Addis Ababa University
School of Commerce

The Effect of Strategic Leadership on Organizational Innovation: in case of selected Digital Tech firms in Ethiopia

By: Michael Melaku Abebe

A Research Project submitted to Addis Ababa University, School of Commerce in Partial Fulfillment of the Requirements for the Award of MA Business Leadership

Advisor: Fisseha Afework (Assistant Professor)

Addis Ababa, Ethiopia

September 2021

DECLARATION

I, Michael Melaku Abebe declare that the research project entitled ‘The Role of Strategic Leadership on Organizational Innovation: in case of selected Digital Tech firms in Ethiopia” is my original work. Moreover, this study has not been presented for any other program or university and that all sources of material used have been acknowledged accordingly.

Michael Melaku

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CERTIFICATION

This is to certify that Michael Melaku Abebe has carried out his research work entitled “The Effect of Strategic Leadership on Organizational Innovation: in case of selected Digital Tech firms in Ethiopia” for the partial fulfilment of Masters of Arts in Business Leadership at Addis Ababa University, School of Commerce. This work is original and it is suitable for submission of Masters of Arts in Business Leadership.

Advisor: Fisseha Afework (Assistant Professor)

Signature: _____

Date: _____

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APPROVED BY BOARD OF EXAMINERS

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ACKNOWLEDGEMENTS

I asked God and I didn't know it was already given. Dear Assistant Professor Fisseha Afework without your sincere support this work would not have been materialized. Your exceptional support brought the work to its end.

My friend Nebil Ahmed, I am thankful for your encouragement to take part in such program and in all the progress of the MBL program.

My friends and classmates Nigus, Yalemfikir, Tsega, Yared, Tewodros you have irreplaceable role from the beginning of the program to its end. I am blessed to have your support in every way.

My Friends Hannibal, Yohannes, Tariku, Tekeste, Addis, Masresha and Ermia without your all-rounded discussions, intellectual engagements, debates, emotional support and understandings this would not have been a reality. Dear Hannibal and Addis your contributions on reviewing the work were valuable in the progress of the work.

My colleagues Daniel, Lema, Solomon and Andinet; you played important role in practicing of leadership and innovation in the work engagements. Special thanks go to Lema and Andinet for your valuable input on reviewing the work.

Dear Ato Sisay Tola, I am thankful for your admirable leadership and the opportunity for creating conducive environment for the progression of this research.

All respondents to the data collected, thank you very much for your valuable time and willingness to participate in the research.

The agency I worked for long time had been the place for learning, experimenting, challenging myself and contributed a lot in expanding my knowledge, expertise and personal growth.

I am blessed to have such parents, and thankful for my brothers and sister for all your understandings and support. Dr. Gumataw you are like no other, I am thankful to have you.

Last but not least the staff of commerce and 6kilo campus libraries deserve acknowledgement.

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ACRONYMS AND ABBREVIATIONS

AB – Absorptive Capacity

AD – Adaptive Capacity

CEO - Chief Executive Officer

IT – Information Technology
ICT – Information and Communication Technology

MINT – Ministry of Innovation and Technology

NBE – National Bank of Ethiopia

OECD – Organisation for Economic Co-operation and Development

OI – Organizational Innovation

OP – Operational Efficiency

R&D – Research and Development

SL - Strategic Leadership

ST – Strategic Thinking

TM - Top Management

TMT - Top Management team

ABSTRACT

The purpose of the research was to assess the effect Strategic leadership on Organizational innovation for Digital tech companies that operate in Ethiopia. Level of Strategic leadership practices and Organizational Innovation implementations in the organizations were also assessed. Strategic Leadership dimensions of Strategic Thinking, Absorptive Capacity, Adaptive capacity and Operational efficiency were identified from literature and the impact of each on Organizational Innovation was assessed. The Digital tech companies were selected from the association (ICT-et). Systematic Random sampling was used and 192 responses were collected and analysis was done. The research employed explanatory research design. Analysis for describing, assessing relationships and explaining inference were done with the help of SPSS tool. Validity and reliability of the resulted was tested. Strategic leadership is found to be Strong and positive predictor of Organizational Innovation. All of the dimensions of Strategic leadership positively related to Organizational innovation. Adaptive Capacity of Strategic Leadership failed to significantly predict Organizational Innovation. Absorptive Capacity of Top Management is found to be the most important for Organizational Innovation. The Strategic leadership variable(s) explained 50.4% of the variation in Organizational Innovation. As Organizational innovation is critical to digital tech firms operating in dynamic environment; it is recommended that organizations work on development of Strategic leadership capabilities especially Absorptive Capacity.

Keywords: leadership, Strategic leadership, innovation, Organizational Innovation, strategic thinking, absorptive capacity, adaptive capacity

Chapter 1

INTRODUCTION

This chapter discusses background for the study, problem statement, research questions, objectives, significance, scope, limitation, operational definitions and organization of the study.

1.1. Background of the Study

Organizations exist to achieve certain goals. The term organization is defined as a group of people working together for goal achievement. For the attainment of their ultimate purpose, mission, vision or goals organizations depend on resources and organizing systems. Organizations need to optimize use of their scarce resources for their existence.(Madhani, 2010)

Leaders in organizations are expected of meeting multi-stakeholder interests for short and long term. To attain competitive advantage in the short- and long-term leaders look for various ways in different areas; increasing productivity, reducing cost, building knowledge & skills of their employees and provide products and services that delight their customers. For this, they need to be in a position to pull, retain, develop, engage talent using different strategies.

With the advent of globalization organization are now challenged with intense competition and changes in the environment they operate in. Leaders either choose to react to the changes or be proactive, anticipate and prepare. This demands a unique kind of leadership. Strategic leaders are most suited for this as they exhibit strategic thinking and engage in strategic planning. (Aredo et al., 2006; Bouhali et al., 2015)

The intense competition and continuous changes create mandatory situation on organizations to innovate for their viability. Innovation involves introduction of something new, can be product, service way of doing or way of organizing.

Innovation has critical value in the development of economies. Many nations reached to the current stages of their development through innovation. Innovation improves productivity and competitiveness. (Growth & Reduction, 2015).

Ethiopia is the second populous country in Africa with more than 100 million people having young demographic. Its economy largely depended on agricultural products. The country has unique economic, social and geopolitical context. It is the fastest growing economy in the sub-Saharan region. To small extent, the country is working to utilize its comparative advantages and has policies and directions to progress to industrialization and technology advancement.(Chari et al., 2013; *Worldbank Ethiopia Overview*, n.d.)

With the availability of large population (talent pool) and diversified natural resources Ethiopia is striving to develop its economy in various ways. The nation has established a dedicated ministry (Ministry of Innovation and Technology - MINT) to move ahead with technology and innovation. The ministry is established with Proclamation No.1097/2018 holding mandates to enable innovation and technology advancement(Federal Negarit Gazette - Proclamation No.1097/2018, 2018).

In 2020, MINT introduced its ambitious 5-year Digital Transformation Strategy – Digital Ethiopia 2025. The strategy aims to build Digital economy that will contribute to job creation, foreign exchange, and the overall GDP. Digital Economy involves economic activities that utilizes interconnectivity and networks in digital platforms. The strategy understands the state of digital economy in Ethiopia is at its early stage. New goods, services and new uses of existing technologies is believed to develop the digital economy of the country. In this, the strategy underpins the relevance of innovation.(*Digital Ethiopia 2025 - Strategy*, 2020)

In the same year the country enacted the eTransaction proclamation showing commitment for creating conducive legal ground to Digital Economy. Additionally, Ministry of Science and Higher education (MoSHE) laid out 10 years Digital Skills Country Action Plan on 2020. Furthermore, for the facilitation of digital financial transaction the National Bank of Ethiopia (NBE) issued 3-years National Digital Payment Strategy in 2021. The introduction of Telebirr and the liberalization of the telecom sector are unprecedented factors that are furthering the development of the digital economy.(*Etransaction - Proclamation No. 1205/2020*, 2020; *Digital Skills Country Action Plan*, 2020; *National Digital Payments Strategy 2021–2024*, 2021)

This study will have contribution on providing contextualized knowledge base for successful innovation in organizations.

1.2. Background of the Organizations

The Information technology and communications Association (ICT-ET) was first established by private firms in Ethiopia on November 25, 2010 and re-established in Dec. 2013. ICT-ET was established to work on Information Technology, Communication Technology & Broadcasting Technology. The purpose for establishment of ICT-Et was for **exposing**, **engaging** and **enabling** the players in the industry. (*Www.Ictet.Org*)

The organizations selected for this research are member of this association that are engaged in digital tech or providing IT products and services.

1.3. Statement of the Problem

Globalized competition and frequent changes in the Digital tech sector bears challenges for organizations in the area to strive in the short and long term.

The Digital, IT, cyber technology sector is known to operate in what is called Complex Adaptive System (CAS) (Mbanaso & Dandaura, 2015). This brings challenges for Organizational Leaders to appropriately respond to needs of the operating environment. Innovation is the means for sustainability of the organizations. Organizations need not only innovate in the products and services they provide but also innovate themselves in the way they organize, structure, interact and cooperate within and the external environment.

Globalization has made innovation prerequisite for competitiveness and economic development. Zizlavsky, (2013) puts innovation as ‘creative act in economics’. For gaining the hearts of customers, generate benefits, profits and overall performance of firms Innovation plays important role(Fadiah et al., 2016). Systematic theoretical review by Bach et al., (2019) concluded that innovation is vital for competitivenes of businesses, createts ehanced financial results and overall superior perfromance.

Innovation research has evolved in many ways. Definitions of Innovation assume exploitation of benefits from introduction of ‘something new’. Recent studies believe the spectrum of innovation involve the process of innovating, the state of mind/ context for innovation including the outcome of innovation.(Kahn, 2018)

Focus on study of innovation relied mostly on outcome of innovation and differentiated as Product innovation, Marketing innovation, Process innovation, Organizational innovation, Business Model innovation, Value chain innovation, and the like.(Kahn, 2018)

Even though both theoretical and empirical evidence agree on the value innovation brings to organizations and societies, many do not excel in innovation. Organizations that are fond of innovation often does not excel on many operational measures. For this reason, organizations happen to trade off innovation for operational excellence. Operational Excellence requires system to be predictable to measure, control and reward.

Engaging in innovative and creative practices involve risk and uncertainty. In striving to meet short-term goals managers and leaders tend to become risk averse and obsessed in operational issues. Innovation demands fail safe environment and long-term view.

Leaders create conditions for employees to take action. They create enthusiasm, set goals and challenges. Through their behaviours and actions they either enhance or inhibit innovation.(Kozioł-Nadolna, 2020)

The top management in organizations operating in such environment needs leaders that can anticipate, predict, scan and prepare for the opportunities and threats while also effectively performing in todays' operations. Change and the current competitive conditions demands Strategic leaders at the top(Eromafuru, 2013).

Ireland & Hitt(1999) defined Strategic Leadership as "a person's ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization". Ireland and Hitt indicate Strategic leadership to be more about responsibility than position and needs to be executed through shared insights, knowledge and interactions. They provided 6 elements of strategic leader's role; providing of vision, strategic direction, balanced control, exploiting core competencies, human capital development and influencing ethical practices.(Ireland & Hitt, 1999)

The study of Strategic leadership has been given increased attention in recent years. The study of innovation has been evolving, incorporating new dimensions and ways of understanding. This study will build up on those recent developments to create knowledge area on the specified context.

In the context (Ethiopia) the Digital tech sector is expected to grow and contribute to the Economy. The country is embarking in this sector with the adoption of national Digital Transformation Strategy and similar initiatives. This creates new opportunities for

development of new products and services and also challenges as the sector has complex, uncertain and globalized nature. As the sector is at early stage of development in Ethiopia; contextualized theoretical and empirical knowledge is urgently demanded.

Finally, the research tries to provide theoretical and empirical finding for the role Strategic Leadership can play in manoeuvring Digital Technology firms in Ethiopia towards Organizational Innovation.

1.4. Research Questions

This research project will work on answering the following research questions

1. To what extent does Strategic leadership exist in the selected organizations?
2. What is the level Organizational innovation in the selected organizations?
3. What relationship exist between Strategic Leadership and Organizational innovation?
4. What is the effect of Strategic Leadership on Organizational innovation in the selected Digital tech companies?

1.5. Objective of the Study

The current operating environment for organizations demands both Strategic Leadership and Innovation. The changes and competitive environment create suitable conditions for innovation as well as challenges for organizational leaders.

The focus of this study is to identify how Strategic Leadership influence Organizational innovation in case of selected Digital Tech companies in Ethiopia.

General Objective

To assess the effect of Strategic Leadership on Organizational Innovation.

Specific Objective

1. To assess the existing practice of Strategic Leadership in the selected Digital tech companies.
2. To examine the level of Organizational Innovation in Digital tech companies
3. To describe the relationship between Strategic Leadership and Organizational Innovation in Digital tech companies.
4. To investigate the effect of Strategic Leadership on Organizational Innovation in Digital tech companies.

1.6. Significance of the study

The digital economy is in the infant state in Ethiopia; yet there are initiatives, strategies, policies that signal the needed growth. The growth of the digital economy demands vibrant Strategic Leaders that can fulfil the needs of the complex, adaptive, innovative and global in its nature. The growth of the digital economy demands contextualized understanding of success conditions for top management specific to the digital sector.

The sector seeks talent and knowledge-based jobs requiring firms to make major shifts in the ways they acquire, develop, manage and organize significantly different from existing ways of managing labour. Apart from creation of new products, services & processes; organizations need to organize, structure, coordinate, behave in entirely new ways in the stated circumstances.

The significance of this research project lies in creating knowledge base how Organizational innovations can be developed and enhanced.

1.7. Scope of the study

The study of the relationship of Strategic Leadership on Organizational innovation is delimited to digital tech or related firms that operate in Ethiopia that are members of the sector association (ICT-et). The study is delimited to only one type of innovation; Organizational innovation. The measurement of Strategic Leadership is within the scope of what the four components can measure. The explanation of the relationship between the independent variables and dependent variables are done using quantitative methods only.

1.8. Limitation of the Study

The study is limited to companies that are accessible online or reside in Addis Ababa, may not effectively be generalized for context of Ethiopia. The research was limited to companies that are willing to participate/respond. Many organizations have multiple sector involvement, limiting the application of the research for the selected sector.

Changes needed on questionnaire could not be entertained in printed format, non-response from important samples, Possibility or online questionnaire being field by participants other than the intended samples and Respondents' fatigue for response to questionnaire.

Usage of combined and adapted instrument for measurement especially in the strategic leadership part. Limited number of questions used for the variables especially Adaptive Capacity (three items). The instrument only provided in English language and this may have introduced biases to understand the questions. The research design only utilized quantitative approaches and triangulation of different methods could not be done.

1.9. Operational Definitions

Strategic leadership – The ability to anticipate, envision, maintain flexibility, think strategically, and work with others to initiate changes that will create a viable future for the organization.

Innovation – The exploitation of new ideas, inventions, practices.

Leadership - a process that involve influencing individuals or group(s) for achievement of goal.

Organizational Innovation - introduction of new way of managing and organizing the workplace.

Strategic Thinking – the ability to have systems view, think in time, reflect and reframe existing situations and possible scenarios.

Absorptive Capacity – ability to recognize, assimilate and apply knowledge

Adaptive Capacity – the ability to change, respond to new circumstances

Operational Efficiency – ability to plan, monitor and execute.

1.10. Organization of the study

The paper is organized in 5 chapters. This chapter introduces the background of the study, background of the research, problem statement, the research questions, significance, scope and limitations of the research project. The second chapter reviews literature, captures relevant variables and present conceptual framework for the study. Chapter three presents the Research methodology utilized in the research project. This chapter discuss the research approaches adopted, the population and sampling, how data is collected, tests for validity and reliability including the methods of analysis utilized. Chapter four presents, discusses and interprets results and findings. The fifth chapter provides conclusion and recommendations based on results obtained.

Chapter 2

LITERATURE REVIEW

This chapter discusses existing theoretical and empirical literature on Leadership theories, specific researches in Strategic Leadership, innovation concepts, typologies and aspects of innovation, organizational innovation specific researches and possibly researches that relate the two areas.

2.1. Theoretical Concepts

2.1.1. Innovation

In this competitive and continually changing world, organizations are demanded to innovate for their sustainability.

Innovation is the introduction of something new; it can be product, process, way of marketing or ways of organizing. In the perspective of an organization Aslan et al. (2011) states innovation as the application of creative ideas.

On the analysis of previous researches Kogabayev and Maziliauskas (2017) reached to the conclusion of non-existence of generally accepted definition for innovation. The term Innovation relates to invention, creativity, design, product development, continuous improvement, organizational change, new ideas, R&D. Nevertheless, most of such concepts lie only on one side of innovation. Innovation involves integration of such concepts with exploitation.

Different discussions on the topic see innovation from multiple perspectives and some even propose multi-dimensional views on Innovation. Based on the level of novelty and impact innovation can be seen as radical or incremental. Based on where innovation applied innovations can be seen as technical and non-technical. Kogabayev & Maziliauskas, (2017) provides multidimensional model for innovation one dimension between administrative and technology, the other between product and process, the last dimension between incremental and radical. Edwards-Schachter(2018) supports this argument in that innovation is a multidimensional concept having different perspectives and meanings. Edwards-Schachter provided types for innovation as Technological, Product, Process, Service, Business Model.

Additionally, Edwards-Schachter discusses issues of hiden innovation and dark innovation that are not measured with measurment instruments.

Management viewers see innovation as a management process. They see the different activities of innovation has to be properly managed to encompass the exploration and exploitation components. Earlier views on innovation see it as a scientific quest of problem solving. Seeing innovation as a process creates guidance system for innovations to bear expected fruits. There exists various tools and methods for accelerating innovation in firms. These tools are there to support the major stages in innovation; creation phase, value proposition phase, resourcing phase, documentation phase, production phase, sales/delivery phase, performance analysis phase. The handbook lays out different tools and techniques to be used in the different phases. (Harrington & Voehl, 2019, p5)

According to Granstrand & Holgersson (2020) the contemporary meaning of innovation convey two characteristics; newness and usefulness. New may mean to the organization, to the country or to the world. (Granstrand & Holgersson, 2020)

In the discussion of innovation, the terms; innovativeness and innovative comes to attention that support better understanding and also confusion. Salavou (2004) express innovativeness as a method for measuring propensity towards innovation. Avlonities et al. (1994) describes innovativeness to have technological and behavioral parts (Salavou, 2004). Innovativeness is also seen as willingness to change, innate personality trait, both attitude and behavior, open-mindedness, enterprising, creativeness, intension to innovate, risk appetite, and ability to innovate (Hurt et al. (1977), Goldsmith and Hofacker (1991), Zaltman et al. (1973) as cited in Lynch et al., 2010).

Kahn (2018) provides useful framework to understanding innovation, Innovation can be seen as outcome, as process and as mindset. Innovation as outcome can be product innovation, process innovation, marketing innovation, organizational innovation and the like. Innovation as process lays out how innovation efforts be organized to reap the expected outcomes. Innovation as mindset addresses how innovation is ingrained in the members and in the organization culture.(Kahn, 2018)

This framework from Kahn provides complete view on the inputs for innovation, the state for innovation and the result of innovation.

Innovation as outcome can be further streamed to Product innovation, Process innovation, Marketing innovation, Business Model Innovation, Supply Chain Innovation, Organizational Innovation. Kahn stages Innovation as process involving as Discover, Develop, and Deliver. These three broad stages are seen in the popular Stage-gate, new product development (NPD) innovation processes. (Kahn, 2018)

In regard to innovation as mindset it involves Associating, Questioning, Observing, Experimenting and Networking. The mindset Kahn refers to is also expressed in the innovativeness as expressed by Lynch et al.

The four major outcomes of innovation discussed in literature are:

- Product/service innovation
- Process innovation
- Marketing innovation
- Organizational innovation

Product Innovation

Introduction of new product with significant changes in characteristics, use can be termed as product innovation(Gault, 2016). Such significant changes (Atalay et al., 2013) can be on technical specification of the product, components used, added software, user friendliness or similar functional characteristics.

Process Innovation

A summarized definition of Gault addresses process innovation to involve significant changes in production and delivery. These may involve use of new techniques, technology, infrastructure. (Gault, 2016)

Marketing Innovation

Using OECD definition Gault (2016) defines marketing innovation as usage of new marketing method that exhibit significant changes in the four Ps of marketing(Gault, 2016).

2.2.2. Organizational Innovation (OI)

Organizational innovation is a broad concept that has not gained enough attention like other types of innovation.

The term Organizational innovation has been prone to varied definitions(Bekkenutte, 2016). Organizational innovations are seen as adoption of ideas new to the organization(Hage, 1999). OI can be on particular units in the organization or something that affect the overall organization(Bekkenutte, 2016).

The major focus of OI is non-technological innovations in the organization. Equist (as cited in Bekkenutte, 2016) even asserts Organizational innovations does entirely involve technological elements that are intangible and non-material. The organization itself is the main user of these innovations. Uterback and Abernathy (1974) separates innovations in processes that are aimed for product and service production as different from Organizational Innovations. Organizational innovations mainly involve efficiently managing the interactions and involve social element. (Bekkenutte, 2016)

Bloch & Bugge (2013) and OECD (2005) as cited in Gault expresses organizational innovation as an introduction of new way of managing and organizing the workplace. Organizational innovation expected to affect business practices and how the organization relates to the outside environment. (Gault, 2016)

Organizational innovations contribute to reducing costs of the way the organization manages and organizes. Enhancing on labour productivity, minimizing cost of supplies, introducing of efficient management systems, minimizing administrative system result in organizational innovation.

Lam(2004), using organizational cognition explains organizational innovation as the results of the organizations' ability to create knowledge and learn properly resulting in changes in the organization. Strategic directions are seen as source of organizational innovation, as they create new possibilities for the organization to create adapt to the intended new future state.

2.2.3. Views in Organizational Innovation

There are three main views on organizational innovation; OI as organizational learning and knowledge creation**,** OI as precondition for the creation of other innovations (technical/technological) and OI as manifestation of organizational change and development(Lam, 2004).

OI as organizational learning and knowledge creation – this view sees innovation as a process where individual knowledge and insights are transformed to organization knowledge and capability. These knowledges are expressed in the way of doing and solving problems in the organization. Knowledge creation is seen as recombination of new and existing knowledge and new applications of existing knowledge. Organizational innovation is this sense is a process and methods employed for learning and creation of knowledge. Two forms are widely discussed in this perspective; J-form, cellular forms, and Adhocracy. J-form is method adopted from Japanese manufacturing firms that drives learning with developing organization specific knowledge and routines for problem solving. Adhocracy as expressed by Mitzberg focus on individual expertise knowledge applied in flexible project-based teams. Adhocracy is creating adhoc projects that involve complexity and uncertainty. This demands presence of rich knowledge and skill, usually addressed through teams composed from various organizations. With the view creation of routines, structures, forms for knowledge and skill diffusion are how OI is expressed. Teams, interactions and problem-solving activities are the central piece for with this view.(Lam, 2004)

OI as precondition for the creation of other innovations (technical/technological) – this view focuses on ways the organizations' structure and operate to impact propensity of the organizations' innovativeness. Organizational innovation in this sense is exhibited towards creating this organizational context supportive of incubating product and process innovations.

OI as manifestation of organizational change and development – this view focuses on the external environment's role on changing organizations. With this view there are two ways organizations change, one as strategic choice of the organization the other evolutionary change by the organization in response to changes in the environment. With strategic choice it is believed that organizations could choose, learn and change themselves and influence the external environment. With the evolutionary or incremental change, the organizations are seen as passive respondents of that the environment provides. Organizational change with this perspective is the expression of adaptation, evolution, transformation and change in response to or proactive of the environment the organizations operate.(Lam, 2004)

2.2.4 Categories in Organizational Innovation

Armbruster et al., (2008) and Wegel (2000) classified Organizational innovations Structural & Procedural and Structural & Managerial respectively. Their classifications have many

similarities in both Structural, Manager/Procedural types. In relation to changes/innovations in the way the organization relates, coordinates, with-in and outside the organization Armbruster classified Organizational innovations as Intra-organizational and Inter-organizational.(Armbruster et al., 2008)

Structural Organizational Innovation

The Structural OI exhibited changes in structural elements of the organization, command lines, flow of information, responsibilities and level of hierarchy. Organizations choose or design structure like mechanistic, organic, bureaucratic, divisional, matrix or functional structures to meet those needs. Structural OI involve creation of methods or way for facilitating teamwork, coordinating between different functions, facilitating project type organization, facilitating strategic partnerships and enhancing long- term/strategic collaborations.(Armbruster et al., 2008; Gault, 2016)

Procedural Organizational Innovation

The managerial (in Weger) and Procedural (in Armbruster) refers to innovations that affect operations, routines and procedures in the organization. In this, organizational innovations are exhibited in managing the supply chain, production and quality management, human resource management in systems of managing information. (Armbruster et al., 2008)

Organizational Innovation in how production is organized; some of these include value stream mapping, customer-oriented cell / line, zero stock principle, SMED, TPM, TQM. Organizational Innovation could be exhibited in organizing of work; as such 5S, standardized work instructions, integration tasks, methods for continuous improvement of processes, teamwork in production and assembly. Organizational innovations in process standardization and assessment examples are visual display of the process and status of equipment, ISO 9000 and other, 6 Sigma, ISO 14001, ISO 50001: 2011. OI in human resources management may involve; formalized workshops to generate ideas, instruments for retention of knowledge in the enterprise, part-time dedicated to creativity, program of staff development, training to enhance creativity.(Armbruster et al., 2008; Bekkenutte, 2016)(Bekkenutte, 2016)

Intra- and Inter-Organizational OIs

Depending on the involved, OIs' can be categorized as Intra-, Inter- organizational. OIs that relate to customers, suppliers and other stakeholders are considered Inter-Organizational OI. OIs that have ultimate users inside the organization considered Intra-Organizational OI.(Armbruster et al., 2008)

2.2.5 Leadership Theories

The subject of Leadership had been given enormous attention. Kellerman (2012) (as cited in Mango, 2018) states there more than 1500 definitions for leadership. Bass(1978) notes (as cited in Badshah et al., 2012) leadership as one that is given due attention yet less understood phenomenon.

Hersesy (1979) definition of Leadership sees leadership as a process that involve influencing individuals or group(s) for achievement of goal(Cote, 2017).

The prevalence of much study in leadership and existence of more than 60 leadership theories created vagueness for scholars and practitioners. For the study of leadership Mango, (2018) identified 6 domains; character, characteristics, people practices, institutional practices, context and outcomes. Mango believes there are too many theories in leadership and plenty of repetition with overlapping subdivision of leadership. (Mango, 2018)

Leadership theories and models can be categorized in four major ways; Trait Theories, Behavioral Theories, Situational Theories and Power & Influence.

Trait and "Great Man" theories

"Great man" theory surrenders itself to the assumption that leaders are born not made. This theory lends itself to less relevance of study of leadership. As these born leaders will show up anyway. This theory identifies leaders as heroic, destined, or gifted to lead. Trait theory extends the former explaining leaders exhibit common "traits". The main similarity between Trait and Great Man theory relays on the innate / inborn characteristics. Trait Theory goes further to study these common characteristics in who are identified as Leaders. If Trait or Great Man theories remained acceptable, approaches of studying leadership would have been quite different. The approach for leadership would have become actions of mining instead of developing.(Asrar-ul-Haq & Anwar, 2018)

Behavioral theories

Behavioral Theories opened the world of development in the study of Leadership. These theories relied on what leader do and these actions can be learned/conditioned to form behaviors. The behaviors leaders exhibit is believed to matter for the Behavioral leadership theories. In other words, Behavioral theories brought major shift in leadership studies is particularly in the belief leaders are made, not born. Behavioral theories still do not contradict with the characteristics /'trait' that can be considered common to leaders. However, Behavioral theorists believe those characteristics can be learned and what matters most is what leaders do and how they act. The Hawthorne Studies, The Iowa Studies, The Ohio State Studies, University of Michigan Studies helped the development of Behavioral Leadership theories. Following from the studies behaviors of leaders can be identified as Consideration, Initiating Structure, Production Emphasis, Social Awareness, Concern for task, Concern for people. From these, leadership styles such as autocratic, consultative, democratic, persuasive, Laissez faire styles born(Likert, 1967; Tannenbaum and Schmidt 1973).(Asrar-ul-Haq & Anwar, 2018)

Situational theories

The situations where the leaders operate was shown to matter in later researches. Behavioral theories exhibited limitations in explaining leaders' actions in different contingencies. Situational and Contingency theories try to add context on the concept of leadership. The notable Fedlers'(1967) contingency theory leadership style is fixed and leadership effectiveness depends on the favorableness of the leadership style to particular situation. Fedler utilized Least Preferred Coworker questionnaire to identify the leader's preference and stated leaders can either be focused on consideration or initiating structure. Hersey and Blanchard's' (1993,1996) Situational leadership essence provides two-dimensional view that create four styles leaders can utilize depending on the nature of the task and readiness of the subordinate. Following to that the leader can adapt to directing, coaching, supporting or delegating style(Cote, 2017). House later with Michell developed Path-Goal theory extending on work of Fedler. They extended leaders' style can be adaptable to the situation. In Path-Goal theory leaders' role is creating suitable condition for subordinates execute tasks and achieve goals. Depending on the needs of the task and needs of the follower the leader modifies actions and behavior.(Asrar-ul-Haq & Anwar, 2018)

Power and Influence

Five bases of Social Power by French and Raven (1959) provided perspective in the study of leadership. It describes 5 types/sources of power; Referent power, Expert power, Legitimate power, Coercive Power, and Reward power. These sources of power are categorized as Formal/Position (Legitimate, coercive, reward) and Personal (Referent, Expert). These sources of power explain how leaders could exert their influence.(French & Raven, 1959)

Transformational & Transactional Leadership, Charismatic leadership and Leader-Member Exchange theory (LMX) are contemporary Leadership theories that incorporate the role of follower in the influence process to be important. Transformational, Charismatic and similar leadership concepts furthered the importance of leader-follower relationship in the leadership process.

Leader-Member Exchange theory (LMX) furthers the leadership concept and effectiveness of leaders to be the result of interchange between leader and followers. Accordingly, effectiveness relays on the unique relationship pair between the two.

Different literatures discuss about quite a number of leadership styles creating ambiguity in understanding of leadership. Such styles can be considered as manifestations of different leadership theories and can be useful for developmental purposes.

This study focuses on what is mostly considered as the responsibility of top-level management, *Strategic Leadership*.

2.2.6 Strategic Leadership

Strategic leadership is the role and responsibility of top management and the board and mainly resides on the CEO. Bass states Strategic leaders deal with continuation of business and strategic change. They set policies, acquire resources and align the organization to meet its goals. Bruce (1986, as cited in Bass) explains CEOs are the main bearers of the tension between giving attention to the present and to the future. (Bass, 2007)

Upper Echelons theory is widely used to conceptualize top management, their perceptions on how the external situation is translated on ‘cognitive base’ and ‘value in stages’ to strategic choice. As SL is considered mainly the role of top management Upper Echelons theory is used as major conceptualization tool. (Hambrick & Mason, 1984)

Rowe (2001) provided the view of Strategic Leadership as a style that compose and balance both Visionary and Managerial styles of leadership. It states existence of such leadership is rare and critical for short-term and long-term success of organizations.(Redmond, 2010; Rowe, 2001)

Summarizing on previous researches Jaleha & Machuki (2018) puts Strategic Leadership critical practices involving long term, exploration, exploitation, ethical practices and balanced control systems.(Jaleha & Machuki, 2018)

The framework and definition of strategic leadership provided by Hitt et al. and in their book is utilized in large literature. This research also adopts the framework for building the conceptual framework of the Strategic leadership part.

In the Conceptual framework explaining the relationship between SL and Organizational performance Mui et al. Strategic leadership is provided as its composed of Leadership vision, Strategic Direction, Core Competence, Developing Competence, Innovation Capability. (Mui et al., 2018)

Samimi et al (2020) provides SL framework for research in terms of who the Strategic leaders are, their functions and their attributes. Samimi took Strategic leaders as CEO, TMT, and Board of directors. The functions of strategic leaders as (1) Making strategic decisions, (2) Engaging with external stakeholders, (3) Performing human resource management activities, (4) Motivating and influencing Managing information,(5) Overseeing operations and administration, (6) Managing social and ethical issues, (7) Managing conflicting demands. (Samimi et al., 2020).

In ‘Why they do what they do’ Samimi et al. places attributes of SL in Individual Level(Personality, cognition, charisma, power & motivation, Managerial KSA(knowledge, skill and ability)), Dyadic Level (interface of CEO and Top Management) and Group level(Top Management diversity, compensation, capability)(Samimi et al., 2020)

There are Internal and External contextual factors in which SL operate in. SLs at firm level influence outcomes of Performance Strategic choices & actions, Social & ethical issues and Innovation(Samimi et al., 2020) .

Strategic Leadership is considered as leadership of the organization instead of leadership in the organization(Musca et al., 2009). Selznick 1984 also described strategic leadership similarly as leadership concerned for evolution of the organization as a whole(Katana, Eric Lewa, Waiganjo, E.W., Mugambi, 2016).

Musca explains most literature focused study of strategic leadership in three perspectives Upper Echelons theory, Transformational perspectives and Cognitive complexity & social intelligence approaches(Musca et al., 2009). The Upper Echelons theory explains the organization as reflection of the top. Transformational, visionary and charismatic perspective views leaders as symbols for the organization and their internal and external relationships. The Complexity and social intelligence approaches on leaders' ability to analyze complex information and interpret their environment.(Musca et al., 2009)

Musca emphasizes the need to focus on practices of Strategic Leadership laying out the environment as High Risk and High Ambiguity, which will need transforming schemes for patterns of interaction and interpretation. Musca relates 'transforming interpretation' schemes with Knowledge mobilizing and transforming patterns of interaction to social competence.(Musca et al., 2009)

In the article, *Essentials for School Leadership* the model provided from Davis & Davies (2004) presented Strategic Leadership as set of wisdoms. The model entails Strategic Leadership is sourced from Leaders' Strategic intelligence applied with People and Contextual wisdom and enforced through strategic approaches and processes(Procedural wisdom).(Davies & Davies, 2004)

Organizational success does not come by chance. It refers such is the result of decisions of the strategic leaders in the organization. Accordingly, places responsibility on the top management as it needs to sense the environment, trends, opportunities, treats and create vision. The current dynamic and uncertain environment places more demand for Strategic Leadership.(Robert N. Lussier & Christopher F. Achua, 2010).

From literature the following aspects of Strategic Leadership have been extracted.

Attributes and abilities

- To adapt
- To learn
- To think strategically
- To effectively communicate, motivate, stimulate, engage and control

Actions & Functions

- Create direction
- Establish and maintain culture
- Create control
- Practice ethics
- Explore and exploit core competencies
- Develop people

Focus

- Focused on the future
- Able to balance with today's needs

Operate in an Environment

- Alienated to the external
- Affect the Internal

Scope

- Intra organizational – overall organization
- Enter-organization
- Interaction of the organization with the external environment

The conceptualization of Strategic leadership by Ireland and Hitt can be boiled down to; ability to think strategically, capacity to learn, capacity to adapt and capacity to execute efficiently.

Strategic Thinking

Strategic thinking is tool for creating/crafting the intended future. In this, it is a process that is creative, innovative, and non-linear. It deems to see the organization as a system, look at the organization as a whole. It demands systems perspective and systems thinking. For this the involved will need to continually think – in-time, reflect and reframe existing situation and possible scenarios the organization exhibits. It is 'intelligent opportunism' and seeks to place the organization achieve competitive advantage. It is intent-focused, hypothesis driven and may exhibit trial and error. Strategic thinking is intent-focused and seeks to generate the vision, future direction and goals of the organization.(Gromyko, 2016)

In iterative manner strategic thinking interacts with strategic planning with intention to effectively implement generated insights, vision and direction of the organization. This interaction usually exhibits creative innovative and intuitive nature. (Gromyko, 2016)

Absorptive Capacity

The term is first introduced by Kedia & Bhagat (1988). The most accepted conceptualization of Absorptive Capacity has been the definition provided by Cohen & Levinthal (1990). This definition later expanded, refined and detailed description were provided by Mowery & Oxley (1995), Zahra & George (2002). Absorptive Capacity is openness to recognize and acquire knowledge that is relevant to the organization, assimilate the recognized knowledge and utilize. The idea of Absorptive Capacity involves organizational knowledge creation and utilization. Absorptive Capacity entails organization to have routines and processes that can effectively acquire, assimilate, transform and exploit external knowledge. Absorptive Capacity is believed to provide competitive advantage in strategic flexibility, innovation and performance innovation.(Dorothée Zerwas, 2014)

Adaptive Capacity

The environment organizations operate in demands to have strategic flexibility to attain competitive advantage. Leaders in organizations are expected to have this ability to change. Adaptive capacity is the ability of the organization or leaders in the organization to change. Adaptive capacity involves understanding new events and situations and adjust actions and

behaviors. Adaptive capacity involves observing and correcting. It involves ability to capture insight for the positive and negative consequences of actions taken. Adaptive capacity is about quick and proactive response to changes, instability or crisis. (Boal & Hooijberg, 2000; Sorgenfrei & Wrigley, 2005)

The hypercompetitive, discontinuous and innovative operating environment of organizations demands leaders to have flexibility, cognitive and behavioral complexity to adjust strategies for positioning the organization to future opportunities.(Boal & Hooijberg, 2000)

Operational Efficiency

The ability on operational efficiency entails in exploiting existing capabilities and resources for excelling in today's circumstances. Operational efficiency focuses on executing, achieving and realizing what the organization exists to achieve. Operational efficiency tries to attain competitive advantage by applying economics principles. With capacity in operational efficiency organizations are able to reduce cost, optimize resource utilization and be able to get things done. Organizations exhibit operational efficiency through routinization and standardization of tasks. Operational efficiency focuses on setting clear objectives, planning in detail, checking progress, make decisions in time and be able to deliver products and services on schedule. Operational efficiency capabilities also demand interpersonal, social and transactional skills. Excellence in operational efficiency may not guarantee sustainability or competitive advantage when other capabilities fail to create appropriate direction, goals and avail resources for the right initiatives.(Duursema, 2013; Jansen et al., 2009; Muzee et al., 2016)

2.2.7 Strategic Leadership and other Leadership concepts

Most leadership theories focus on the interaction between leader and follower. Strategic leadership focuses on the organization while other leadership concepts focus on the leaders and their interactions with their follower. Other concepts of leadership have a given/known goal, objective, task, or job at hand whereas Strategic leadership involves scanning, navigating, anticipating to determine the goal itself. In other words, other leadership models altogether regard how best to accomplish a given goal not how that goal come in mind or consideration or in need of execution. Strategic Leaders on the other hand are obliged with determining the right directions and goals for sustainability of the organization in the long term and meeting

short-term needs. In spite of that Strategic leadership does not discard any of leadership concepts, it rather extends leadership concepts to meet organizational needs of the short-term and long-term.

2.2.8 Strategic leadership with innovation

Leadership and Innovation

Aslan et al., (2011) referring to Appelbaum and Peace (2001) captures nine role of leaders; Determining the route, The Strategist, The Entrepreneur, Action biased, skilled people developer, initiating, global thinking, exchange manager and keeper initiative.(Aslan et al., 2011). In playing these roles leaders influence innovation in organizations by discovering of new opportunities, development of new products and services, providing vision, goals, motivations and taking initiatives.

With consideration of strategic leadership as one of the inventory of leadership styles Kesting et al. (2016) reviews the impacts of different leadership styles on innovation. It strongly believes leadership plays critical role for innovation in organizations. With definition of leadership of Bass(1990a) as it consists of influencing the attitudes and behaviors of contributors in the organization. Kesting et al. provides four dimensions for existence of leadership; people, means, effects and goals. Contextual factors and the goals affect the different leadership styles to influence innovation..(Kesting et al., 2016)

Kesting et al. (2016) using the framework (People, means, effects and Goals) shaped how the different leadership styles impact innovation. Direct leadership style showed to impact implementation phase of innovation while participative leadership creates innovative climate and can support ideation, product innovation and R&D. Interactive leadership style showed unspecified effect on innovation. Charismatic leadership through personal example, visualizing a promising future could create commitment and sense of collective mission possibly supporting Ideation and execution gaps. Transformational leadership through the four I's showed to exhibit positive role in Ideation, implementation and radical innovation. Transactional leadership showed relation with task completion (implementation), Incremental innovation and product innovations. Strategic Leadership through shaping of the organizational environment and decisions to advance ideas builds competence and innovative capabilities influencing Implementation, Product innovation and Organizational innovation. Existing

research showed shared/distributed leadership to relate with Continuous innovation. (Kesting et al., 2016)

Kesting et al. provided insight on the relevance of leadership in general and how the different individual styles, level of management impacts the different stages for Innovation. It provides framework on where, when and how to configure leadership in organizations to succeed in different stages of innovation. In alignment with the results of this research Strategic/CEO leadership is shown to impact organizational innovation.

Influence of Strategic Leaders/ Top Management on Product/Market innovation is rather indirect as direct influence may be perceived as micromanagement. However TM though configuration of the organizational environment and idealized influences do have strong influence on Product/Market innovation. (Elenkov & Manev, 2005)

Strategic leadership and Innovation

Innovations happen in organizations seen as prospectors, such can be a strategy and those strategies are reflections of the top management(Bass, 2007). Understanding innovation in the framework provided by Kahn helps how leadership (particularly Strategic leadership) plays its role. As outcome.

Samimi et al. recognizes the influence of Strategic Leadership on innovation as one of the firm level influences of SL. In their framework firm innovativeness is considered as one of internal context of the organization that moderate the relationship of SL and its impacts.(Samimi et al., 2020)

Literatures view Strategic Leadership as an integration of Transformational and Transactional leadership. With this as framework the Strategic Leaders Transformational leadership and transactional leadership effect on Innovation (exploration and exploitation) are studied. Researches show contradictory results on the relationship between Strategic Leadership components (transformational and transactional) on their effect on Exploration Innovation and Exploitation innovation. Environmental variables are shown to change the direction of relationship as studied by Jansen et al. Based on Bass (1990) Transformational Leaders are in favorable position to affect innovation because they have the capacity to affect followers in various ways.(Aslan et al., 2011; Jansen et al., 2009)

Strategic leadership see innovation as a means for their end, their sole focus is to achieve performance in the short term and maintain the viability of the organization in the long term. For this, they are in continuous exploration and exploitation. In this regard innovation can be taken as their critical tool. Strategic leaders through their future orientation understand, support and direct innovation efforts which will also provide value for the organization. Their ultimate intension relies not on the mere invention, the next new thing, but on the potential for exploitation and capacity to provide viability of the organization in the long term.

2.2 Empirical Literature Review

Empirical research to identify moderating role of firm size in the relationship between Organizational innovation and Transformational leadership reviled; the four components of transformational leadership significantly ($p<0.01$) and positively correlated($r>0.25$) with organizational innovation. The research confirmed hypothesis for the moderating role of firm size on the three components of transformational leadership apart from Intellectual stimulation.(Khan et al., 2009)

Research to confirm the influence of transformational leadership on organizational innovation resulted significant ($p<0.001$) influence with coefficient of 0.716.(Hsiao & Chang, 2011)

Research done in Slovenian firms by Murovec and Prodan (2008) confirmed Absorptive Capacity to have positive and strong influence on process and product innovation. Absorptive capacity shown to explain for 55% of the variation in product innovation and 30% variation in process innovation. (Murovec & Prodan, 2008)

In research to assess how Innovation is influence by CEO Leadership; the results obtained confirm operational leadership has significant($p<.05$) positive influence; the variation in operational leadership accounted to 16% variation in innovation. (Makri & Scandura, 2010)

Kazmi et al.(2016) confirmed strategic thinking to have significant, positive and weak (0.39) influence on NPD (new product development). The results of this research shown to have negligible correlation of transformational leadership with new product development.(Kazmi et al., 2016)

Another study undertaken to assess Strategic thinking influence on innovation confirmed positive and significant predictive (40%) capacity of strategic thinking. (Moghadam et al., 2018)

Strategic leadership expressed using three dimensions: visioning, focusing and implementing was tested for its relationship with organizational Ambidexterity (capabilities to explore and exploit; components of innovation). The results reviled a model that explained organizational Ambidexterity for 84% of its variation. All the presented dimensions were significant at p<.000 and having positive coefficients greater than 0.67. The three dimensions were significant predictors of both Exploration and exploitation with coefficients greater than 0.5. (AbuZaid, 2016)

2.3 Conceptual Framework

The conceptual framework is based on theoretical and empirical literature reviews. Specifically Absorptive capacity & Adaptive Capacity are extracted from Boal & Hooijberg, (2000) , Strategic Thinking from Richard L. & Katherine, (2005), and Operational Efficiency from Duursema, (2013).

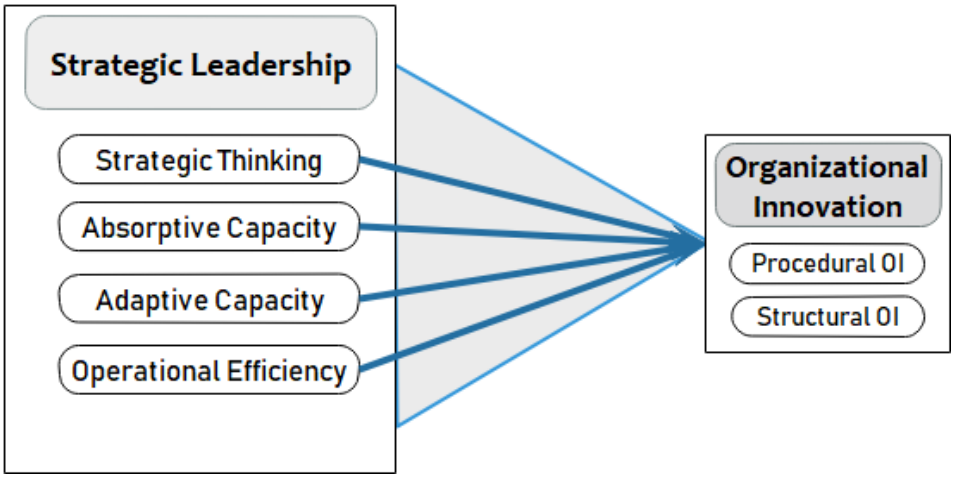

Figure 1- Conceptual framework

Source: Own Research (2021);

Chapter 3

RESEARCH DESIGN AND METHODOLOGY

This research project has purpose of expanding knowledge on the relationship between Strategic Leadership and Organizational Innovation; is academic research type. Using theoretical and empirical literature the independent and dependent variables were identified for their construct, their relationship and conceptual framework was developed. The research was designed to confirm the assumed relationship.

3.1. Research design

The research progressed to explain the relationship of Strategic leadership with Organizational innovation. Thus, explanatory research design is employed.

3.2. Research Approach

Quantitative research approach is utilized for testing the effect of each of the independent variables with Organizational Innovation. Unsing Quantitative analysis the researcher could be able to infer the ability of the independent variables on dependent variable. Using the selected approach; the researcher was able to identify the direction, significance and strength of relationship between Strategic leadership (and its components) with Organizational innovation.

3.3. Method of Data Collection

Based on the quantitative research approach adopted the research utilized close-ended questionnaire as method of data collection.

3.4. Research Instrument

This research used five-point Likert scale, close-ended questionnaires as the main data collection instrument. It included questions to capture demographic and background information.

The Questionnaire is partly developed and partly adopted from existing literature based on availability.

The prepared questionnaire has four major parts; the first two parts adapted from (Mui et al., 2018), and other relevant information the researcher added.

Part1: Demographic Information of the Respondent

Part 2: Background Information of the organization

Part3: Independent Variables: Strategic Leadership - From Section 2.6 – Strategic leadership and the Section 2.10 - Conceptual framework used to assess the Independent Variable (Strategic Leadership Construct). 20 Questions are used for the 4 components.
Strategic thinking was assessed by Q1 – 7 and are coded ST1 – ST7.
Absorptive capacity was assessed by Q8-11, and are coded as AB1 – AB4.
Adaptive capacity was assessed by Q12,13 and 14, and are coded as AD1, AD2 and AD3.
Operational efficiency was assessed by Q15 – 20, and are coded as OP1 – OP6.

Part4: The dependent Variable: Organizational Innovation - Based on the discussion on section 2.2, 2.3, 2.4 and instrument adopted from Gunday et al., (2011) used to assess the dependent variable (Organizational Innovation Construct).

9 Questions are used for Organizational Innovation Q1 – 9 are coded as OI1- OI9. The first 5 questions in OI correspond to Procedural Organizational Innovation (OI1 – OI5) and the rest 4 questions (OI6 to 9) correspond to Structural Organizational Innovation.

3.5. Target Population and Sampling technique

The target population for this research is management and staff working in IT, software, digital technology or related companies in Ethiopia, specifically members of the selected association; *Association ICT-et* in the industry.

Systematic Random sampling of individuals working in companies that are members of *Association ICT-et* in Ethiopia is used. There are registered 124 companies in ICT-et. The involved companies have 19524 employees (of those that registered their number of employees) in total.

To have representative sample, according to Yamane (1967). (Israel, 1992)

$$number\ of\ samples, n = \frac{N}{1 + Ne^2}$$

For confidence level of 95%; margin of error, e=0.05, n becomes 392.

192 responses were received and analysed.

3.6. Source of Data

Primary and secondary source of data is used for the research. Primary data collected from respondents in those companies using structured 5-point Likert scale that are members of Association of ICT-et. Secondary data from the association is also used.

3.7. Procedures of Data Collection

Prepared online form and printed out questionnaire is used for data collection. The online form is sent to all the firms in the association on their electronic addresses using the association and are contacted tirelessly. To enhance response rate printed out form will be used and delivered to the participants physically.

3.8. Validity and Reliability

Construct validity and Content validity are verified. Reliability of collected data for distribution, multi -collinearity are assessed.

3.8.1. Reliability Tests

The reliability of each variable is tested checking the internal consistency between the items in the variables. The following table summarizes the result and actions taken.

Table 1 - Reliability test result

Variables	Initial Cronbach's Alpha	Initial Alpha Based on Standardized Items	Initial N of Items	Items removed	Final Cronbach's Alpha	Final Alpha Based on Standardized Items
Strategic Thinking (ST)	.721	.736	7	ST4	.821	.822
Absorptive Capacity (AB)	.821	.823	4	none		
Adaptive Capacity (AD)	.770	.769	3	none		
Operational Efficiency (OP)	.910	.910	6	none		
Strategic Leadership (SL)	.905	.912	4	*ST4**	.912	.914
Organizational Innovation (OI)	.897	.898	9	none		

* The result of reliability of Strategic Leadership when Strategic Thinking treated without ST4

Source: Survey Result (2021)

Strategic Thinking (ST)

ST4 removed at it increases the reliability in a measurable amount (from .736 to .821). Computation of reliability test after deletion of ST4 shows the reliability can be further enhanced to .827 with removal of ST7. ST7 was checked in Factor analysis for the impact on validity. ST7 found to have loading of 0.589, thus the item was retained in ST.

Absorptive Capacity

The internal consistency of Absorptive Capacity (0.821) with 4 items was very good. The test also reviled deletion of any item lowers the Cronbach's alpha value

Adaptive Capacity

Reliability test for Adaptive capacity show Cronbach's Alpha value of 0.770. The test provided deletion of the third item AD3 could enhance the Cronbach's Alpha value to 0.806. AD3 is maintained in AD because it is shown to have importance for validity in Factor analysis.

Operational Efficiency

The reliability test on Operational Efficiency items resulted in Cronbach's Alpha value of 0.910, which also agrees with the items for standardized alpha. This shows OP has excellent internal consistency.

3.8.2 Validity Tests

Principal component / Factor analysis was used to assess content and construct validity.

With the removal of item 4 from Strategic Thinking, the factor analysis resulted with extraction of one component. All the loading of the items in Strategic thinking were more than 0.5 explaining more than 25% of the variation in the variable. All other variables resulted in extraction of one component for each of them with proper level of loading. Thus, using factor analysis the variables for analysis are tested for validity and the results are commendable. For reference the results of validity test are attached in the appendix section.

3.9. Method of Data analysis

Descriptive and inferential analysis were conducted to assess the existence, relationship and influence of the Strategic Leadership and Organizational Innovation variables. Using

descriptive analysis, the existing practices of Strategic leadership, Strategic Leadership dimensions and Organizational Innovation was done. Correlation analysis was used to assess the relationship of Strategic Leadership, its dimensions with Organizational innovation and its dimensions. Linear and Multiple regression analyses were applied to asses the predicting capabilities of the independent variables on Organizational innovation and its dimensions. Computer software (SPSS v23) is used for the purpose of this analysis.

3.10. Ethical Considerations

The participants are involved in the research with clearly knowing and voluntarily accepting participation. Participants are provided with sufficient information regarding the purpose of the research and its proceedings. Anonymity and Confidentiality of collected data is maintained in all stages of the research process, be it analysis, reporting, presentation and publishing.

The research is in alignment with Research ethical considerations. The usage of information, and protection of the rights of respondents will be maintained.

Chapter 4

DATA PRESENTATION, ANALYSIS AND INTERPRETATION

4.1. Introduction

This chapter contains survey results, analysis and interpretation to answer the research questions described in the first chapter. The existence of the practices of Strategic leadership and organizational innovation.

4.2. Demographic and Background results

56 organizations were participated in the survey, the following shows the summary of the results of demographic background of the respondents and background information on the organizations.

Table 2 - Summary of Demographic and Background information

No	Factors	Categories/ Characteristics	f	%
1	Sex	Male	137	71.4
		Female	53	27.6
3	Position	General Manager/CEO	19	9.9
		Top Management	28	14.6
		Management	44	22.9
		Non-management/ Technical	94	49.0
4	Local or International company	Local Company	150	78.1
		International/ Affiliate of Foreign Company	38	19.8
		I do not know	4	2.0
5	Years since establishment	< 5 Years	50	26.0
		<10 Years	40	20.8
		<20 Years	37	19.3
		20+ Years	59	30.7
		I do not know	6	3.2
6	Number of employees in the firm	<5	9	4.7
		<10	21	10.9
		<20	26	13.5
		<50	24	12.5
		<100	24	12.5
		<500	22	11.5
		1000+	56	29.2
		I do not know	10	5.2

Source: Survey result (2021)

The respondents were 71% male and 27% female; two of the respondents didn't fill their gender.

15% of the responses are from top management or CEO. In the respondents 22.9% are in management positions. The non-management staff account for around 50% of the response. The results show good representation of different positions in the organizations.

The majority of respondents (59%) are from companies aged 20+ years. 6 respondents in total do not give information on the age of the firm since establishment.
54.5% of the respondents are from organizations that have up to 100 employees. 1 is missing another 9 responses were 'I don't know' the remaining percentage which account for more than 40% reside in companies with size of greater than 500.

4.3. Existence of Strategic Leadership in the organizations

To assess the existing practice of Strategic Leadership in the organizations that participated in the survey, Descriptive analysis was done on each of the Strategic Leadership dimensions and the aggregated results.

4.3.1 Descriptive analysis of Strategic Thinking

Table 3 - Descriptive statistics of Strategic Thinking Items

No	***Items***	***Rating Scales***					***Mean***	***St. dev***
		1	***2***	***3***	***4***	***5***		
ST1	The top management can see patterns in ambiguous information	2	27	90	51	21	3.32	.888
ST2	The Top Management tries to understand how the facts in a situation are related to each other	6	24	56	78	27	3.50	.989
ST3	The Top Management can see different points of view on a single situation	5	36	59	68	24	3.36	1.009
ST5	The Top Management engages in discussions with those who have different beliefs or who make different assumptions about a situation	7	30	60	61	33	3.43	1.064
ST6	Our organization has clear future we work towards to	6	10	32	71	72	4.01	1.021

ST7	I am committed, energized and motivated to the purpose, vision and goals of the organization	8	10	25	75	73	4.02	1.051
						Overall (aggregate) mean	**3.61**	**.737**

Key- rating scales:

1 = no extent; 2 = small extent, 3 = moderate extent; 4 = large extent and 5 = very large extent

** Strategic thinking was evaluated without item 4, based on the results of reliability.

Source: Survey result (2021)

The mean values of ST6 and ST7 are above 4 (values of – Large Extent). The skewness and kurtosis of all items in the range acceptable for normal consideration. Of all the 7 items ST7- "I am committed." has the highest mean (4.02) and the third highest std. deviation (1.051).

The range of the aggregate mean between 3.5 and 4.5 can be considered as 'large extent'. Thus, the result shows the participated respondents believe Strategic Thinking to be present in large extent in their organization.

4.3.2 Descriptive analysis of Absorptive Capacity

Table 4 - Descriptive statistics of Absorptive Capacity items

No	***Items***	***Rating Scales***					***Mean***	***St. dev***
		1	***2***	***3***	***4***	***5***		
AB1	The search for relevant information concerning our industry is every-day business in our company	6	20	55	66	43	3.63	1.045
AB2	Our management emphasizes cross-departmental support to solve problems	10	21	63	63	35	3.48	1.073
AB3	We are successful in linking existing knowledge with new insights.	4	20	54	81	33	3.62	.958
AB4	Our company regularly reconsiders technologies for the production of products and services and adapts them accordant to new knowledge.	2	21	40	77	51	3.81	.989
						Overall (aggregate) mean	**3.632**	**.826**

Key- rating scales:

1 = no extent; 2 = small extent, 3 = moderate extent; 4 = large extent and 5 = very large extent

Source: Survey Result (2021)

The four items in the Absorptive capacity have standard deviations between 0.958 and 1.073. The mean values of each item are close to each other with in 0.33 difference. The aggregate mean shows (3.632) in the range 3.5- 4.5. Implying the respondents agree the presence of Absorptive Capacity in large extent in their organization/Leadership.

4.3.3 Descriptive analysis of Adaptive Capacity

Table 5 - Descriptive Statistics of Adaptive Capacity

No	***Items***	***Rating Scales***					***Mean***	***St. dev***
		1	***2***	***3***	***4***	***5***		
AD1	The Top Management Team establish control systems that facilitate flexible employee behaviours	15	37	57	56	27	3.22	1.147
AD2	The Top Management Team make sure that employees are comfortable with constant change	18	27	68	58	21	3.19	1.107
AD3	Most people know what their role would be in a crisis	19	54	65	41	12	2.86	1.064
						Overall (aggregate) mean	3.09	.917

Key- rating scales:

1 = no extent; 2 = small extent, 3 = moderate extent; 4 = large extent and 5 = very large extent

Source: Survey result (2021)

AD3 has mean 2.86 less than the centre value of 3.0 unlike the other two items (3.22 and 3.19). The std. deviations in the items of AD are bit wider than the other variables in the research (all above std. deviation of one). The Aggregate mean shows value of 3.09, which is in the range 2.5-3.5. The mean value describes the majority of respondents believe Adaptive capacity present in their Top Management in Moderate level.

4.3.4 Descriptive analysis of Operational Efficiency

Table 6 - Descriptive Statistics of Operational Efficiency

No	***Items***	***Rating Scales***					***Mean***	***St. dev***
		1	***2***	***3***	***4***	***5***		
OP1	CEO, Top Management or Board checks work progress against agreed-upon objectives	5	21	47	74	45	3.69	1.031
OP2	CEO, Top Management or Board formulates clear objectives	5	21	47	83	36	3.65	.992
OP3	CEO, Top Management or Board reassures time schedules and deadlines	6	28	51	77	30	3.51	1.023
OP4	CEO, Top Management or Board works according to a structured system in order to ensure an optimal service level	9	25	62	70	26	3.41	1.030
OP5	CEO, Top Management or Board plans in detail how to accomplish an important task	6	24	53	70	39	3.58	1.045
OP6	CEO, Top Management or Board follow-up both long-term and short-term objectives effectively	8	18	58	73	33	3.55	1.021
					Overall (aggregate) mean		**3.56**	**.852**

Key- rating scales:

1 = no extent; 2 = small extent, 3 = moderate extent; 4 = large extent and 5 = very large extent

Source: Survey result (2021)

The items of Operational Efficiency (OP) have std. deviation that can be approximated to 1. The aggregate mean is in the range 3.5 – 4.5. The aggregate results show the respondents generally believe in the presence of operational efficiency to large extent in their Top Management.

4.3.5 Descriptive Statistics of Strategic Leadership

Strategic Leadership variable being the aggregate of its 4 dimensions is shown to be described as follows.

Table 7 - Descriptive Statistics of Strategic Leadership

Description	N	Mean	Std. Deviation	Skewness	Kurtosis
Strategic Thinking	192	3.61	.737	-.471	.172
Absorptive Capacity	192	3.63	.826	-.366	-.350
Adaptive Capacity	192	3.09	.917	-.259	-.246
Operational Efficiency	192	3.56	.851	-.377	-.252
Strategic Leadership	**192**	3.47	**.743**	**-.390**	-.262
Valid N (listwise)	192				

Key- rating scales:

1-1.5 = no extent; 1.5 – 2.49 = small extent, 2.5 -3.49 = moderate extent; 3.5-4.49 = large extent and 4.5 - 5= very large extent

Source: Survey result (2021)

As described above the aggregate mean of the four dimensions lies in the range 2.5-3.5. The result implies the respondents are indecisive on the presence of Strategic Leadership in their Top Management.

4.4. Existence of Organizational Innovation in the Organizations

To assess the existence of Organizational Innovation practices in the organizations under the research descriptive analysis was done and the results are summarized as follows.

Table 8 - Descriptive Statistics of Organizational Innovation

No	***Items***	***Rating Scales***					***Mean***	***St. dev***
		1	***2***	***3***	***4***	***5***		
OI1	Renewing the routines, procedures and processes employed to execute firm activities in innovative manner	14	28	53	68	26	3.34	1.116
OI2	Renewing the supply chain management system	33	31	58	46	21	2.95	1.247
OI3	Renewing the production and quality management systems	19	25	65	57	24	3.22	1.138
OI4	Renewing the human resources management system	28	31	50	65	18	3.07	1.209
OI5	Renewing the in-firm management information system and information sharing practice	13	21	67	67	22	3.34	1.045
OI6	Renewing the organization structure to facilitate teamwork	11	30	53	58	38	3.43	1.147
OI7	Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing	17	28	63	61	22	3.23	1.113
OI8	Renewing the organization structure to facilitate project type organization	17	15	55	72	32	3.46	1.132
OI9	Renewing the organizational structure to facilitate strategic partnerships and long- term business collaborations	15	24	54	67	31	3.39	1.137
Overall (aggregate) mean							**3.268**	**.860**

Key- rating scales:

1 = not implemented

2=imitated/copied from national markets

3=imitated/copied from international markets

4=current organizational practices in the market were improved

5=original organizational innovations were implemented

Source: Survey result (2021)

OI2 – "renewing the supply chain." item of Organizational Innovation (OI) has the least mean (2.95) and the highest std. deviation. The descriptive statistics of the means of items in each variable. The means of each variable are between 2.95 and 3.46. Standard deviations between 0.6 and 1.0. The aggregate mean of Organizational innovation items is 3.268. The result lies in

the range 2.5 to 3.5 implying Organizational Innovations in the average are imitated/copied from international market (moderate level of Organizational innovation)

4.5. The relationship between Strategic Leadership and Organizational Innovation

Bivariate and partial correlation analysis was done to identify the relationship of the independent, control and dependent variables.

Table 9 - - Summary of correlation and partial correlation results

		Organizational Innovation	**Procedural OI**	**Structural OI**
Strategic Leadership	Pearson Correlation	**.710****	**.689****	**.623****
	Sig. (2-tailed)	.000	.000	.000
	N	192	192	192
Strategic Thinking	Pearson Correlation	**.630****	**.597****	**.567****
	Sig. (2-tailed)	.000	.000	.000
	N	192	192	192
Absorptive Capacity	Pearson Correlation	**.662****	**.639****	**.587****
	Sig. (2-tailed)	.000	.000	.000
	N	192	192	192
Adaptive Capacity	Pearson Correlation	**.593****	**.595****	**.497****
	Sig. (2-tailed)	.000	.000	.000
	N	192	192	192
Operational Efficiency	Pearson Correlation	**.650****	**.625****	**.576****
	Sig. (2-tailed)	.000	.000	.000
	N	192	192	192

Source: Survey result (2021)

4.5.1. Strategic thinking and Organizational Innovation

Moderate, significant and positive relationship (r=.626, p<.0005) existed between ST and OI.

4.5.2. Absorptive Capacity and Organizational Innovation

Among the dimensions of SL considered in the research AB has the highest strength (0.662) followed by Operational Efficiency (0.650). The relationship is identified as moderate, positive and significant at confidence level of 99.999%.

4.5.3. Adaptive Capacity and Organizational Innovation

Adaptive capacity has shown the least (0.593) among Strategic Thinking, Absorptive Capacity and Operational Efficiency in its relationship with organizational innovation.

OI and Adaptive capacity has positive significant (p<0.001) and moderate correlation. The correlation strength of AD with OI is the least compared to the other three variables in SL.

4.5.4. Operational Efficiency and Organizational Innovation

Correlation result shows OP moderately correlate with OI. The relationship is significant(p<0.001) and both variables vary in the same direction. OP expressed Top Managements ability to set clear objectives, plan in detail and monitor execution effectively is shown to positively relate to OI. Eventhough the level of correlation is moderate it is stronger than AD and ST.

4.6. The effect of Strategic Leadership on Organizational Innovation

To analyse the influence and predictive capacity of the independent variables on Organizational Innovation simple and multiple regression analyses were done. The analysis results are summarized in the following 3 tables using six models.

Table 10 - Model Summary of regression analysis

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	**.710[e]**	**.504**	**.501**	**.60726**
2	.689[a]	.474	.472	.66393
3	.623[a]	.388	.384	.72794
4	.713[f]	.509	.498	.60921
5	.690[a]	.476	.465	.66812
6	.632[a]	.399	.386	.72692

Source: Survey result (2021)

Table 11 - Regression analysis ANOVA table

Model		Sum of Squares	df	Mean Square	F	Sig.
1		71.157	1	71.157	192.962	.000[b]
2		75.576	1	75.576	171.448	.000[b]
3		63.748	1	63.748	120.300	.000[b]
4		71.821	4	17.955	48.380	.000[b]
5		75.855	4	18.964	42.483	.000[b]
6		65.616	4	16.404	31.044	.000[b]
	Total	**141.223**	191			

Source: Survey result (2021)

Table 12 - Coefficients for Regression analysis

Model	Dependent	Predictors	Coefficients	Sig.	Collinearity	
					Tolerance	VIF
1	Organizational innovation	(Constant)	.413	.051		
		Strategic Leadership	.822	.000	1.000	1.000
2	Procedural OI	(Constant)	.245	.289		
		Strategic Leadership	.847	.000	1.000	1.000
3	Structural OI	(Constant)	.676	.008		
		Strategic Leadership	.778	.000	1.000	1.000
4	Organizational Innovation	(Constant)	.338	.146		
		Strategic Thinking	.208	.042	.352	2.841
		Absorptive Capacity	.283	.004	.309	3.237
		Adaptive Capacity	.111	.151	.395	2.530
		Operational Efficiency	.227	.015	.324	3.091
5	Procedural OI	(Constant)	.243	.333		
		Strategic Thinking	.159	.153	.349	2.866
		Absorptive Capacity	.277	.009	.310	3.226
		Adaptive Capacity	.177	.034	.407	2.460
		Operational Efficiency	.229	.024	.319	3.131
6	Structural OI	(Constant)	.519	.058		
		Strategic Thinking	.252	.038	.349	2.866
		Absorptive Capacity	.295	.011	.310	3.226
		Adaptive Capacity	.029	.745	.407	2.460
		Operational Efficiency	.221	.045	.319	3.131

Source: Survey result (2021)

4.6.1. Multi collinearity and Normality tests

Test for multi-collinearity was done with Variance Inflation Factors (VIF) or Tolerance. VIF measures the level one independent variable in the equation explains for the variation in another variable. The least VIF value is 1, VIF values between 1 and 5 are considered Moderate, VIF values more than 10 would need correction measures. All the multiple regression results in this research have VIF values <4. Thus, the multiple regression results discussed are free from issues of multi-collinearity.

As depicted in Table 12, the independent variables show normal distribution, the kurtosis and skewness levels are within -1 to 1 and -3 to 3 respectively. Thus, valid regression analysis can be done on the variables.

4.6.2. The Effect of Strategic Leadership (SL) on Organizational Innovation

Simple Linear regression analyses were done on Strategic leadership as independent variable with Organizational Innovation, Procedural OI and Structural OI as Dependent Variable.

The sum of squares of the regression result from Strategic Leadership on Organizational Innovation is the little bit more than half of the total (regression + residual), which implies the variable in the regression equation account for more than 50% of the variation in OI and this is significant at the level of $p<0.001$. The linear regression analysis of SL on the dependent OI variable resulted in significant relationship ($F(1,190) = 192.962$; $p<.001$), $R^2=.504$ and adjusted $R^2=.501$.

$$OI = 0.413 + 0.822 * SL + \varepsilon$$

A unit change in SL resulted in 82.2% change in OI. This is very high predicting capability.

Similarly on the analysis of Strategic leadership with Procedural dimension of OI resulted in significant equation; $POI = 0.245 + 0.847 * SL + \varepsilon$; and the analysis of Strategic leadership with Structural dimension of OI resulted $SOI = 0.676 + 0.778 * SL + \varepsilon$. Strategic Leadership seen to influence Procedural OI more than Structural OI. A unit change in Strategic Leadership changed Procedural OIs by 84.7%, while it influenced change of 77.8% in Structural OI. (Models 2 and 3 as shown in Tables 16,17 and 18).

4.6.3. The effect of the Dimensions of Strategic Leadership (ST, AB, AD, OP) on OI

As shown in Tables 16,17 and 18; A multiple linear regression was calculated to predict Organizational Innovation (OI) based on Strategic Thinking (ST), Absorption Capacity (AB), Adaptive Capacity (AD) and Operational Efficiency (OP).

A significant equation found (F (4,187) =48.380, p=.000) with R^2 of .509. (Model 4)

$$OI = 0.338 + 0.208 * ST + 0.283 * AB + 0.227 * OP + \varepsilon$$

Object of measurement increased 20.8% for each ST unit increase, 28.3% for each AB unit increase, 11.1% for each unit increase in AD and 22.6% for each unit increase in OP. Strategic Thinking (ST), Absorption Capacity (AB) and Operational Efficiency (OP) were significant predictors of Organizational Innovation (OI). Adaptive Capacity (AD) was not statistically significant.

A significant equation found (F (4,187) =42.483, p=.000) with R^2 of .476 and Adjusted R^2 of .465 (Model 5) was found for the effect of the four dimensions of Strategic Leadership on Procedural OI. The analysis reviled Strategic Thinking to be insignificant predictor of Procedural OI. The other three dimensions were significant predictors with the equation: $POI = 0.243 + 0.277 * AB + 0.177 * AD + 0.229 * OP + \varepsilon$. Unit change in Absorptive capacity resulted in 25.7% change in Procedural OI. Unit change in Adaptive Capacity resulted in 17.7% change in Procedural OI. Unit change in Operational Efficiency resulted in 22.9% change in Procedural OI.

Multiple regression to identify the effect of the four dimensions on Structural OI resulted in model 6 with (F (4,187) =31.044, p=.000) with R^2 of .399 and Adjusted R^2 of .386. In this result Adaptive Capacity was found to be insignificant predictor of Structural OI. The equation; $SOI = 0.519 + 0.252 * ST + 0.295 * AB + 0.221 * OP + \varepsilon$ shows unit changes in Absorptive Capacity, Strategic Thinking and Operational Efficiency impacted Structural OI for changes in 29.5%, 25.2% and 22.1% respectively.

In both Structural and Procedural OI, Absorptive capacity had more influence.

Chapter 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Summary

Organizations especially that operate in the digital technology are prone to frequently changing operating environment. Globalization of competitions, the global nature of digital, IT, cyber technology sector creates its own demands, challenges and opportunities.

Current directions of the country (Ethiopia) in building digital economy facilitates the need to build knowledge base and expertise for leading organizations to success in this uncertain environment.

The association - ICT-et has been working for the development of the ICT sector for years. The association has more than 100 member companies with thousands associate individual members. This research project focused on those companies that are members of the association.

Strategic leadership as leadership of the overall organization and Organizational innovation is the innovation of the organization within; the relationship of the two is of critical value.

Innovation, dimensions of innovation with special focus on Organizational innovation was reviewed. Leadership theories and styles of leadership were reviewed to differentiate the concept of strategic leadership. Theories of leadership starting from Great man theory to transformational leadership were discussed.

Strategic Leadership with its four components were reviewed and incorporated for their effect on Organizational innovation. Strategic thinking as systematic, reflective, non-linear thinking process for crafting of direction of the organization. Absorptive capacity as the activities and cognitive efforts to acquire and utilize new knowledge. Adaptive capacity as means for the organization to proactively and reactively respond to variability in the operating environment. Operational efficiency as capacity of the leadership/ organization to implement goals economically.

The study employed quantitative methods to test the relationship of the dependent variable (Organizational Innovation) with the independent variables.

Data collected from respondents in 56 different companies through close-ended questionnaire was analyzed with descriptive, and inferential methods. Pearsons' correlation, linear and multiple regressions were applied to assess the relationship of the aggregate Strategic Leadership variable and each the components (Strategic Thinking, Absorptive Capacity, Adaptive Capacity and Operational Efficiency) with Organizational innovation.

The data was assessed for reliability (internal consistency) and measures were taken to optimize internal consistency of variables. Factor analysis were used to asses construct validity of the variables. The results also show normally distributed data with multi-collinearity in the different analyses within the recommended level.

5.2. Conclusion

The study conducted to identify the relationship of Strategic Leadership and its components with Organizational innovation shown insightful significant relationships using primary data collected. Effects that are significant and predicting capacity were also identified.

The research results have shown to be reliable and valid. The collected data exhibited normal distribution. All the tests for multicollinearity in all regression analysis show acceptable values of VIF<4. The number of samples collected (N=192) from the targeted number (N=222) provided representative response for analysis and deduction.

The organizations that participated in the study exhibited Strategic Leadership at moderate Level. Strategic Thinking, Absorptive Capacity and Operational Efficiency of the Strategic Leadership dimensions were exhibited in the organizations in large extent. Relatively Adaptive Capacity were exhibited at lower level than the three dimensions and was practiced at moderate level.

From the descriptive analysis of Organizational Innovation, the majority of the Digital tech companies implemented Organizational innovations that are imitated form from the market (moderate level of Organizational innovation exhibited).

Strategic Leadership and Organizational innovation have positive and strong relationship (0.710). The dimensions of Strategic Leadership; Strategic Thinking, Absorptive Capacity, Operational Efficiency have positive and moderate relationship (r = 0.630, r = 0.662, r= 0.650 respectively) with Organizational Innovation. Absorptive Capacity and Operational Efficiency relates to the Procedural dimensions of Organizational Innovation positively and at moderate

level (r=0.639 and r=0.625 respectively). The other dimensions of Strategic Leadership and dimensions of Organizational Innovation related weak and positive.

Strategic Leadership is strong and positive predictor (beta=0.822) of Organizational innovation. Strategic Leadership predict both Procedural (beta=0.847) and Structural (beta=0.778) dimensions of Organizational Innovation strongly.

In testing the conceptual framework; the three dimensions of Strategic Leadership (Strategic thinking, Absorptive capacity, and Operational efficiency) have significant and positive influence with beta 0.208,0.283 and 0.227 respectively on Organizational Innovation. Adaptive Capacity fail to significantly influence Organizational Innovation. The Procedural dimension of Organizational Innovation is significantly influenced by Absorptive Capacity, Adaptive Capacity and Operational efficiency. Strategic thinking fails to significantly predict Procedural OI. Structural dimension of OI on the other hand is significantly influenced by Strategic thinking, Absorptive capacity, and Operational efficiency. For Structural OI Adaptive Capacity have insignificant influence.

In contrary to the assumptions Adaptive Capacity has insignificant role on Structural and the overall Organizational Innovation. Similarly, Strategic thinking has insignificant role on Procedural dimension of Organizational innovation.

To this end, the study concludes Strategic leadership is strong and positive predictor of Organizational Innovation.

5.3. Recommendation

Organizational Innovations are vital to the short-term and long-term success of digital tech firms that are operating the complex and dynamic operating environment. Thus, the following can be recommended based on the results of the research.

The digital tech firms under study could enhance Organizational innovation building Strategic leadership capabilities in the Top Management and in the DNA of the overall organization.

As depicted on the results Absorptive Capacity of the leadership/organization determines organizational innovation and its dimensions (Procedural and Structural) more than the other components of Strategic Leadership. Organizations that seek to enhance Organizational

innovation shall have processes and means to assimilate, transform and utilize knowledge external and internal to the organization.

Strategic thinking contained the tools and processes of creating future direction of the organization. Developing capabilities in Strategic thinking will help enhance Organizational innovation more specifically Structural dimension of OI.

The nature of organizational innovations in procedural and structural typology entails to achieve efficiency and effectiveness of the organizations' operations. In turn Organizational or Leadership capacities in setting clear objectives, following up and maintaining balanced control, i.e. Operational Efficiency capacities affected Organizational Innovations. It can be said that by developing organizational /Leadership capacities of operational efficiency organizations can enhance Organizational Innovation.

Organizations can enhance Structural dimension of OI by developing Adaptive capacity of the Top Management.

Finally, the results of this research project recommend Organizations especially involving in the Digital Technology sector to work on developing their Strategic leadership capabilities to be able to sustain and strive in the short and long term.

5.4. Future Research

The research related Strategic Leadership with a mostly overlooked but critical type of innovation (Organizational innovation). The research instrument for Strategic leadership was adapted from different researched in the dimensions of SL. The research in the specific topic and the sector was limited. Thus, the following are recommended for future research.

Future researches may focus on the relationship of Strategic leadership and other innovation typologies and aspects in the similar context. Typologies such as Product/service innovation, Process innovation, Business model innovation. Other aspects of innovation such as propensity to innovate, innovativeness, or mindset for innovation.

Future researches with similar topic but addressing different sectors in the economy. The sectors can be established sectors or emerging sectors.

REFERENCES

AbuZaid, A. N. (2016). Testing the Impact of Strategic Leadership on Organizational Ambidexterity: A field Study on the Jordanian Chemical Manufacturing Companies. *International Journal of Business and Management*, *11*(5), 328. https://doi.org/10.5539/ijbm.v11n5p328

Aredo, D., Fekadu, B., & Workneh, S. (2006). *MPIA Network Session Paper The Impact of WTO Accession on Poverty and Inequality in Ethiopia : An Investigation of a Dynamic CGE Micro-Simulation Analysis*. https://www.pep-net.org/sites/pep-net.org/files/typo3doc/pdf/files_events/5th_ethiopia/Aredo.pdf

Armbruster, H., Bikfalvi, A., Kinkel, S., & Lay, G. (2008). *Organizational innovation : The challenge of measuring non-technical innovation in large-scale surveys*. *28*, 644–657. https://doi.org/10.1016/j.technovation.2008.03.003

Aslan, Ş., Diken, A., & Şendogdu, A. A. (2011). Investigation of the effects of strategic leadership on strategic change and innovativeness of SMEs in a perceived environmental uncertainity. *Procedia - Social and Behavioral Sciences*, *24*, 627–642. https://doi.org/10.1016/j.sbspro.2011.09.009

Asrar-ul-Haq, M., & Anwar, S. (2018). The many faces of leadership: Proposing research agenda through a review of literature. *Future Business Journal*, *4*(2), 179–188. https://doi.org/10.1016/j.fbj.2018.06.002

Atalay, M., Anafarta, N., & Sarvan, F. (2013). The Relationship between Innovation and Firm Performance: An Empirical Evidence from Turkish Automotive Supplier Industry. *Procedia - Social and Behavioral Sciences*, *75*, 226–235. https://doi.org/10.1016/j.sbspro.2013.04.026

Bach, T. M., Dalazen, L. L., Vieira, W., Ferraresi, A. A., & Pereira, C. (2019). *Relationship Between Innovation and Performance in Private Companies : Systematic Literature Review*. https://doi.org/10.1177/2158244019855847

Badshah, S., Farh, C. I. C. C., Seo, M., & Tesluk, P. E. (2012). Historical Study of Leadership Theories. *Journal of Strategic Human Resource Management*, *1*(1), 49–60.

Bass, B. M. (2007). Executive and strategic leadership. *International Journal of Business*, *12*(1), 33–54. http://proquest.umi.com/pqdweb/?did=1210832711&Fmt=7&clientId=46781&RQT=309&VName=PQD

Bekkenutte, B. H. L. (2016). *Organizational Innovation Practices* (Issue August).

Boal, K. B., & Hooijberg, R. (2000). Strategic leadership research: Moving on. *Leadership Quarterly*, *11*(4), 515–549. https://doi.org/10.1016/s1048-9843(00)00057-6

Bouhali, R., Mekdad, Y., Lebsir, H., & Ferkha, L. (2015). Leader Roles for Innovation: Strategic Thinking and Planning. *Procedia - Social and Behavioral Sciences*, *181*, 72–78. https://doi.org/10.1016/j.sbspro.2015.04.867

Chari, F., Muchanyuri, B., & Mzumara, M. (2013). Comparative Advantage of Ethiopia and the Role

of International Purchasing. *Greener Journal of Economics and Accountancy*, *2*(2), 051–057. https://doi.org/10.15580/GJEA.2013.2.052213627

Cote, R. (2017). A Comparison of Leadership Theories in an Organizational Environment. *International Journal of Business Administration*, *8*(5), 28. https://doi.org/10.5430/ijba.v8n5p28

Davies, B. J., & Davies, B. (2004). Strategic leadership. *School Leadership and Management*, *24*(1), 29–38. https://doi.org/10.1080/1363243042000172804

Dorothée Zerwas. (2014). *Organizational Culture and Absorptive Capacity:The Meaning for SMEs* [Universität Koblenz-Landau]. https://doi.org/10.1007/978-3-658-05552-3

Duursema, H. (2013). Strategic Leadership: Moving beyond the leader-follower dyad [Erasmus Research Institute of Management – ERIM]. In *ERIM PhD Series in Research in Management* (Issue 279). https://repub.eur.nl/pub/39129/EPS2013279ORG9789058923240.pdf

Edwards-Schachter, M. (2018). The nature and variety of innovation. *International Journal of Innovation Studies*, *2*(2), 65–79. https://doi.org/10.1016/j.ijis.2018.08.004

Elenkov, D. S., & Manev, I. M. (2005). Top management leadership and influence on innovation: The role of sociocultural context. *Journal of Management*, *31*(3), 381–402. https://doi.org/10.1177/0149206304272151

Eromafuru, E. (2013). Building and Sustaining Supportive Organizational Culture through Innovative and Strategic Leadership. *International Journal of Humanities and Social Science*, *3*(11), 130–137. http://arshadfile.ir/wp-content/uploads/2016/08/15.pdf

Fadiah, N., Zawawi, M., Wahab, S. A., Al-mamun, A., Yaacob, A. S., & L, N. K. A. (2016). *Defining the Concept of Innovation and Firm Innovativeness : A Critical Analysis from Resorce-Based View Perspective*. *11*(6), 87–94. https://doi.org/10.5539/ijbm.v11n6p87

Federal Negarit Gazette - Proclamation No.1097/2018, 25 Federal Negarit Gazette (2018). https://www.eia.nl/documenten/00000443.pdf

French, J. R. P., & Raven, B. (1959). The bases of social power. *Group Dynamics*, 259–269.

Gault, F. (2016). *Defining and Measuring Innovation in all Sectors of the Economy : Policy Relevance*. *July 2016*, 19–21.

Granstrand, O., & Holgersson, M. (2020). Innovation ecosystems: A conceptual review and a new definition. In *Technovation* (Vols. 90–91, p. 102098). Elsevier Ltd. https://doi.org/10.1016/j.technovation.2019.102098

Gromyko, A. (2016). On Strategic Thinking. *Contemporary Europe*, *68*(2), 6–9. https://doi.org/10.15211/soveurope220160609

Growth, E., & Reduction, P. (2015). *Entrepreneurship and Innovation for Ethiopia's Transformation*. *3*.

Hage, J. T. (1999). *ORGANIZATIONAL INNOVATION AND ORGANIZATIONAL CHANGE*. 597–622.

Hambrick, D. C., & Mason, P. A. (1984). Upper Echelons: The Organization as a Reflection of Its Top Managers. *Academy of Management Review*, *9*(2), 193–206.

https://doi.org/10.5465/amr.1984.4277628

Harrington, H. J., & Voehl, F. (2019). Creative Tools, Methods, and Techniques That Every Innovator Must Know. In *The Innovation Systems Cycle*. Productivity Press. https://doi.org/10.4324/9780429324727-7

Etransaction - Proclamation No. 1205/2020, 12581 (2020) (testimony of House of Peoples Representatives HoP). https://mint.gov.et/wp-content/uploads/2021/04/Etransaction-Proclamation.pdf

Hsiao, H. C., & Chang, J. C. (2011). The role of organizational learning in transformational leadership and organizational innovation. *Asia Pacific Education Review*, *12*(4), 621–631. https://doi.org/10.1007/s12564-011-9165-x

Ireland, R. D., & Hitt, M. A. (1999). Achieving and maintaining strategic competitiveness in the 21st century: The role of strategic leadership. *IEEE Engineering Management Review*, *27*(4), 51–64. https://doi.org/10.5465/ame.1999.1567311

Israel, G. D. (1992). Determining Sample Size. *University of Florida Cooperative Extension Service, Institute of Food and Agriculture Sciences, EDIS*, *25*(3), 2017. https://doi.org/10.4039/Ent85108-3

Jaleha, A. A., & Machuki, V. N. (2018). Strategic Leadership and Organizational Performance: A Critical Review of Literature. *European Scientific Journal ESJ*, *14*(35), 124–149. https://doi.org/10.19044/esj.2018.v14n35p124

Jansen, J. J. P., Vera, D., & Crossan, M. (2009). Strategic leadership for exploration and exploitation: The moderating role of environmental dynamism. *Leadership Quarterly*, *20*(1), 5–18. https://doi.org/10.1016/j.leaqua.2008.11.008

Kahn, K. B. (2018). Understanding innovation. *Business Horizons*, *61*(3), 453–460. https://doi.org/10.1016/j.bushor.2018.01.011

Katana, Eric Lewa, Waiganjo, E.W., Mugambi, F. M. (2016). Influence of Strataegic Leadership and Organizational Culture on Strategy Execution in Shipping Companies in Kenya. *Research on Humanities and Social Sciences*, *6*(22), 67–76.

Kazmi, S. A. Z., Naarananoja, M., & Wartsila, J. K. (2016). Integrating Strategic Thinking and Transformational Leadership for NPD Idea Support Process. In *Procedia - Social and Behavioral Sciences* (Vol. 229, pp. 387–397). https://doi.org/10.1016/j.sbspro.2016.07.149

Kesting, P., Ulhøi, J. P., Song, L. J., & Niu, H. (2016). The impact of leadership styles on innovation - a review. *Journal of Innovation Management*, *3*(4), 22–41. https://doi.org/10.24840/2183-0606_003.004_0004

Khan, R., Rehman, A. U., & Fatima, A. (2009). Transformational leadership and organizational innovation: Moderated by organizational size. *African Journal of Business Management*, *3*(11), 678–684. https://doi.org/10.5897/AJBM09.203

Kogabayev, T., & Maziliauskas, A. (2017). The definition and classification of innovation. *HOLISTICA*

– *Journal of Business and Public Administration*, *8*(1), 59–72. https://doi.org/10.1515/hjbpa-2017-0005

Kozioł-Nadolna, K. (2020). The Role of a Leader in Stimulating Innovation in an Organization. *Administrative Sciences*, *10*(3), 59. https://doi.org/10.3390/admsci10030059

Lam, A. (2004). Organizational Innovation. In J. Fagerberg, D. Mowery, & R. R. Nelson (Eds.), *The Oxford Handbook of Innovation* (pp. 115–147). Oxford University Press. http://mpra.ub.uni-muenchen.de/7975/

Lynch, P., Walsh, M. M., & Harrington, D. (2010). *Defining and Dimensionalizing Organizational Innovativeness Defining and Dimensionalizing*.

Madhani, P. (2010). Resource Based View (RBV) of Competitive Advantage: An Overview. *... BASED VIEW: CONCEPTS AND PRACTICES, Pankaj ..., March 2010*. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1578704

Makri, M., & Scandura, T. A. (2010). Exploring the effects of creative CEO leadership on innovation in high-technology firms. *Leadership Quarterly*, *21*(1), 75–88. https://doi.org/10.1016/j.leaqua.2009.10.006

Mango, E. (2018). Rethinking Leadership Theories. *Open Journal of Leadership*, *07*(01), 57–88. https://doi.org/10.4236/ojl.2018.71005

Mbanaso, U. M., & Dandaura, E. S. (2015). The Cyberspace: Redefining A New World. *IOSR Journal of Computer Engineering*, *17*(3), 2278–2661. https://doi.org/10.9790/0661-17361724

Digital Ethiopia 2025 - Strategy, (2020) (testimony of MINT). https://mint.gov.et/wp-content/uploads/2021/05/Digital-Ethiopia-2025-Strategy-english.-.pdf

Moghadam, H., Haddadi, E., & Kikha, A. (2018). *Studying the Effect of Strategic Thinking on Innovation Performance*. *26*(14), 63–65.

Digital Skills Country Action Plan, (2020) (testimony of MoSHE). https://www.moshe.gov.et/files/1610810983579.pdf

Mui, H. K. Y., Basit, A., & Hassan, Z. (2018). The Impact of Strategic Leadership on Organizational Performance of Small Medium Enterprises (SME) in Malaysia. *Journal of Leadership and Management*, *13*(August 2019), 154–166.

Murovec, N., & Prodan, I. (2008). The Influence of Organizational Absorptive Capacity on Product and Process Innovation. *Organizacija*, *41*(2), 43–49. https://doi.org/10.2478/v10051-008-0005-7

Musca, G., Perez, M., Rouleau, L., & Giordano, Y. (2009). *A PRACTICE VIEW OF STRATEGIC LEADERSHIP IN A HIGHLY RISKY AND AMBIGUOUS ENVIRONMENT: THE DARWIN EXPEDITION IN PATAGONIA*. *3*(1).

Muzee, H., Bagire, V., & Ngoma, M. (2016). Strategic Leadership and Employee Engagement, Evidences from an African Industrial Setting. *OALib*, *03*(08), 1–10. https://doi.org/10.4236/oalib.1102907

National Digital Payments Strategy 2021–2024, (2021) (testimony of NBE). https://nbebank.com/wp-

content/uploads/pdf/news/National- Digital- Payment Strategy.pdf

Redmond, J. (2010). *By James Redmond , BBS , MBS , ACMA : Examiner - Professional 2 Strategy & Leadership*. 1–9.

Richard L., H., & Katherine, C. B. (2005). *Becoming a Strategic Leader : Your Role in Your Organization's Enduring Success* (1st ed.). John Wiley & Sons, Inc.

Robert N. Lussier, P. D., & Christopher F. Achua, D. B. A. (2010). Leadership Theory, Application & Skill Development 4e. In *The American Journal of Geriatric Psychiatry* (Vol. 18, Issue 3). https://doi.org/10.1097/01.jgp.0000369161.13792.ad

Rowe, W. G. (2001). Creating wealth in organizations: The role of strategic leadership. *IEEE Engineering Management Review*, *29*(4), 25–37.

Salavou, H. (2004). *The concept of innovativeness : should we need to focus ?* https://doi.org/10.1108/14601060410515628

Samimi, M., Cortes, A. F., Anderson, M. H., & Herrmann, P. (2020). What is strategic leadership? Developing a framework for future research. *Leadership Quarterly*, *October*, 101353. https://doi.org/10.1016/j.leaqua.2019.101353

Sorgenfrei, B. M., & Wrigley, R. (2005). *Building Analytical and Adaptive Capacities for Organisational Effectiveness*. *7*.

Worldbank Ethiopia Overview. (n.d.). Retrieved July 24, 2021, from https://www.worldbank.org/en/country/ethiopia/overview

www.ictet.org. (n.d.). Retrieved August 12, 2021, from http://ictet.org

Zizlavsky, O. (2013). Past, present and future of the innovation process. *International Journal of Engineering Business Management*, *5*(1), 1–8. https://doi.org/10.5772/56920

APPENDIX A: QUESTIONNAIRE

Addis Ababa University, School of Commerce (Masters of Arts in Business Leadership)

Dear Respondent,

I am Michael Melaku (GSE/0731/10).
This is Academic research on the Title of "The Role of Strategic Leadership on Organizational Innovation: in case of selected Digital Tech firms in Ethiopia" At Addis Ababa University, School of Commerce.

For this purpose, this questionnaire which will take less than 10 minutes is to be filled. This study is to be used for academic purposes only. The information will be strictly confidential and all ethical proceedings in usage of the collected information will be maintained.

Thank you very much for you willingness and cooperation. I can be reached at mickymelaku@gmail.com for any inquires.

Michael

Demographic Information of the Respondent

(1) Gender ☐ Female ☐ Male
(2) Age (years)
◯ 20 – 30 ◯ 31 – 40 ◯ 41– 60 ◯ 60+

(3) Highest level of Qualification
◯ Diploma ◯ Bachelor's Degree ◯ Master's Degree ◯ Above Master's Degree
◯ Others
(4) Year(s) work of Experience at the current organization
◯ <1 year ◯ 1-5 years ◯ 5-10 years ◯ 10-20 years ◯ >20 years
(5) Year(s) overall work of Experience
◯ <5 years ◯ 5-10 years ◯ 10-20 years ◯ 21-30 years ◯ >30 years

(6) Current job Position at the organization
◯ General Manager/CEO
◯ Top Management
◯ Management
◯ Non-management/ Technical
◯ other not included here

Background Information of the organization

6) The organization (more than one can be checked)

☐ has owner – manager -the manager of the organization is also the owner (owns 20%+)

☐ Has board (board of directors)

☐ Top Management team

7) Legally Established as

◯ Private Limited Company (PLC)

◯ Share Company (S.C)

◯ Sole Proprietorship

◯ Partnership

◯ Other

◯ I do not know

8) The organization is

◯ Local Company

◯ International company/ affiliate of foreign company

◯ I do not know

9) Age of the firm (years since establishment)

◯ <5 years

◯ <10 years

◯ <20 years

◯ 20+ years

◯ I do not know

10) Number of employees in the firm (temporary and permanent)

◯ <5

◯ <10

◯ <20

◯ <50

◯ <100

◯ <500

◯ 1000+

◯ I don't know

11) Name of organization _____

	To what extent is the following exhibited in your organization	**No extent**	**Small extent**	**Moderate extent**	**Large extent**	**Very large extent**
		1	**2**	**3**	**4**	**5**
1	The top management can see patterns in ambiguous (or vague/unclear) information	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	The Top Management tries to understand how the facts in a situation are related to each other	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	The Top Management can see different points of view on a single situation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	The Top Management ignore past decisions when considering current similar situations	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	The Top Management engages in discussions with those who have different beliefs or who make different assumptions about a situation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	Our organization has clear future we work towards to	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	I am committed, energized and motivated to the purpose, vision and goals of the organization	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	The search for relevant information concerning our industry is every-day business in our company	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	Our management emphasizes cross-departmental support to solve problems	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

10	We are successful in linking existing knowledge with new insights.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11	Our company regularly reconsiders technologies for the production of products and services and adapts them accordant to new knowledge.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12	The Top Management Team establish control systems that facilitate flexible employee behaviours	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
13	The Top Management Team make sure that employees are comfortable with constant change	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14	Most people know what their role would be in a crisis	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
The CEO, Top Management or Board in our organization…						
15	Checks work progress against agreed-upon objectives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16	Formulates clear objectives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17	Reassures time schedules and deadlines	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18	Works according to a structured system in order to ensure an optimal service level	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
19	Plans in detail how to accomplish an important task	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
20	Follows up both long-term and short-term objectives effectively	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

	To what extent were the following organizational innovation items implemented in your organization in the last three years? (1 – low /nonexistence, 5 – very high)	1- not implemented 2- imitated/copied from national markets 3- imitated/copied from international markets 4- current organizational practices in the market were improved 5- original organizational innovations were implemented				
		1	2	3	4	5
1	Renewing the routines, procedures and processes employed to execute firm activities in innovative manner	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Renewing the supply chain management system	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Renewing the production and quality management systems	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Renewing the human resources management system	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Renewing the in-firm management information system and information sharing practice	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	Renewing the organization structure to facilitate teamwork	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	Renewing the organization structure to facilitate project type organization	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	Renewing the organizational structure to facilitate strategic partnerships and long- term business collaborations	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

APPENDIX B: RESULTS FOR ADDITIONAL REFERENCE

Results in Relation to Validity tests

Strategic Thinking (ST)

Table 13 - Component matrix - Principal factor analysis for items in Strategic Thinking

	Component
	1
ST1 - The top management can see patterns in ambiguous information	.688
ST2 - The Top Management tries to understand how the facts in a situation are related to each other	.845
ST3 - The Top Management can see different points of view on a single situation	.809
ST5 - The Top Management engages in discussions with those who have different beliefs or who make different assumptions about a situation	.773
ST6 - Our organization has clear future we work towards to	.690
ST7 - I am committed, energized and motivated to the purpose, vision and goals of the organization	.548
Extraction Method: Principal Component Analysis.	
a. 1 components extracted.	

Source: Survey result (2021)

Absorptive Capacity (AB)

Table 14 - Principal factor analysis for items in Absorptive Capacity

	Component
	1
AB3 - We are successful in linking existing knowledge with new insights.	.862
AB4 - Our company regularly reconsiders technologies for the production of products and services and adapts them accordant to new knowledge.	.799
AB2 - Our management emphasizes cross-departmental support to solve problems	.789
AB1 - The search for relevant information concerning our industry is every-day business in our company	.784
Extraction Method: Principal Component Analysis.	
1 component extracted.	

Source: Survey result (2021)

Adaptive Capacity (AD)

Table 15 - Component matrix - Principal factor analysis for items in Adaptive Capacity

	Component
	1
AD1 - The Top Management Team establish control systems that facilitate flexible employee behaviors	.877
AD2 - The Top Management Team make sure that employees are comfortable with constant change	.861
AD3 - Most people know what their role would be in a crisis	.741
Extraction Method: Principal Component Analysis.	
1 component extracted.	

Source: Survey result (2021)

Operational Efficiency (OP)

Table 16 - Component matrix - Principal factor analysis for items in Operational Efficiency

	Loading
OP4 - CEO, Top Management or Board works according to a structured system in order to ensure an optimal service level	.873
OP6 - CEO, Top Management or Board follow-up both long-term and short-term objectives effectively	.846
OP2 - CEO, Top Management or Board formulates clear objectives	.841
OP1 - CEO, Top Management or Board checks work progress against agreed-upon objectives	.828
OP5 - CEO, Top Management or Board plans in detail how to accomplish an important task	.803
OP3 - CEO, Top Management or Board reassures time schedules and deadlines	.790
Extraction Method: Principal Component Analysis.	
1 component extracted.	

Source: Survey result (2021)

Strategic Leadership (SL)

Table 17 - Component matrix - Principal factor analysis for items in Strategic Leadership

	Loading
Strategic Thinking	.892
Absorptive Capacity	.908
Adaptive Capacity	.867
Operational Efficiency	.902
Extraction Method: Principal Component Analysis.	
1 component extracted.	

Source: Survey result (2021)

Organizational Innovation (OI)

Table 18 - Component matrix - Principal factor analysis for items in Organizational Innovation

	Loading
OI1 - Renewing the routines, procedures and processes employed to execute firm activities in innovative manner	.757
OI2 - Renewing the supply chain management system	.652
OI3 - Renewing the production and quality management systems	.751
OI4 - Renewing the human resources management system	.743
OI5 - Renewing the in-firm management information system and information sharing practice	.792
OI6 - Renewing the organization structure to facilitate teamwork	.775
OI7 - Renewing the organization structure to facilitate coordination between different functions such as marketing and manufacturing	.721
OI8 - Renewing the organization structure to facilitate project type organization	.716
OI9 - Renewing the organizational structure to facilitate strategic partnerships and long- term business collaborations	.771
Extraction Method: Principal Component Analysis.	
1 component extracted.	

Source: Survey result (2021)

Results of Normality test

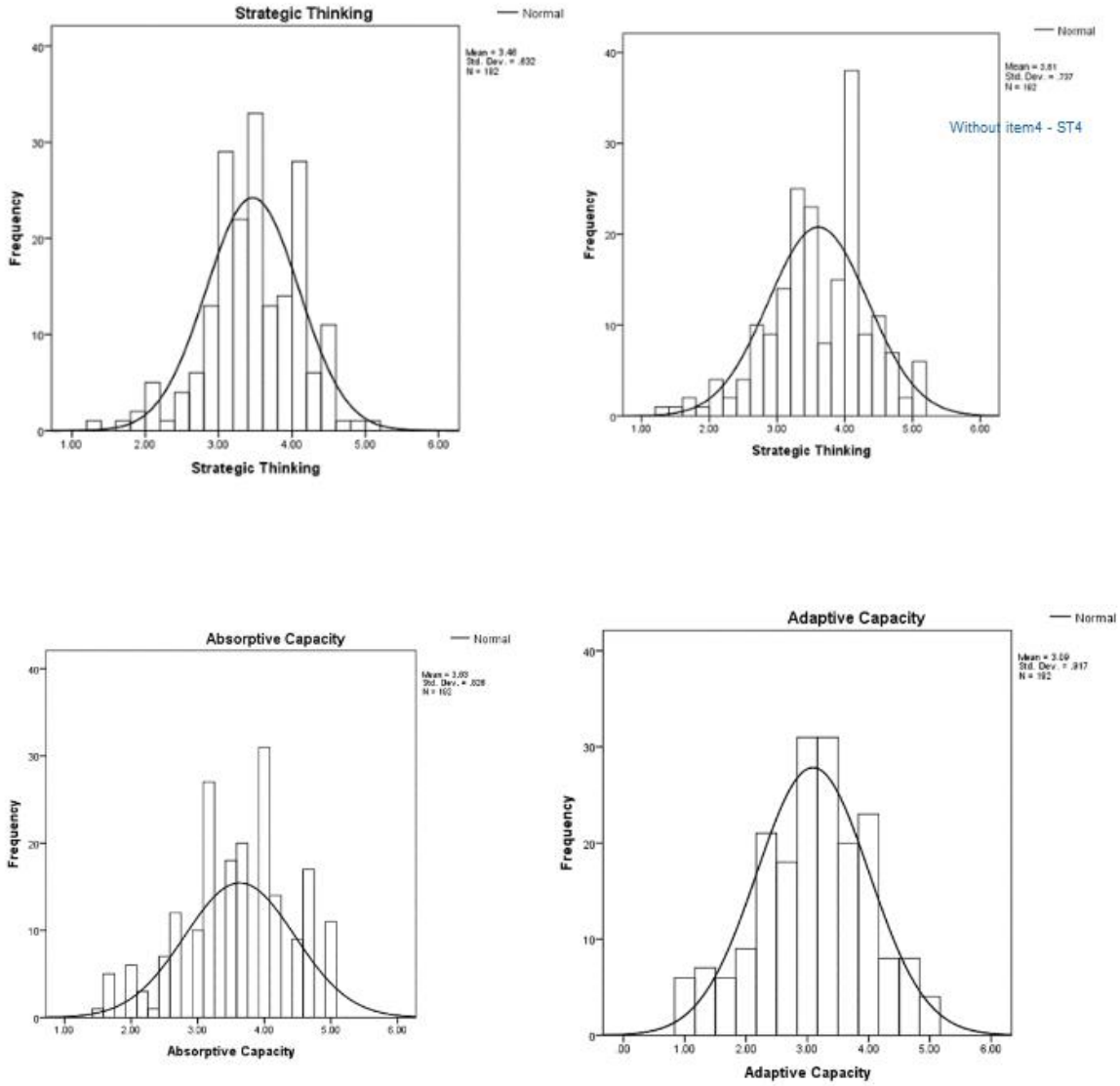

Figure 2 - normality plots of Strategic thinking, Absorptive capacity and Adaptive capacity

Source: Survey result (2021)

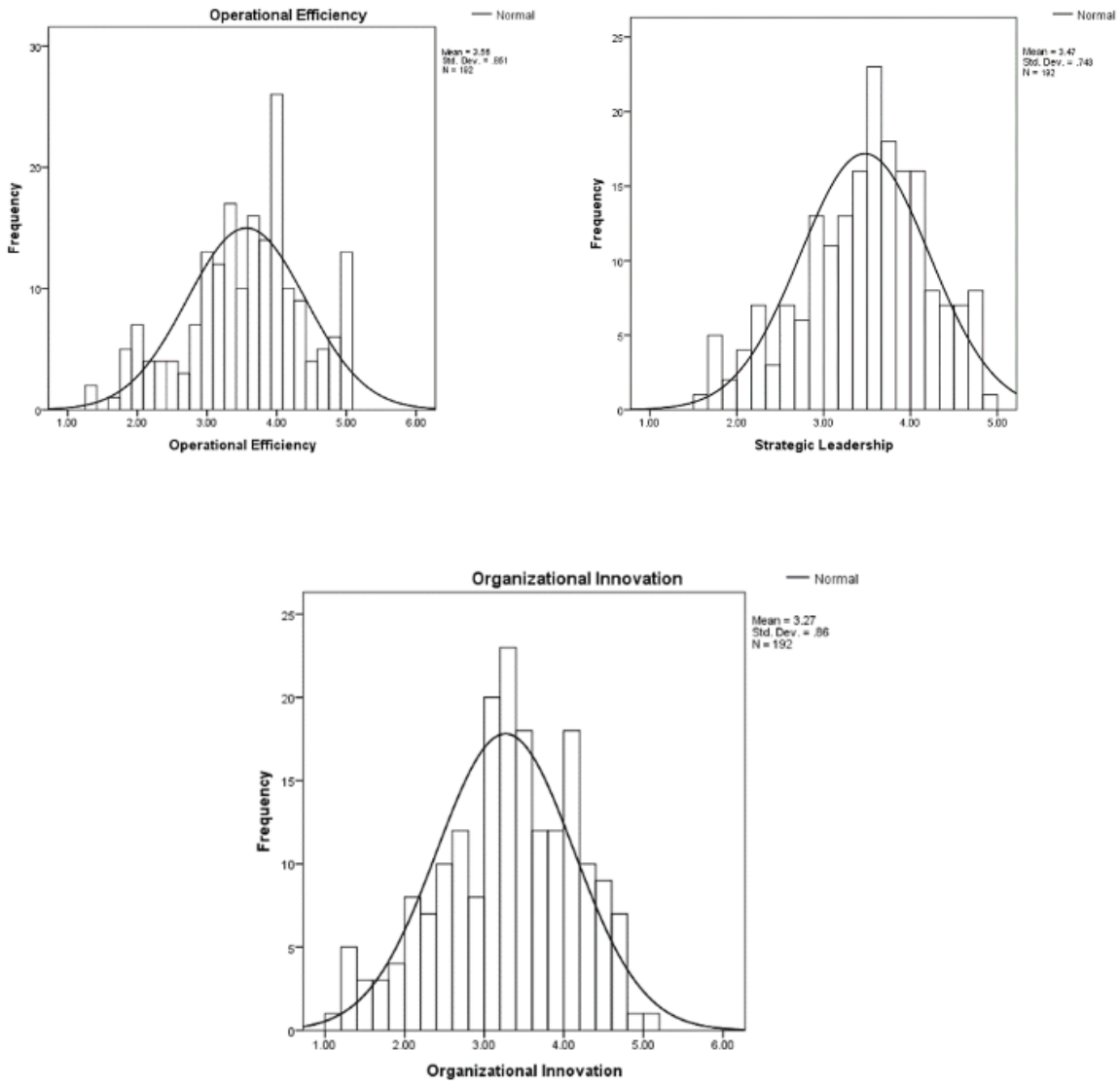

Figure 3 - normality plots of operational efficiency, Strategic leadership, and Organizational innovation

Source: Survey result (2021)