and prolong CA. Therefore, DC theory informs study objective number one through to four.

2.2.2 Network Theory

Network theory was introduced in the 1970s, developing from centering on dual relationships towards multiple relations involving many different members, embracing a network approach throughout the SC (Mills et al., 2004). New businesses avoided growth based on vertical integration but instead focused on establishing coalitions with independent firms (Snow & Miles, 1992). Later in the 1980s, researchers moved towards focusing their attention on the examination of prolonged relations with myriad associates. Wellenbrock (2013) posits there are four fundamental assumptions in network theory. The first one indicates there is no freedom of decision. The actions and processes of companies in a network with other firms are assumed to be fully understood (Håkansson & Ford, 2002). Different factors are recognized is of importance in configuring a network: selecting cooperative associates, creation of a competitive market position and mechanism for monitoring competitors as well as sound interfirm relationship management.

Companies capable of attracting other firms into the network, where members have the same objectives as well as a stable operating environment, are entrenched in such relationships and thus become part of a network. Hence, sound management and the ability to attract companies into starting strategic partnerships becomes essential to a network system. Through the strategic relationships formed, companies find it easier to access and mobilize resources as well as activities (Harland, 1996). The second assumption of network theory is that the centrality of a company in the linkage is of necessity. A strong central locus in the network necessitates having an effective internal collaborative capability as a starting point.

Therefore, firms that have achieved centrality in the network are considered to possess strong collaborative strength internally. They are ably capable of establishing valuable central positioning in the network thus ensuring the creation of stronger relationships with partners in the system (Miles et al., 2006). Ability to achieve centrality of the network enhances delivery speed, quality, costs, and SC sensitivity leading to the attainment of CA (Hult et al., 2006). The third assumption is that by achieving centrality in the network, a company within that net strives to utilize its resources better to enhance its performance (Håkansson & Snehota, 1989). Occupying a dominant location in the linkage, a company's knowledge of accessible assets and competencies is enhanced. Furthermore, Bernardes and Zsidisin (2008) posit that access to resources when the need arises is vital for the prosperity of firms in the network. The fourth assumption is that there is information sharing among the companies in the network. Ordinarily, in the supply chain, information such as product costs and sources of the key assets is not mutually communicated amongst firms for fear of imitation and usage to gain competitors (Ballou et al., 2000).

On the contrary, there is still a supposition that information sharing exists amongst companies on the net thus offering them learning opportunities. Relationships among companies in the network are based on trust, adding value, and simplifying decision-making when choosing a SCS (Zaheer et al., 2000). According to Oliver (1990), networks theory explains reciprocity in cooperative relationships. The constant interfacing between partners has become vital for developing new resources. Network theory is useful in understanding the formation of strategic relationships and its associated usefulness in the scheduling of demand as well as simplifying the allocation of resources.

Critics of the theory argue that in the SC, networks involve a large number of decision-makers and criteria forcing managers to be torn between serving partners' demands and attaining private goals (Nagurney, Cruz, Dong & Zhang, 2005). Network theory is not beneficial to companies in explaining the timing of making buy or make decisions (Shook et al., 2009). The network has many decision-makers leading to failure in coordination and achievement (Salancik, 1995). Moreover, the interdependencies arrived at through partnerships are likely to cause problems for firms executing their own goals and market strategy (Wilkinson & Young, 2002). Strategic associations among companies may take the form of capital, technological and/or management partnerships. These relationships are often based on trust, and dependence to substitute price motivated confrontational ties. The network theory attempts to deal with essential issues of company characteristics such as formation of special relations, negotiations, and continuous communication which culminate in merchandise customization as well as the fulfilment of exceptional clients' desires (Johanson & Mattson, 1987).

Despite the criticisms, the network theory helps in appreciating the dynamics of relationships amongst firms through building mutual trust which takes place through the exchange of processes and adoption of common procedures as well as systems. Strategic partnerships help companies to enhance performance while taking advantage of associations. Networks theory explains the linkages amongst various SC associates as well as the formation of strategic partnerships. The theory informs the study objective number two; the impact of SP on the association concerning LS and CA in construction companies' SCs in NCC.

2.2.3 Institutional Theory

Introduced in the 1970s, institutional theory explains organization founding and change (Meyer & Rowan, 1977). Ultimately these innovations become legal mandates such that the inability of their implementation by organizations is tantamount to being unreasonable and neglectful. Thus, the innovative structures end up being adopted by new and existing organizations even if they do not improve efficiency (Tolbert et al., 2011). Institutional theory is based on two assumptions. The first supposition emanates from efforts to maximize production efficiency and is concerned with the components of managerial structure such as job description, procedures, and composition. Supposition number two dwells on effectiveness of organizational configurations which depends on the size and dominant technology (Schoonhoven, 1981). These institutional isomorphic pressures emanating from most important foreign and local peers' environments fundamentally impact competitive strategy as well as human resources practices in organizations more than market forces (Zaheer, 1995; Marquis & Tilcsik, 2016).

The institutional theory addresses how institutions condition their actors' beliefs and actions within, the way entrepreneurial players create and transform them, and the forms of institutionalization which meet with resistance among others (Meyer, 2008). However, there are substantial differences that exist amongst scholars on the key concepts and assumptions of institutional theory, especially on how norms and expectations affect organizations. The term institution has been defined by different scholars: Meyer and Rowan (1977) posit it is a specific organizational practice, Selznick (1949) refers to it as a whole organization while Friedland and Alford (1991) advance it means broad systems involving the norms and values characterizing a particular sector in society.

There is conflict in the meaning in terms of usage of the word institution (Alvesson & Spicer, 2018; Lawrence, Suddaby & Leca, 2009). Institutional theory has been criticized for shifting away from organizations by explaining about structure and practices based on functional needs different from explanations by contingency propositions. The structures and practices are embraced by organizations for legitimacy, not productivity (Greenwood et al., 2014; Willmott, 2015). The disapproval is that it provides a minimal allowance for the individual agency (DiMaggio, 1988). They just simply adopt the ideas prescribed by organizations perceived to be more successful (Scott, 1995). The institutional theory ignores the influence of power in institutions yet change essentially involves the transformation of power. Institutional theory help understand product, process, marketing and organizational innovations among companies as well as inform on the association concerning FI and CA. Innovation correspondingly emanates from the inventiveness of human resources and it is of importance to follow suit those large organizations which set the innovative pace and direction (Zemplinerova, 2010).

Companies acquire the innovative structures, and develop fresh products, processes, marketing techniques and other organization methods geared towards improving firm competitiveness (Forsman, 2010). Out of the three theories discussed, the dynamic capabilities theory emanated as dominant and best informs this research study. The DC theory recognizes the core competencies companies use in transforming short-term CA to prolonged gains (Teece et al., 1997). The theory informs the overall goal of this investigation.

2.3 Empirical Studies

Leagile strategy is an approach enlightening exactly how a company attains competitive advantage via competences such as low cost, rapid rejoinder as well as elasticity (Ismail & Sharifi, 2006). Hair et al. (2010) posits that companies yearning to boost attractiveness, and performance need to implement leagilie strategy to gain efficiency as well innovativeness. Quick reaction, realistic targets, and capacity to alter the manufacturing capacity, and mix are the logistical objectives of leagile strategy (Christiansen et al., 2007). The establishment of SP in the SCs is principally propelled by the desire for prospective attainment of competitive advantage (Mohr & Spekman, 1994).

Innovative companies commercialize research and development creating new and nonexistent value which cannot be imitated by competitors. Innovation in a company equally promotes productivity leading to efficient utilization of resources and culminating in the achievement of competitive advantage (Knight, 2007). Molina-Morales et al. (2011) argue the innovative culture is known for temporary organization structure, use of mobile offices, specialists, and Adhoc teams as well as speedy response to new opportunities, leading to increased inventive potential.

Competitive advantage necessitates exploitation of valuable and effective approaches inimitable by rivals (Gupta, 2004). Companies derives CA from the employment of appropriate approach, configuration, personnel, technical know-how, and innovation (Wang, 2010). Achievement of CA by companies in the SC necessitates that they concentrate on ensuring timeliness, sensitivity, and rapid rejoinder to adjustments in the continuously shifting worldwide arena.

2.3.1 Leagile Strategy and Competitive Advantage

Zimmerman et al., (2020) conducted an empirical analysis where they explored the application of lean, agile, leagile, and traditional SCS concerning commodity features, environmental ambiguity, and performance in innovation. The study's sample size was 329 and information was processed vide cluster analysis and one-way ANOVA were utilized for data processing. The outcome showed that companies which adopted leagile strategy presented the highest performance, compared to the other three supply chain strategies. While the study concentrated on determining adoption of four SC strategies, the present exploration explored the impact of LS on CA where information was processed vide computer software SPSS Version 22, and a direct effect model of linear regression as well as ANOVA.

Tariq et al. (2022) explored the correlation concerning SC strategies, competitive advantage, and sustainable performance of companies in hospitality and allied industry of Pakistan. Data was analyzed vide the smartPLS4 SEM bootstrapping. It was discovered that when leagile strategy is amalgamated with supplier associations, collaboration planning, forecasting, and replenishment, they generate CA and boost performance of organizations.

Whereas the study combined leagile strategy with supplier associations, collaboration, planning, forecasting, and replenishment to determine their effect on CA, and performance, the present research was dissimilar. The present investigation did not examine leagile strategy's impact on performance. It explored the effect of LS on CA using SPPS version 22 to analyze information gathered from construction companies' supply chains. Rehimnia, and Moghadisian (2010) conducted a case study in Iran on the applicability of SC leagility in professional services confirming its application in specialized healthcare facilities. While that study was on SC leagility in hospitals in Iran, the present research endeavored to seal the gap by exploring the effect that LS has on CA via cross-sectional survey methodology in construction companies' supply chains.

Ambe (2012) conducted a study with the objective of unearthing if SCS and best practices were applied in South Africa's light vehicle manufacturing companies. The study applied a survey methodology to gather information, and the outcome showed that the SCS and best practices were embraced. The research developed a structure for evaluating SCS and best practices different from the present research. Therefore, both conceptual, and contextual gaps were exposed which this investigation endeavored to tackle. Samman (2014) developed a methodology known as the Analytical Hierarchy Process (AHP) for testing the extent to which the existing strategies could exhibit performance characteristics of lean, agile, or leagile in cloth manufacturing and fashion industries in Iraq. The scholar provided evidence that the choice of manufacturing strategies should be based upon careful analysis of characteristics that provided solutions to the business.

While the study was based on development of a testing methodology for exhibiting the characteriistics of leagile performance, the present investigation concentrated on exploring a different aim. Galankashi and Helmi (2016) assessed leagile SCS proposing a structure for evaluating the operational activities of leagile SC drivers. Whereas the study developed a framework for assessing leagility levels presenting a useful tool for scholars and practitioners, this research concerted its efforts on determining the effect of LS on CA of construction companies' supply chains. As per the study by Madhani (2019), the benefits of lean, agile, and leagile paradigms were evaluated, and a conclusion was drawn that SC traditional strategies performed worse. LS yielded superior outcomes than either lean or agile approaches.

That research further examined the benefits of lean and agile approaches suggesting three different ways of marrying lean and agile strategies as pareto curve rule, de-coupling point, base and surge demand seperation. To address this, the present research assessed the association concerning LS and CA directed on unearthing ways in which blending lean and agile approaches could lead to competitiveness of construction companies' SCs in NCC. A study by Kiswili et al. (2021) endeavored to assess effect of SC responsiveness, and waste management on the performance. A census survey was carried out of 330 organizations in Kenya and the respondents were SC managers. It was discovered that the organizations had partly effected leagile supply chain approach. To address this, the present study explored the effect of SP on the association concerning LS and CA of construction companies' SCs in NCC. It utilized cross-sectional survey as well as stratified and simple random sampling to identify the 323 construction companies surveyed.

Nagaaba (2022) did a study on the impact of leagile manufacturing involving time-based practices on factory performance among SME factories Uganda confirming a positive significant effect. While the study used factory performance as the dependent variable, and principal component analysis, and SEM to anlyze information, the current study employed competitive advantage as the predictor variable. Ryciuk and Szymczak (2021) appraised the metrics for evaluating a leagile SC, and advanced a measurement framework. They found that lean measures were tangible and focused on internal processes and products and the metrics were process-focus, cost, productivity, inventory, and delivery-based metrics specific to lean strategy. Whereas agile strategy measures are targeted at the external environment. This research concerted its efforts on examining the association concerning LS and CA. Leagile strategy can create SC fit resulting in better organizational outcomes, a view supported by Ville Hallavo (2015). This study suggests that leagile strategy positively impacts on competitive advantage.

2.3.2 Leagile Strategy, Strategic Partnership, and Competitive Advantage

Gulati (1998) summarized the reasons for the formation of strategic alliances as including; sinking transaction costs resulting from a small number of bargainers, strategic behavior requiring firms to enhance their competitive position, and a quest for organizational learning. Wangui (2019) asserts that strategic partnerships aid in concealing capability gaps, attaining the necessary assets, acquiring distribution channels, overcoming regulation barriers, pooling of resources, reducing risks, generating innovations, and realizing competitive advantages. Khan and Wisner (2019) concluded that whereas SC integration has an important impact on learning, exhibited insignificant impact on performance, and agility.

While the study explored the interrelationships amongst SC integration, learning, agility, and organizational performance in 257 publicly-owned companies in Pakistan, the present investigation addressed the issue by assessing how SP moderates the correlation concerning LS and CA amongst 260 construction companies' SCs in NCC. Furthermore, the investigation utilized structural equation modeling for testing of hypotheses whereas this investigation employed linear regression modelling and correlation analysis. Mohamed, Mokadem, and Khalaf (2022) explored the moderation of SC strategies (agile, risk-hedging, and lean) on the association concerning SC integration and performance of 112 manufacturing organizations in Egypt using survey research methodology to gather information, and linear regression model for testing the hypotheses. It investigated supply chain strategies (agile, risk-hedging, and lean) as they moderate on the association concerning SC integration and performance. Yet the current study utilized SP as the moderator in the connection between leagile strategy, and firm innovation. Meykens (2010) studied how partnerships contribute to CA and applied the RBV to Nascent Social Ventures in USA, revealing a significant relationship.

The study utilized a two-phase design where exploratory analysis and pilot study were initially done then followed by survey research. Convenience sampling was employed and results were analyzed vide statistical techniques. Though the study examined the correlation concerning partnerships, and CA, it was dissimilar from present research which applied dynamic capabilities, network, and institutional theories. Furthermore, the current study applied strategic partnership as the moderating variable, and not the independent one, utilizing disproportionate stratified random procedure to determine the sample size. Franco (2011) investigated factors determining the success of strategic alliances in Portuguese firms.

Using a descriptive research approach and convenience sampling of 109 strategic alliances, the findings revealed that a good relationship with partners, mutual trust, commitment between the parties, clear objectives, and strategy are the outstanding factors affecting the success of alliances. The study was conducted among Portuguese firms focusing on the determination of success factors of strategic alliances different from the current investigation. The investigation utilized convenience sampling technique while the present research employed a stratified random procedure to determine the sample size.

Watiri and Kihara (2017) surveyed the impact of strategic supplier partnerships, and customer relationships on CA in East African Portland Cement Company Ltd. The descriptive research design was utilized and Yemane's formula (2007) was employed to establish the sample size revealing strategic supplier partnerships, and customer relationships influenced competitive advantage. The study's independent variable was strategic supplier partnerships while this study utilized strategic partnership as moderating variable.

They focused on East African Portland Cement Company Ltd whereas the current investigation was carried out in construction companies' SCs in NCC. Sufian and Manideepa (2014) discovered that strategic supplier partnership had a mediating impact on the association concerning lean strategy, and responsiveness in the SC. However, they exposed the correlation between agility, and responsiveness was mediated partially by postponement. Cheboi et al. (2022) examined the effect of strategic alliances in terms in seven major supermarkets, and utilized strattified randomization as well as questionnaire to gather information which was analyzed vide Pearson correlation and multiple regression. They looked at the strategic alliances in terms of innovation, financing, and distribution, the current investigation considered it in the perspective of capital, technological, as well as management.

Furthermore, the study utilized strategic partnership as an independent variable, and employed case study methodology different from the present research. The present research explored the impact of SP as moderating the association concerning LS aan CA of construction companies' SCs. Oum and Zhang (2001) confirmed that strategic alliances among global airlines help increase their profitability. SP ensures reduction in transaction costs, improves competitive position, acquisition of knowledge information, and a source of growth and competitive advantages (Kale & Singh, 2009; Arrigo, 2012). Consequently, this study suggests strategic partnership may be a MV in the correlation concerning LS and CA.

2.3.3 Leagile Strategy, Firm Innovation, and Competitive Advantage

Leagile activities require information technology support for their effective implementation (Kamble et al., 2020). Responsiveness is an aspect of agility requiring a continuous investment in information technology as a support in collecting timely information. However, companies and SCs have grown in complexity requiring adequate intelligent information processing for effective responsiveness (Kharub et al., 2019). Information technology practices in a leagile supply chain lead to innovation in pursuit for responsiveness-related competitive advantages (Calatayud et al., 2019; Zhang et al., 2011). Oliveira-Dias et al. (2022) carried out a field study to evaluate the impact of technological innovation capabilities on companies' innovations, and marketing performance in 56 Technopark companies in Turkey. The study analyzed information vide IBM SPSS version 23, AMOS 23 package programs, explanatory, and confirmatory factor analysis, as well as SEM to evaluate the relationships. Marketing performance was directly influenced by learning, and marketing capabilities.

The study utilized technological capabilities as the independent variable predicting innovation and marketing performance different from the present study. This was addressed this issue by assessing the influence of firm innovation as intervening on the correlation concerning leagile strategy, and CA. Thorsten et al. (2014) asserts that innovation is progressively reflected as a source of CA in business companies. Businesses are continuously focusing on delighting their customers via provision of innovative, and qualitative products as well services. Innovative methods such as technology based solutions are used in the SC to create value to the clienteles. The scholars posit that the parties in the logistics chain should apply efficient practices to facilitate innovation.

Supply chains wishing to improve in innovation ensure increased standardization, and interoperability of information technology. Maree Storer (2013) explored the Australian beef industry to examine how industry led innovation utilization influenced performance outcomes. The research was conducted vide quantitative methodology among 412 supply chain operatives. The study revealed that supply chain relational, dynamic, synchronization and innovative capabilities positively influence performance outcomes. That investigation was based on the SC capabilities different from the current one. Lukášová (2010) suggests the result of inculcating innovative culture is loyalty to the organization associated with engaging employees in fulfilling goals and performing tasks. Soltani (2007) asserts competitive advantage is not obtainable randomly without a plan but companies should move with scientific thought and frameworks to attain it. Leaning on the company's innovative abilities influences CA.

Yadegari (2005) introduced innovation, quality, efficiency, and responsiveness to clienteles as the four aspects of CA. Innovation helps companies introduce changes to products, ideas, and markets with added value to customers (Mohammadian, 2014). The elements of product innovation comprise flexibility, new technical specifications, easy usage for existing products, reduction in production costs, and increase in quality for the existed products, all of which are geared towards increasing customer satisfaction (Gandi et al., 2011). Dowlatabadi and Saaneiyan (2015) researched to analyze innovation effectiveness on competitive advantage using the entrepreneurship approach among carpet industrialists. They found a relationship exists between marketing innovation and competitive advantage promoted by entrepreneurship.

Nyeadi et al. (2018) surveyed the impact of innovation on firm productivity of service and manufacturing firms in Ghana establishing a positive influence. The secondary data had been obtained from World Bank Enterprise Survey on Ghana in 2013. For data collection, they employed face-to-face interviews preceded by a random sampling procedure. Methodological gaps have been unearthed as the study utilized secondary data and random sampling techniques different from the current study. Nafula et al. (2017) surveyed to unravel innovation's impact on firm competitiveness in Manufacturing SMEs in Nairobi County, Kenya. Anchored on RBV, DCA, and the Theory of entrepreneurship and innovation, the investigation revealed Product, Process, Marketing, and Organizational innovation positively impacted firm competitiveness. The scholar conducted research in Manufacturing SMEs different from the current study. Innovation strategies are many but they can be summarized into four such as product/service, market, process, and organizational innovation (Adriopoulos & Dawson, 2009).

Andersson et al. (2012) argue that organization innovation strategies vary in various companies. The scholars assert that some companies are persistent innovators, others innovate intermittently, while a few do not invent. A strategy is only reflected as innovative if it results in economic viability and financial gain for the firm by enabling it to create CA. The obtained competitive position is characterized by product differentiation and value addition to clienteles (Ito et al., 2012). The current investigation suggests firm innovation has an intervening influence on competitive advantage.

2.3.4 Leagile Strategy, Strategic Partnership, Firm Innovation, and Competitive Advantage

Madueno (2016) opine that enhancing relations with associates actively affect CA. A suggestion by Saeidi et al. (2015) is that CA is boosted via the advancement of consumer fulfillment. Talaja et al. (2017) observe that a company's CA and business performance are reinforced by the use of market orientation. Chang (2011) suggests companies can increase their CA vide innovative products and processes as well as advertisements through images and media. Innovation is an essential economic driver of performance in most organizations. Many companies enter into strategic partnerships to successfully commercialize their inventions (Simonin, 1997) and gain competitive advantages (Gari, 1999). Strategic partnerships are important avenues for knowledge and experience transmission between companies. Small organizations find strategic partnerships even more important because in comparison, they have lesser innovative autonomy and lack technological collaboration (Romero & Martinez-Roman, 2012). Therefore, formation of strategic partnerships enables sharing of resources and knowledge needed by innovative projects to create competitive advantage in organizations.

Inkpen and Ross (2001) assert that SP is essential to company success as it enhances acquisition of technology. Phelps (2010) did a longitudinal study of 77 telecom companies discovering those firms which are in strategic alliances have better access to innovation and that technological networks enhance exploratory innovativeness. The scholar further found it was still unclear what conditions in alliances influence firm innovation. Miah et al. (2013) discovered apparel manufacturing industries need to apply leagile strategy to be competitive in an ever-changing marketplace.

Ling and Chen (2008) revealed that knowledge sharing and strategic partnerships with customers, suppliers and distributors improve CA in the long run. Oh and Rhee (2010) CA can be achieved by combining the capabilities of strategic alliances with suppliers thereby attaining cost leadership in Korean car industry. Innovation is the basis of efficiency, generation, and satisfaction of fresh customer needs (Rommer, 1990; Baumol, 2002; Bhide, 2011).

Various scholars have also argued that innovation transcends beyond an organization's investments in research and development (Arbix, 2006; Andreassi & Sbragia, 2002**;** Barañano, 2005). Webster (2013) also discovered that innovation leads to improvements in productivity. Utarayana et al. (2021) carried out an investigation on Agro-technology SMEs in Tabanan, Bali, Indonesia to explain the role of CA in mediating the correlation concerning SCM and company performance.

The outcome indicated that SCM has a positive and significant effect on CA and company performance. It was observed that CA had a significat positive impact on company performance. Further findings revealed CA significantly mediated the relationship between SCM and company performance. The present study utilized LS and CA as the independent, and predictor variables respectively. The relationship was mediated by strategic partnership.

2.4 Summary of Literature Review and Knowledge Gaps

The previous works appraised in the earlier sections has revealed there are conceptual, contextual, and methodological knowledge gaps which need to be filled. Conceptual gaps consist of the way variables have been conceptually related in the previous studies. Most of the concepts that have been studied previously were done under direct relationships. This study has gone further by considering both the moderating and intervening relationships amongst the conceptualized variables. Table 2.1 is organized into six columns specifying the name of the researcher, year of research, area of focus, the methodology utilized, findings, and knowledge gaps as well as how they were filled. It shows a summary of reviewed literature, knowledge gaps obtained by this researcher, and how the knowledge gaps were sealed.

Table 2.1: Summary of Literature Review and Knowledge Gaps

Researcher	Focus	Methodology	Findings	Knowledge Gaps	How Knowledge Gaps were Filled
Pono et al. (2020)	The study investigated the effect of SC strategy on CA and company performance in 210 SME industries in West Sulawesi Province, Indonesia	Slovin formula was used to determine the sample size and the purposive sampling technique was exploited. Data was collected vide descriptive methodology using observation, questionnaires, interviews, and documentation. A Five-point type Likert scale was utilized and data was analyzed using Structural Equation Modeling (SEM).	The findings showed that SC strategy had a significant effect on CA as well as company performance. Further results indicated CA significantly affected company performance.	The study's independent variable was SC strategy measured using information sharing, integration, agility, and adaptability. different from the current investigation. Although the dependent variable was CA, its measurement factors of cost, quality, flexibility, and product innovation were dissimilar from the present study. Data collection and analysis methodologies were different from the present investigation which utilized questionnaire and linear regression respectively.	The current study utilized different attributes to measure leagile srategy, and competitive advantage. Further, knowledge on research methodology was extended in the current study by employing regression models for data analysis.
Khouroh, Abdalla & Handayani (2019)	The study examined the role of strategic alliance as a mediating variable in the relationship between environmental dynamism and	A survey method was employed to collect data vide questionnaires. Questionnaires were addressed to SME owners or managers. The seven-point Likert scale was used to measure the constructs. Data were	The results revealed environmental dynamism did not have a significant relationship with a sustainable competitive advantage. Further findings unearthed	The study's dependent variable is sustainable CA different from the current study. The independent variable is environmental dynamism different from the current study.	Strategic partnership was utilized as the moderating variable. The current investigation extended knowledge on research methodology by employing a Five-point Likert Type scale in

Summary of Literature Review and Knowledge Gaps Cont'd

	sustainable CA among SMEs in creative industries in Indonesia.	analyzed using Smart Partial Least Squares (PLS) approach/software.	strategic alliance mediated the relationship between environmental dynamism and sustainable competitive advantage in the SMEs in creative industries in Indonesia.	The study was conducted in Indonesia's creative industry different from the current investigation. A seven-point Likert scale was utilized to measure the constructs different from the current investigation which used Five-point Likert Type scale. The study's data was analyzed using Smart PLS approach while the current study employed SPSS Version 22.	measuring the study variables.
Nyeadi et al. (2018)	The study surveyed the impact of innovation on firm productivity of service and manufacturing firms in Ghana.	A cross-sectional survey design of secondary data was employed. Secondary data was obtained from World Bank Enterprise Survey on Ghana in 2013. Qualitative and quantitative information was obtained from managers and owners of private firms in Ghana. Information was collected vide face-to-face interviews preceded by a random sampling procedure. Data analysis	The findings showed both product and process innovation had a positive influence on the firm productivity of Ghana's service and manufacturing firms.	The study's dependent variable is firm productivity different from the current study which utilized CA. The study utilised secondary information while primary data was collected for the current investigation.	The present research filled the gap through the application of cross-sectional survey strategy using the questionnaire to collect primary data to assess the influence of strategic partnership and firm innovation on the association concerning LS and CA.

Summary of Literature Review and Knowledge Gaps Cont'd

		was done vide regression and correlation models.			
Watiri and Kihara (2017)	The study examined the effect of strategic supplier partnerships and customer relationships on CA of Cement Manufacturing firms in Kenya with a particular focus on East African Portland Cement Company Ltd.	A descriptive research design was utilized. Yemane's formula (2007) was used to determine the sample size. Primary data was collected vide questionnaires and data were analyzed using SPSS Package version 21.	The research revealed strategic supplier partnerships influence CA in East African Portland Cement Company Ltd. Customer relationships also influenced CA at East African Portland Cement Company Ltd.	The study's independent variable is strategic supplier partnerships while in the present study it was LS and SP as the moderating variable. The study's focus was on East African Portland Cement Company Ltd whereas the current study was carried out in construction companies' SCs in NCC, Kenya. The study used Yemane's Formula (2007) in its sampling while the current research employed a disproportionate stratified random procedure to determine the sample size.	The present investigation examined the effect of SP on the association concerning LS and CA revealing lack of significant influence.
Durmuş-Özdemir et al. (2017)	The study focused on examining the competitive position of the hospitality industry in Turkey in terms of strategic alliances in an international joint venture operating a luxury	The case study method involved in-depth interviews conducted with the general manager and nine managers. Semi-structured interviews were also conducted with managers of information technology, quality, food and beverage, marketing, human resources, and	The research provided evidence that the use of international joint ventures led to competitive advantage in the Turkish hospitality industry.	The study utilized strategic alliances as the independent variable while in the current research it is used as the mediating construct between LS and CA. The study was conducted in the hospitality industry in Turkey while the	The present study employed descriptive design and cross sectional survey strategy to collect information in the construction industry in NCC, Kenya.

Summary of Literature Review and Knowledge Gaps Cont'd

	destination in the Antalya region.	general manager who played active roles in the strategic alliance process of the resort hotel.		current research was done in construction companies' SCs in NCC, Kenya.	
Nafula et al. (2017)	The study focused on establishing the effect of innovation on firm competitiveness in Manufacturing SMEs in NCC, Kenya, and was anchored on Schumpeter's theory of entrepreneurship and innovation, the theory of the innovative firm; the RBV theory, and the DC approach.	The study utilized a descriptive exploratory research design with a survey strategy. Cluster sampling was done and semi-structured questionnaires were employed to collect the data. Descriptive and inferential statistical techniques were used to analyze and interpret the data.	It was established that Product, Process, Marketing, and Organizational innovation had a positive influence on firm competitiveness. Further revelation show Study that the size of the firm size had a significant moderating effect on innovation and competitiveness re firm had a significant moderating effect on the relationship between innovation and competitiveness.	The study utilized innovation as the independent variable while the present study employed it as the intervening variable. The study was conducted in SMEs in the manufacturing sector whereas the present study was conducted in construction companies' SCs in NCC, Kenya.	The current study extended the knowledge on the relationship between firm innovation and competitive advantage by employing firm innovation differently. Firm innovation was employed as the intervening variable in the association concerning LS and CA revealing there was a significant influence.
Galankashi and Helmi (2016)	The paper assessed leagile SC strategies proposing a framework for evaluating the operational activities of leagile SCs concerning	The operational activities of the supply chain strategy were ranked using an analytic hierarchy process and then categorized using the cycle view of SC.	The study proposed operational activities of leagile SC based on its major drivers thus useful for scholars and practitioners to construct new leagile SCs or	The study's focus was on proposing a framework for evaluating the operational activities of leagile SCs concerning supply chain drivers while the current research assessed the effect of SP and FI on the	The present study added knowledge on the applicability of LS in evaluating its operational activities concerning SC drivers by further examining LS as an IV and CA as the DV using SP and FI as the

Summary of Literature Review and Knowledge Gaps Cont'd

	supply chain drivers.		assess leagility levels.	correlation concerning LS and CA.	moderating and intervening variable respectively.
Arasa, Mwaura and Ngui (2016)	The study was focused on examining the relationship between lean, agile, and leagile strategies and CA in Kenya's seed manufacturing companies located in Nairobi County.	A sample size of 20 seed companies was studied. The study applied a descriptive research methodology. Data were analyzed using correlation as well as analysis of variance (ANOVA) techniques.	It was discovered the companies utilizing either of the strategies influenced CA.	The study used the census sampling technique whereas this research employed a disproportionate stratified random procedure to determine the sample size. The study's focus was on seed manufacturing companies in NCC, Kenya while this study's research was in construction companies' SCs.	The study extended the knowledge on the association concerning LS and CA by utilizing SP as the moderating variable and FI as intervening one in the context of construction companies' supply chains.
Ambe (2012)	The focus of the study was to determine whether local manufacturers of light vehicles in South Africa employ SC best practices and strategies.	The research design employed was a combination of exploratory and descriptive research using qualitative and quantitative approaches based on a survey of light vehicle manufacturers in S.A. Descriptive statistics was utilized for the data analysis and interpretation	The study revealed that best practices were implemented to a large extent by all manufacturers. Light vehicle manufacturers utilized leagile strategy. There was in some instances a mismatch between strategies and practices in the area of product and manufacturing characteristics as well as the decision drivers of the SC.	The study focused on the light vehicle manufacturing sector in South Africa while this investigation was conducted in construction companies' supply chains in NCC, Kenya. The study focused on the employment of supply chain best practices and strategies while this study concentrated on the effect of SP and FI on the association concerning LS and CA.	The present study examined the application of LS best practices in the SCs of construction companies in NCC, Kenya to create competitive advantage.

Summary of Literature Review and Knowledge Gaps Cont'd

			The study developed a framework for determining supply best practices e with a chosen strategy that could guide SC managers in their decision-making.	The study's focus was not on CA as the dependent variable.	
Sukati (2012)	The research focused on the impact of supply chain responsiveness and supply chain integration on a firm competitive advantage in the Malaysia Manufacturing industry.	The quantitative research methodology was exploited and data was collected vide questionnaires administered to 400 managers. Convenience sampling was done.	The findings indicated supply chain integration positively impacts SC responsiveness and competitive advantage. It was further found SC responsiveness was positively associated with the CA of a firm.	The research utilized a convenience sampling technique whereas this research adopted the disproportionate stratified random procedure to determine the sample size. The study was carried out in the manufacturing industry in Malaysia while this research was done in construction companies' SCs.	The present investigation studied the effect of LS, SP, and FI on CA of construction companies' SCs in NCC, Kenya.
Tanvir and Yoshi (2012)	The study focused on the impact of leagile manufacturing system on the industrial up-gradation of firms in the apparel industry in Bangladesh.	A cross-sectional survey research design was utilized. Data was collected vide questionnaires from 180 Apparel companies in Bangladesh.	Findings revealed although all the characteristics of leagile system are not uni-directionally influencing industrial up-gradation, leagile system even if fractionally applied, positively	The study's focus was on the apparel manufacturing industry in Bangladesh, India while this study was done in construction companies' SCs.	The present investigation added new empirical evidence on the effect of LS on CA revealing there was a significant influence in construction companies' supply chains.

Summary of Literature Review and Knowledge Gaps Cont'd

Summary of Literature Review and Knowledge Gaps Cont'd

			influences industrial up-gradation.		
Franco (2011)	The study focused on identifying the determining factors in the success of strategic alliances in Portuguese firms.	A descriptive research approach was employed where primary data was collected vide questionnaires and informant interviews. A sample of convenience was obtained from 109 strategic alliances.	The findings indicated that the outstanding factors affecting an alliance's success are a good relationship with partners, mutual trust, a minimum commitment between the parties, and clear objectives and strategy.	The study focused on determining factors in the success of strategic alliances whereas this study concentrated on the effect of SP and FI on the correlation concerning LS and CA. The study was conducted on strategic alliances while the current study was conducted in construction companies' SCs. The study used convenience sampling while the current research employed a stratified random procedure to determine the sample size.	The present study investigated the association concerning LS and CA by employing SP as the moderating variable revealing no significant effect. New knowledge was also added that SP acts as an IV and significantly influence CA.
Rahimnia & Moghadisian (2010)	The case study aimed at showing how leagility can be applied in professional services, especially in hospitals.	Using a case study approach, the applicability of the concept of leagility in a specialized hospital in Iran was done. The information was gathered through in-depth, semi-structured interviews via non-standardized questions. "What" and "how" questions were mostly used. Process mapping was used to	The findings revealed the concept of leagility is applicable in hospitals. The specific condition of the patients forces the hospital to be highly agile and at the same time can benefit from lean strategies. By grouping healthcare	Their study utilized a case study approach while the current research was conducted using a survey design in construction companies' supply chains. The study focused on the applicability of LS in hospitals whereas the current research assessed the effect of SP and FI on	The current research examined the effect of LS on CA in the SC of construction companies.

Summary of Literature Review and Knowledge Gaps Cont'd

		depict the steps of the process.	services into three pipelines, it identified decoupling points for the supply chain.	the association regarding LS and CA.	
Meykens (2010)	The study focused on how partnerships lead to competitive advantage and applied the resource-based view to Nascent Social Ventures	The study utilized a two-phase design where exploratory analysis and a pilot study were initially done then followed by survey research. Convenience sampling was employed and results were analyzed vide statistical techniques.	It was revealed there exists a significant relationship between partnership diversity and the achievement of competitive advantage. Partnership diversity was also positively related to social innovation which is associated with venture development and the launching of social ventures.	The study applied a RBV as the anchoring theory while this research applied a DC, Network, & institutional theories. The study was conducted in Nascent Social Ventures in the USA whereas the current study was conducted in construction companies' supply chains. The study focused on partnerships as the IV while in the current research LS was the independent variable and SP the moderating variable. The study used convenience sampling while the current research employed a disproportionate stratified random procedure to determine the sample size.	New empirical evidence was added on how SP lead to CA applying DC, Network, and institutional theories to construction companies' SCs.

Source: Summary of Literature Review and Knowledge Gaps by Researcher (2019)

The conceptual gaps are those which are concerned with the way variables have theoretically been associated in preceding investigations. This study is not substantiated anywhere in the preceding literature. There is no known previous research done exploring the impact of SP and FI on the association concerning leagile strategy, and CA. This study set out to fill the extant conceptual, contextual, and methodological gaps by exploring the joint impact of LS, SP, and FI on competitive advantage. The study adds to the works of previous scholars in strategic management about the utilization of LS, SP including firm innovation to create CA in construction companies' SCs in NCC. Past empirical evidence shows the existence of co-aligned studies and most of them have exhibited contextual gaps. Those previous studies were conducted in other sectors outside Kenya different from the construction industry which this study sought to address. Hence, their findings and conclusions may not be generalized in the building sector in Kenya.

2.5 Conceptual Model

To build knowledge in strategic management and for enhancing awareness about association amongst the variables of concern, a conceptual model was proposed and prepared. The conceptual model is fundamental in steering the direction of an investigation as well as addressing the theoretical gaps. Furthermore, it demonstrated the important relationships considered in the study. Figure 2.1 depicts a schematic illustration regarding the conceptual model formulated to enhance the understanding of the direction of association between the study variables. It was recognized that strategic partnership is likely to affect the power of the association concerning leagile strategy and CA.

Operational indicators of the strategic partnership were in terms of capital, technology, and management. It was further hypothesized that firm innovation has the empirical role of influencing as an intervening variable. The intervening variable explains the causal link between independent and dependent variables. It was conceptualized that leagile strategy caused firm innovation, which in turn affected competitive advantage. This conceptual model also denotes the presumed joint influence of the three variables: leagile strategy, strategic partnership, and firm innovation on competitive advantage. This conceptual framework is useful in showing the direction of the empirical research to derive the study's hypotheses and address the research gaps (Aitken & Todeva, 2011).

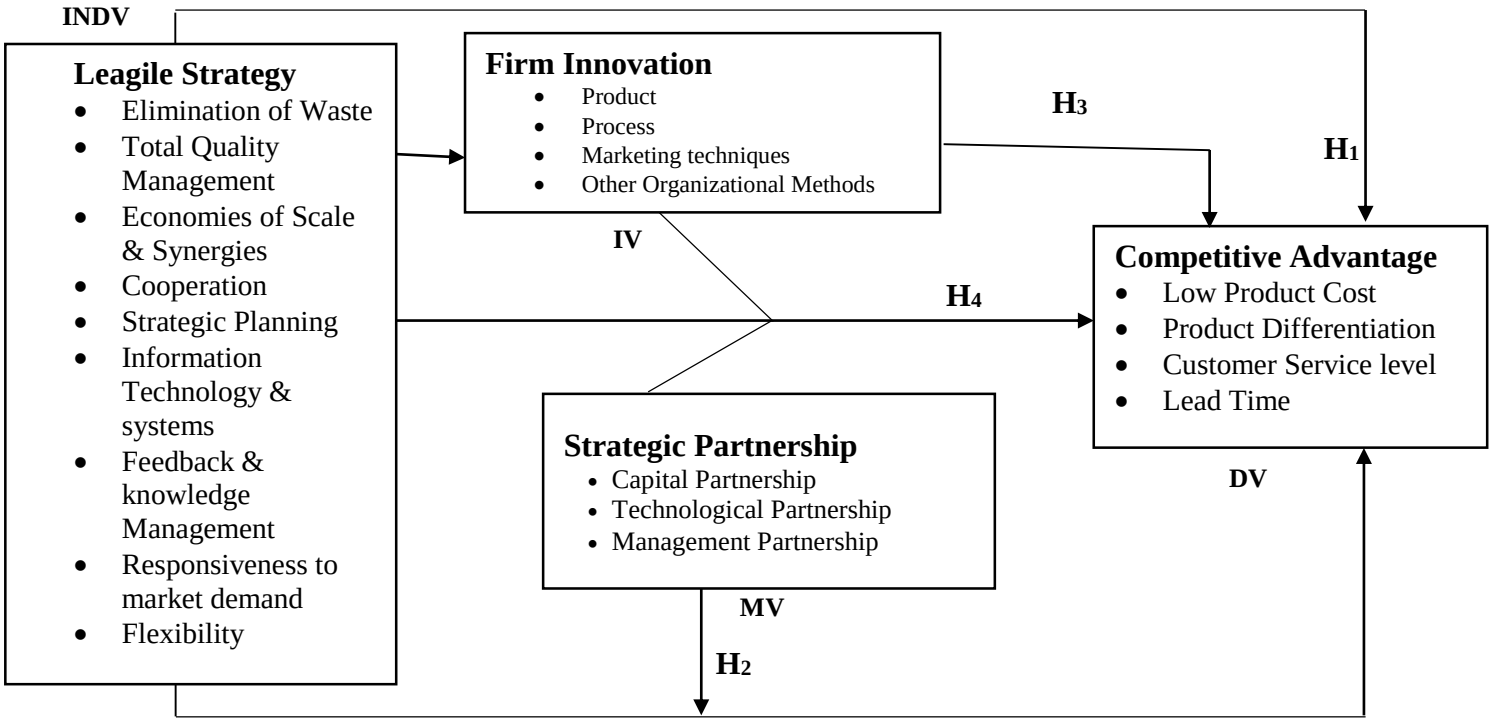

Figure 2.1: Conceptual Model

Source: Researcher's Conceptualization (2019)

H_1: Leagile Strategy and Competitive Advantage

It was conceptualized that leagile strategy has the empirical role of influencing CA and its indicators were abstraction of surplus, large volume production, synergy, strategic planning, IT, IS, responsiveness as well as flexibility among others. CA is enhanced by high clients' fulfillment regarding a company's products in comparison to its competitors' (Janavaras & George, 2017). Karani (2022) confirmed that under environmental uncertainties, SC strategies like leanness, agility, postponement, and risk hedging are significant contributors of performance in Kenya's manufacturing companies.

Piotrowicz et al. (2021) argues that lean strategy highlights certainty while agility emphasize adaptation and flexibility. Lean strategy improves information flow in the value chain, and reduces defects, errors, as well as waste (Lengala, 2022). Fariabi-Hamadani (2022) argues that stock surplus refers to accumulation of disproportionate merchandises and its minimization increases productivity especially in the paint industry. Leagile strategy enables responsiveness, flexibility, and adaptability to swift shifts of demand, enhancing the general SC competitiveness (Huma & Siddiqui, 2019).

H_2: Leagile Strategy, Strategic Partnership and Competitive Advantage

Businesses should understand the crucial operational determinants of successful strategic alliances to heighten competitive advantages in swiftly shifting environments. Companies, which effectively manage their SCs, and establish mutually beneficial relationships with partners realize their objectives and greater competitive advantages (Adesanya et al., 2020). Hisnindarsyah (2022) found that partnership strategy directly influences competitive advantage in Ambon City-Indonesia.

Kasych (2019) posits that strategic alliances are vehicles through which companies combine resources, and learn to create competitive advantages. Makhumbiri (2021) argued that strategic partnerships were vital in enhancing quality services and performance of cooperative societies. The scholars found that strategic partnerships generate synergistic benefits that culminate in the acquisition of intangible assets and capabilities considered to be the main sources of greater performance. The main aim of companies is to recognize significant strategic partnerships that meaningfully heighten performance.

H_3: Leagile Strategy, Firm Innovation, and Competitive advantage

Product innovation significantly affect firm performance as moderated by technology capabilities in Indonesia (Agustia et al., 2022). Hui and Rajapathirana (2017) confirmed that innovation capability helped companies to deliver more effective innovations outcomes which generated better performance. According to Timotius (2023), business strategy considerably impacts on competitive advantage. Product, process, and people innovations increases competitive advantage among MSMEs in Indonesia. The scholar posit that innovations greatly interposes the association concerning business strategies and CA. Innovation facilitates the association concerning business strategies and competitive advantage among SMEs in Indonesia (Farida & Setiawan, 2022).

H_4: Leagile Strategy, Strategic Partnership, Firm Innovation and Competitive Advantage

Lean strategy is the crucial driver of agility in the SC thanks to its features of suppliers and customers' involvement (Ghobakhloo & Azar, 2018). Agility helps in the achievement of responsiveness and is a crucial factor for companies in pursuit of competitiveness (Kaviyani-Charati et al., 2022; Patel et al., 2020). Leagile SC strategy enhances operational performance in companies (Andrew, 2020). The unique combination of strategies such as strategic supplier partnership and leagile strategy leads the attainment of CA in hospitality and associated industries (Tariq et al., 2022). Product and organizational innovation, leads to CA in manufacturing companies in NCC (Aliton, 2022).

2.6 Research Hypotheses

$H0_1$: Leagile Strategy has no significant influence on competitive advantage of construction companies' SCs in Nairobi City County.

$H0_2$ Strategic partnership has no significant moderating influence on the relationship between leagile strategy and competitive advantage of construction companies' SCs in Nairobi City County.

$H0_3$: Firm Innovation has no significant intervening influence on the relationship between leagile strategy and competitive advantage of construction companies' SCs in Nairobi City County.

$H0_4$: Leagile strategy, strategic partnership, and firm innovation have no significant joint influence on competitive advantage of construction companies' SCs in Nairobi City County.

Chapter two described the relevance of theories anchoring this study (Dynamic Capability, Network & Institutional) highlighting the assumptions, contributions, and drawbacks. Literature was reviewed on the four concepts of LS, SP, FI, and CA, examining existing interrelationships as well as their contribution to competitive advantage. The conceptual framework was hypothesized by the researcher, depicting the relationships amongst the four study variables of LS, SP, firm innovation, as well as CA.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The procedure of research is the science and viewpoint behind all studies providing the details of how they are designed and conducted. The objectivity of a research methodology lies in its validity and reliability. Three tables have been prepared to show the sample size for the strata, operationalization, measurement of key study variables, and summary of research hypotheses testing (see tables 3.1, 3.2, and 3.3) respectively. The research questionnaire has been captured appropriately (see Appendix I). The list of construction companies in Nairobi City County includes contractors registered under NCA 1-8, construction manufacturers/suppliers who KAM members in 2018 as well as construction end-users, Kenya Property Developers Association (KPDA) 2019 members, all which constitutes the population of this study is explained in detail (see Appendix II).

3.2 Research Philosophy

It is a system of thought from which new reliable knowledge about the study's object is obtained. The philosophy of research is concerned with the choice of study strategy, problem formulation, information gathering, and processing. The choice of study methodology is associated with the philosophical mindset of the investigator (Holden & Lynch, 2004). Research philosophy explains how data on a study is collected, tested, analyzed, and utilized. It can be categorized under two approaches positivism and interpretivism. These two viewpoints may also be considered as quantitative and qualitative respectively (Coopers & Schindler, 2004).

The measurement of human behaviour to discern reality belongs to the widely accepted positivist view (Smallbone & Quinton, 2004). In a positivist philosophy, there is objective reality expressed numerically and supported by explanatory as well as predictive power (Hatch & Cunliffe, 2006). Saunders et al. (2007) argue the positivist paradigm leads to the development of generalizable models explaining cause and effect in relationships. This study believed in an organized and structural approach to identify the topic, construct hypotheses and adopt a suitable methodology (Churchill, 1996). Central to positivist research are specifically structured statistical and mathematical techniques applied. This investigation applied it since it recognizes theories, hypotheses, background knowledge, and value attached to an investigation as capable of influencing the outcome.

3.3 Research Design

This investigation applied a quantitative descriptive design using a cross-sectional survey. Quantitative studies principally assume a positivist view highlighting the importance of generalizability and reliability (Henn et al., 2006). Quantitative research is the procedure of gathering, analyzing, inferring, and generalizing the outcomes of investigation (Creswell, 2002). The quantitative descriptive research technique is aimed at finding out the "what is'' of the problem. According to Levin (2006), descriptive design strategies are useful in quantifying social issues, problems, and conditions that present in a setup (Levin, 2006). The quantitative research methodology is commonly used for purposes of testing hypotheses, generalization the results, and clarifying the causal association concerning the constructs (Hair et al., 2003). Descriptive research designs are useful in gathering information on the current status of a phenomenon as well as in describing the study variables and their existing condition (Anastas, 1999).

Descriptive research utilizes pictorial supports such as graphs and charts to aid information understanding and interpretation. They allow the investigator to consider various aspects of the research problem, thus facilitating the gaining of new insights and ideas. Descriptive research design is suitable for investigating large populations employing large samples, which improves the efficiency of the sample estimates. Furthermore, descriptive surveys allow the utilization of various data collection and analysis approaches and consequently enable speed and accuracy in accessing information (Owens, 2002). Survey research can utilize quantitative strategies such as questionnaires, qualitative techniques, or mixed methods. Singleton and Straits (2009) say surveys are frequently employed in social psychological research. This investigation applied descriptive study plan because the collected information is not only reliable and valid but also suitable for testing the study hypotheses.

Descriptive survey studies provide reports on summary data in terms of the deviations, variations, percentage, and correlation between variables to draw references. Descriptive research designs are known to be very informative and capable of explaining the causal relationships between constructs of the study (Mugenda, 2008). Moturi (2015) and Kenani (2013) effectively conducted their study utilizing the cross sectional survey method for theory testing drawing positive inferences. This research gathered information using questionnaire from respondents on their attitudes by collecting expert views from the area of strategy and supply chain management.

3.4 Population of the Study

Research populace refers to distinctive persons, objects, or items possessing identifiable common characteristics (Polit & Hungler, 1999). Cox (2013) describes the research populace as the whole unit where data is obtained analyzed, and inferences made. Inclusion benchmarks stipulate the prerequisite features of the people or objects to be incorporated in an investigation. A study's population should be properly defined to avoid ambiguity and enable inferences to be drawn concerning the inhabitants that comprise it (Shukla Satishprakash, 2020).

This study's population consisted of construction companies in Nairobi City County including contractors registered under NCA 1-8, construction manufacturers/suppliers who KAM members in 2018 as well as construction end-users, Kenya Property Developers Association (KPDA) 2019 members, all which constitutes the population of this study is explained in detail (see Appendix II). Unit of analysis incorporates the distinct entity being explored applying the research constructs (Salkind, 2010).

3.5 Sampling Design and Sample Size

The methodology of selecting a statistically representative sample of individuals from the population of interest is known as sampling (Turner et al., 2020). The determination of suitable sampling method and size are vital in a cross-sectional survey study (Rahman et al., 2022). Deriving reliable inferences from the study population needs determination of correct sample (Memon et al., 2020). Probability and non-probability sampling are the two best common techniques of selecting samples (Elfil & Negida, 2017). A representative sample has all the characteristics present in the same intensity as the population. Bias in sample selection can be avoided by random choice (Enticott, et al., 2017).

Dworkin (2012) contends that proportion of a sample in quantitative research designs is often bigger than in qualitative studies. Chandler and Paolacci (2017) posits that observational studies require more samples than experimental research. Meysamie et al. (2014) suggests that most online sample size calculations consider 50 % of the population adequate. The more heterogeneous the study population, the larger the size of sample needed to obtain a given level of precision (Ziafati Bafarasat, 2021). This research assumed that a population proportion of 70% was sufficient in determining the linkage concerning LS, SP, FI and CA. The foregoing supposition is held by Aosa (2011). This investigation therefore applied the formulation suggested by Mugenda and Mugenda (2003).

The formulation is expressed as:

$$n = \frac{z^2\ p(1-p)}{d^2}$$

Where;

n = sample size

z = z-score at confidence level α = 0.05 (which implies z = 1.96)

p = inclusion proportion or probability which in this case is 70%

d = permissible marginal error (the level of statistical significance, set at α = 0.05).

Calculation of the sample takes the following form:

$$n = \frac{1.96^2 \times 0.7(1-0.7)}{0.05^2} = 323$$

This investigation utilized stratified random sampling procedure. It was the most appropriate in this research due to the heterogeneity of the study population which consisted of 4,015 construction companies in NCC. They were categorized in three strata to represent the different players in the construction companies' supply chains including the manufacturers, contractors (service providers), and property developers. The proportions were calculated apply the following formulation:

$$\boldsymbol{n_i = n\frac{N_i}{N}}$$

Where;

n_i = No. of companies to be sampled from each stratum

$\boldsymbol{n}$ = Overall sample size, which is 323

N_i = No. of companies in the given stratum

N = No. of companies from the sampling frame.

Table 3.1: Sample size

Stratum	Population size	Calculation	Sample size
NCA Construction Companies in 2018	3,787	3787×323/4015	305
Construction companies (KAM members 2018)	112	112×323/4015	9
Construction companies (KPDA members 2019)	116	116×323/4015	9
Totals	**4, 015**		**323**

Source: Researcher (2021)

3.6 Sampling Frame

A sample frame is a complete and correct catalogue of components where picking of a sample is done (Cooper & Schindler, 2011). In quantitative research studies, the sampling frame must include a sufficient number of units that support the collection of a complete set of data otherwise the researcher runs the risk of obtaining insufficient information leading to inaccurate measures (Hackshaw, 2008). In a situation where the sampling frame has two or more strata, the stratified sampling technique enables each group of interest to be proportionally represented (Sudman, 1976). This study's sample frame is 4,015 construction companies in NCC which was divided in three strata (see Appendix II).

3.7 Data Collection

Data refers to measurements collected from scientific observations expressed in the language of measurement (Henerson et al., 1987). This study's pilot testing was done when the research instrument was administered to 45 construction companies during the first phase. According to Newing (2011), a pilot study is important in detecting weaknesses in research and data collection instrument. Eldridge et al. (2016) say a pilot precedes the larger study but the two are closely related. Hertzog (2008) warns determining the sample size of an experimental investigation is not straightforward because various dynamics influence such studies. The pilot study was conducted in 45 construction companies and data collection took a period of two months (September to October 2020). The 45 construction companies were not among the respondents of the main study but they possessed similar characteristics and ensured no manipulation. Cronbach coefficient alpha values of 0.7 or more show an acceptable and reliable research instrument (Sekaran, 2003).

The information obtained from the pilot study revealed a Cronbach's alpha statistic of 0.7 thus the newly developed questionnaire was adopted. Primary data was obtained when researchers collected their information in the field for this study via questionnaire which contained closed-ended questions. Information was gathered for the main investigation for a period of seven months from January to July 2021 targeting construction companies in NCC categorized in the following three strata.

3.7.1 Data Collection from NCA1-8 Contractors registered in 2018

The survey's questionnaire was targeted to supply chain managers and directors. They were respondents of this study who provided information from NCA1-8 contractors registered in 2018. These calibers of people in the target organizations possess the crucial knowledge required to provide statistical information and in operationalizing visionary ideals (Holden, 1999). To enhance respondents' cooperation, the researcher presented an introduction document assuring confidentiality of information.

Each questionnaire was conveyed via drop-off as well as emailing approaches aimed at ensuring that information was obtained. A completed questionnaire was thereafter collected the research assistants. The main advantage of a questionnaire is its capability to permit the quick and efficient collection of different forms of information at a specific instance (Cooper & Schindler, 2011). Closed-ended questionnaires allow measurement of views and gathering a large volume of information within the shortest period (Orodho, 2004; Best & Khan, 1993). The questionnaire was divided into five sections A-E: Section A: Respondent and company demographic data, Section B: Leagile Strategy, Section C: Strategic Partnership, Section D: Firm Innovation, and Section E: Competitive Advantage. Information for this study was gathered for a period of seven months beginning January, and ended in July 2021.

Each respondent was telephoned prior the survey. A stamped return envelope indicating the due date of response was enclosed and delivered together with the questionnaire to the respondents. Various follow-ups vide telephoning, emailing as well as physically revisiting were done. Also a fresh questionnaire was distributed where the respondent reported a misplacement to boost the rate of response. Overal, 243 completed questionnaires were collected from NCA1-8 contractors registered in 2018 recording 79.6 percent level of response.

3.7.2 Data Collection from KAM members of 2018

Data collection from the stratum comprising of construction companies, and members of Kenya Association of Manufacturers in 2018 was done via the use of a questionnaire to the targeted respondents in those organizations. Each respondent was informed in advance about the survey which started January, and ended in July, 2021 covering a period of seven months. The survey's questionnaire was targeted to supply chain managers and directors. The researcher presented an introduction document assuring confidentiality of information to each organization to win the respondents' cooperation. The questionnaire was organized in five sections A-E: Section A: Respondent and company demographic data, Section B: Leagile Strategy, Section C: Strategic Partnership, Section D: From Innovation, and Section E: Competitive Advantage. Each respondent was informed of the upcoming survey beforehand but within the seven-month period of information gathering.

After the first set of completed questionnaires were received, numerous follow-ups were done vide telephoning, emailing, and physically revisiting the respondents in the construction companies. A fresh questionnaire was provided after the follow-ups to the respondent who was found to have misplaced it to upsurge the rate of response. A total of 9 Manufacturers registered in 2018 were contacted after which all the respondents filled the questionnaires accomplishing 100 percent rate of response in the stratum.

3.7.3 Data Collection from KPDA members of 2019

In this stratum, data collection was done by conveying the research instrument to the construction companies in the category of KPDA members of 2019. Each questionnaire was marked to target respondents in this stratum. Closed-ended questionnaires containing questions were conveyed to target respondents via drop-off and pick-up as well as emailing to secure a high response rate. Each respondent was informed of the upcoming survey beforehand but within the seven-month period of information gathering. After the first set of completed questionnaires were received, numerous follow-ups were done vide telephoning, emailing, and physically revisiting the respondents in the construction companies.

A fresh questionnaire was provided after the follow-ups to the respondent who was found to have misplaced it to upsurge the rate of response. A total of 9 construction companies who were members of KPDA registered in 2019 were contacted and followed up. Out of the 9 construction companies, a feedback from 8 were received attaining a rate of response of 88.8 percent in that stratum. A grand number of completed questionnaires from all the targeted construction companies in NCC were 260 recording a response rate of 80.50 percent.

3.8 Reliability and Validity Tests

Validity and reliability raise the level of transparency and decrease opportunities for researcher bias (Singh, 2014). It is possible to have a measure that is reliable but not valid (Bollen, 1990). Tavakol and Dennick (2011) suggest the main reason why researchers need to determine the reliability and validity of the research instrument is to ensure data is sound, replicable, and accurate. Before meaningful consideration of the reliability aspect, validity testing is of essence (Saunders et al., 2007).

3.8.1 Reliability Tests

Reliability has been defined by Savin-Baden and Major (2013) as the capability of the measuring tool to produce similar outcomes each time it is utilized for measurement. It is the internal consistency of a research measuring instrument (Cooper & Schindler, 2011). Reliability is indirectly affected by random error and its estimation is through a measure of association, the correlation/reliability coefficient (Rosenthal & Rosnow, 1991). This investigation measured the internal consistency vide Cronbach's coefficient statistic. According to Cronbach (1951), using the alpha value to measure reliability is the most appropriate especially when multiple Likert scales is applied.

3.8.2 Validity Tests

Bryan and Cramer (2005) contend that validity involves the accurateness and inferential connotation of conclusions that are grounded on study outcomes. The scholars maintained that to increase validity, it is necessary to continuously improve the same sampling as well as information gathering techniques throughout the procedure. Robinson (2010) argues validity evaluates the degree to which the research questionnaire accurately evaluates itself.

Drost (2011) argues that there are four different types of validity which are termed a statistical conclusion, internal, construct, and external. Trochim (2006) posits that construct validity is the extent the researcher can translate the concepts into functional and operational reality. According to McKinney (2013), construct validity examines the significant positive correlation of a variable to the concept to which it is expected to relate and a strong negative relationship to those it should not.

Construct validity for the questionnaire was ensured in this study by developing the instrument based on a logical conceptual framework hinged on empirical literature review and similar prior research. Further, construct validity was measured by separating the research instrument into five sections and ensuring that each assessed information related to the specific objective. The current investigation tested validity using Kaiser-Meyer-Olkin (KMO) test.

3.9 Operationalization and Measurement of Key Variables of the Study

Nachmias and Nachmias (2004) argue that operationalization of study variables is a process that aids in defining the ambiguous concepts of a study, enabling them to be empirically evaluated and quantified. Sekaran (2000) posits that the operationalization accelerates the reduction of theoretical beliefs of constructs into observable and measurable characteristics. Tariq (2005) says it is the procedure of strictly describing variables into measurable factors. Rao and Vasudeva (2013) suggest that operationalization procedure aids the investigator in understanding the association concerning concepts and data, provides a connection between theory and research, and moves the investigator from the abstract level to the empirical realm where findings are generalized to the real world.

According to Marsden (2018), the operationalization decreases subjectivity, increases dependability, and facilitates replication of the exploration findings. Operationalization requires the researcher to identify specific indicators that represent the ideas of interest in the study and the chosen variables must be related to the theoretical framework supporting the research. The indicators should be identified in a scholarly manner by utilizing extant literature in the area of study's interest. The theories also help in the identification of relevant concepts and potential indicators. Leagile strategy (independent), CA (dependent), strategic partnership (moderating), and firm innovation (intervening). The operationalization and measurement of the key study variables were done as tabularized in 3.2.

Table 3.2: Operationalization and Measurement of Key Variables of the Study

Variable	**Indicators(Measure)**	**Variable Type**	**Scale** (Five Point Likert Type Scale)	**Measurement in the Research Questionnaire**	**Supporting literature**
Leagile Strategy	• Elimination of Waste • TQM • Economies of Scale & Synergies • Cooperation • Strategic Planning • IT & systems • Feedback & knowledge Management • Responsiveness to market demand • Flexibility	Independent	”	Section B of research instrument	Naylor et al. (1999) Miah et al. (2013) Arasa, Ngui & Mwaura (2016) Piotrowick et al. (2021) Romana (2013)
Strategic Partnerships	• Capital Partnership • Technological Partnership • Management Partnership	Moderating	”	Section C of the research questionnaire	Maurrassee (2013) Depamphilis (2008) Arrigo (2012) Das & Teng (1999)
Firm Innovation	• Product • Process • Marketing Techniques • Other Organizational Methods	Intervening	”	Section D of the research questionnaire	Carayannis (2008) Zahra &George (2002) Hagedorn & Cloodt (2003)
Competitive Advantage	• Lowest Product Cost Offers • Differentiated Products • High Service Level • Short Lead times	Dependent	”	Section E of the research questionnaire	Porter (1998, 2000)

Source: Researcher (2020)

The operational indicators for competitive advantage were low cost, differentiated products, high service level, and short lead times. Leagile strategy was operationalized using elimination of waste, total quality management, economies of scale & synergies, cooperation, strategic planning, and IT & systems. Other indicators for leagile strategy were feedback & knowledge management, responsiveness to market demand, and flexibility. SP was operationalized through the capital, technological, and management partnerships. Lastly, the operational indicators for firm innovation were in the areas of product, process, marketing techniques, and other organizational methods.

3.10 Diagnostic Tests

The researcher conducted several analytical tests before data analysis to ensure information gathered met underlying assumptions of the linear regression. Multicollinearity, autocorrelation, normality, and homoscedasticity are the diagnostic tests that were applied. Multicollinearity is assumed to be existent where there is a correlation between predictor variables in a multiple regression model (McCave & Sincich, 2018). The study utilized Field's (2009) test to examine multicollinearity among the explanatory variables. Multicollinearity is a statistical concept where several independent variables in a conceptual model are correlated.

The existence of multicollinearity in a data set among independent variables can lead to less reliable statistical inferences. In this study, detection and correction of autocorrelation were done by using Autoregressive Integrated Moving Average (ARIMA) approach. The normality of the distribution of the response variables was measured in the current study using the Shapiro-Wilk test. Coolican (2014) says the value obtained from the Shapiro-Wilk test where $P \geq 0.05$, shows information is normally distributed and vice versa.

Homoscedasticity assumes equality of variance among different samples and is central to linear regression models (Tabachnick & Fidel, 2007). Heteroscedasticity occurs where the variance of the errors of the outcome variable are not the same throughout the data. If the value of the Levene test statistic is less than the critical value, we fail to reject the null hypothesis at a 95% confidence level; $\alpha = 5\%$ and conclude that there is insufficient evidence to claim the variances are not equal. To examine the existence of homoscedasticity, Levene's (1960) test for determining the equality of variance computed using the procedure of one-way ANOVA was utilized.

3.11 Data Analysis

Analysis of information encompasses the procedure of using statistical techniques to summarize data into practicable sizes and develop patterns to assist the investigator in interpreting results concerning queries in the research instrument (Cooper & Schindler, 2011). Submitted questionnaires were checked for completeness, inconsistencies, and mistakes. The effort was taken to minimize errors to ensure that the collected data was of good quality. Consequently, information was processed via version 22 of SPSS which yielded descriptive and inferential statistics. Key empirical models were tested as offered following in the order of the research objectives (Edwards & Lambert, 2007; Edwards, 2009). To establish the direct effect, the first regression analysis of a simple linear regression model was applied. It involved regressing CA on Lagile strategy hence it took the form as shown under research objective number 1 in table 3.3. From the conceptual framework, Strategic Partnership (denoted as M_1) acts as the moderating variable.

The moderating influence of Strategic Partnership was tested using the regression equation as shown under research objective number 2 in Table 3.3. The intervention effect was tested vide the stepwise approach proposed by Baron and Kenny in 1986. Intervention effects of the intervening variable M_2 = Firm Innovation. According to Baron and Kenny (1986), testing proceeded as shown under research objective number 3 in table 3.3. Determination of the joint impact of LS, SP, and FI on CA was obtained by using a composite variable that represented the three explanatory variables. We used X^* to represent this newly formed composite variable. The corresponding model, therefore, takes the form as shown under research objective number 4 in table 3.3. In that table, a summary of this study's research objectives, hypotheses, and how they have been tested as well as the empirical models utilized for testing the statistical significance of the association concerning LS, SP, FI, and the CA are represented. Table 3.3 further depicts how the results of the study were interpreted.

Table 3.3: Summary of Research Hypotheses Testing

Research Objectives	**Hypothesis**	**Empirical/Statistical model**	**Interpretation of results**
Research Objective To interrogate the influence that LS has on CA of construction companies' SCs in NCC.	**Hypothesis 1:** H_{O1}: There is no significant relationship between LS and CA of construction companies' SCs in NCC.	$Y= \beta_0 + \beta_1X+ Ɛ$ Where: Y= CA; β_0= intercept constant; β_1 = regression coefficient for LS X = LS Ɛ= random error term	H_o: $\beta_1 =0$ H_a: $\beta_1 \neq 0$ Where β_1=regression coefficients for LS Reject H_o if $p<0.05$, Otherwise, fail to reject the H_o The higher the R^2 value, the higher the extent of influence If the p-value <0.05, then the influence is significant
Research Objective To assess the influence of SP on the relationship between LS and CA of construction	**Hypothesis 2:** H_{O2}: SP has no moderating influence on the relationship between LS and CA of	$Y= \beta_0 + \beta_1X+ \beta_2M_1 + \beta_3X*M_1 + Ɛ$ where Y=CA β_0 is the intercept constant	H_o: $\beta_3 = 0$ H_a: $\beta_3 \neq 0$ Reject H_o if $p<0.05$, Otherwise, fail to reject the H_o

companies' SCs in NCC.	construction companies' SCs NCC.	β_1 =regression coefficient for LS (X) β_2 =regression coefficient for SP (M_1) β_3 =regression coefficient for the interaction between X and M_1 ε_i is a random error term	The higher the R^2 value, the higher the extent of influence If the p-value <0.05, then the influence is significant
Research Objective To explore the influence of FI on the relationship between LS and CA of construction companies' SCs in NCC.	**Hypothesis 3:** H_{O3}: FI has no intervening influence on the relationship between LS and CA of construction companies' SCs in NCC. SCs in NCC.	(i) $Y=\beta_0 + \beta_1 X + \varepsilon$ (ii) $M_2 =\beta_0 + \beta_2 X + \varepsilon$ (iii) $Y =\beta_0 + \beta_3 M_2 + \varepsilon$ (iv) $Y= \beta_0 + \beta_4 X +\beta_5 M_2+ \varepsilon$ Y= Competitive advantage; β0= intercept constant; β_i = corresponding regression coefficients for leagile strategy X and firm innovation M_2 in the models ε = random error term	H_o: $\beta_i = 0$ H_a: $\beta_i \neq 0$ Where β_i are the respective regression coefficients in the three models Reject H_o whenever p<0.05 in the three models, Otherwise, fail to reject the H_o The higher the R^2 value, the higher the extent of influence If the p-value <0.05, then the influence is significant
Research Objective To determine the joint influence of LS, SP, and FI on CA of construction companies' SCs in NCC.	**Hypothesis 4:** H_{O4}: LS, SP, and FI have no significant joint influence on CA of construction companies' SCs in NCC.	$Y= \boldsymbol{\beta_0 + \beta_1 X^* + \varepsilon}$ Where; Y=Competitive Advantage; X* is the composite variable (leagile strategy, strategic partnership & firm innovation) β_0 is the intercept constant; β_1 measure the regression coefficient for composite variable; ε is a random error term. The corresponding p-value for $\beta_1$was utilized in testing for the significance of the joint effect. The p-values were exploited to evaluate fourth hypothesis H_{04}.	H_o: $\beta_1 = 0$ H_a: $\beta_1 \neq 0$ Where β_1=regression coefficients for composite variable Reject H_o if p<0.05, Otherwise, fail to reject the H_o The higher the R^2 value, the higher the extent of influence If the p-value <0.05, then the influence is significant

Source: Researcher (2020)

Chapter three captured the philosophy and methodology of the study. The research areas discussed herein consist of the sampling frame which showed the comprehensive list of elements where the sample was drawn. It was discussed how the target population was categorized into three strata. A detailed account as outlined in the data collection procedure for all the information gathering from the targeted construction companies. Explanations about the various diagnostic tests used in the study to determine multicollinearity, autocorrelation, and homoscedasticity were deliberated. On data analysis and presentation procedures, a description of the linear, as well as multiple regression steps followed, were shown. A summary of the hypotheses testing depicting the four research objectives, hypotheses, statistical models, and interpreted outcomes was shown in table 3.3.

CHAPTER FOUR

DATA ANALYSIS AND HYPOTHESIS TESTING

4.0 Introduction

This chapter is structured into five sections; Section one is the response rate. Section two covers the requisite tests of validity and reliability; Section three, the demographic information of respondents; Section four, responses in each of the four study variables; and Section five, regression analysis and hypothesis testing.

4.1 Response Rate

A high response rate implies a good sample representation, reducing the chances of obtaining biased results. This proportion is often expressed as a percentage. The computation of the response rate in this research applied the formulation:

$$\frac{Actual\ Number}{Expected\ Number} \times 100$$

The research was conducted in Nairobi City County, Kenya covering various players in construction companies' supply chain: first stratum comprised of NCA registered contractors in 2018 falling in category 1-8; second included the KAM members in 2018 who were the sector's manufacturing companies and suppliers; third encompassed end-user companies in the construction industry who were KPDA in 2019. The size of sample in each of the three categories was obtained through a stratified sampling procedure. Structured questionnaires containing closed-ended inquiries were self-administered to get primary information from respondents in the field. Each questionnaire for the survey was addressed to SC/Procurement managers and directors in the targeted construction companies. A computation of the ratio was realized as illustrated below.

$$\frac{260}{323} \times 100 = 80.5\%$$

An aggregate number of 260 questionnaires were duly completed and the proportion per stratum of the three categories of construction companies is tabularized in 4.1.

Table 4.1: Response Rate

Stratum	Sample	Response	Response Rate (%)
NCA registered companies in 2018	305	243	79.6
KAM memberships in 2018	9	9	100
KPDA memberships in 2019	9	8	88.8
Totals	**323**	**260**	**80.5**

Source: Field Data (2021)

Response rate was 80.50%, hence, the sample size was sufficient to be used in the investigation. Based on the suggestion by Mugenda and Mugenda in 2003, this was a sufficient sample size since it surpassed the threshold of at least 70%. The high rate of response inferred that the information collected was adequate to evaluate the research objectives. Discourses have been advanced by scholars on the acceptable response rate in social science research. There is no agreement in the literature on the desirable response rate (Rogelberg & Stanton, 2007). Some scholars suggest a minimum response rate ranging from 30 to 80 percent of the sample size. An argument advanced by Cook et al. (2000) and based on meta-analysis, reiterated that a survey should put more emphasis on response representativeness than the rate.

Orodho (2009) states that a rate of response which is above 50 percent is both representative and sufficient for obtaining inferences about the study's outcomes on the general population. In this study, all three categories of construction companies responded and thus were represented avoiding chances of bias. Not all the targeted firms that received questionnaires responded to the survey. Some of the firms did not respond due to company policy and lack of ample time, while others did not give reasons at all. Most of the firms that preferred soft copy questionnaires did not respond.

4.2 Requisite Tests

Requisite tests were key in determining whether the research instrument was reliable and valid. Requisite tests included the calculation of Cronbach's Alpha value to gauge reliability as well as Kaiser-Meyer-Olkin (KMO) and Bartlett's for disclosing its validity. Other precautionary measures were also taken regarding validity of the research instrument during the pilot study.

4.2.1 Reliability of Research Instrument

As noted in Chapter Three, reliability, which measures internal consistency, is significantly and negatively influenced by random error. Reliability tests were done on the questionnaire items vide the use of Cronbach's Alpha. Cronbach's Alpha value was calculated and utilized to determine the reliability of the research instrument. Cronbach's Alpha is a coefficient of consistency that measure the scale of reliability and provides an unbiased estimate of the closeness of a related set of items as a group (Zinbarg, 2005). The value of Cronbach's alpha is ranging from 0 to 1. The suggestion by Sekaran (2003) that Cronbach's alpha coefficient value greater than or equal to 0.7, shows a good and reliable research instrument was implemented. The recorded values were higher than 0.7 and the same is tabularized in 4.2.

Table 4.2: Reliability Test of the Constructs

Variable	No. of Items	Cronbach's Alpha	Decision
Leagile Strategy	11	0.896	Reliable
Strategic Partnership	08	0.784	Reliable
Firm Innovation	08	0.792	Reliable
Competitive Advantage	09	0.864	Reliable
Overall	**36**	**0.834**	**Reliable**

Source: Field Data (2021)

As per the outcomes, all the constructs were reliable and they were ranked from the highest to the lowest value; leagile strategy revealed greatest value = 0.896; second, competitive advantage = 0.864; third, firm innovation = 0.792; fourth, strategic partnership = 0.784.

4.2.2 Validity of Research Instrument

Validity requires reliability, demonstrating that a research instrument can be reliable without being valid. Hence reliability is a sub-component that must first be attained before validity (Willis et al., 2007). Validity is concerned with ensuring the research instruments yielded consistent outcomes. The fundamental aim of validity is ensuring data is sound, replicable, and results accurate (Tavakol & Dennick, 2011). This investigation utilized KMO test to evaluate validity. Bartlett's test of sphericity measure the homogeneity of variances. It checks that the assumption of equal variance is true for one pair or more. It is hypothesized in the null that the variables are not correlated and equal for all samples. A minimal value that is < 0.05 in significance insinuate usefulness of factor analysis. A significance that < 0.05 implies a valid research instrument. In this study, these tests were done and results illustrated in the tabularization in 4.3.

Table 4.3: Results of Validity Test

Item	KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.712
Bartlett's Test of Sphericity	Approx. Chi-Square	2718.457
	Df	260
	Sig.	0.000

Source: Field Data (2021)

Table 4.3 show the obtained Kaiser-Meyer-Olkin value of the test statistic = 0. 712, indicating validity of the research instrument. This observation is further seen from Bartlett's test of sphericity where the results indicate a p-value = of 0.000 < 0.05. Validity was further enhanced by expert judgement of the questionnaire. A board comprising of superiors, professors, and scientists from the University of Nairobi was involved during the thesis proposal presentations. They evaluated the statements in the research instrument to establish relevance, meaningfulness, clarity, and non-offensiveness. The above-mentioned experts tested the questionnaire by subjecting it to double-check. Unclear parts were either rectified, or expunged. The researcher ensured the questionnaire covered the five main areas of research.

4.3 Demographic Information of Respondents

The investigation endeavored to acquire info on the demography of the population. Information on education level, number of years of service, and present rank in the company was gathered.

4.3.1 Level of Education

Figure 4.1 show education level of those who provided information in this research. Results show that (47.7%) were degree holders, (45.8%) diploma, and (6.2%) masters, as the highest level of education while only 0.4 percent had a certificate category of training. Indications were that 99.7% had attained degree as well as diploma qualification.

Outcomes showed the greatest percentage of those who supplied information were skilled and possessed ability to provide the information required in the survey study.

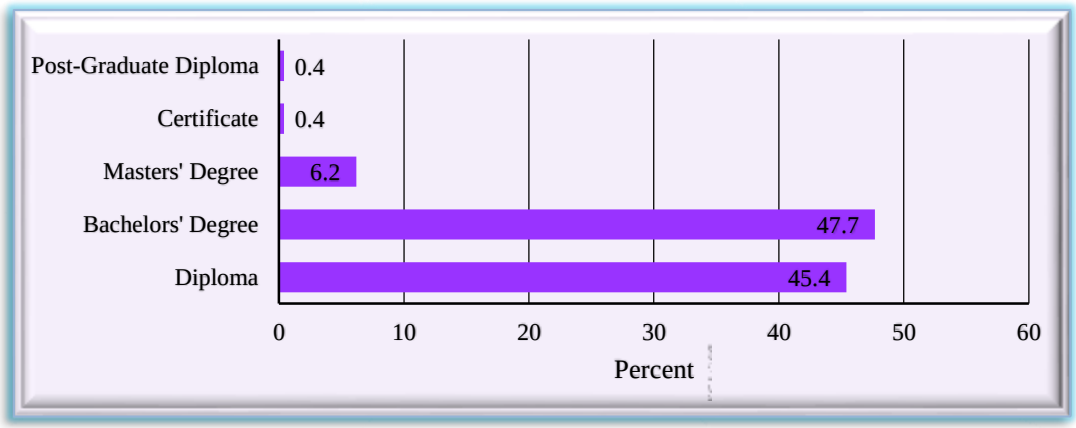

Figure 4.1: Level of Education
Source: Field Data (2021)

4.3.2 Years of Service

Another demographic characteristic of the respondents was years of service. Figure 4.2 illustrates how long those providing information had been employed in the company. The results illustrate that (37%) of the respondents had served between 1 and 3 years, (35%) more than 3 years whereas those who had served for less than one year were 28%.

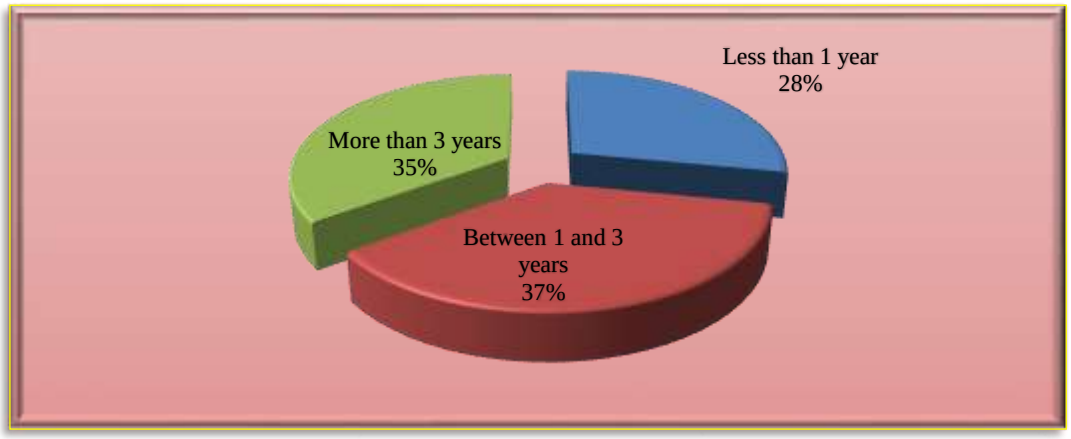

Figure 4.2: Years of Service
Source: Field Data (2021)

4.3.3 Position Held by Respondents

The position held by respondents was also a demographic characteristic in this survey study. Table 4.4 exhibits the cadre of those providing information in the investigation. Results insinuated that the position of project managers overall occupied 46.5%, other managers were the second largest with 26.9%, while directors occupied the third position with 15%. Sales executives were 5.4% and the rest of the occupations last with 5.2%. It was displayed that a greater part of the respondents (87.2%) were holding the positions of managers and directors.

Table 4.4: Position of Respondents

Position	n	Percentage
Director	36	13.8
Manager	70	26.9
Project Manager	121	46.5
Sales Administrator/Executive	14	5.4
Accountant	5	1.9
Administrator	1	.4
Human Resource	3	1.2
CEO/MD	3	1.2
Site Supervisor	3	1.2
Engineer	2	.8
Licensed Electrician	1	.4
Finance Officer	1	.4
Total	**260**	**100**

Source: Field Data (2021)

4.3.4 Company Ownership

This survey study also sought to analyze the characteristics of the targeted companies such as company ownership type, duration of operation, and area of specialization of the companies. An overview of multinational, regional, national, and local proprietorship is depicted in Figure 4.3.

It indicates that (51%) of the company's ownership is categorized as national, local ones are (37%), regional (11%), and multinational (1%). This indicates that the majority of the companies (88%) are nationally and locally owned. Those owned multi-nationally constitute a very small percentage of the targeted companies.

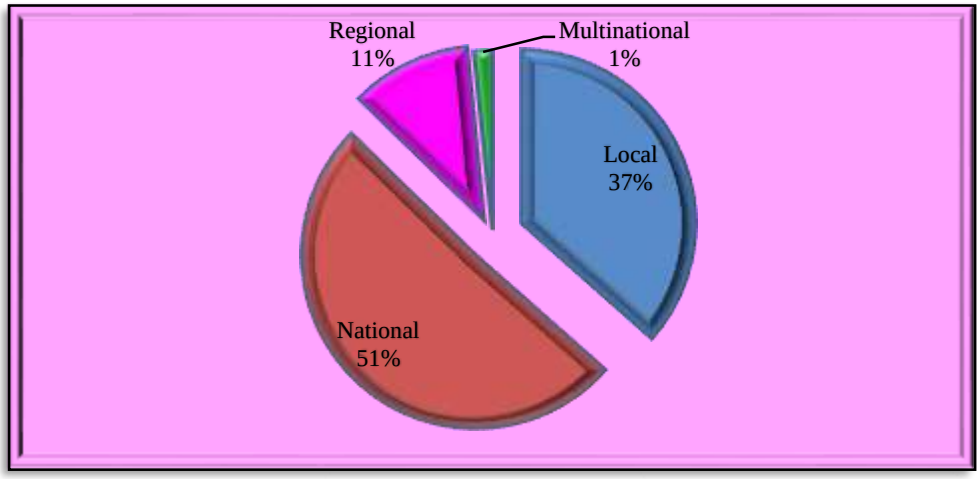

Figure 4.3: Company Ownership
Source: Field Data (2021)

From Figure 4.3, the high percentage of national and local company ownership is a strong indication that Kenyans and locals have registered businesses in the construction sector. Most construction companies require a very high capital outlay to start up. Most of the owners, therefore, are reliant on mutually beneficial long-term agreements to acquire raw materials, finances, capital equipment, and information technology all of which are very useful for their business success.

4.3.5 Duration of Operation

Another aspect analyzed was the duration of operation, companies have been in operation. Figure 4.4 displays how long the companies have operated. The results reveal that (43.8%) of the companies had functioned for a duration between 1-5 years, (26.5%) more than 10 years, (22.7% between 6-10 years, and (6.9%) less than one year.

This indicates that the majority (49.2%) had functioned for a period exceeding six years and therefore could provide the information required in the survey study.

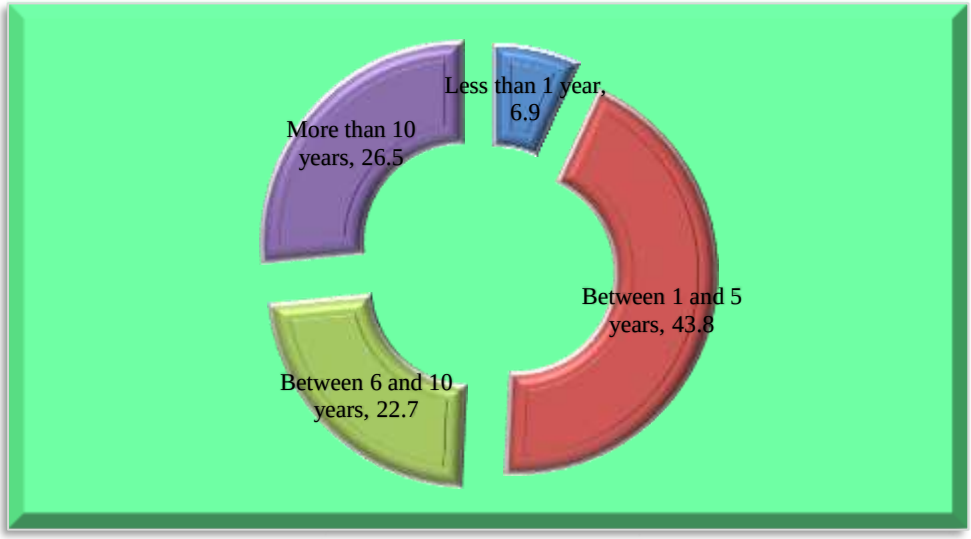

Figure 4.4: Duration of Operation
Source: Field Data (2021)

A greater number of construction businesses in operation for more than six years means that most companies in the industry have overcome the problems associated with business startups. Most of them have now started the strategic planning process, setting the priority strategic goals and working towards achieving them through committed employees. They have also developed internal work processes which may ensure efficient utilization of resources to achieve the functional objectives.

4.3.6 Area of Specialization

The companies were also analyzed based on their area of specialization. Table 4.5 exhibits specialization of the construction businesses by area. The investigator guided the respondents as to the main grouping of the areas shown in Table 4.5. That is, specific areas that were believed to be someway connected were grouped together into major areas of specialization. This was done to avoid overlap in the responses.

The results indicate that 61.6 percent were in building and road works, 11.9 percent, water works, and a combination of all categories exhibited 6.5%. Building and road works have increased in recent years in Nairobi-Kenya especially with the government's commitment to the improvement of infrastructure by building roads such as the Expressway on Mombasa Road as well as affordable housing projects.

Table 4.5: Area of Specialization

Specialization	n	Percentage
Building Works	91	35
Road Works	40	15.4
Mechanical Engineering Service	17	6.5
Water Works	31	11.9
Electrical Engineering Service	14	5.4
All of these	17	6.5
Building and Road Works	29	11.2
Painting Works	1	.4
Manufacturing	9	3.5
Supply of Industrial & Construction Goods	2	.8
Building and Water Works	1	.4
Property Management	8	3.0
Total	**260**	**100**

Source: Field Data (2021)

From Table 4.5, it is exhibited that (5.4%) specialized in Electrical Engineering Service, (3.8%) manufacturing and supply, (3%) property management, (0.4%) painting works, (0.4%) building and water works. These were the areas of specialization which had the lowest percentage. The low percentage of those contractors specializing in painting works means that painting is still not being viewed by many as a business opportunity. Most of the painting works are still done through the hiring of individuals who have specialized in that skill on a contractual basis.

4.4 Responses in Each Study Variable

This study's broad objective assessed the impact of SP and FI on the correlation concerning leagile strategy and construction companies' competitive advantage. From the general goal, four comprehensive aims and matching statements were hypothesized. Responses for each of the four study variables were examined in detail.

4.4.1 Leagile Strategy

Operationalization of leagile strategy as one of the study variables was initially done and the indicators were the surplus eradication, synergy, strategic planning, and IT among others.

Table 4.6: Responses on Leagile Strategy

Variables	Mean	SD	CV%	Sk
Business keeps a minimum inventory level to eliminate waste	3.71	.851	22.9	-.28
Business focuses on the highest priority goals to eliminate waste	3.99	.740	18.5	-.16
Business delivers products and services that conform to customers' quality requirements	4.18	.781	18.7	-.57
Business practices continuous quality improvement	4.19	.762	18.2	-.45
Business practices economies of scale to achieve volume discounts	4.18	.816	19.5	-.77
Business retains a large volume of managerial expertise	4.14	.863	20.8	-.56
Business cooperates with suppliers and all service providers	4.19	.767	18.3	-.34
Business plans its activities strategically	4.22	.752	17.8	-.55
Business operates using IT and market intelligence	4.17	.811	19.4	-.49
Business quickly responds to changes in customer's requirements	4.09	.793	19.4	-.30
Business keeps a flexible workforce, processes, and technologies	4.30	.801	18.6	-.77
Average	**4.12**	**0.79**	**19.3**	**-.48**

Source: Field Data (2021)

Table 4.6 describes the observations obtained about statements which recorded average mean of 4.12. These results show a general agreement that CA is caused by LS. The greatest mean score recorded was =4.30 from the statement which_investigated if management had put in place those procedures which make sure they maintain the flexible workforce, processes, and technologies. Maintaining a flexible workforce, processes and technologies is very vital in a company that aims at achieving competitive advantage through Leagile Strategy. The highest mean score reveals the respondents agreed with this statement. The standard deviation (SD) column illustrates distance of the scores from a central mean score. A high standard deviation, implies that the responses highly deviates from a central mean score. CV = 22.9% recorded was for the first expression demonstrating that in all the 260 construction companies investigated, respondents had divergent views about it.

There are different areas of specialization of these construction companies such as building, road, mechanical, water, electrical engineering, painting, manufacturing, supply, and property management which may require different levels of inventory to be maintained. How they eliminate waste may involve different inventory management decisions. The lowest (CV %) = 17.8% was "Company strategically plans its activities" showing that the construction companies recorded convergent views about it. This statement is also among those with the highest mean e.g. it had a mean score of 4.22. The outcome was indicating that planning of activities is practiced in all these companies irrespective of their areas of specialization, duration of operation, and company ownership type. Strategic planning of activities in advance is crucial as one of the leagile strategy practices which lead to competitive advantage.

4.4.2 Strategic Partnership

The operationalization of strategic partnership as one of the study variables was initially done. Those providing information agreed with the expressions regarding SP practices in the company. The observed outcomes are tabularized in 4.7.

Table 4.7: Responses on Strategic Partnership

Variables	Mean	SD	CV%	Sk
Business retains long-term mutually beneficial agreements with raw material suppliers	4.10	.853	20.8	-.411
Business retains long-term mutually beneficial agreements with financial service providers	4.27	.706	16.5	-.568
Business retains long-term mutually beneficial agreements with capital service providers	4.35	.826	19.0	-1.09
Business retains long-term mutually beneficial agreements with professional service providers	4.22	.808	19.1	-.78
Business retains long-term mutually beneficial agreements with IT, service providers	4.28	.836	19.5	-1.18

Business effectively communicates within and among networks	4.28	.816	19.1	-.773
Business easily assimilates with other companies in the network/industry	4.30	.746	17.3	-.542
Business retains long-term mutual beneficial agreements with management and advisory consultants	4.16	.973	23.4	-.937
Average	**4.25**	**0.82**	**19.35**	**-0.79**

Source: Field Data (2021)

The observations obtained about statements eight statements used to assess SP practices in these construction companies recorded average mean of 4.25. These results show a general agreement that strategic partnership was practiced because of the high mean score. Greatest mean score recorded was =4.35 which shows that these construction companies practice strategic partnership by maintaining longer term relations with service providers of capital. SP with service providers of capital is very vital in construction companies that utilize large machines and equipment in their operations.

It may be impossible for construction companies to operate without the use of large-scale machines and equipment hence their need to form partnerships with capital service providers. They are therefore able to lease or buy such equipment at affordable and negotiated rates. The highest mean score reveals the respondents agreed with this statement on strategic partnership with capital service providers. The greatest coefficient of variation (CV) of 23.4% recorded was for the last expression demonstrating that in all the 260 construction companies investigated, respondents had divergent views about it.

Some of these companies are owned by experts in their areas of specialization while others are not. This means that those companies without their own internal experts need SP in specialized areas such as building, road, mechanical, water, electrical engineering, painting, manufacturing, supply, property management, and vice versa. The lowest CV = 16.57.8% showing that the 260 construction companies recorded convergent views about it. This indicates that SP maintenance of SP with service providers of finance is practiced in all these companies irrespective of their areas of specialization, duration of operation, and company ownership type. Maintenance of SP with service providers of finance is therefore fundamental to construction companies because they require a very high initial capital outlay in their operations, and even continuous processes, therefore explaining the overall need for financial flow and stability.

4.4.3 Firm Innovation

The third specific research objective explored firm innovattion's impact on the association concerning leagile strategy and CA. Firm Innovation was employed as the intervening variable in the current investigation. The operationalization of Firm Innovation as one of the study variables was done. Those providing information agreed with the expressions regarding firm innovation. Table 4.8 illustrates the observed outcomes.

Table 4.8: Responses to Firm Innovation

Variables	Mean	SD	CV%	Sk
Business develops and implements new products continuously	3.89	.891	22.9	-.340
Business continuously develops new processes	4.08	.736	18.0	-.531
The company uses new advertisement and promotional methods for its products and services	4.13	.869	21.0	-.826
Business uses new techniques of delighting customers continuously	4.11	.828	20.1	-.704
Business continuously carries out research	4.12	.886	21.5	-1.01
Business continuously acquires new IT system	4.35	.799	18.4	-1.08
Business continuously create culture that encourage suggestion of new ideas	4.02	.829	20.6	-.439
Business continuous create organization structure that matches corporate and innovation goals	4.33	.790	18.2	-1.23
Average	**4.13**	**0.83**	**20.11**	**-0.77**

Source: Field Data (2021)

Observations obtained about statements recorded average mean of 4.13. These results show a general agreement that firm innovation was applied. The greatest mean score recorded was =4.35 “Company continuously acquires new IT system” shows that these construction companies practice firm innovation by continuously acquiring new IT systems as technology changes. Continuously acquiring a new IT system is very crucial for construction companies. The highest mean score reveals the respondents agreed with this statement on firm innovation. The greatest coefficient of variation (CV) of 22.9% was “Company develops and implements new products continuously” demonstrating that in all the 260 construction companies investigated, respondents had divergent views about it. Products in construction industry vary a lot with the area of specialization.

There are varied product requirements for the companies in building, road, mechanical, water, electrical engineering, painting, manufacturing, supply, property management, etc. This means that in some areas of specialization, companies may have needed to develop new products while old products were maintained by companies in other specialized fields in the construction industry. Further, what is new as a product in a particular area of specialization e.g. building may not be new to other areas such as road, mechanical, water, electrical engineering, painting, manufacturing, supply, property management, and vice versa. The lowest CV = 18.0% was “Company continuously develops new processes” showing that in all the 260 construction companies investigated, respondents had recorded convergent views about it.

It indicates that these construction companies continuously develop new processes regardless of their areas of specialization, duration of operation, and company ownership type. Continuous development of new processes leads to reduced risks, increased productivity, improved agility, increased efficiency, continuous improvement, and responsiveness. It helps them also to meet the very high and unique customer needs, expectations, and standards in the industry promptly.

4.4.4 Competitive Advantage

Specific objective number four of this research explored the joint impact on CA by LS, SP, and firm innovation. Those providing information for the survey were asked to offer their views concerning the intensity of CA practices in the company. The observations are tabularized in 4.9.

Table 4.9: Responses on Competitive Advantage

Variables	Mean	SD	CV%	Sk
Business offers comparatively lower prices than competitors	3.86	.891	23.1	-.31
Business has been reducing its overall costs more than its competitors	3.88	.850	21.9	-.42
Business focuses on offering benefits to customers more than its competitors	4.17	.738	17.7	-.35
Business offers high product variety than its competitors	4.04	.760	18.8	-.33
Business offers products and services with unique features than competitors	4.06	.776	19.1	-.30
Business offers products and services with superior qualities than competitors	4.18	.782	18.7	-.38
Business offers an especially high service level to its customers	4.13	.809	19.6	-.42
Business ensures speedy delivery to customers	4.25	.731	17.2	-.48
Business maintains short lead times	4.37	.720	16.5	-.74
Average	**4.10**	**0.89**	**19.2**	**-0.31**

Source: Field Data (2021)

Table 4.9 describes the observations obtained about statements expressed to assess the degree of agreement that competitive advantage was attained which recorded average mean of 4.10. These results show a general agreement that competitive advantage is attained in construction companies' SCs in Nairobi City County. The greatest mean score recorded was =4.37 from the statement which investigated if management had put in place those procedures which make sure they attained shorter lead times. "Company maintains short lead times" shows that these construction companies have realized competitive advantage by maintaining short lead times. This means that the duration taken by these companies from the time customer orders are placed to when they are received is short. Short lead times help free up capital which can be used for other objectives and improves customer satisfaction and quality of production. It may be impossible for construction companies to rapidly react to the precise needs of the clienteles and increase productivity without maintaining short lead times. Maintaining short lead times is key in the efficiency of operations for these construction companies.

The customer orders are processed very fast, hence increasing the company's competitiveness. These construction companies need to be market responsive by quickly responding to customer requests. The highest mean score reveals "Company maintains short lead times", implying competitive advantage is achieved in these construction companies through maintaining short lead times. The greatest coefficient of variation (CV) of 23.1% was "Company offers comparatively lower prices than competitors" demonstrating that in all the 260 construction companies investigated, respondents had divergent views about it. There are different areas of specialization in the construction industry and the products are therefore not similar. The products vary from one area of specialization to another, making it impossible to compare their prices.

The pricing policies of companies in each area of specialization may also be quite different from the other. The lowest (CV %) = 16.5% was showing that the construction companies recorded convergent views about maintaining short lead times. The expression was similarly leading regarding average mean score of 4.37. This indicates that maintaining short lead times is experienced in all these companies irrespective of their areas of specialization, duration of operation, and company ownership type.

Maintaining short lead times is considered key to ensuring efficiency, responsiveness, agility, better resource utilization and ensures competitiveness in the construction industry. For instance, “Company ensures speedy delivery to customers” had 4.25. This infers that there is general agreement among respondents that their companies ensure speedy delivery to customers, which is evidence of the existence of customer satisfaction which is an element of CA in this investigation.

Speedy delivery is one of those aspects that afford the company's customer preference. The customers could prefer products of a particular company over other companies because of speedy delivery. The statement also showed a relatively high average mean score of 4.13. This implies that especially high service level to customers is offered by the construction companies surveyed. Offering especially high service levels to customers leads to repeat purchases, development of long-term relationships, helps combat higher prices, improves employee morale, creates personal positive connections with customers, and therefore ensures competitive advantage.

Offering products and services with exceptionally superior quality to customers helps companies create trust, earn customer loyalty, establish brand recognition, and manage cost reduction emanating from reduced product returns, defects, and losses. It encourages the customers to prefer to buy the company's product and hence increases the revenue. Offering high product variety than competitors provides a variety of choices, supplier creativity, hinders market entry, leading to competitive advantage via enhanced competitiveness and increased market share.

4.5 Regression Analysis and Hypothesis Testing

The four specific objectives of this survey study reflected four corresponding hypotheses. In this section, the manifestation of the variables is explained vide inferential statistics. Every hypothesis was tested using appropriate statistical methods such as simple and multiple linear regressions, correlation coefficient (r), and Baron and Kenny's (1986) stepwise moderation approach. The analyses using simple and multiple regression, Pearson correlation coefficient (r) assisted in revealing the predictor variable's influence on the outcome variables. P-values denote the level of significance of the variables.

4.5.1 Regression Modeling

The independent variable was leagile strategy, while strategic partnership and firm innovation were conceptualized as moderating variables and competitive advantage as the dependent one. Baron and Kenny's (1986) stepwise moderation approach was exploited in determining how firm innovation impacted on leagile strategy and competitive advantage correlation. Joint effects model, was exploited to determine association concerning composite variable and competitive advantage.

4.5.2 Diagnostic Tests

Various diagnostic checks were key in determining whether the study variables were suited for regression modeling. Diagnostic tests in this study included examinations of normality, autocorrelation, homoscedasticity, and multicollinearity.

4.5.2.1 Normality Test

The underlying assumption is that the population distribution is exactly normal (the null hypothesis). Results of this test are summarized and tabularized in 4.10.

Table 4.10: Test for Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df.	Sig.	Statistic	df.	Sig.
Competitive Advantage	**.981**	**260**	**.215**	**.977**	**260**	**.118**

Source: Field Data (2021)

From Table 4.10, the findings show the data distribution is normal. In both cases, the p–values are more than 0.05, an indication that there is no sufficient evidence to reject the null hypothesis of normally distributed data. Therefore, a failure to reject the null hypothesis infers normal distribution of the responses. For this reason, the null hypothesis of normal distribution was accepted. Consequently, based on this decision, the condition of normality was satisfied in this survey study.

4.5.2.2 Autocorrelation Test

The autocorrelation test examines whether there is a correlation between values of a measured variable at different times (Gujarati & Porter, 2015). This was done using Autoregressive Integrated Moving Average (ARIMA) approach for detection and correction. In this study, the Durbin-Watson test was used. Autocorrelation was considered to eliminate the chances that some responses could be related.

Two models were considered; the direct effects model (Model 1) and the joint effects model (Model 2). A relatively normal absence of autocorrelation is often indicated by a Durbin-Watson value that ranges between 1.5 and 2.5. Observations on autocorrelation are tabularized in 4.11.

Table 4.11: Test for Autocorrelation

Model	Durbin-Watson	Interpretation
Model 1	1.885	No autocorrelation
Model 2	1.995	No autocorrelation

Model 1: Predictors: (Constant), Leagile Strategy

Model 2: Predictors: (Constant), Leagile Strategy, Strategic Partnership, Firm Innovation

Source: Field Data (2021)

Results show Durbin-Watson statistics of 1.885 and 1.995 respectively for the two models. These values implied that there was no autocorrelation in the responses, which further implied that the responses were independent of each other.

4.5.2.3 Multicollinearity Tests

The multicollinearity test involves the determination of association amongst the variables of the study. The existence of multicollinearity amongst the study variables leads to an increase in the standard errors in the measurements rendering the predictor variables statistically insignificant even when they are important. Tolerance values and Variance inflation factors (VIF) are used to assess the magnitude of this association. Field (2009) explains that the existence of a small tolerance value of less than 0.1, implies the presence of a strong correlation among the independent variables of the study. In this case, such a variable is not added to the regression model. VIF measures how much multicollinearity exists in a group of regression variables. The total absence of correlation between any two independent variables is indicated by a VIF value of 1.

Multicollinearity is corrected by removing the greatly correlated independent variables and computing afresh the regression equation. Multicollinearity is deemed to exist when the VIF is above 5 and tolerance values are below 0.2 insinuating an inverse relationship. According to Kennedy (1992), a VIF below 10 is recommended and it implies an acceptable tolerance value of 0.1.

Table 4.12: Multicollinearity Test Results

Predictor Variables	Collinearity Statistics		Comment
	Tolerance	VIF	
Leagile Strategy	**.820**	**1.219**	**No multicollinearity**
Strategic Partnership	**.776**	**1.289**	**No multicollinearity**
Firm Innovation	**.871**	**1.148**	**No multicollinearity**
Dependent Variable: Competitive Advantage			

Source: Field Data (2021)

Observations insinuates that three study variables; leagile strategy, strategic partnership, and firm innovation were within the acceptable range. This study employed the recommendation by Field (2009) which accepts advises that VIF value less than 5 is acceptable. Also tolerance value exceeding 0.2 is a better determinant of multicollinearity. The scholar argues that higher value inflation factors imply higher collinearity amongst the variables and vice versa. Rogerson (2001) asserts that a value lower or equal to 5 is recommended as an acceptable level of multicollinearity. Therefore, no correlation amongst independent variables of this study was observed indicating fitness for regression analysis. The absence of multicollinearity was proof that the research constructs were suitable for use.

4.5.2.4 Homoscedasticity Tests

In this study, Levene's (1960) test used way ANOVA procedure was utilized, and the computed statistic was used to determine the equality of variance at different levels of the independent variable(s). The Homoscedasticity test, therefore, involves testing the null hypothesis of equal variation.

Table 4.13: Levene's Test for Homoscedasticity

	Criterion	Levene Statistic	df1	df2	Sig.
Competitive Advantage	Based on Mean	1.616	17	239	.061
	Based on Median	1.455	17	239	.113
	Based on Median and with adjusted df	1.455	17	207.6	.114
	Based on trimmed mean	1.568	17	239	.074

Source: Field Data (2021)

Table 4.13 gives various values of Levene statistics using different criteria. Preference is, however, given to computation using the arithmetic mean. Nevertheless, criterion notwithstanding, it can be seen that the obtained p-values > 0.05. This indicates that the variance of the dependent variable across all levels of the predictor variables is the same. Field (2009) suggests that the probability for Levene's statistic should be greater than 0.05 for it to meet the variance homogeneity assumption. Henceforth, the results obtained from Table 4.13 show that the homoscedasticity assumption is fulfilled inferring the suitability of using the linear regression model for this study.

4.5.3 Testing of Research Hypotheses

Every hypothesis was tested using appropriate statistical methods such as simple and multiple linear regressions, correlation coefficient (r), and Baron and Kenny's (1986) stepwise moderation approach. Testing the hypotheses involved examining both direct and indirect effects of the relationships.

4.5.3.1 Direct Effects Model: Leagile Strategy and Competitive Advantage

To appraise the impact of leagile strategy on CA, a direct effects regression model was applied. The matching hypothesis was: *H_{01}: Leagile Strategy has no significant influence on CA of construction companies' SCs in NCC.* The direct effect model involved regressing CA on LS and the statement was symbolized as:

$$CA = \beta_0 + \beta_1 LS + \varepsilon$$

Where:

CA = Competitive Advantage (Dependent variable)

LS = Leagile Strategy (Independent variable)

β_0 = Regression constant

β_1 = Regression coefficient for Leagile Strategy

ε = Error term

Results of the regression analysis in this section were, therefore, used to test the corresponding study hypothesis. Table 4.14 illustrates results of the observed.

Table 4.14: Results of Model Summary: Leagile Strategy and Competitive Advantage

Model Summary					
R	**R^2**	**Adjusted R^2**	**Std. Error**	**F Change**	**p-value/Sig.**
.261	.068	.065	.967	18.922	.000
Dependent Variable: Competitive Advantage					
Predictors: (Constant), Leagile Strategy					

Source: Field Data (2021)

Outcomes from Table 4.14 recorded $R^2 = 0.068$ which was converted to 6.8%. In other words, 6.8% of adjustments in competitive advantage of a company is due to changes in leagile strategy. The observed standard error for this explained variation was found to be 0.967, while the p-value = 0.000. The corresponding P-value of 0.000 implied that the explained variation is significant since 0.000 < 0.05. ANOVA outcomes are illustrated in Table 4.15.

Table 4.15: Results of ANOVA: Leagile Strategy and Competitive Advantage

ANOVA					
	Sum of Squares	df	Mean Squares	F-statistic	p-value/ Sig.
Regression	17.699	1	17.699	18.922	.000
Residual	241.320	258	.935		
Total	259.019	259			

Dependent Variable: Competitive Advantage

Predictors: (Constant), Leagile Strategy

Source: Field Data (2021)

The results of ANOVA were recorded in Table 4.15. Factually, this part of the regression analysis results examines whether the conceptualized regression model is a good fit for the collected data or not. This fittingness is identifiable using the p-value, which in this study was observed to be 0.000. The ANOVA results, therefore, indicated that there was model fittingness to information gathered as the p-value was observed to be less than 0.05. From the F-distribution tables, the tabulated F-value is 3.87. The fact that the computed F- statistics value (18.922) is greater than the tabulated 3.87 infers the model fits the data. Outcomes about the regression coefficients were tabulated in 4.16.

Table 4.16: Results of Regression Coefficients: Leagile Strategy and Competitive Advantage

Regression Coefficients				
	Beta	Std. Error	t-statistics	Sig.
(Constant)	.00036	.060	.006	.995
Legile Strategy	.261	.060	4.350	.000

Dependent Variable: Competitive Advantage

Predictors: (Constant), Leagile Strategy

Source: Field Data (2021)

Values of the regression coefficients observed are illustrated in Table 4.16. The constant term recorded a Beta = 0.00036, p-value = 0.995 > 0.05, Standard Error = 0.060, and t-statistic = 0.006. These results indicated that the constant term was insignificant. Leagile strategy recorded a Beta = 0.261, p-value = 0.000 < 0.05, Standard Error = 0.060, t-statistic = 4.350. The Beta = 0.261 advises that any enlargement in leagile strategy by a unit, caused 0.261 units of competitive advantage. Further, the impact of LS on CA was appraised by testing the hypothesis. As the p-value was less than 0.05, a decision was made to reject the null hypothesis. This inferred that LS has a positive important impact on CA of construction companies' SCs in NCC. fter the aforementioned observations, CA was expressed as:

$$CA = 0.00036 + .261\ LS$$

Where LS= Leagile Strategy

4.5.3.2 Indirect Effect Model: Moderating Influence of Strategic Partnership on the Relationship between Leagile Strategy and Competitive Advantage

Two regression models were applied to analyze the moderating effect of SP on the aforementioned relation. The first equation articulates the regression model without the interaction term while the second expresses the model including it as follows:

$$\mathbf{Y = \beta_0 + \beta_1 X + \beta_2 M_1 + \varepsilon \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ (i)}$$

$$\mathbf{Y = \beta_0 + \beta_1 X + \beta_2 M_1 + \beta_3 (X * M_1) + \varepsilon \ldots\ldots\ldots\ldots\ldots\ (ii)}$$

Where;

Y	=	CA (Dependent variable)
X	=	LS (Independent variable)
M_1	=	SP (Moderating variable)
$X*M_1$	=	Interaction between LS and SP
ε	=	the error term
β_0	=	Constant (intercept of the model)
β_1	=	Regression coefficient for LS
β_2	=	Regression coefficient for SP
β_3	=	Regression coefficient for the interaction term

Outcomes of the indirect effects model are provided are tabulated in 4.17.

Table 4.17: Results of the Moderation Effect of Strategic Partnership on the Relationship between Leagile Strategy and Competitive Advantage (without Interaction)

Model Summary					
R	R^2	Adjusted R^2	Std. Error	F Change	p-value/Sig.
.358	.128	.121	.937	18.859	.000

ANOVA					
	Sum of Squares	**df**	**Mean Squares**	**F-statistic**	**Sig.**
Regression	33.150	2	16.575	18.859	.000
Residual	225.869	257	.879		
Total	259.019	259			

Dependent Variable: Competitive Advantage

Predictors: (Constant), Leagile Strategy, Strategic Partnership

Regression Coefficients				
	Beta	Std. Error	t-statistics	Sig.
(Constant)	.0005	.058	.008	.994
Leagile Strategy	.153	.064	2.396	.014
Strategic Partnership	.267	.064	4.193	.000

Dependent Variable: Competitive Advantage

Predictors: (Constant), Leagile Strategy, Strategic Partnership

Source: Field Data (2021)

Outcomes were recorded in Table 4.17 where $R^2 = 0.128$ which was converted to 12.8%. The observed standard error for this explained variation was found to be 0.937, while the corresponding p-value = 0.000. The corresponding P-value of 0.000 implied that the explained variation of the two constructs is significant since p-value = 0.000 < 0.05. The results of ANOVA examine whether the conceptualized regression model is a good fit for the collected data or not.

This fittingness is identifiable using the p-value, which was observed to be 0.000. This was an indication of model fittingness to information gathered as the observed p-value was observed less than 0.05. This finding showed that leagile strategy and SP significantly predicts construction companies' competitive advantage. Values of the regression coefficients observed were as follows: The constant term recorded a Beta = 0.0005, p-value = 0.994 > 0.05, Standard Error = 0.058, and t-statistic = 0.008. These results indicated that the constant term was insignificant. Leagile strategy recorded a Beta = 0.153, p-value = 0.014 < 0.05, Standard Error = 0.064, and t-statistic = 2.396.

The outcomes reveal that leagile strategy's impact was positive and significant. SP recorded a Beta = 0.267, p-value = 0.000 < 0.05, Standard Error = 0.064, and t-statistic = 4.193. The outcomes reveal that the effect of SP was positive and significant. Deduced from the findings, the association concerning LS, SP, and CA ecluding interaction term is portrayed by way of:

$$CA = 0.0005 + 0.153\,X + 0.267\,M_1 \ldots. \textbf{(iii)}$$

Table 4.18: Results of the Moderation Effect of Strategic Partnership on the Relationship between Leagile Strategy and Competitive Advantage (with Interaction)

Model Summary					
R	R^2	Adjusted R^2	Std. Error	F Change	Sig.
.363	.132	.121	.937	12.921	.000

ANOVA					
	Sum of Squares	**df**	**Mean Squares**	**F-statistic**	**Sig.**
Regression	34.062	3	11.354	12.921	.000
Residual	224.957	256	.879		
Total	259.019	259			

Regression Coefficients				
	Beta	**Std. Error**	**t-statistics**	**Sig.**
(Constant)	.0005	.059	.008	.994
Leagile Strategy	.161	.064	2.505	.013
Strategic Partnership	.264	.064	4.141	.000
Interaction	-.060	.059	-1.019	.309

Dependent Variable: Competitive Advantage

Predictors: (Constant), Leagile Strategy, Strategic Partnership

Source: Field Data (2021)

The indirect effects model with the interaction term involved regressing CA on LS, SP, and interaction term. Outcomes recorded in Table 4.18 recorded $R^2 = 0.132$ which was converted to 13.2%. This inferred that leagile strategy, SP, and interaction term explain 13.2% of the total variations in competitive advantage and other factors describe the remaining 86.8%. The observed standard error for this explained variation was found to be 0.937, while the p-value = 0.000. The corresponding P-value of 0.000 implied that the explained variation of the three constructs is significant since p-value = 0.000 < 0.05.

The results of ANOVA examine whether the theorized regression model is a good fit for the information gathered or not. This fittingness is identifiable using the p-value, which was observed to be 0.000. This was an indication of model fittingness to information gathered. This finding showed that leagile strategy, SP, and interaction term significantly predicts construction companies' competitive advantage. Values of the regression coefficients observed were as follows: The constant term recorded a Beta = 0.0005, p-value = 0.994 > 0.05, Standard Error = 0.059, and t-statistic = 0.008. These results indicated that the constant term was insignificant.

Leagile strategy recorded a Beta = 0.161, p-value = 0.013 < 0.05, Standard Error = 0.064, and t-statistic = 2.505. The outcomes reveal that leagile strategy's impact was positive and significant. SP recorded a Beta = 0.264, p-value = 0.000 < 0.05, Standard Error = 0.064, and t-statistic = 4.141. The outcomes reveal that the effect of SP was positive and significant. SP recorded a Beta = 0.264, p-value = 0.000 < 0.05, Standard Error = 0.064, and t-statistic = 4.141. The outcomes reveal that the effect of SP was positive and significant. Interaction term recorded a Beta = -0.060, p-value = 0.309 00 > 0.05, Standard Error = 0.059, and t-statistic = -1.019.

The outcomes reveal that the effect of interaction term was negative and insignificant as the resultant P-value = 0.309 > 0.05. Deduced from the findings, the association concerning LS and SP including the interaction term was articulated by way of:

$$\boldsymbol{CA = 0.0005 + 0.161X + 0.264M_1 - 0.060(X*Z_1)}\textbf{. (iv)}$$

Aditionally, the moderation impact of SP on association concerning leagile strategy and competitive advantage was appraised by testing the hypothesis H_{02} was executed via a check of the implication of change by comparing the p – value of leagile strategy and SP prior and after inclusion of interaction term (moderation). If p-value is significant at 5% level and falls after introducing interaction term, then the construct has an important moderation impact. Likewise, if the interaction term is found to be significant, there exists an important moderating effect. Moreover, significance of moderation impact is designated by an upsurge in R^2.

Yet, in the two models, Beta value of LS and SP remained approximately the equal (LS 0.153: 0.161 & SP 0.267: 0.264) respectively. Again, in the two regression models, p-value of predictor variable stayed approximately the same and indicated importance. The interaction term was negative (-0.060) as well as insignificant because the P-value = 0.309 > 0.05. Besides, R^2 is approximately equivalent and is significant in the two models. The above mentioned outcomes are not corroborating the requirements for an important moderation impact, hence the null hypothesis was not rejected. Insinuations were that SP behaved more like a predictor variable than a moderating one. This inferred that interaction term has a negative inconsequential impact on CA. Hence, a conclusion was reached that SP has no moderating effect on the association concerning LS and CA of construction companies' SCs in NCC.

4.5.3.3 Indirect Effect Model: Intervening Influence of Firm Innovation on the Relationship between Leagile Strategy and Competitive Advantage

In exploring this study's third specific objective, an indirect effect model was useful. Firm innovation was operationalized in the study by product and process innovations, marketing techniques as well as organizational innovation. Testing for the significance of firm innovation (denoted as M_2), as an intervening variable, involved analyzing the hypothesis which was expressed in this manner: H_{03}: *Firm Innovation has no significant intervening impact on the correlation regarding LS and CA of construction companies' SCs in NCC.*

The intervening influence of firm innovation was tested using a stepwise approach recommended in 1986 by Baron and Kenny. The existence of a non-significant relationship is an indication of the absence of mediation. Intervention effects of firm innovation denoted as M_2 were tested vide a stepwise approach recommended in 1986 by Baron and Kenny. The testing followed four steps:

Step 1: Conducting a simple regression analysis of LS predicting CA.

(i) $CA = \beta_0 + \beta_1 X + \varepsilon$

The Step 1 model corresponds to the direct effects model, which was done while testing H_{01} (see Table 4.14, 4.15 & 4.16).

Step 2: Conducting a simple regression analysis with LS predicting M_2

(ii) $M_2 = \beta_0 + \beta_2 X + \varepsilon$

Step 3: Conducting a simple regression analysis with M_2 predicting CA

(iii) $CA = \beta_0 + \beta_3 M_2 + \varepsilon$

Step 4: Conducting a multiple regression analysis with LS and M_2 predicting CA

(iv) $CA = \beta_0 + \beta_4 X + \beta_5 M_2 + \varepsilon$

Where

CA= (Dependent variable)

LS= (Independent variable)

M_2= (Intervening variable)

$\beta 0$ = Intercept constant

β_i = corresponding regression coefficients for LS (X)

ε = random error term

The resultant regression coefficients and the corresponding p-values in the above mention four steps following the recommended methodology in 1986 by Baron and Kenny were illustrated in Table 4.19.

Table 4.19: Results of the Intervening Effect of Firm Innovation on the Relationship between Leagile Strategy and Competitive Advantage

Steps		**Leagile Strategy**	**Firm Innovation**	R^2
Step 1 (Base model)	Coefficient	0.261	-	0.068
	P-value	0.000	-	
Step 2	Coefficient	0.250	-	0.063
	P-value	0.000	-	
Step 3	Coefficient	-	0.343	0.118
	P-value	-	0.000	
Step 4	Coefficient	0.187	0.296	0.151
	P-value	0.002	0.000	
Significance of Change		P-value = 0.002, 0.261 > 0.187	P-value = 0.00, change significant at $\alpha = 0.05$	0.083 (0.151-0.068)

Source: Field Data (2021)

Table 4.19 and based on the base model as Step 1, show how competitive advantage was regressed on independent variable (leagile strategy). The model's expression was in the following form: $CA = \beta_0 + \beta_1 LS + \varepsilon$, expressed as:

$$\boldsymbol{CA = 0.00036 + .261\ LS}$$

Where:

LS= Leagile Strategy.

That base model gave a regression of the dependent variable on the independent variable. From the base model, leagile strategy recorded a Beta value = 0.261, which was significant because of the resultant P-value of 0.000. It was inferred that the effect was important since p-value = 0.000 < 0.05. From the base model, the recorded R^2 = 0.068 denoted the independent variable's explained variation. Step 2 model describes how leagile strategy and firm innovation are associated. This model explains how leagile strategy affects firm innovation in a company.

From Table 4.19, the results show a positive coefficient of 0.25 implying that positive adjustments to leagile strategy causes 0.25 units increase in firm innovation. It was observed that the effect of leagile strategy on firm innovation recorded significance because the corresponding p-value = 0.000 < 0.05. From step 2, the explained variation was 6.3% indicating R^2 = 0.063. Step 3 of the model examined how firm innovation could lead to a gain or decline in competitive advantage. From Table 4.19, the results show a positive coefficient of 0.343 implying that positive adjustments to firm innovation improve competitive advantage by 0.343 units.

From Table 4.19, in the step 3 regression model, the value of the coefficient was observed to be $\beta_1 = 0.343, p - value = 0.000$ which indicate significance at 5% because the P-value was less than 0.05. The explained variation was 11.8% or R^2 = 0.118. Step 4 of the model explains how both the independent and intervening variables affect the competitive advantage. From Table 4.19, in model 4, the corresponding Beta of LS and firm innovation were 0.187 and 0.296 respectively. The Beta values of LS and FI were important because the p-values of 0.020 and 0.000 were less than 0.05.

In this multiple regression model, the explained variation was found to be 15.1%, or R^2 = 0.151. Testing of hypothesis H_{03} involved determining the significance of intervening influence of firm innovation on leagile strategy-competitive advantage relationship. Regression coefficients and the corresponding P–values as well as the explained variations (R^2) before and after mediation were compared. The two models were also utilized when determining full or partial mediation effect. The outcome from Table 4.19 illustrated that the regression coefficient of the leagile strategy, the independent variable before mediation was greater than after i.e. (0.261 >0.187).

Additionally, Table 4.19 indicated that the regression coefficients before and after mediation showed significance as the p-values were smaller than 0.05. Further, the regression coefficient of firm innovation in Model 4 was also of significance at 5% significance level because the p-value was smaller than 0.05. As a result of the comparison made between the values of explained variations before and after mediation, it was revealed that using firm innovation as an independent variable increased explained variation from 6.8% to 15.1%. This is evidence of strong explanatory power when firm innovation is used.

Given that leagile strategy has a significant effect on firm innovation, which in turn has a significant effect on competitive advantage is proof of the existence of the mediation effect. According to Baron and Kenny (1986), a variable has an intervening influence if all regression coefficients in the four steps are significant at a 5% level of significance. This was established as recorded in Table 4.19. Hence, it was suggested that firm innovation had an intervening effect in the correlation concerning the independent and dependent variables.

Due to this reason, the null hypothesis H_{03} was rejected. Baron and Kenny (1986) have made the following suggestions to determine partiality in the mediation.

1. The Beta values in the base model and in the step 4 are significant
2. The Beta value of the independent variable decreases after mediation and
3. There is an increase in R^2 before and after mediation

Reading from Table 4.19, all these three conditions are satisfied. Conclusions can therefore be made that firm innovation, as a variable, has a partial intervening effect on the association regarding leagile strategy and CA of construction companies' SCs in NCC.

4.5.3.4 Joint Effect Model: The Joint Influence of Leagile Strategy, Strategic Partnership, and Firm Innovation on Competitive Advantage

To appraise objective four, the joint impact of leagile strategy, SP, and firm innovation on CA, a joint effect model was utilized. The joint effect model involved regressing competitive advantage on a composite variable which constituted the above mentioned three constructs and the statement was symbolized as:

$$\boldsymbol{CA = \beta_0 + \beta_1 X^* + \varepsilon}$$

Where:

CA = Competitive Advantage (Dependent variable)

X* = Composite Leagile Strategy, Strategic Partnership and Firm Innovation

β_0 = Regression constant

β_1 = Regression coefficient for Composite Variable

ε = Error term

Table 4.20: Results of Model Summary of the Joint Influence of Leagile Strategy, Strategic Partnership, and Firm Innovation (Composite Variable) on Competitive Advantage

Model Summary

R	R^2	Adjusted R^2	Std. Error	F Change	Sig.
.179	.032	.028	.986	8.537	.004

Dependent Variable: Competitive Advantage

Predictors: (Constant), Composite Variable

Source: Field Data (2021)

Outcomes from Table 4.20 recorded $R^2 = 0.032$ which was converted to 3.2%. This inferred that the composite variable explains 3.2% of the total variations in competitive advantage and other factors describe the remaining 96.8%. In other words, 3.2 % of adjustments in competitive advantage of a company is due to changes in the composite variable. The observed standard error for this explained variation was found to be 0.986, while the corresponding p-value = 0.004. The corresponding p-value of 0.004 implied that the explained variation is significant since $0.004 < 0.05$. ANOVA outcomes are illustrated in Table 4.21.

Table 4.21: The results of ANOVA for the Joint Influence of Leagile Strategy, Strategic Partnership and Firm Innovation (Composite Variable) on Competitive Advantage

ANOVA

	Sum of Squares	df	Mean Squares	F-statistic	Sig.
Regression	8.297	1	8.297	8.537	.004
Residual	250.723	258	.972		
Total	259.019	259			

Dependent Variable: Competitive Advantage

Predictors: (Constant), Composite Variable

Source: Field Data (2021)

The results of ANOVA were recorded in Table 4.21. Factually, this part of the regression analysis results examines whether the conceptualized regression model is a good fit for the collected data or not. This fittingness is identifiable using the p-value, which in this study was observed to be 0.004. The ANOVA results, therefore, indicated that there was model fittingness to information gathered as the p-value was observed to be less than 0.05. This finding showed that the composite variable significantly predicts construction companies' CA. A regression model correctly fits the data if the observed F-statistics value is greater than the F-tabulated value. From the F-distribution tables, the tabulated F-value is 3.87. The fact that the computed F- statistics = 8.537 is greater than the tabulated 3.87 infers the model's fittingness to the data. Outcomes about the regression coefficients were tabulated in 4.22.

Table 4.22: Regression Coefficients: Composite Variable and Competitive Advantage

Regression Coefficients				
	Beta	Std. Error	t-statistics	Sig.
(Constant)	.00018	.061	.003	.997
Composite Variable	.179	.061	2.922	.005
Dependent Variable: Competitive Advantage				
Predictors: (Constant), Composite Variable				

Source: Field Data (2021)

Constant term recorded a Beta = 0.000, p-value = 0.997 > 0.05, Standard Error = 0.061, and t-statistic = 0.003. These results indicated that the constant term was insignificant. Composite variable recorded a Beta = 0.179, p-value = 0.005 < 0.05, Standard Error = 0.061, and t-statistic = 2.922. The Beta value = 0.261 advises that any enlargement in composite variable by a unit, caused 0.179 units of competitive advantage. Further, the impact of composite variable on CA was appraised by testing the hypothesis. As the p-value was less than 0.05, a decision was made to reject the null hypothesis.

This inferred that composite variable (leagile strategy, SP, and firm innovation) has a joint positive important impact on CA of construction companies' SCs in NCC. After the aforementioned observations, competitive advantage was expressed as:

$$CA = 0.00018 + .179\ X^{*}$$

Where:

X* is the composite variable of leagile strategy, strategic partnership, and firm innovation. Table 4.23 show a summary of the hypotheses test results for the study depicting the objective, respective research hypothesis, and the decisions arrived at.

Table 4.23: Summary of Hypotheses Tests

Study Objectives	**Research Hypotheses**	**Decisions**
Research objective one: To interrogate the influence that LS has on CA of construction companies' SCs in NCC.	H_{O1}: There is no significant relationship between LS and CA of construction companies' SCs in NCC.	Rejected
Research objective two: To assess the influence of SP on the relationship between LS and CA of construction companies' SCs in NCC.	H_{O2}: SP has no moderating influence on the relationship between LS and CA of construction companies' SCs in NCC.	Failed to reject
Research objective three: To explore the influence of FI on the relationship between LS and CA of construction companies' SCs in NCC.	H_{O3}: FI has no intervening influence on the relationship between LS and CA of construction companies' SCs in NCC.	Rejected
Research objective four: To determine the joint influence of LS, SP, and FI on CA of construction companies' SCs in NCC.	H_{O4}: LS, SP, and FI have no significant joint influence on CA of construction companies' SCs in NCC.	Rejected

Source: Researcher (2022)

The four hypotheses of this study were all tested. The findings showed competitive advantage is affected positively and importantly by leagile strategy. SP does not have moderation effect on the association concerning LS and CA. Consequently, a revised conceptual model reflecting the research findings and the resultant relationships is shown in Figure 4.5.

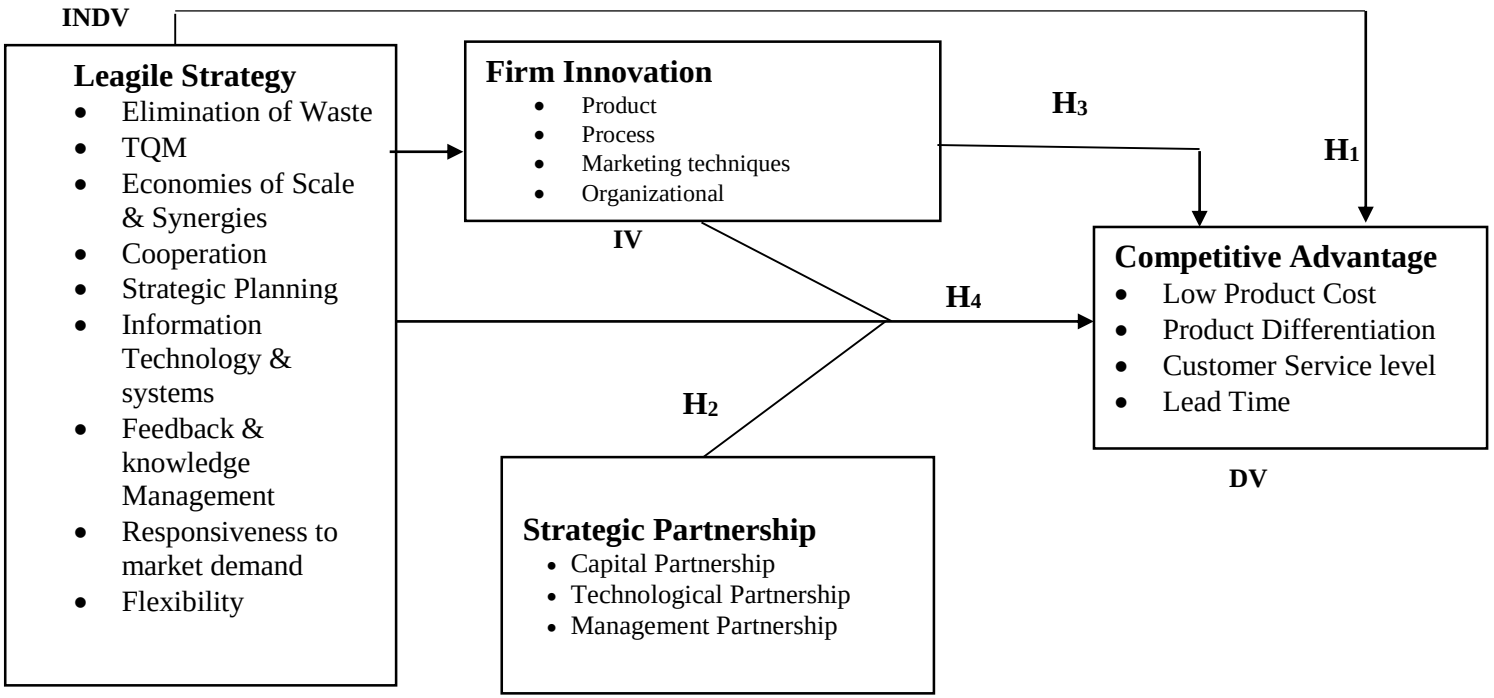

Figure 4.5: Revised Conceptual Model
Source: (Researcher's conceptualization, 2022)

KEY
INDV – Independent Variable
IV – Intervening Variable
DV – Dependent Variable

The revised conceptual model in Figure 4.5 indicates the interrelationships after outcomes revealed that SP has no effect of moderation on the above mentioned association. However, further results revealed it impacted directly on the CA. The rest of the associations amongst the variables remained the same as conceptualized earlier in this study.

The chapter presented preliminary and hypotheses tests as well as findings of the survey study. The four study variables are leagile strategy, strategic partnership, firm innovation, and competitive advantage. Various analyses were done especially on the responses received based on the operationalization and respective expressions. Regression analysis included performing the diagnostic tests, and examining the direct effects model. Indirect effects models were also utilized to explain the other three objectives of this study. The various hypotheses tests were summarized and a revised conceptual model was prepared to depict the interrelationships amongst the study variables after the outcomes.

CHAPTER FIVE

DISCUSSION OF RESULTS

5.1 Introduction

This part provides a conversation about the inferential analyses outcomes. The discussion of the observations revolved around four goals which were specific to this research, the conceptual framework showing relationships amongst the variables, and the research hypotheses, all of which are grounded on reviewed empirical literature. The results of the four tested hypotheses were contrasted with suggestions offered by previous scholars. The contradicting and converging propositions from the comparisons were eventually discussed with a view of unearthing new knowledge.

Conclusions were drawn about the whole population from the sample observations obtained after the inferential analyses of the four hypotheses. The main aim of discussing findings is to consider, comprehend the importance of the outcomes with respect to the existing literature and to explain any new insights into the problem. The discussions describe clearly the reasons supporting the outcomes, and the reliability concerning earlier discoveries on the area of research focus.

5.2 Leagile Strategy and Competitive Advantage

The direct effect model of linear regression was applied to test this association concerning LS and CA. The observations showed a major impact on CA emanating from LS because the obtained p-value of 0.000 was less than 0.05. The inference of the outcome insinuates that leagile strategy is a major source of CA when its practices such as surplus reduction, and information technology among others are implemented in the company.

Application of these leagile practices warrants achievement of CA as the company is capable of offering lowest cost, and differentiate products among other benefits. The outcome support recommendations by Miah et al. (2013) who affirmed that the aforementioned leagile practices result in competitiveness of the apparel manufacturing industry under volatile market conditions. The outcome corresponds to that of Christopher et al. (2006) who advocated that companies must develop a differentiated SCS to remain competitive. Similarity was established when comparing the observations of this study and that of Arasa, Mwaura, and Ngui (2013). The scholars measured the association between lean, agile, leagile, and CA concluding the presence of correlation.

These outcomes are also in agreement with those of Tanvir and Yoshi (2012), who surveyed the apparel industry in Bangladesh, India unraveling a positive influence. Also, the outcome of the present research showed there is applicability of leagile strategy in construction companies which indicates equivalence to expositions made by Rehimnia and Moghadisian (2010) after exploring specialized hospital in Iran discovering that the concept of leagility is applicable in hospitals. The study findings also show that the measurement aspects of lean and agile (leagile) SC strategy work best to complement each other. Further suggestions infer that the construction companies in Nairobi City County concurrently combine lean, and agile strategies into leagile strategy leading to realization of competitive advantage. This support the propositions by Naylor (1999) and Christopher (2001) that lean and agile are complementary strategies that are not mutually exclusive. The current investigation show that DC Theory is applicable in construction companies' supply chains.

The findings concur that in Nairobi City County, the construction companies possessed dynamic capabilities which were inherent in the integrated leagile strategy which enabled them to respond persistently, on time, to customer demands or changes in the marketplace and helped attain competitive advantage, an argument supported by (Siddiqui, 2018). Leagile strategy involves integration, representing an amalgamation of lean and agile SC strategies. Leagile strategy represents process dynamism exhibited in the adoption of responsive lean techniques and market responsiveness present in agile supply chains.

Given the foregoing discussion, a conclusion was arrived at that leagile strategy has great impact on the competitiveness of construction companies' supply chains. Hence, embracing the strategy helps companies in the construction companies' supply chains to achieve efficiency by eliminating waste and addressing the process dimension of responsiveness. Leagile strategy ensures responsiveness to the needs of the SC players and customers (Aouam, 2020). Those companies whose operations face a highly tumultuous environment, requiring flexibility and responsiveness are advised to embrace agility, while those under less uncertainty should apply a lean strategy which focuses on cost savings and efficiency (Candace et al., 2011).

5.3 Leagile Strategy, Strategic Partnership, and Competitive Advantage

The second aim assessed strategic partnership as the moderator in the correlation concerning leagile strategy, and competitive advantage. This specific objective had a corresponding hypothesis $H0_2$. To begin with, this investigation confirmed the direct effect on competitive advantage by leagile strategy without involving the interaction term. Secondly, the impact of involving SP as a moderating variable was tested involving the interaction term.

In this study, the indicators of strategic partnership were capital, technological, and management partnerships. The outcome observed without involving the interaction term exposed that both LS and SP greatly influence CA because they showed p-values > 0.05 i.e. (0.014 & 0.000). The second assessment which included the interaction term obtained a p-value = 0.309 < 0.05. It also observed that β's value was negative i.e. -0.060 insinuating non importance of the interaction. Furthermore, a comparison of the p-values before and after the moderation was done and from the outcome, SP has no moderating influence on the association concerning LS and CA of construction companies' SCs in NCC. A study by Khouroh, Abdalla, and Handayani (2019) in which they investigated the association between environmental dynamism, strategic alliance, and sustainable CA identified contracdictory outcomes. The scholars disclosed that strategic alliance has different conclusions from this exploration. Revelations herein equally disputes findings by Sufian and Manideepa (2013).

The outcomes of the current investigation likewise exposed that SP act as an independent variable and has direct impact on competitive advantage. This aspect of the discoveries infers that strategic partnership plays a major role in ensuring competitiveness of construction companies, hence confirming the propositions by Cobeña et al. (2017). Durmuş-Özdemir (2017) similarly found that international joint ventures led to CA. In the airline industry, strategic partnership helps to increase profitability by increasing competitiveness leading to cost gains through economies of scale, cost-sharing, and access to new skills (Oum et al., 2004; Oum & Zhang, 2001). Furthermore, these results support the ideals advanced by proponents of Dynamic Capabilities Theory and Networks Theory. The current study's results which allude that leagile strategy as well as strategic partnerships significantly impacts on competitiveness agree with the arguments advanced by proponents of DC Theory.

For example, Heimericks and Schreiner (2010) contend that strategic alliance management competencies are a specific type of dynamic capabilities. They argue DC Theory lends itself to strategic relationships and towards managerial capabilities specific to a company. The conclusions confirm Networks philosophy explain how strategic partnership is at the center of supply chains regarding construction companies. When companies form a network in the supply chain, it is assumed that direct ties become non-existent. The absence of direct ties known as structural holes located at different parts of the network afford heterogeneous sources of information (Fernhaber & Li, 2013; Ozmel et al., 2012). Scholars such as Kale and Singh (2009) and Arrigo (2012) have supported the viewpoint that strategic partnership ensures a reduction in transaction costs, improves competitive position, acquisition of knowledge, and a source of growth and competitive advantages. In examining the association concerning the three variables, previous research studies show that strategic partnership may have an effect on the correlation involving leagile strategy and competitive advantage which is in contradiction with the current exploration.

There are propositions by early researchers that a key enabler of agility in the SC is the establishment of a virtual enterprise centered on the development of strategic partnerships. SC agility may be hindered by the absence of strategic partnerships (Martinez et al., 2018; Arbussa, Bikfalvi & Marque, 2017). These scholars opined that in the virtual enterprise, the dynamic alliances go further to assist agility in becoming more capable of coping with the rapid response, especially under immense environmental tumult. They further argued agility relies more on partnerships to realize speediness and flexibility. The scholars' viewpoints are not in congruence with the second part of these findings which observed the insignifant effect of SP as a moderator on the association concerning LS and CA.

Despite the second part of the findings revealing the absence of the moderation effect, this study agrees LS and SP have a positive significant direct influence on CA of construction companies' supply chains in NCC. Strategic partnerships are very crucial in the pursuit of attaining CA. The insignificance of strategic partnership's moderation could be explained by the fact that there may be other stronger factors in the supply chain affecting the association concerning leagile strategy and competitive advantage.

5.4 Leagile Strategy, Firm Innovation, and Competitive Advantage

Objective number three looked at how firm innovation intervenes in the association concerning LS, and CA. It was hypothesized in the null that firm innovation has no important intervening influence on the correlation regarding LS, and CA. Baron and Kenny (1986) approach first established the relationships among the three variables (leagile strategy, firm innovation and competitive advantage), followed by a determination of the significance. It was established that leagile strategy significantly influenced firm innovation, which in turn impacted on CA.

The conclusions are similar to the investigation done by Atiang' and Nafula (2020) who revealed that innovation influences competitiveness in SMEs in Kenya. The freshly produced commodities assists in the maintening market share, and improving profits. Furthermore, the scholars' assertion that through innovation, companies are capable of substituting outdated commodities, shortening production time, and hastening new product development better than rivals tie well with the evidence of this research. In addition, the results are in congruence with Dowlatabadi and Saaneiyan's (2015) discoveries that, a relationship exists between marketing innovation and CA among carpet industrialists.

The institutional theory believes that isomorphic pressures emanating from most important foreign and local peers' environments inspire organizations more than market forces (Zaheer, 1995; Marquis & Tilcsik, 2016). Yet there are some innovations that emanate from inside the organization such as new ideas originating from human resources. The findings support DC theory aspects put forward by Teece (2007) who explained that reconfiguration is about transformation. The DC theory suggests that firms scan their environments for opportunities, explore market needs, practice activities that enable them to understand technological transformation as part of their sensing mechanism. Competitive advantage is attained when a company's products are perceived by customers as superior to those of competitors. In a constantly changing environment, innovation is one of the key dynamic resources useful for the attainment of CA because it cannot be reproduced easily by new technologies (Hosseini & Moghaddam, 2014).

5.5 Leagile Strategy, Strategic Partnership, Firm Innovation, and Competitive Advantage

A joint effect model of linear regression was applied to measure objective number four and to test the related hypothesis articulated as $H0_4$: Leagile strategy, strategic partnership, and FI have no significant joint influence on CA. The inference of the finding was that a joint enhancement of LS, SP, and firm innovation caused 0.179 units increase in CA. The results back the empirical attestation by Phelps (2010) who discovered that those companies which are in strategic alliances have better access to innovative firms and that technological networks enhance exploratory innovation leading to competitiveness.

This finding supports the tenets of dynamic capability theory as suggested by Augier and Teece (2009) that the capabilities include the intelligent capacity of seizing fresh environmental opportunities, reconfiguring, and protecting information as well as complementary assets to achieve sustained competitive advantages. The application of leagile strategy, strategic partnership, and firm innovation in companies represent the existence of a blend of dynamic capabilities inherent in these strategies at their disposal leading to competitive advantage.

The chapter debated the inferential findings which highlighted in conformity with the study's four specific objectives which included: the direct correlation concerning LS and CA; the moderating effect involving LS, SP, and CA; the intervening impact regarding LS, FI, and CA; and the joint effect of the four constructs of this research. The results were also discussed based on the conceptual framework, corresponding hypotheses, and underpinning theories as well as reviewed literature.

CHAPTER SIX

SUMMARY, CONCLUSION, AND RECOMMENDATIONS

6.1 Introduction

This chapter reviews the data collection process and statistical analysis considerations regarding the four objectives and hypotheses. How findings were linked to extant literature has been was summarized and conclusions were drawn. Implications to theory, policy, and practice has further been elaborated. Recommendations of the study and information has been provided on the limitations, suggestions for future research and contribution to new knowledge.

6.2 Summary

There has been no agreement among strategic management scholars regarding the association between LS, SP, FI, and CA. In fact, some scholars have pressed for the synchronization of a number of strategies in companies (Denise, 2012; Madhani, 2017). Yet most previous research have tended to focus on direct associations concerning; LS and CA (Pono et al., 2020); strategic partnership and competitive advantage (Watiri & Kihara, 2017); firm innovation and competitive advantage (Nafula et al., 2017). Furthermore, the reviewed studies which employed dissimilar methodologies were conducted in economies and sectors different from the construction industry. Similarly, no known study had been carried out on the correlation concerning leagile strategy, strategic partnership, firm innovation and CA of construction companies' SCs in NCC, exposing knowledge gaps worth investigating. The construction companies and the industry at large in Kenya faced myriad problems concerning dismal performance, collapsing buildings, delayed projects, and consumer dissatisfaction.

They needed insight on how to increase their competitveness as well as chances of survival in the global arena. The researcher was stimulated, addressed the extant gaps and carried out an investigation whose main objective assessed the association regarding leagile strategy, strategic partnership and firm innovation and CA of construction companies' supply chains in NCC. Consequently, four precise research aims were derived together with corresponding hypotheses. Testing of the hypotheses was done by first measuring the independent influence of leagile strategy on the dependent variable. According to the outcomes, leagile strategy affects CA of companies involved in construction and their supply chains in NCC. Secondly, the moderating effect of SP was tested by applyiing the interaction term. However, outcomes insinuated that SP has no moderated effect on the association.

Intervening influence by firm innovation was verified revealing there was partial effect on the correlation regarding the LS and CA. Finally the joint effect of LS, SP, and FI on CA of construction companies' SCs in NCC was determined revealing an important influence existed. The study's underpinning theories were DC, networks theory, and IT. A literature review was based on the above-mentioned three theories and four variables of this study. A summarized tabulation of reviewed literature and knowledge gaps as well as a conceptual model depicting the relationships was prepared. The investigation applied a cross-sectional survey design which assume positivism. The research was conducted in Nairobi City County, Kenya covering 260 construction companies divided in three strata depicting the various players in that supply chain: first stratum comprised of NCA registered contractors in 2018 falling in category 1-8; second included the KAM members in 2018 who were the sector's manufacturing companies and suppliers; third encompassed end-user companies in the construction industry who were KPDA in 2019.

Structured questionnaires containing closed-ended inquiries were self-administered to get primary information from respondents in the field. Each questionnaire for the survey was addressed to SC/Procurement managers and directors in the targeted construction companies. The respondents were well knowledgeable about information passed on to researchers. A total of two hundred and sixty (260) satisfactory questionnaires realized a response rate of 80.50%. Computation of descriptive statistics was done to aid in meaningful summarization and organization of the characteristics of the data set.

6.2.1 Leagile Strategy and Competitive Advantage

Defining the independent effect of LS on CA as the first objective. A matching hypothization was derived stating that LS has no important effect on CA of construction companies' SCs in NCC. It was determined that there was independent influence of on competitive advantage by leagile strategy. Observation was made that leagile strategy significantly influenced CA of construction companies' SCs in NCC. It was observed that the value of R^2 =0.068 inferred that 6.8% of adjustments in competitive advantage of a company were due to changes in leagile strategy. The regression model correctly fitted the data because using ANOVA, the observed p-value = 0.000 > 0.05. The regression coefficient of the constant term was not significant because the p-value = 0.995 was observed. The regression coefficient of leagile strategy was 0.261 and significant with a p-value = 0.000. This insinuated that competitive advantage was enhanced by 0.261 units on adjusting leagile strategy by one unit.

Ater testing the hypothesis, the following outcome was revealed. The p-value of 0.000 which was less than 0.05 inferred that leagile strategy has a significant influence on competitive advantage. Due to the observed outcomes, the null hypothesis $H0_1$: *Leagile Strategy has no significant influence on CA of construction companies' SCs in NCC* was rejected. This finding implied that in the construction companies' SCs in NCC, LS greatly affect competitive advantage.

6.2.2 Leagile Strategy, Strategic Partnership, and Competitive Advantage

SP was conceptualized as the variable in moderation of the association regarding LS and CA. It was hypothesized that SP has no important moderating effect on the correlation concerning between LS and CA in the context of this study. The interaction term was utilized to gauge the moderating effect of SP in the direct association concerning the independent and dependent variables. However, it was found that SP has no effect on the correlation regarding LS and CA as a moderating variable. Competitive advantage was regressed on independent and the moderating variables and revealed their observed R^2 value was =0.128 which established that LS and SP explained 12.8% of adjustments in CA.

It implied that 12.8% of adjustments in competitive advantage of a company were due to changes in leagile strategy and strategic partnership. Results of ANOVA showed a p-value = 0.000 < 0.05 was obtained. It was inferred that the regression model correctly fitted the data because using ANOVA, the observed p-value = 0.000. Results obtained revealed the following corresponding β's values; interaction term, – 0.060; strategic partnership, 0.264; leagile strategy, 0.161. The interaction term was not significant as it had a p-value = 0.309 > 0.05.

The observations made on the results of the interaction term revealed a negative regression coefficient and insignificance. On the basis of the above mentioned observation, acceptance of the null hypothesis was done and it was concuded that there is no important moderating effect of SP regarding LS and CA association in construction companies' SCs in NCC. From the results, it was additionally concluded that strategic partnership, as an independent variable has effect on CA.

6.2.3 Leagile Strategy, Firm Innovation, and Competitive Advantage

It was endeavored to establish how FI, which was conceptualized as an intervening variable, influenced the connection concerning LS and CA. The intervening influence of firm innovation was established via a stepwise methodology recommended by Baron and Kenny in 1986 in which the existence of association concerning the variables was established and then their significance was determined. Step one involved regression of the DV (competitive advantage) on the IV (leagile strategy). From the base model, the explained variation was observed to be 6.8% i.e. (R^2 = 0.068). From the base model, leagile strategy's corresponding β's value was 0.261, which was positive, and significant.

The aforementioned observation showed significance since the p-value < 0.05. Step 2 in the model described the association concerning leagile strategy and firm innovation. This model explained how leagile strategy affects firm innovation in a company. From the step 2, the explained variation R^2 was observed to be 0.063 or 6.3% indicating that leagile strategy explained 6.3% of adjustments in firm innovation. It implied that 6.3% of adjustments in firm innovation of a company were due to changes in leagile strategy. The regression coefficient of 0.25 was observed which implied that positive adjustments to leagile strategy improve firm innovation by 0.25 units.

The observed impact was of significance. Stage three model examined how firm innovation affected in CA in terms of either a gain or decline. In this model, the explained variation of 11.8% (R^2 = 0.118) was observed indicating that firm innovation explained 11.8% of adjustments in competitive advantage. It implied that 11.8% of adjustments in competitive advantage of a company were due to changes in firm innovation. The corresponding β value was 0.343 and significant at 5% i.e. ($\beta_1 = 0.343,\ p - value = 0.000$). This implied that positive adjustments to firm innovation improved competitive advantage by 0.343 units. The observed effect was of significance. The step 4 model explained how both leagile strategy and firm innovation influenced competitive advantage.

In this multiple regression model, the explained variation was found to be 15.1% i.e. (R^2 = 0.151). The observed regression coefficient of leagile strategy = 0.187 and firm innovation = 0.296. The obtained P-value of leagile strategy (0.002) and firm innovation (0.000) showed significance at 5% level. In testing the hypothesis to determine the impotance of intervening impact of firm innovation on the correlation regarding the study's independent and dependent variables, regression coefficients, corresponding p – values as well as explained variation R^2 of both the base and step 4 models were compared before as well as after mediation.

A comparison of explained variations before and after mediation of the two aforementioned models revealed that using firm innovation as an independent variable increased explained variation from 6.8% to 15.1%. This was evidence of a strong explanatory power when firm innovation was used. Additionally, the fact that LS had a significant influence on firm innovation, which in turn significantly affected competitive advantage was a confirmation of the existence of the intervening effect.

Baron and Kenny (1986) advises that a construct has an intervening influence if all regression coefficients in the four steps show significance at 5% level, which is true from the above-mentioned observations. A decision was made not to accept the null hypothesis which was expressed that *Firm Innovation has no significant intervening impact on the association concerning LS and CA.* Hence, this study established that firm innovation had a significant partial intervening impact on the association regarding LS and CA of construction companies' SCs in NCC.

6.2.4 Leagile Strategy, Strategic Partnership, Firm Innovation, and Competitive Advantage

The three variables were joint as one composite variable to evaluate their impact on competitive advantage using linear regression model. Regression results showed that the explained variation R^2 =0.032. That observation inferred that the composite variable explained 3.2% of the change in competitive advantage and it was of significance because the corresponding p-value = 0.004. The results of ANOVA showed a P-value = 0.004 < 0.05) and F-statistic = 8.537 > 3.87. The regression coefficient of the constant term for the joint effects model was observed to be insignificant because $\beta = 0.000$ and P-value = 0.997 which were greater than 0.05. For the composite variable, corresponding β value was 0.179, Standard Error = 0.061, t-statistics = 2.922 greater than tabulated of 1.968 and P-value of 0.005< 0.05.

To explain the fourth specific objective of this study, the matching hypothesis was affirmed and tested. The above observations implied that leagile strategy, strategic partnership, and firm innovation were what incorporated the joint effect from the composite variable. Therefore, it was inferred that the composite variable has a joint influence on CA. The observed results especially the value of R^2 which was 3.2% implied the remaining 96.8% of change in competitive advantage were attributed to other factors different from the composite variable.

6.3 Conclusion

The current study set the main objective which was measured in the context of construction companies' SCs in NCC. Association concerning the four study variables was shown in the conceptual model. A questionnaire was applied for gathering of information for this survey where 80.5 percent response rate was realized. Linear regression model and hypotheses testing were employed to evaluate the association regarding the study variables. Results recognized that there was a statistically important impact of LS on construction companies' CA in NCC.

Examples of dynamic capabilities are managerial decision-making at a strategic level, marketing, superior product development, and alliancing processes (Adegbite et al., 2018; Ambrosini & Bowman, 2009). DC approach emerged to be the underpinning theory of this study because it is connecting all the four variables and objectives. Secondly, it was further established that the interaction between LS and SP revealed a negative effect on competitive advantage and was not important statistically, which was not satisfactory to support a moderation relationship. It is prudent for company managers to appreciate and apply strategic partnerships to achieve CA.

Involving capital service provider in the SP arrangements is very vital in construction companies that utilize large equipment in their operations. Management and advisory agreements with consultants in specialized areas such as building, road, mechanical, water, electrical engineering, painting, manufacturing, supply, and property management help the companies in terms of expert advice. Strategic partnership with financial service providers is fundamental to construction companies because they require a very high initial capital outlay in their operations and therefore the overall need for financial flow and stability. The outcome of the study support networks and dynamic capability theories.

A network emanating from strategic partnerships provides heterogeneous sources of information which is treated as a cause of CA (Fernhaber & Li, 2013; Ozmel et al., 2012). In another instance, firm innovation was confirmed to have a partial intervening effect on leagile strategy and the contruction companies' competitive advantage. It was found that leagile strategy had an important effect on FI, which in turn significantly affected competitive advantage. The outcome that FI had a statistically important effect on leagile strategy and CA correlation is vital and construction companies are encouraged to ensure it is embraced.

Innovation helps companies introduce changes to products, ideas, and markets with added value to customers (Mohammadian, 2014). Influence by SP and FI on leagile strategy and CA association was established to be statistically important. That outcome is critical to construction companies, who should appropriately adopt an amalgam of the aforementioned strategies to ensure competitiveness and survival. The construction companies ought to own assets and other competencies which improve competitiveness under tumultuous business arena.

6.4 Implications of the Study

These findings are a source of in-depth knowledge to scholars, policymakers, management as well as practitioners. Research implications are discussed based on their significance in theory, and knowledge.

6.4.1 Implications of Theory

The conclusions of this research have empirically corroborated that LS and CA have a positive important association. The adoption of leagile strategy attributes give rise to cost efficiency, product differentiation, high service levels, and shorter lead time, culminating in the realization of competitive advantage. It further confirms that SP influence competitive advantage as an independent variable due to its advantages arising from cooperation, pooling of resources, and joint problem solving among others. Likewise, firm innovation significantly impacted on competitive advantage. In a company, innovation gives rise to continuous research, ability to differentiate products, and meet consumers' needs. Innovation also equips companies with the sensing, seizing and reconfiguration competencies vital in tackling the challenges associated with fast changing business environment. All these findings indicate that there was mmanifestation of the attributes of the three variables three variables contributing to competitive advantages.

With this enlightenment the research findings supported dynamic capabilities approach as the anchoring theory in this study. Furthermore, these findings support the Networks Theory which enlightens on the importance of many partnerships among companies in the supply chain (Håakanson & Snehota, 1989). These outcomes also support the institutional theory which expounds on adoption of innovative structures and how the same is driven more by symbolic actions and external influences and less via functional considerations (Meyer & Rowan, 1977).

However, some innovations are adopted more from functional considerations, especially when new ideas and processes emanate from within. Such innovations end up being adopted by organizations specifically to improve efficiency. The implication is that firm innovation was necessary for the organizations due upsurge in business rivalry and uncertainty. The attributes such as that of continuous research provided the businesses with a means to stay abreast of the ever-changing customer needs, desires and behaviors. It further facilitated the creation of a reputation for the companies in the industry. The companies' involvement in continuous research assisted in tracking changes in the environment and the organizations responded to them. The revelations of the study as far as firm innovation are concerned are important for theory development. The constant acquisition of new IT systems, development of fresh processes, implementation of differentiated products, and introduction of innovative advertisement and promotional methods increased customer satisfaction. The capability of employees to suggest novel concepts was a great basis of benefits for a certain period and helped the companies gain competitive advantage. The impact of FI on CA backs the outcomes of previous research of (Nyeadi et al. 2018; Pelegrin & Antunes, 2013; Finep, 2004; Nelson & Rosenberg, 1993).

6.4.2 Implications of Policy

Policy implications for construction companies in Naihave emerged from the present research's results. According to Competition Authority of Kenya, (2017) and Kenya National Bureau of Statistics KNBS (2017), one of the industries motivating economic development in Kenya is construction because it enormously contributes to GDP, generates employment, drives progress in other sectors like agriculture, and provides export expansion prospects, and critical for achievement of vision 2030 among other things.

The outcomes of this study could influence organizational reforms in Kenya's construction companies and beyond. These findings help in increasing the awareness of the policymakers of their capability to alleviate myriad challenges emanating from the tumultuous business environment, achievement of competitive advantages, and superior firm innovation. The study offers awareness to policymakers about the importance of attaining competitive advantages and the contributory factors which are leagile strategy, strategic partnership, and firm innovation amongst others.

They offer assurance of organizational change towards competitiveness and survival when faced with diverse challenges. The study demonstrates to the policymakers in oversight institutions the benefits of implementing a blend of strategies in their organizations and their supply chains. Furthermore, this study benefits the government as its findings have increased the generation, utilization, and commercialization of research and development in the construction industry.

6.4.3 Implications of Practice

Top echelons, stakeholders, chief executive officers, directors, line managers, and practitioners of construction companies find this information useful. They should adopt strategies, practices, and carefully select their strategic partners on projects that mutually beneficial. Firm innovation individually and jointly impacts on construction companies' competitive advantages. Therefore, the findings of the present research have empirically established variables which leads to the attainment of CA in construction companies and beyond. For managerial practice, the suggestions of this research should be put into practice. The company's practices therefore ought to concentrate on surplus eradication, management flexibility, adoption of information technology and systems.

Perhaps one of the equally necessary practices is strategic planning, internal and external coordination as well as ensuring that total quality management is embraced to reap on the benefits. The construction companies' performance would be greatly enhanced if practitioners engaged in partnerships that are strategic to their organizations. Construction companies heavily rely on use of heavy duty equipment which require high initial capital outlay.

It is equally necessary to practice capital, technological, and management partnerships as they are mutually beneficial to the organizations involved. Strategic management practices in organizations need to concentrate on environmental scanning for opportunities and early detection of eminent changing conditions for swift response. The construction companies' practitioners should adopt innovation practices such as investing heavily on research and development.

6.5 Recommendations of the Study

Managers and practitioners need to embrace and adopt an appropriate practices including those involving firm innovation which are capable of successfully reengineering their companies towards management efficiency, competitiveness, and superior performance. To achieve competitive advantage through leagile strategy, the companies need to adopt practices such as innovation, surplus eradication, synergies, strategic planning, use of IT systems, responsiveness to market demand, flexibility, and feedback. It is commended that companies must embrace strategic partnerships in their supply chains and beyond. The adoption of mutually beneficial relationships in the areas of the capital, technological, and management partnerships facilitates the competitiveness of construction companies.

It is suggested that strategic partnership with consultants, financiers, professional service providers, raw material, and capital equipment suppliers is necessary for the competitiveness and survival of companies. This study recommends that companies interested in the achievement of CA and survival ought to embrace and adopt the appropriate firm innovation practices. It has been established that firm innovation possesses great intervening effect on association concerning leagile strategy and construction companies' competitive advantage. Firm innovation practices comprise continuous designing of new techniques of delighting the customer, carrying out research, creating an organizational structure that matches corporate and innovation goals as well as encouraging a culture where employees are allowed to suggest new ideas are recommended.

6.6 Limitations of the Study

A number of limitations could be attributed to this study. A sample size of 323 construction companies was earmarked for information gathering in this research. However, there was a wave of COVID-19 pandemic during the information gathering period. There were limitations of people and hard document access in most of the companies visited by the researchers. In some companies, the employees who were meant to fill out these questionnaires were working from home. Additionally, the fact that responses were only to be provided by individuals particularly managers and directors working in SC or procurement departments may have introduced an element of personal perception, misleading responses, and common method bias. It could also be prudent if, in the future, the questionnaires are accompanied by a respondent interview.

The cross-sectional survey strategy utilized may have affected the response since those individuals particularly managers and directors working in SC or procurement departments in the targeted companies, were the ones who were perceived to possess the right information. There were presented several delays which required constant follow-ups, all of which could have affected response. The construction companies in this study were categorized in three strata.

One classification of companies entailed those registered contractors under NCA1-8, the second grouping comprised construction manufacturing companies who were members of KAM, and the third category consisted of property development companies listed under the KPDA directory of 2019. Although all the studied companies represented the construction industry supply chain and were located in Nairobi City County, their strategic behavior and mode of response to the tumultuous environment may have been different. Moreover, the leadership and governance of construction companies' supply chains may take dissimilar forms. Hence, the dissimilarities could have restricted maximum information gathered herein.

6.7 Areas for Future Research

This investigation was carried out in construction industry in Kenya. Construction companies and their SCs in NCC, Kenya are less developed. It is advisable that related studies ought to be done in industrialized countries where the construction companies and supply chains are advanced to comprehend if comparable outcomes will be realized. The research applied one moderating and intervening variable in construction companies. Related studies can be done using two moderating variables to unearth if same results will be attained. More research should be done to unearth if using those different variables could result in a similar or different set of findings altogether.

Another recipe for future research is on the facilitating role of strategic partnership in agile SCS in the attainment of loner term competitiveness. This study concluded that other factors besides leagile strategy, strategic partnership, and firm innovation contribute towards attainment of competitiveness in construction companies. It is recommended for upcoming studies to concentrate on discovering these other factors in construction companies' supply chains in NCC and beyond. This investigation involved construction manufacturing companies, contractors, and property developers as constituting the supply chain. Future studies should include the transportation and distribution businesses too. It was unearthed from this research that SP has no moderation impact on the association concerning LS and CA. Another recommendation is that future researchers should investigate the factors which moderate the relationship between LS and CA in construction companies.

6.8 Contribution to New Knowledge

Empirically, this research has recognized the degree of influence that three variables have on competitive advantage. New knowledge to strategic management has therefore been added by this study recognizing those factors which are vital for attainment of CA. These factors are LS, SP, and firm innovation. These findings can be used by researchers as points of reference for the achievement of competitive advantages. It has also established the aforementioned variables possess some of the dynamic capabilities for achieving and sustaining competitiveness in companies in tumultous business environment. There is new knowledge that the aforementioned strategies are useful when adopted for sound management of organizations faced with complex, turbulent, and competitive environments.

The study has therefore provided new knowledge by confirming early findings of various scholars that the adoption of leagile supply chain strategy in an organization impacts competitive advantage through its factors of elimination of waste, synergies, IT systems, feedback as well as knowledge management. This research has added fresh knowledge vide its findings which determined the absence of a positive important impact of SP in moderation of the association concerning leagile strategy and construction companies' competitive advantage. There is original knowledge that strategic partnership does not affect the strength of the association concerning leagile strategy and CA, but rather it directly influences it. This finding triggers the minds of upcoming scholars to question if the facilitating part of SP is only effective in agility and not leagility.

Early studies suggested that agility relies more on partnerships to realize speediness and flexibility. A key enabler of agility in the SC is the establishment of a virtual enterprise centered on the development of strategic partnerships (Martinez et al., 2018). Agility may be hindered by the absence of strategic partnerships (Arbussa, Bikfalvi & Marque, 2017). The second part of the outcomes of the present investigation showed that SP adoption in an organization through its measurement elements of effective communication and integration in the network, maintenance of close ties with consultants, financiers, raw material and capital equipment suppliers. There is novel empirical proof ratifying the existence of the intervening influence of Firm Innovation on LS and CA correlation in construction companies. Conclusions of this study show it has a partial impact on that association through factors such as; continuous design of new techniques of delighting the customer, carrying out research and development, creating an organizational structure that matches corporate and innovation goals, and encouraging a culture allowing employees to suggest new ideas.

Managers of construction companies should continuously develop and implement new products, processes and markets vide introducing fresh advertisement and promotional methods for their products. Empirically, this study determined there is a joint impact of LS, SP, and firm innovation on CA of construction companies' SCs in NCC. The study has introduced fresh knowledge by acknowledging that apart from the aforementioned three variables, different factors also are at play in causing longer term competitiveness in the construction companies.

In summarization, the chapter scrutinized research objectives, hypotheses, design, data collection methods, and statistical analysis tools employed. The research set out to unearth the impact of SP and FI on the association regarding leagile strategy and construction companies' competitive advantage. The research findings were summarized and conclusions were made precisely correlating to the hypotheses as well as the reviewed literature. The recommendations were discussed and implications were suggested in terms of practical issues, new knowledge, and policy considerations. Consequently, limitations of the investigation were outlined, and areas to be studied in the future were recommended as was articulated.

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APPENDICES

Appendix 1: Research Questionnaire

COMPANY NAME: M/S …… STAMP: ……

TELEPHONE EMAIL: SIGNATURE:

…… …… ……..

Research Questionnaire

This tool is purely for research and it is intended to aid in acquiring informative data from respective respondents in construction companies comprising of (Contractors Registered under NCA1-8), Construction Manufacturing Companies and (Suppliers) & Property Developers (Customers) in NCC, Kenya. The study's focus is on Leagile Strategy, Strategic Partnership, Firm Innovation and CA of Construction Companies' SCs in NCC, Kenya. Therefore, your response to this questionnaire will highly be appreciated in accordance with the provided guidelines for each of the parts. Strict confidentiality of information and secrecy of respondents will be ensured.

Kindly give feedback to all inquiries by ticking as appropriate.

SECTION A: RESPONDENT AND COMPANY DEMOGRAPHIC DATA

Please Mark By Ticking As Appropriate:

1. Indicate the highest level of education you have attained.

Diploma [ ] Bachelors' [ ] Masters' [ ] PhD [ ]

Others (specify), _____

2. Indicate the number of years you have been working in this company

< 1 year [ ]

Between 1-3 years [ ]

> 3 years [ ]

3. Specify the substantive position you hold in this company

Director SC/Procurement/Logistics [ ]

SC/ Procurement/Logistics Manager [ ]

Project Manager [ ]

Other (Specify) _____

4. Indicate the category of company proprietorship (kindly tick the one)

Local [ ] National [ ] Regional [ ] Multinational [ ]

Other (Specify) _____

5. Indicate which type of construction your company specializes in.

Building Works [ ] Road Works [ ]

Mechanical Engineering Service [ ]Water Works [ ]

Electrical Engineering Service [ ] All of these [ ]

Other (Specify) _____

6. Specify the number of years your company has functioned (please tick as appropriate)

Below One [ ] Between One and Five [ ] Between Six and Ten [ ]

Above Ten [ ]

SECTION B: LEAGILE STRATEGY

Specify the extent to which you agree that LS leads to CA in your company utilizing the following scale: On a scale of 1-5 where denotation for **(1) Very small (2) Small (3) Moderate (4) Large (5) Very large**

No	Leagile Strategy	1	2	3	4	
1	Business keeps minimum level of inventory/stocks at all times to eliminate waste.					
2	Business fully utilizes and focuses its resources (employees' talents, assets, finances) on the highest priority goals to eliminate waste.					
3	Business delivers to the customer products & services that conform to customer's quality requirements.					
4	Business practices a continuous improvement in quality and all other processes.					
5	Business practices economies of scale to achieve quantity markdowns					
6	Business maintains a large volume of managerial expertise					
7	Business maintains cooperation arrangements with suppliers, service providers, transporters, distributors, customers, financiers etc.					
8	Business plans in advance for its activities (strategic planning).					
9	Business utilizes information technology and market intelligence systems in its operations					

10	Business quickly responds to changes in customer's requirements.					
11	Business maintains flexible workforce, processes and technologies					

SECTION C: STRATEGIC PARTNERSHIP

Specify the extent to which you agree that the statements reflect the company's SP position by ticking the relevant box for each statement using the following scale: On a scale of 1-5 where denotation for **(1) Very small (2) Small (3) Moderate (4) Large (5) Very large**

No.	Strategic Partnership	1	2	3	4	5
1	Business sustains SP with raw materials sellers.					
2	Business sustains SP with financial services dealers					
3	Business sustains SP with capital equipment sellers					
4	Business sustains SP with professional service dealers (architects, quantity surveyors, engineers, plumbers, designers).					
5	Business sustains SP with Information Technology (IT) service dealers					
6	Business practices effective communication within and shares information					
7	Business integrates effortlessly with other companies in the network/industry					
8	Business sustains SP with Management and Advisory Specialists.					

SECTION D: FIRM INNOVATION

Specify the extent to which you agree that the statements reflect the company's firm innovation position by ticking the relevant box for each statement using the following scale: On a scale of 1-5 where denotation for **(1) Very small (2) Small (3) Moderate (4) Large (5) Very large**

No.	Firm Innovation	1	2	3	4	5
1	Business continuously develops and implements new products					
2	Business continuously develops new processes					
3	Business continuously introduces new advertisement and promotional methods for its products & services					
4	Business continuously develops new techniques of delighting customers					
5	Business continuously carries out research					
6	Business continuously acquires new information technology system					
7	Business continuously creates a culture that encourages employees to suggest new ideas					
8	Business continuously creates an organization structure that matches corporate and innovation goals					

SECTION E: COMPETITIVE ADVANTAGE

Specify the extent to which you agree that the statements reflect the company's CA situation by ticking the relevant box for each statement using the following scale: On a scale of 1-5 where denotation for **(1) Very small (2) Small (3) Moderate (4) Large (5) Very large**

No.	Competitive Advantage	1	2	3	4	5
1	Business offers comparatively lower prices than competitors for equivalent products and services.					
2	Business has been reducing its overall costs more than competitors.					
3	Business focuses on offering benefits to the customers more than competitors					
4	Business offers high product variety than competitors					
5	Business offers products and services with unique features to customers than competitors					
6	Business offers products and services with exceptionally superior quality to customers than competitors					
7	Business offers specially high service level to its customers					
8	Business ensures speedy delivery to customers					
9	Business maintains short lead times (time taken from customer order placement to delivery)					

Appendix II: List of NCA1-8 Contractors of 2018 : Source: Kenya Gazette Notice Vol. CXX—No. 94 (2018). **Link:** http://www.kenyalaw.org/kenya_gazette/gazette/volume/MTgyMw--/Vol.CXX-No.94/ , **KAM memberships in 2018, and KPDA memberships in 2019 in Nairobi City County.**

KAM memberships in 2018

S/No.	Name of Company
1.	ARM CEMENTS
2.	BAMBURI CEMENT LTD
3.	BAMBURI SPECIAL PRODUCTS LTD
4.	BOYAMA BUILDING MATERIALS
5.	CENTRAL GLASS INDUSTRIES LTD
6.	EMMADO WORKS COMPANY LIMITED
7.	GEOLINK HOLDINGS LIMITED
8.	FLOTSAM LIMITED
9.	EMMANUEL & BROTHERS ENTERPRISES LIMITED
10.	ACUMEN CONSTRUCTION COMPANY LIMITED.
11.	KENBRO INDUSTRIES LTD
12.	KENYA BUILDERS & CONCRETE LTD
13.	MANSION HART KENYA LTD
14.	MOMBASA CEMENT LTD – ADDIS ABABA ROAD, NAIROBI
15.	ORBIT ENTERPRISES LTD
16.	SAJ CERAMICS LTD
17.	SANDBLASTING & COATINGS (KENYA)
18.	SAVANNAH CEMENT
19.	SPACE AND STYLE
20.	TILE & CARPET CENTRE
21.	VIRJI VISHRAM PATEL & SONS
22.	VALLEM CONSTRUCTION LTD STEEL MANUFACTURERS
23.	ATHI RIVER STEEL PLANT LTD
24.	CORRUGATED SHEETS LIMITED
25.	DOSHI & COMPANY HARDWARE ENTERPRISES LTD
26.	STEEL MAKERS LTD
27.	TONONOKA STEEL LTD
28.	AUTO SPRINGS EAST AFRICA LTD
29.	STEEL MAKERS LTD
30.	STEEL STRUCTURES LTD
31.	BROLLO KENYA LTD
32.	APPEX STEEL LTD – ROLLING MILL DIVISION
33.	INSTEEL LTD
34.	ASP COMPANY LTD
35.	WARREN ENTERPRISES LTD
36.	NAIL & STEEL PRODUCTS LTD

37.	ROLMIL KENYA LTD
38.	SAFAL MITEK LTD
39.	TECHNOCONSTRUCT KENYA LTD
40.	HEAVY ENGINEERING LTD
41.	MITSUBISHI CORPORATION
42.	SPECIALISED ENGINEERING CO. (E.A) LTD
43.	MABATI ROLLING MILLS LTD
44.	DEVKI STEEL STEEL MILLS LTD
45.	FARM ENGINEERING INDUSTRIES LTD
46.	BLSF EAST AFRICA
47.	HOLMAN BROTHERS E.A LTD
48.	JUNGLE GROUP HOLDINGS
49.	CHRYSO EASTERN AFRICAN LTD
50.	IMPALA GLASS INDUSTRIES LTD
51.	JUMBO CHEM KENYA LTD
52.	BUILDING CONSTRUCTION CONCEPTS
53.	KOTO HOUSING KENYA LTD
54.	FLAMINGO TYLES
55.	PRIDE ENTERPRISES LTD
56.	SUPERFIT STEELCON LTD
57.	TWYFORD CERAMICS LTD
58.	WOOD MAKERS (K) LTD
59.	PIPE MANUFACTURERS LTD
60.	BASCO PRODUCTS (K) LTD
61.	CROWN PAINTS (KENYA) LTD
62.	GALAXY PAINTS & COATING CO. LTD
63.	GRAND PAINTS LTD
64.	KANSAI PLASCON KENYA LTD
65.	L.G. HARRIS & CO. LTD
66.	MAROO POLYMERS LTD
67.	NAIROBI PLASTICS LTD
68.	SYNRESINS LTD
69.	WESTMIMSTER PAINTS & RESINS LTD
70.	FINLAY BRUSHWARE LTD
71	ANJARWALLA & KHANNA ADVOCATES
72	BALALA & ABED ADVOCATES
74	KANAGA AND ASSOCIATES LTD
75	KARANJA NJENGA AND COMPANY ADVOCATES
76	KHAYESI NJAMBI & KHAYESI ADVOCATES
77	KN LAW LLP
78	MBOYA WANGONG'UU & WAIYAKI ADVOCATES
79	MENEZES AND PARTNERS ADVOCATES
80	MEREKA & CO. ADVOCATES
81	MMC AFRICA LAW
82	MURIMI AND COMPANY ADVOCATES
83	O & M LAW LLP
84	BRITAM
85	COMMERCIAL BANK OF AFRICA LTD
86	FUSION CAPITAL LTD

87	INVHESTIA AFRICA LTD
88	KCB BANK KENYA LTD
89	POPOTE PAYMENTS LTD
90	SPEARHEAD AFRICA LTD
91	STANLIB FAHARI I-REIT
92	VEDMAN CAPITAL LTD
93	KANSAI PLASCON KENYA LTD
94	CUMMINS C & G LTD
95	I BUILD KENYA LTD
96	DAVIS & SHIRTLIFF LTD
97	TECHNICAL ENGINEERING SERVICES LTD
98	QUESTWORKS
99	CLASSIC MOULDINGS LTD
100	KOTO HOUSING KENYA LTD
101	SARMA ENTERPRISES LTD
102	CEMEX HOLDINGS LTD
103	BOLEYN MAGIC WALL PANEL LTD
104	ALI FABRICATION SOLUTIONS LTD
105	KUMKANG KIND EAST AFRICA LTD
106	C & G MABATI MILLS LTD
107	MABATI ROLLING MILLS LTD
108	NEWLINE LTD
109	NEWMATIC AFRICA LTD
110	BAMBURI CEMENT LTD
111	RHOMBUS CONCRETE LTD
112	SAVANNAH CEMENT LTD

Source: Kenya Association of Manufacturers and Exporters Directory (2017/18)

KPDA memberships in 2019

S/No.	Name of Company
1	ACORN MANAGEMENT SERVICES
2	ADWAA ALKHALIL DEVELOPMENT COMPANY
3	AHCOF INVESTMENTS (KENYA)
4	AMAZON PROJECTS
5	AMBOSELI COURT
6	AMS PROPERTIES
7	BAHATI RIDGE DEVELOPMENT
8	BLUELINE PROPERTIES
9	TILISI DEVELOPMENTS
10	CAMELOT CONSULTANTS
11	CENTURY CITY PROPERTY
12	CHERIEZ PROPERTIES
13	CHIGWELL HOLDINGS
14	CITIESTATE INVESTMENTS
15	EMESHH BUILDERS
16	EMINENT INTERNATIONAL LIMITED
17	EMIRISHOI (E.A) LIMITED
18	EMKAF LTD
19	EMKAN BUILDING LTD
20	EMPIRE ELITE BUILDERS
21	ELM RIDGE
22	ENDLESS AFRICA
23	ENKAVILLA PROPERTIES
24	FAIRDEAL DEVELOPMENT & INFRASTRUCTURE
25	FEDHA MANAGEMENT
26	GOLDEN COMPASS
27	GEOFARTHOM DRILLING COMPANY LIMITED
28	GEOHEN ENTERPRISES LTD
29	GEOJAM ELECTRICALS CONTRACTORS LIMITED.
30	GEO-KREATIVE DESIGNS INTERNATIONAL LIMITED
31	IMMENSITY HOLDINGS
32	IKO WORLD ENGINEERING LIMITED
33	ILBAROK AGENCIES (K) LIMITED
34	ILENSAH INVESTMENT CO. LTD
35	ILLAN ENTERPRISES LIMITED
36	ILLUSTRATE SERVICES LIMITED
37	JAJUHA CIVIL CONTRACTORS AND ENGINEERS LIMITED
38	JAKAMU ENGINEERING LIMITED
39	JAKAMUYA BUILDING AND CONSTRUCTION COMPANY
40	JAKIWA ENGINEERING WORKS
41	MACHJA GENERAL DEALERS LTD
42	MACIKA LIMITED
43	MACKEN SERVICES LIMITED
44	MACLAND CONSTRUCTION COMPANY
45	MACPLAN ENGINEERING SERVICES LIMITED

46	M-AFRICA COMPANY LIMITED
47	MAGIC ENGINEERING COMPANY LIMITED
48	NORCENT PROJECTS
49	OAKPARK PROPERTIES
50	PAMMART HOLDINGS CO. LTD
51	PAMUKO ENTERPRISES
52	PANIA ENTERPRISES LIMITED
53	PANORAMA TECHNICAL SERVICES LIMITED
54	PANWAYS INVESTMENT LIMITED
55	PARADIGM CONSTRUCTION COMPANY LIMITED
56	SAYANI INVESTMENTS
57	SHERRY BLUE PROPERTIES
58	SHREEJI DEVELOPMENT
59	SIGIMO ENTREPRISES
60	SJR PROPERTIES
61	SLOK CONSTRUCTION
62	SOHAIL DEVELOPMENTS
63	SOMA PROPERTIES
64	SUPERIOR HOMES KENYA
65	14TREES KENYA
66	TATU CITY
67	TECNOFIN KENYA
68	THE COMBINED WAREHOUSES
69	THE EPIC PROPERTIES
70	TIEMBEY ENGINEERING AND SUPPIES
71	TIERSIX LIMITED
72	TRIDENT ESTATES
73	TSG REALTY LTD
74	TWO RIVERS DEVELOPMENT LTD
75	UNITY HOMES LTD
76	USERNAME INVESTMENTS LTD
77	VAAL REAL ESTATE
78	VISHWA DEVELOPERS LTD
79	WOOD PRODUCTS KENYA LTD
80	AXIS REAL ESTATE LTD
81	BROLL KENYA LTD
82	HASS CONSULT LTD
83	KNIGHT FRANK KENYA LTD
84	MW&C COMPANY ADVOCATES LLP
85	PAM GOLDING PROPERTIES LTD
86	TYSONS LTD
87	SHABAHA SOLUTIONS LTD
88	BOOGERTMAN AND PARTNERS ARCHITECTS LTD
89	K&M ARCHPLANS LTD
90	MORPHOSIS LTD
91	PARAGON ARCHITECTS

92	BUY RENT KENYA LTD
93	DLR GROUP AFRICA LTD
94	TANDEM AND STARK LTD
95	GLOBAL PROPERTY ADVICE
96	REITS ASSOCIATION OF KENYA (RAK)
97	TOWN AND COUNTY PLANNERS ASSOCIATION OF KENYA
98	EMERGE DEVELOPMENTS LTD
99	VILLA CARE LTD
100	HOMES UNIVERSAL
101	KNIGHT FRANK
102	HASS CONSULT LTD
103	LLOYD MASIKA
104	MY SPACE PROPERTIES KENYA
105	GAKUYO REAL ESTATE
106	AZIZI REALTORS
107	HAYER ONE LTD
108	SURAYA PROPERTY GROUP
109	OPTIVEN ENTERPRISE LTD
110	DINARA DEVELOPERS
111	NATIONAL HOUSING CORPORATION
112	NATIONAL CONSTRUCTION AUTHORITY OF KENYA
113	STATE DEPARTMENT FOR HOUSING & URBAN DEVELOPMENT
114	MINISTRY OF TRANSPORT, INFRASTRUCTURE, HOUSING &
115	MINISTRY OF EDUCATION, SCIENCE & TECHNOLOGY
116	POLISH INVESTMENT & TRADE AGENCY

Source: Kenya Property Developers Association Directory (2019)