DIGITAL TRANSFORMATION AND INNOVATION LEADERSHIP

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Nooshin Movahedpour

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Nooshin Movahedpour

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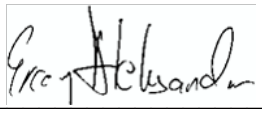

Dissertation chair

RECEIVED/APPROVED BY:

Renee Goldstein Osmic

Admissons Director

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ABSTRACT

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DOCTOR OF BUSINESS ADMINISTRATION

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Directed by: Dr. Jaka Vadnjal, Ph.D.

Background

This study explores how innovative leadership contributes to an organization's effective digital transformation. Organizations must quickly adjust as digital technologies continue to develop in order to stay competitive. Although it is often acknowledged that leadership plays a crucial role in facilitating this process, little is known empirically about how innovative leadership in particular influences the results of digital transformation.

Methods

Using a mixed-methods approach, the study combined qualitative insights from open-ended survey replies with quantitative survey data from 30 firms in Germany and Dubai. Important aspects like communication, risk-taking, innovation culture, organizational preparedness, and

leadership vision were the focus of the poll. The association between innovative leadership and digital transformation initiatives was investigated using statistical analysis, which included regression and correlation tests.

Results

The results show that innovation leadership and digital transformation are strongly positively correlated, emphasizing the need for open communication, employee empowerment, leadership vision, and agility in accomplishing digital objectives. Innovation-driven CEOs showed more openness to adopting new technology, improved teamwork, and increased agility in their organizations. The significance of leadership commitment, cultural alignment, and tackling obstacles, including aversion to change, antiquated systems, and digital skill gaps, was also underlined in the qualitative replies.

Discussion and conclusion

This study advances knowledge in academia and in practice by demonstrating that innovative leadership is a key driver of digital transformation as well as a supporting element. For organizational executives, consultants, and legislators looking to create more successful transformation plans, it provides practical ideas. Additionally, the study lays the groundwork for future research aimed at examining innovation-led change in many industries and regions.

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CHAPTER I: INTRODUCTION

1.1 Introduction

Adopting disruptive technologies to increase productivity, value creation, and social welfare is what digital transformation is all about (Ebert and Duarte, 2018a). It is undergoing rapid growth and is playing an important role in the development of both public and private organizations (Hai, et al., 2021a).

One of the most important factors of competitive advantage in 21st-century organizations is Innovation, which is the implementation of creative ideas (Kremer et al., 2019).

In practice, research has shown that digital transformation can be difficult. However, it is critical to recognize and prepare for leadership thinking innovation that drives successful digital transformation across countries, particularly emerging countries (Hai, Van & Tuyet, 2021b).

Leaders must learn how to encourage an organizational climate in which others contribute innovative ideas to solve problems and develop new products and services (Horth, no date).

In the last decade, management and organizational scholars have paid increasing attention to the interconnection between digital transformation and innovation management (Appio et al., 2021).

The relationship between digital transformation and innovation leadership has to be researched.

Today, every business must adopt digital transformation since it keeps them competitive, lowers costs, and boosts income. We want to discuss the importance of innovation leadership in digital transformation and learn how to use innovation leadership to accomplish digital transformation.

1.2 Research Problem

Digital transformation and innovation leadership, positive impact, and exploratory innovation are closely related to leadership. When implementing digital transformation and innovation, the role of digital leaders is critical for driving rapid decision-making and change. The entire company is involved in digital transformation, which is led by a vision from the CEO, CIO, CMO, or any other newly created role focusing on consumer-centric strategies; digital transformation is essential. To initiate and manage this change, strong leadership is required. The ability to influence followers to understand the speed of technological development and apply digital technology, leading change management to adapt, is referred to as digital transformational leadership (Kho, 2020).

Over the past ten years, management and organizational scholars have increasingly focused on the linkages between digital transformation and innovation management. However, we have a very fragmented picture of this subject (Appio *et al.*, 2021).

There is a need for a better understanding of the amount of knowledge regarding conducting successful digital transformation by using innovation leadership and identifying the role of innovation leadership in digital transformation.

1.3 Purpose of Research

This research aims to find the role of innovation leadership in digital transformation, consider successful businesses that have implemented it, and determine the role of innovation leadership in their success.

The study will address the following research questions:

1. What is the role of innovation leadership in digital transformation?

2. How can businesses achieve successful digital transformation using innovation leadership?

1.4 Significance of the Study

The research investigated the role of innovation leadership in digital transformation because success in the digital transformation process is mostly dependent on leadership. Additionally, leaders ought to play an active role in organizing and directing the company. Also, there is a vital force for leadership in the face of the demands and new difficulties presented by the digital economy.

The research evaluated the role of innovation leadership in digital transformation because there is a need for a better understanding of the amount of knowledge regarding conducting successful digital transformation by using innovation leadership and identifying the role of innovation leadership in digital transformation. The results of this study will be valuable to businesses that want to use innovation leadership to carry out successful digital transformation.

The research will be significant for organizations, their managers, and even entire industries as innovation leadership fosters creativity, adaptability, and problem-solving skills, drives positive change, and improves competitiveness.

Research contributes to a group or organization fulfilling its vision or mission. Organizations are finding it increasingly important to think creatively to secure their ongoing success and maintain their competitiveness in a world where new technologies and processes are always emerging. The necessity for creativity in businesses to adapt to new changes has led to a renewed emphasis on the role of leaders in determining the character and outcome of creative endeavors. Without innovative leadership, organizations are likely to struggle (Adjei, 2013).

1.5 Research Purpose and Questions

The research aims to explore the role of innovation leadership in digital transformation, examine successful businesses that have effectively carried out digital transformation, and determine how the use of innovation leadership contributed to their success.

Recently, there has been a lot of research and interest in digital transformation, and the COVID-19 pandemic has accelerated this process in all industry sectors (McCarthy, Sammon and Alhassan, 2022).

Digital transformation can be defined as the "digitalization of all change" resulting from the fundamental changes that occur in all digital objects, organizations, processes, business models, cultures, and management strategies.

In order for the business to thrive, it must constantly increase its efficacy and efficiency by forging a competitive edge. In order to do this, every business needs to, among other things, make use of each employee's full potential, and a crucial part of the process is leadership. Leadership is seen as essential to guiding all organizational elements toward the successful accomplishment of organizational objectives and necessitates fostering communication among all group members. It is crucial for leaders to commit to their subordinates' goals because they set the direction and guide them toward success (Suwanto, Sunarsi and Achmad, 2022).

1.6 Research Objectives

Past relevant research will examine the role of innovation leadership in digital transformation. Information and data will be collected from managers in various German and Dubai-based companies through an online survey. Particularly, the study has the following sub-objectives:

1. To analyze different principles that have an impact on digital transformation, and especially determine the role of innovation leadership in digital transformation.
2. To review current academic research regarding constraint modeling.
3. To identify major constraints to digital transformation and propose a structured approach for their management based on the study findings.

The results of this study will be valuable to businesses that want to use innovation leadership to carry out successful digital transformation.

CHAPTER II: LITERATURE REVIEW

2.1 introduction

We are living in a digital age. In the current technological transformation setting, "digitalization and digital transformation" as a change factor is essential for discovering new areas in which digital technology can be applied and implemented to increase organizational efficiency.

An organization's executives' vision and decision-making that connects digitization to a new organizational need aid in the achievement of such a transformation or change, so top management is responsible for initiating changes inside an organization, and in order for them to do so, they must be persuaded of the benefits and necessity of change for their organization as well as for themselves. This change perspective demonstrates that the only thing that can result in organizational success and growth from the acceptance of any kind of transformation is a leader's vision. So, leaders in organizations adopt digital transformation ideas in order to break free from old habits and paradigms, as well as to compete with the goal of managing a digital company. Digital transformation is impossible without a leader who develops the platform and motivates stakeholders to act. It is the leader who provides a thoughtful application of technology to generate long-term corporate success (Sainger, n.d.).

Innovation leadership is combining several leadership styles in firms to persuade people to generate new ideas, products, services, and solutions. The innovation leader plays a critical role in innovation leadership practice. In a world constantly evolving with new technology and processes, organizations must think innovatively to maintain their success and competitiveness. In order to adapt to new changes, the necessity for innovation in companies has resulted in a

renewed emphasis on leaders' roles in defining the form and success of creative activities. Without innovative leadership, firms are at risk of sinking.

This study attempts to investigate the role of innovation leadership in digital transformation, study successful firms that have effectively carried out digital transformation, and identify how the usage of innovation leadership contributed to their success.

2.2 Theoretical framework

2.2.1 Digital transformation

What-Is-Digital-Transformation (2023) provided a deep dive into the topic of digital transformation. It defined digital transformation as the fundamental rewiring of an organization's operations. It's a long-term undertaking that involves more than just deploying new technologies; it's about constantly refining and changing the way an organization operates. Unlike traditional corporate transformations, which end when a new behavior is achieved, digital transformations continue. They require enterprises to adapt to the changing technological landscape, especially the growing role of artificial intelligence (AI). The goal of digital transformation should be to gain a competitive edge by implementing technology at scale to improve the customer experience while lowering expenses.

Success in digital transformation depends less on how businesses use digital technology and more on how they become digital at their core.

The paper identified six capabilities required for successful digital transformation, including developing a clear plan centered on business value. It underlined the importance of digital transformation for firms to not only compete but thrive in today's economic landscape.

Digital transformation is currently undergoing rapid growth and is having a significant impact on the development of both public and commercial businesses (Hai et al., 2021b). The study of Hai

et al. (2021b) contributed to the interpretation and discovery of the perception of digital transformation, the cognitive development of digital transformation, the positive aspects of the digital transformation process, the achievements achieved, the urgency of the digital transformation before the impact of the Covid-19 pandemic and challenges and limitations in the initiative of the contingent of civil servants and leaders in the digital transformation process. Hai et al. (2021b) discussed that digital transformation can be a challenge, but perceiving and preparing for leadership thinking innovation that drives successful digital transformation across countries, especially emerging countries, is essential.

Klein (2020) summed up the main characteristics of leadership in the era of digital transformation. He confirmed that since most companies are still at the beginning of their digital transformation, there is a lack of a common understanding and a standard model of digital leadership.

Vial (2019) inductively built a framework of digital transformation articulated across eight building blocks, but he noted that we lack a comprehensive portrait of its nature and implications.

The relevance of digital transformation and how it may help businesses stay competitive in the markets has been underscored by the increasing digitalization of economies (Kraus et al., 2021). They classified the literature on digital business transformation into three different clusters based on technological, business, and societal impacts. Since it all alters consumer relationships, internal workflows, and value generation, digital transformation is a global problem that is crucial for all businesses across all industries (Zaoui & Souissi, 2020).

In answering the question of how companies can successfully lead digital transformation, Zaoui & Souissi (2020) debated on how to digitize a business and to enrich our vision with existing

roadmaps to build an alternative process to digital transformation and determine the strategic character of the digital transformation.

Schwertner (2017) studied opportunities for the digital transformation of the business as a change associated with the application of digital technology in all aspects of the business. Retrieve (n.d.) described how three German media companies successfully approached digital transformation. Based on their experiences, they provided a list of eleven strategic questions and possible answers managers can use as guidelines when formulating a digital transformation strategy. Ebert & Duarte (2018) discussed how the digital transformation is affecting software technology and the software industry. Digital technologies, digital and digital innovations are fundamentally changing business processes, products, services, relationships, and organizations must fundamentally change the way they do business and the relationship team's thinking in order to survive (Hai et al., 2021b).

Appio et al. (2021) suggested an approach to open up the black box of the interplay between digital transformation and innovation management by providing a framework that identifies three levels of analysis (i.e., macro, meso, and micro) along which existing and future research on the topic can be organized. Theyencouraged scholars to conduct theoretical and empirical studies on how digital transformation affects ecosystems' structure and governance, how industries and firms compete and organize for innovation in a digitalized world, how the processes for developing new products and services change under the effect of digital technologies, and the implications of digital transformation on managing people and teams involved in the innovation process, among the other topics.

Lamarre et al. (2023) is a thorough investigation of the impact of digital and AI transformation in significant corporations. Approximately 89% of significant businesses globally are implementing

digital and AI transformations. Despite these efforts, businesses have only achieved 31% of the predicted revenue growth and 25% of the anticipated cost reductions.

It concluded that digital leaders generate much more shareholder value than laggards.

Value emerges from areas that are difficult to imitate, giving digital leaders a competitive advantage. According to the article, corporate leaders may be hesitant to make the required adjustments to boost success rates until they are completely convinced of the value and understand how to attain it.

The essay underlined the necessity of understanding where and how digital transformation may create value, as well as the need for business leaders to commit to making significant changes to fully harness the potential of digital initiatives. Majchrzak et al. (2016) addressed how information and communication technologies (ICTs) affect societal challenges such as employment, climate, health, and migration. It underlined the importance of expanding theory definitions to encompass issue and solution theories, considering the unintended implications of ICT objects, and calling for a wide yet explicit definition of the ICT artifact, including its affordances and restrictions, to better capture factors influencing outcomes. This essay proposed that IS researchers supplement their findings with public policy and regulatory proposals to improve social and corporate situations and explored how ICT may address complex social concerns and the role of IS research in digital transformation.

Verina and Titko (2019) intended to provide a full grasp of digital transformation (DT) and its essential components. They aimed to explore the notion of digital transformation and identify its key features or categories. The researchers analyzed textual data using content analysis techniques, and they reviewed over 30 various definitions of "digital transformation" provided by academics and organizations. They developed a conceptual model for digital transformation.

The study was limited by the number of studied definitions and the methodologies used. Develop survey tools to assess a company's level of digital transformation. Based on the research findings, questionnaire blocks for business sector representatives should be structured.

This research lays the groundwork for future empirical studies on digital transformation in enterprises. The study adds to the corpus of knowledge on digital transformation processes and establishes the framework for future research in this field.

Bonnet Didier and Westerman George (2020) underlined the need to attain digital expertise, which is critical as the risk of falling behind grows. It highlighted findings from ten years of research into digital transformation. The emphasis is on employing digital technologies to transform businesses. According to the paper, success in digital transformation is driven by strategy rather than technology.

This essay offers a thorough perspective on how firms can traverse the digital age by prioritizing strategic transformation above technology updates. It is a helpful resource for leaders who want to understand and implement digital change in their organizations. Nadkarni & Prügl (2021) provided an overview of digital transformation by analyzing 58 peer-reviewed studies. It focused on two key dimensions: technology and actor. The authors suggest further study, highlighting the need for additional studies on the integration of digital technology into organizational structures and procedures, as well as the role of middle management in digital transformation.

It draws attention to the managerial difficulties that come with the digital transformation, including the rate of change, societal norms, workplace dynamics, and the requirement for executives and qualified staff to fully realize the transformative potential of digital technologies.

Berman (2012) indicated that businesses hoping to prosper in a world where customers are always connected should concentrate on two complementary things:

1. Reshaping Customer Value Propositions: Companies must reconsider how they provide value to their clients. This entails thoroughly understanding the customers' needs and creating creative value propositions that appeal to their aspirations.

2. Utilizing Digital Technologies to Transform Operations: Businesses can improve their operations by utilizing digital tools. This entails streamlining procedures, boosting effectiveness, and encouraging increased client communication and cooperation.

If organizations are to succeed in this attempt, they must create a new portfolio of capabilities that provides flexibility and response to rapidly evolving client requirements. A customer-centered business differs from one that just targets customers by interacting with them at every touchpoint where value is generated. This engagement frequently fosters open cooperation through online groups and speeds up invention.

Implementing a well-thought-out plan to combine digital and physical operations components can help businesses adapt their business models effectively and open up new opportunities for growth and consumer engagement.

Gobble (2018) explored the differences that exist between digitization and digitalization. Digitization is a process in which actual atoms, like paper documents, are transformed into digital bits. It includes substituting electronic files with paper files, particularly those containing photos and other digital material.

Digitalization goes beyond simple digitization and includes the use of digital technologies to change operations, consumer relationships, and business processes. It is an all-encompassing move toward using digital tools to gain a competitive edge.

In conclusion, digitalization includes a more thorough organizational change toward digital goals and practices, whereas digitization concentrates on the technical conversion of analog to digital.

Bounfour (n.d.) examined significant trends in digital transformation strategy, society, organization, technology, and legislation.

It proposed a new method that focused on the connections between various value production areas and introduced a new form of production called ‘acceluction’ that is compared to lean manufacturing. It also examined the predicted influence of networks and data as essential resources for businesses after 2020.

Plekhanov et al. (2023) covered the transition from standalone businesses to digital ecosystems, in which enterprises are interconnected and co-create value. After examining 537 peer-reviewed papers, it presented a fresh multi-layered viewpoint on digital transformation literature. The study found a conflict between decentralizing and centralizing power within businesses throughout digital transformation. The authors advocate for further research into organizational power theory and developing forms of organization in the digital economy. They underline the importance of grasping how digital technologies redefine organizations' internal and external limits.

Kraus et al. (2022) examined the growing interest in digital transformation research, emphasizing its importance in preparing for a digital future across governments, sectors, and organizations. The article seeks to link existing DT research to business and management sectors, laying the groundwork for continuous conversation and future research.

It recognized DT's problems and dangers, such as the difficulty of implementing change in organizations, while also emphasizing its potential for efficiency, effectiveness, and competitive advantage.

Berman (2012b) covered how firms can use digital technologies to develop new business models and stand out in the market. It focused on redefining customer value propositions and altering operations to enhance customer interaction and collaboration.

Businesses should prioritize two complementary activities:

Reshaping client Value Propositions entails analyzing and responding to rapidly changing client needs, and Operational Transformation is when Businesses must create new capabilities to increase flexibility and responsiveness.

To set a customer-centric business apart, engage with customers at every stage where value is created. Embracing collaboration, particularly in online communities, frequently promotes creativity. Companies that completely redesign their operating model optimize all value chain components around customer touchpoints.

A well-planned strategy for combining digital and physical processes can successfully transform business models. Furjan et al. (2020) researched objectives about systematizing, analyzing, and assessing the technological and business principles of digital transformation in Croatia using different case studies. According to the study, Digital Transformation is a complicated process driven by a variety of background, business, and technology-related elements, and there is no one-size-fits-all technical model for business transformation. The essay delves into the Digital Transformation process and its implications for businesses, emphasizing the significance of ongoing learning and adaptation in the digital age.

Rogers (2016) discussed strategies using examples from Google, GE, Airbnb, and the New York Times. It provides step-by-step planning tools to enterprises at all stages and emphasizes that digital transformation is more than just updating technology; it is also about improving strategic thinking.

Kotarba (2018) investigated the changes in business models caused by enormous technological growth, using the idea of "digital transformation (DT)." The article presented these improvements using an expanded business model canvas, with an approximate timeframe of about the year 2000. Key features of business models and the drivers of their transformation are documented and analyzed, along with practical findings and suggested areas for additional research.

Ebert & Duarte (2018b) explored how digital transformation (DX) affects software technologies and the software industry. Digital transformation entails implementing disruptive technology to boost productivity, value creation, and social welfare. Its objectives include stimulating innovation, boosting education, enhancing digital communication infrastructure, and strengthening data protection. Despite its expected rapid expansion, digital transformation confronts obstacles such as firm structures, a lack of strategy, return on investment (ROI) visibility, and concerns about cannibalizing current businesses. External impediments include a lack of expertise, inadequate infrastructure, and limited finances.

Digital transformation promotes comprehensive business models, product redesign, and more direct contact with suppliers and customers. Software technologies, including the Internet of Things (IoT), data analytics, cloud services, AI, and machine learning, play a critical role.

Matt et al. (2015) emphasized the need to develop a digital transformation strategy to help manage the complexity of implementing new digital technology.

Companies across industries are exploring digital technology to improve productivity, value creation, and consumer engagement. Digital transformation has an impact on products, processes, organizational structures, and management philosophies. The benefits include higher sales, productivity, and unique customer experiences.

Digital transformation has the potential to change entire company models. Coordinating, prioritizing, and implementing digital transformations is a key concept that needs to be aligned with other corporate initiatives.

The study emphasizes how new technologies are transforming products, processes, and organizational characteristics. IT strategies are largely concerned with IT infrastructure and operational activities. Digital transformation initiatives extend beyond IT to include innovation and cross-firm opportunities.

Bharadwaj et al. (2013) explored the evolution of traditional IT strategy into digital business strategy (DBS), which reflects the intersection of IT and business strategy. This transition is being driven by developments in digital technologies that affect company processes, capacities, and inter-firm interactions.

The authors presented success measures for each theme (scope, scale, speed, and source of value creation), which can help managers and academics execute and measure digital business initiatives effectively. The special issue contains six research papers and opinion pieces on various areas of digital business strategy; these articles contribute to a better understanding of how digital resources may provide business value and how digital business strategies can be effectively developed and implemented.

The paper underlines the need to rethink IT strategy as part of business strategy in the digital era. The proposed topics and success indicators serve as a framework for furthering research and practice in digital business strategy, to shape the next generation of insights in this quickly evolving sector. Schwarzmüller et al. (2018) discussed that digital transformation creates significant shifts in organizational work design and leadership.

Four major themes of change arose, influencing both work design and leadership:

1. Work-Life and Health: Flexibility blurs work-life boundaries, increasing stress and burnout risks, requiring leaders to manage employee well-being.
2. Technology: (Information and Communication Technology) ICT improves decision-making but can reduce employee autonomy. Virtual teamwork has grown.
3. Performance and Talent: Skills like creativity and agility are essential. Leadership now focuses more on results than physical presence.
4. Hierarchies: Employee autonomy is increasing, with leaders taking a participatory, trust-based approach.

Two major dimensions of change were identified:

1. Work Structure: Job roles are evolving due to automation and knowledge work.
2. Leadership: Emphasis on mentoring, teamwork, and personal support.

The study focuses on both established and emergent themes in the digital transformation of work design and leadership. It underlines the importance of firms adapting their employee selection, growth, and organizational culture to meet the demands of the digital age.

2.2.2 Innovation Leadership

Leadership is described as a process of social influence that maximizes others' efforts to achieve a goal. Leadership isn't about seniority, titles, personal characteristics, or management. Effective leadership leverages social influence, relies on people, and focuses on optimizing efforts toward a goal (Kruse, 2013). Effective leadership is critical for effective innovation because it establishes the vision, strategy, and environment in which innovation may thrive. This approach emphasizes the importance of leadership in driving innovation. Leaders who are visionary, adaptive, and supportive can foster an organizational culture that supports

experimentation and the generation of new ideas. Leadership is the ability to influence, motivate, and empower others to contribute to the organization's effectiveness and success.

According to the GLOBE study team, leadership involves influencing, motivating, and enabling people to participate in the development of organizations. This idea highlights the role of leaders in influencing and leading their followers' activities toward accomplishing the organization's goals. Leaders utilize their influence to inspire and encourage employees, producing an environment where individuals feel empowered to contribute (House, 2004). Creativity and innovation are critical components of organizational success. Research indicates that leadership significantly impacts employee creativity and invention.

Our examination revealed that leadership, creativity, and innovation research is an active and developing field with numerous noteworthy discoveries. There is strong theoretical and empirical evidence that leadership is a critical variable that can either increase or inhibit workplace creativity and innovation (Hughes et al., 2018).

The secret to discovering what is new, what is better, and what is next is the application of innovative thinking and the leadership that supports it (Horth, n.d.). He identified six innovative thinking skills. Using these skills, organizations are able to create something that is useful and desirable, whether it is a breakthrough technology, a valuable service, or a fresh solution to an old problem. One of the most important aspects of competitive advantage for companies in the 21st century is innovation, or the application of innovative ideas (Kremer et al., 2019).

They offered evidence-based recommendations for managers to become innovation leaders.

The phenomenon of innovation is not new. There appears to be something naturally human about a desire to consider new and better methods of doing things and to put them into practice. This tendency is arguably as old as mankind itself. Despite how crucial it is, innovation does not

always get the scholarly attention it needs (Fagerberg et al., 2003). They mentioned that no single discipline deals with all aspects of innovation, and that in order to get a comprehensive overview of the role played by innovation in social and economic change, a cross-disciplinary perspective is necessary. The purpose of his study is to provide the reader with a guide to this rapidly expanding literature.

Kahn (2018) studied that to truly manifest innovation and reap its benefits, one must recognize that innovation is three different things: innovation is an outcome, innovation is a process, and innovation is a mindset.

Innovation is complicated, ambitious, sometimes disorganized, and open to various types of change. In order to concurrently address economic, technological, and other types of constraints, innovation also requires close coordination of enough technological knowledge and outstanding market judgment, which is challenging to assess. The innovation process needs to be seen as a series of adjustments made to the entire system, including the market environment, production facilities, knowledge, and the social backdrop of the innovation organization (ChemicalEngineeringasaGeneralPurposeTechnology (1), n.d.).

They performed an overview of the field of innovation studies and focused on the economics and sociology of innovation, development, adoption, and diffusion of innovations in the economic and social context. They highlighted that innovation is a broad topic about which much has been written, and almost every kind of public policy has either a direct or an indirect impact on factors that affect innovative activity.

Vlok (2012) proposed a competency profile for innovation leaders derived from research in a South African science-based research and innovation organization. This profile included competencies identified in a core sample of leaders whose leadership resulted in the creation of

new knowledge or inventions, and the adoption of these by intended recipients in commercial and non-commercial or public good applications.

Bag et al. (2021) examined the effect of big data analytics (BDA) on healthcare supply chain (HSC) innovation, supply chain responsiveness, and supply chain resilience under the moderating effect of innovation leadership in the context of the COVID-19 pandemic. Their article made a unique contribution from the perspective of innovation leadership. In particular, they argued that the role of innovative leadership in the COVID-19 pandemic situation is critical as it indirectly affects healthcare supply chain resilience when big data analytics is in place.

Appio et al. (2021) confirmed that research at the intersection between digital transformation and innovation management is still scattered and lacks a unified perspective and overarching framework that can inform future theoretical and empirical studies.

Solis Altimeter (2018) underlined that, while many hospitality brands strive to be guest-centric, it is critical to focus on the real guest experience (GX), which is defined as the total of experiences at each touchpoint. It covered the importance of service innovation in the hospitality business, where current technology mixed with personalized service can provide a competitive advantage.

The transition should address modern guests' expectations, which are impacted by their preferred gadgets, apps, and services, rather than old perspectives or legacy systems.

According to the article, create a digital transformation roadmap based on an infinity loop model that prioritizes guest attraction and retention, as well as personalization at every stage of the guest journey. The article's main arguments emphasize the need to reinvent the visitor experience in the digital age.

Buckingham (2014) examined the broad scope of digital transformation, highlighting that it required more than just a website or a digital strategy. It entailed a full overhaul to leverage digital technologies for competitive advantage. Dr. Baker supported taking a proactive approach to digital transformation rather than reacting to developments. This entails understanding an organization's specific culture, needs, and dynamics.

It introduced a horizon model for digital transformation, with Horizon One focusing on basic digital presence and Horizon Two integrating social, mobile, app, and cloud technologies for a comprehensive digital platform. The role of the Chief Digital Officer (CDO) is crucial in leading digital transformation, requiring empowerment and direct reporting to the CEO or board for effective change management.

This book serves as a guide for people making digital transformation decisions, providing insights into the process and emphasizing the significance of looking forward in an ever-changing digital landscape. Dr. Mark Baker uses his broad knowledge to provide a strategic roadmap for firms that want to prosper in the digital age.

Strategy, Not Technology, Drives Digital Transformation (n.d.) highlighted that having a defined digital strategy is the major driver of digital maturity rather than the technology itself. Fostering a risk-taking culture and ongoing innovation is critical for successful digital transformation.

Organizations prioritizing digital growth are more likely to recruit employees, as people of all ages prefer to work with technologically progressive companies. Digitally mature firms focus on building the skills required to implement their digital plans, which is critical for transformation.

This paper is part of MIT Sloan Management Review and Deloitte's 2015 Digital Business Global Executive Study and Research Project. It emphasizes the role of strategy and leadership in attaining digital success.

Govindarajan (2016) provided a framework for organizational innovation and strategic planning. The framework consists of three boxes that represent different time frames. Managing the present, which means concentrating on improving current products, services, and operations. Choosing to forsake the past, which means identifying and phasing out old methods, products, or tactics. Creating the future by innovating and developing new ideas, products, and business models to ensure future success.

The study's key concepts are managing the Present and meeting market demands. This entails effectively managing current activities, increasing profitability, and meeting market demands. Selectively abandoning the past means recognizing and abandoning outmoded or inefficient methods that impede growth. This could include eliminating items or procedures that no longer serve the company's aims.

Also, Creating the Future prioritizes innovation and forward-thinking strategies to anticipate and address future market demands. This could include investing in R&D, entering new markets, or creating disruptive technology. The three-box Solution promotes a balanced strategy that involves managing the now, phasing out the past, and investing in the future.

Leaders must successfully distribute resources across all three boxes, meeting short-term demands while also planning for long-term success through innovation.

Overall, the Three-Box Solution offers firms a disciplined way to manage the complexity of existing operations, eliminate outmoded practices, and stimulate innovation for future growth and success.

Govindarajan & Chris Trimble (2013) developed the practical aspects of incorporating innovation into businesses.

The paper underlined that successful innovation entails more than just coming up with ideas; it also demands good execution. Many businesses struggle with implementing ideas efficiently rather than coming up with new ones. Common hurdles in implementing innovation include organizational resistance to change, lack of alignment with corporate goals, and limited resources and experience.

The essay provides an Innovation Execution Framework with three main components: Strategy, Which Aligns innovation with the organization's strategic objectives and market needs; culture, Which Promotes innovation, risk-taking, cooperation, and lifelong learning; and execution, which involves using defined processes and methodologies to transform ideas into actual outcomes, such as resource allocation, project management, and performance measurement.

The study identifies various techniques to improve innovation execution. Here are the key techniques:

1. Leadership support is essential for creating an innovative culture and providing the necessary resources.

2. Cross-functional collaboration: Fostering collaboration among departments and teams to gain unique perspectives and knowledge.

3. Agile Methodologies: Accelerating innovation through iterative development, fast prototyping, and feedback adaptation.

4. Customer-Centric Approach: Prioritizing customer insights and feedback to guarantee innovation meets market needs and provides value.

5. Learning from Failure: Seeing failure as a normal part of the innovation process and using it to learn, iterate, and improve.

The paper emphasizes the need for continuous examination, feedback, and modification of innovation processes and tactics. Overall, "Beyond the Idea" highlights that successful innovation entails developing revolutionary ideas and effectively implementing them within the corporate framework. Companies that prioritize strategy, culture, and execution may overcome typical difficulties and drive long-term innovation and success.

The International Handbook on Innovation (n.d.) explained the Definition and Importance of Innovative Leaders. Top management sees senior executives as critical to driving the innovation process and cultivating an innovative and entrepreneurial culture. Innovation leaders differ from front-line innovators and entrepreneurial middle managers. Their function is more strategic and entails evangelizing and maintaining an innovative culture within the organization.

He starts by connecting common leadership imperatives to the unique problems of innovation. Innovation leaders frequently demonstrate specific characteristics, such as creativity, determination, and the ability to push their visions past organizational barriers.

Effective innovation leaders are enthusiastic about learning, humble in the face of failure, and capable of establishing lofty goals. Unlike ordinary business leaders, innovation leaders may not necessarily excel at overall company leadership, but are critical to promoting innovation. Recognizing and developing innovation leaders is critical for effectively leveraging their particular talents.

Pekka Ala-Pietilä, former President of Nokia, emphasizes the necessity of enthusiasm, constant learning, and establishing stretch goals in innovation leadership.

Jean Philippe Deschamps distinguishes innovation leadership's specialized nature from general business management. He emphasizes the significance of discovering and cultivating the proper personnel to lead innovation within enterprises.

Şen & Eren (2012) explored the importance of innovative leadership in today's complex and fast-changing global context. The authors suggested that traditional leadership models are insufficient for solving contemporary difficulties, emphasizing the importance of leaders adopting new techniques to create innovation, adaptation, and resilience within their businesses.

Innovative leadership requires the ability to inspire and motivate productive behaviors in the face of uncertainty and change. This leadership style is critical for firms seeking to remain competitive and effective in a globalized, technologically sophisticated society.

Innovative leaders are distinguished by their vision, ingenuity, and willingness to accept change. They have excellent communication skills, emotional intelligence, and the ability to develop and maintain high-performance teams. Furthermore, they are proactive in finding new chances and are skilled at managing risks and uncertainties. According to the article, innovative leadership helps to create a positive corporate culture by encouraging trust, openness, and constant learning. This, in turn, improves organizational performance, promoting creativity and efficiency at all levels.

Şen and Eren proposed many strategies to foster innovative leadership within businesses. These include investing in leadership development programs, encouraging collaborative and cross-functional teamwork, utilizing technology to assist knowledge exchange, and fostering a climate conducive to experimentation and learning from failures.

The authors recognize the difficulties of implementing innovative leadership, such as opposition to change, limited resources, and the necessity for a supportive organizational architecture. They

advocate for additional research and practical frameworks to assist leaders in developing the skills and mentality required for innovation. The article emphasizes the importance of leaders growing and adapting to remain relevant and achieve sustained success in the twenty-first century.

Agbor (2008) emphasized the critical role of leadership in encouraging organizational innovation. He contended that while culture, strategy, and technology are critical to organizational productivity, creativity and innovation led by strong leadership ensure long-term success. Leaders have a critical role in fostering a culture of creativity and innovation. To promote creativity and innovation, firms should actively apply strategies.

Leadership impacts corporate culture and structure, which then influences the innovation process. Effective leaders encourage experimentation and variety to drive innovation.

Firms must continuously innovate to remain competitive in today's fast-paced and unpredictable business world. Leaders play an important role in recognizing chances for renewal and guiding their firms toward sustainable innovation methods.

Significant organizational changes, such as those required to build an innovative culture, necessitate active participation and commitment from leaders. Successful examples, such as IBM under Lou Gerstner and General Electric under Jack Welch, show how effective leadership can promote cultural transformation and innovation. In conclusion, Agbor emphasizes that leadership is more than simply one aspect of supporting organizational creativity and innovation; it is the driving force behind these processes, guaranteeing that businesses can adapt and survive in a continuously changing commercial landscape.

Hosmer (n.d.) developed the critical role of leadership in encouraging innovation inside firms. It focuses on how effective leaders can promote innovation and gain a long-term competitive

advantage. The writers provide insights from their research and practical experiences, concentrating on numerous essential themes. Innovation encompasses the development of new ideas, their successful application, and commercialization. It includes innovations in products, processes, and business models. Leaders play a critical role in fostering and maintaining an innovative culture. They must articulate a clear goal, manage resources, and foster an environment that encourages risk-taking and creativity.

Important Leadership Behaviors: Leaders must communicate a compelling vision for innovation that is consistent with the company's strategic objectives. They must also improve the organization's skills and capacities to support innovation, foster an environment where people feel empowered to experiment and learn from their mistakes, and encourage collaboration within the organization and with external partners to boost innovation.

The authors identify frequent impediments to innovation, such as organizational silos, risk aversion, and a short-term mindset. Leaders must actively seek to overcome these obstacles.

The article provides real-world examples and case studies of businesses that have successfully promoted innovation through good leadership. These examples demonstrate actual implementations of the topics addressed.

Leaders must develop measures to assess the impact of innovation initiatives. This aids in tracking development and making sound judgments. Innovation should be a continuous process, not a one-time effort. To ensure long-term success, leaders must continue to invest in and emphasize innovation. Overall, the article underlines the importance of leadership in driving and maintaining innovation. Leaders may ensure their firms' competitiveness and innovation in the dynamic business landscape by establishing a clear vision, developing the necessary talents, cultivating a supportive culture, and overcoming impediments.

Lindgren (2012) looked at how small and medium-sized businesses (SMEs) can strategically drive business model innovation (BMI) to gain a competitive edge and expand. The emphasis is on understanding the specific problems and methods small and medium-sized businesses use to reinvent their business models successfully.

Business model innovation entails radically changing how a firm generates, delivers, and captures value. For small and medium-sized businesses, this is critical for adjusting to market changes, capitalizing on new opportunities, and maintaining competitiveness. Effective business model innovation implementation requires strong leadership. Leaders must be visionary, adaptable, and aggressive in identifying and responding to innovation possibilities.

Successful business model innovation frequently begins with a thorough grasp of consumer demands and behaviors. They can use their smaller size to be nimbler and more responsive to market developments than larger enterprises.

Efficient utilization of limited resources is critical. Small and medium-sized business leaders must strategically allocate resources to areas with the greatest opportunity for innovative growth. Small and medium-sized businesses face specific challenges when leading business model innovation, including limited financial resources, a lack of specialized expertise, and organizational resistance to change. Overcoming these issues necessitates strategic planning and a supportive organizational culture.

The paper includes case studies of small and medium-sized businesses that have successfully led business model innovation. These examples provide practical techniques while emphasizing the importance of leadership in generating innovation.

Working with external partners, such as other organizations, research institutes, and customers, can help improve the innovation process. Small and medium-sized business leaders should build networks and collaborations to have access to fresh ideas and capabilities.

Business model innovation should be considered as a continuous process rather than a one-time project. Their leaders must foster a culture of continual improvement and innovation within their firms. The paper presents a framework for Small and medium-sized business leaders to use in their business model innovation activities. This entails establishing a clear vision, cultivating a creative culture, effectively allocating resources, and participating in continual learning and adaptation. The essay underlines the need for strong leadership for small and medium-sized enterprises (SMEs) in strategic business model innovation. SME leaders may create long-term innovation and success by prioritizing client demands, employing agility, managing resources efficiently, and encouraging cooperation.

Porfírio et al. (2021) highlighted the importance of DT for businesses, with an emphasis on systems, IT, strategy, and people. It investigated how corporate and managerial variables influence DT in Portuguese businesses. Effective DT processes rely on strong leadership. The study uses strategic management principles and leadership theory to examine the impact of leadership and management on DT. The data imply that management traits are more important than company factors in progressing DT phases. Democratic leadership styles and strategic management capabilities are emphasized as important. The study helps to understand the leadership characteristics and management mindsets that support DT. It proposes additional research to investigate the company's mission and role in DT further.

Suwanto, Sunarsi, and Achmad (2022) investigated how digital leadership and innovation management affect incumbent telecommunications businesses in Indonesia throughout the digital

disruptive era. According to the research, strong digital leadership is critical for promoting innovation, which helps these organizations migrate to digital telecoms and maintain a competitive advantage. Using a quantitative approach with 100 respondents from the industry, the study highlights the need to adjust to digital disruptions through strategic leadership and innovation methods.

The study investigates how traditional telecommunications companies can navigate digital disruptions through effective leadership and innovation. Key results include the importance of digital leadership in driving firms through digital transformation, creating an innovative culture, and connecting strategic goals with digital trends. Innovation management is critical for integrating new technology and procedures that allow businesses to remain competitive.

The study emphasizes the importance of proactively adapting to digital developments.

Schiuma et al. (2022) outlined the critical abilities required of leaders to drive digital transformation in organizations successfully. The study underlined the significance of a new leadership profile, known as the "digital transformative leader," who can promote digital transformation entrepreneurship. This requires starting or growing firms to continuously utilize digital knowledge to generate value. The study seeks to identify six important qualities that define a digital transformative leader capable of fostering digital transformation entrepreneurship.

They investigated the role of leadership in promoting digital transformation and proposed hypotheses to create a framework for identifying a digital transformative leader.

The Transformative Leadership Compass draws on wisdom, transformative, and digital leadership literature. It identifies six key qualities that a digital transformative leader must possess in order to foster ongoing innovation and digital transformation within enterprises.

The implications framework identifies leadership traits that impact digital transformation. It can guide management actions to improve an enterprise's digital transformation capabilities.

The paper outlines a framework for executives to successfully manage and drive digital transformation in today's rapidly changing business environment.

Larjovuori et al. (2018) discussed organizations must adopt new leadership techniques due to the enormous influence of digital business transformation. This study looks into leadership positions in digital transformation within eight Finnish service sector businesses.

Leadership should provide a clear strategic strategy for digital transformation. Leaders should show their commitment to digital efforts by taking smart steps and investing financially.

Creating a culture that encourages innovation, risk-taking, and agile procedures is crucial. Fostering experimentation and recognizing failures as learning opportunities.

Leaders should use coaching to support and motivate staff and encourage employee autonomy and participation in the digital transformation process. Leadership should prioritize understanding and addressing customer demands. It should also collaborate with external entities to drive digital transformation.

Leadership is essential at all levels of the company, from strategic vision to immediate leadership. Leaders must enable and assist people during digital business change to promote an innovative and agile culture. Customer-centricity and leveraging external alliances are critical to effective digital transformation. Successful digital business transformation requires leadership that prioritizes strategic vision, cultural change, enabling leadership styles, and network management.

Petrucci & Rivera (2018) delved into the changing landscape of leadership in the context of digital transformation . Millennials and iGen (Gen Z) prioritize open communication,

individualized learning, and immediate feedback, shaping the future of organizational leadership. A growth-focused culture emphasizes continual learning and improvement over performance indicators, leading to sustained high performance.

Future digital leaders must combine classic leadership principles with cutting-edge technology. They must promote real-time feedback, agile team networks, and advanced people analytics and AI to improve performance and drive behavior change. Traditional leadership models like Transformational Leadership (TL) and the Leadership Challenge (TLC) are still useful, but they must adapt to embrace digital tools and approaches.

Traditional annual performance assessments are being replaced with digital feedback methods that better match younger generations' communication styles and expectations. Organizations should shift their learning and development strategies to prioritize tailored micro-learning opportunities over long-term skill acquisition. Digital leaders should leverage advanced people analytics and AI to improve team chemistry and performance, enabling improved decision-making and cultivating a growth attitude. The book emphasizes that while the fundamental pillars of leadership, such as shared values and vision, talent development, and change management, are vital, the techniques for achieving these objectives are altering with the arrival of digital technology.

Promsri Chaiyaset (2019) examined the key characteristics of digital leaders and proposed a paradigm for effective digital leadership. The study discovered 64 distinct features from sources, which were synthesized and examined to highlight the most important ones. Six key qualities were cited in four or more sources.

Vision is the most commonly mentioned characteristic (reported in 9 sources). Collaboration was highlighted in 7 sources. Digital literacy is mentioned in five sources. Risk-taking is mentioned

in five sources. Customer Focus is found in four sources. Four sources mention agility. The study intended to create a digital leadership model by integrating essential traits. Effective digital leadership requires a combination of these skills. Overall, the document thoroughly analyzes the necessary attributes for digital leaders and proposes a model based on their synthesis. This paradigm can be used to guide present and future leaders through digital transformation initiatives.

Kokot et al. (2021) investigated leadership's critical role in firms' digital transformation processes. This article aims to define the role of digital leadership and maturity in the context of digital transformation. This research aims to conduct a comprehensive literature review to examine prior research, develop conclusions, and provide recommendations for future study. By systematizing findings from management and information technology disciplines, this paper contributes significantly to the continuing debate on this subject.

In today's fast-paced world, businesses must align their plans with technological improvements to stay competitive and comply with regulations. Digital transformation affects all business elements and necessitates collaborative efforts from all stakeholders. Effective digital transformation requires top-level management support and strategic integration.

Digital Transformation is a fundamental change within a company caused by digital technology, which affects business models, strategy, and stakeholder relationships. The process starts with digital technology adoption and progresses to a comprehensive company transformation. This research is important because Companies with higher digital maturity levels outperform their competitors.

Digital leadership Characteristics are Fast, cross-hierarchical, team-oriented, cooperative, and innovation-driven. Key qualities include digital knowledge, customer focus, vision, agility, risk-

taking, and teamwork. Leaders must support and drive the digital transformation process, connect IT strategy with business strategy, and foster an atmosphere that encourages digital innovation.

Success factors include technology, people, strategy, and competitiveness. Maturity Models are Used to analyze existing digital maturity and drive future transformation processes. Strong digital leadership is essential for managing the intricacies of digital change. Future Research is required to Emphasize empirical examination of digital leadership's impact on digital transformation and identify the attributes and methods of leaders in digitally mature businesses. Successful digital transformation needs alignment of digital and business strategies. Top-level management must provide critical support to drive transformation projects.

Schork et al. (n.d.) studied effective innovation leadership. The researchers focus on investigating human decisions influenced by their circumstances. Methods like continual comparison and adding all examples into the study help boost Grounded Theory validity. The objective was to create a practical framework for innovation leadership based on the statements and actions of German innovation professionals. The study compared the constructed network of concepts to existing scientific literature, as well as six pioneering leaders' biographies, interviews, and speeches. This comparison demonstrated the innovative leadership framework's comprehensiveness and strength.

The major findings demonstrate that successful innovation leaders have distinct thoughts, competencies, and behaviors. They are analogous to film directors who lay the groundwork for their teams to function optimally. The impressions are consistent with Kotter's distinction between controlling managers focused on efficiency and visionary leaders focused on

innovation. Innovation leaders may both refine and challenge current paradigms, resulting in unique solutions.

The report admits its limitations and offers future research possibilities to better investigate and confirm the innovation leadership framework. Additional case studies and quantitative data analysis will be conducted to improve the theoretical model. Innovation Leadership in Digital Enterprise (n.d.) thoroughly examined leadership in digital firms. The chapter discussed leadership in digital firms and presented a theoretical framework based on three research. The chapter introduced the Effective Innovation Leadership (EIL) Framework, developed over six years of research and validated through empirical studies with executives from successful technology companies. It aims to guide innovation managers and leaders in effective digital enterprise transformation, addressing modern global business challenges and the growing importance of digital innovations.

The internet, home computers, the World Wide Web, cell phones, and social media have all contributed to the digital revolution, which began in 1947. The present digital economy prioritizes mental strength and knowledge over physical strength, spawning new sectors and disrupting old ones. Digital pioneers such as Google, Apple, and PayPal have tremendously impacted multiple industries. Successful digital transformation requires reducing structural barriers, implementing supportive technology, and establishing self-contained work units. Leadership skills are more important than technical abilities in digital transformation. Six leadership styles are discussed: transformative, charismatic, strategic, diversity-focused, participative/shared, and trait-based leadership. Effective leaders create vision, predict market trends, grasp technology, adapt to change, and empower their teams. Shared leadership is

especially vital in digital businesses, where success is frequently dependent on networks of external partners.

Effective Innovation Leadership (EIL) entailed integrating distinctive ideas and affordable technologies into marketable digital innovations. It should demonstrate values like openness, responsibility, and transparency, as well as capabilities like creativity, delivery, and persuasiveness. Effective leaders prioritize communication, co-creation, entrepreneurship, focus, reflexivity, and system design. The EIL framework highlights the necessity of an innovative corporate culture and strategy.

One suggestion for upgrading the Effective Innovation Leadership Questionnaire is to incorporate peer viewpoints and performance data into a 360-degree assessment. Future studies should look into the contrasts between mature and less mature digital companies, with a focus on leadership styles such as shared leadership and leadership diversity. Additional development of the Effective Innovation Leadership Framework is recommended to improve its use in digital organizations and uncover stable criteria for global technology companies.

Abbas & Asghar (2010) investigated the critical role of leadership in successfully implementing organizational transformation, highlighting visionary and innovative leadership as significant variables. The argument begins by emphasizing the competitive nature of the globalized world, which requires innovative business techniques for organizational success. It asserts that good leadership is critical for managing organizational change, which is becoming increasingly important as a result of rapid technology breakthroughs and evolving market conditions. The authors suggest that visionary and imaginative leadership can help organizations manage the complexity of transition, resulting in long-term success and innovation.

The thesis investigates the abilities required for leaders to successfully implement organizational transformation, focusing on vision and innovative techniques. Two case studies from developing nations (Nirala Sweets in Pakistan and MAS Holdings in Sri Lanka) are examined to better understand the link between leadership qualities and successful organizational development.

A mental image of a desired future is crucial for leadership, providing direction and drive. Effective leaders possess creativity, problem-solving abilities, and the capacity to motivate people to implement novel ideas. Change is driven by both internal and external influences, such as technical improvements and market needs. Successful organizational change entails unfreezing (changing attitudes), moving (implementing tactics), and refreezing (stabilizing changes).

Leadership Competencies: Cognitive competencies include creativity, self-reliance, and problem-solving skills. Functional competencies include communication, management, and decision-making capabilities. Social competencies include interpersonal skills, teamwork, and stress management.

The research's Case Study, Nirala Sweets, demonstrates how visionary leadership transformed a small, sweet shop into a successful brand. Innovative leadership helped the company become a key player in the clothing sector. A proposed model is presented to illustrate the relationship between leadership attributes (vision and innovative approach), organizational change, and long-term success. It implies that strong leadership can result in successful organizational change, which in turn promotes innovation.

The thesis concludes that creative and inventive leadership is essential for navigating organizational change. While other leadership attributes are crucial, vision and innovation are especially critical in establishing long-term success and organizational innovation. The proposed

model offers a framework for comprehending how these leadership skills connect to successful organizational change.

Hughes et al. (2018) evaluated 195 empirical papers on leadership's impact on creativity and innovation. The goal is to refine definitions, identify patterns, and make practical recommendations for future research. Creativity is creating new and beneficial ideas, and innovation is putting these ideas into action. The study emphasizes the importance of clear and distinct definitions to minimize conceptual confusion.

Leadership has a tremendous impact on creativity and innovation. Research indicates that transformational leadership and leader-member exchange (LMX) have a favorable link. Leadership effectiveness can be influenced by follower attributes, leader attributes, the leader-follower relationship, and team/organizational context. A unified theoretical framework is necessary to better understand these moderating effects.

The report presents a taxonomy of mediators between leadership and creativity/innovation, including motivational, cognitive, affective, identification-based, and social-relational factors. This will guide future research. The majority of research is cross-sectional, limiting causal conclusions due to endogeneity biases. The authors suggest using experimental designs and instrumental variables to strengthen findings. The report emphasizes the need for improved assessment tools to effectively assess creativity and innovation, as there are currently no standardized and valid metrics.

Future research should refine definitions, improve study designs, and establish trustworthy metrics. Additionally, researchers should examine under-studied regions and assess the' practical implications of their findings for policy and organizational practice. The report suggests that while leadership is important in encouraging creativity and innovation, more thorough and

systematic research is needed on the topic. By resolving the identified constraints and implementing the recommendations, future studies can construct more credible theories and provide actionable insights for companies.

Weberg & Hagler (2013) investigated a new framework for innovation leadership in healthcare, focused on Complexity Leadership Theory (CLT). It emphasized the shortcomings of old leadership styles in the face of modern healthcare concerns, such as rising costs and low-quality outcomes.

The healthcare system's high costs and low-quality outcomes are the result of antiquated leadership approaches such as leader-centricity and linear thinking. To investigate the leadership attributes that allow successful innovation implementation using a Complexity Leadership Theory lens. The research emphasizes the need for new leadership models that correspond with the complexity and adaptability of healthcare systems. Traditional Leadership Theories examine attribute, style, and transformational leadership theories and their limits in promoting innovation. Complexity Leadership Theory (CLT) emphasizes emergent, adaptive, and enabling leadership behaviors that promote innovation through interconnection and information flow.

It emphasizes seeing the organization as a system with interconnected pieces. Theoretical Biology proposes that organizations, like biological systems, evolve and adapt through intricate interactions. Complex Adaptive Systems (CAS) emphasize the significance of basic rules and connectivity in facilitating system-wide adjustments and innovations.

The research identifies essential traits of effective leaders in innovation implementation, including boundary bridging, risk-taking, visioning, capitalizing on opportunities, adaptation, information flow coordination, and facilitation. It shows how these characteristics promote

successful innovation by establishing strong relationships, efficient information flow, and a supportive organizational environment.

Introduces a new leadership framework incorporating Complexity Leadership Theory principles, stressing the dynamic interaction of leaders, followers, and organizational context in creating innovation. It explores the implications for nursing, healthcare organizations, and leadership studies, arguing that complexity leadership theory can increase innovation outcomes and organizational performance.

This paper emphasizes the potential of Complexity Leadership Theory to meet modern healthcare concerns by encouraging adaptive, emergent leadership practices that foster innovation. Additional empirical investigations are needed to evaluate the proposed paradigm and investigate its use in various healthcare contexts.

This dissertation contributes to our understanding of how complexity leadership can boost innovation in healthcare organizations, laying the groundwork for future study and practical applications in leadership development and organizational change.

Blagoev and Yordanova (2015) presented a model to assess a business's innovative leadership, underlining the importance of such a model given the absence of assessment methodologies at the company level. It investigates the relationship between leadership and innovation, arguing that leaders require innovations as strong tools for influencing and responding to changing business contexts. The model incorporates various indicators organized into three categories: innovation activity, potential, and competences. Its goal is to evaluate a company's innovation capability and performance.

The model may be used to compare organizations, evaluate innovative leadership, and help businesses improve their innovation performance and strategies. It offers a balanced way of assessing innovation creation and performance.

Imran et al. (2020) looked at the leadership abilities required to drive digital transformation (DT) in industrial enterprises. Five critical leadership abilities were identified: digital vision, digital expertise, failing fast, empowering, and managing diverse teams. These skills are essential for executives to manage their organizations through DT strategically.

Leaders need to have key competencies to guide their operations. They should have a strategic vision for the digital future that can inspire and engage team members emotionally. Additionally, they should possess fundamental awareness of digital tools and their business implications, although they do not necessarily need to have technical skills. Failing Fast emphasizes the ability to recognize and learn from failures, saving resources swiftly. Empowerment is delegating power to lower levels in the hierarchy, which can improve decision-making and minimize bottlenecks. Leaders should lead cross-functional and virtual teams to achieve DT objectives.

The study underlines the necessity of coordinating vision and actions. Leaders do not need to be technical gurus, but they should understand the power of digital technologies and why Fast failure is essential for agile learning and resource optimization. Empowerment promotes strategic focus and increases team involvement. Managing multiple teams is critical owing to the cross-functional nature of DT projects.

Leadership in DT entails change management, vision, empowerment, and the capacity to lead different teams. According to the report, these competencies will assist industrial firms in equipping their leaders with effective DT. Future research should involve more case organizations and interview participants to improve generalizability.

2.3 Theory of Innovation Leadership

The Innovation Leadership Theory offers a comprehensive framework for understanding how leaders may build and maintain an atmosphere that fosters innovation. Leaders can promote continuous innovation and preserve a competitive advantage in a fast-changing world by establishing a clear vision, cultivating a creative culture, empowering workers, encouraging cooperation, and being adaptable. The Creativity Leadership Theory focuses on how leaders may create a climate that fosters creativity, which is critical for digital transformation.

Schork et al. (2018) define innovation leaders as entrepreneurial shapers who are open to change and willing to change established rules in order to rejuvenate a system. Innovation leaders are self-controlled pro-acters who are dedicated to one goal, executing innovation. Effective innovation leadership is about guiding, inspiring, and allowing others to innovate successfully rather than exercising rigorous control. Unlike traditional management, which focuses on efficiency and stability, innovation leadership emphasizes vision, adaptation, and nurturing a creative environment. Innovation leadership entails developing potential, embracing change, and generating real impact. Successful innovation leaders combine personal values, professional strengths, and effective strategies to handle complexity, motivate teams, and make ideas a reality. It has been established that innovative leaders do not fit into a single mold, but they do share qualities such as determination, strategic risk-taking, and people-centric leadership. Innovation leadership necessitates ongoing learning and self-improvement. Innovation leadership flourishes in a culture that encourages experimentation and views failure as a learning experience.

Organizations must foster a culture of talent development, encourage risk-taking, and provide resources to propel creative ideas ahead. Instead of being micromanagers, innovation leaders function as facilitators, coaches, and mentors.

They encourage people and teams to experiment with new ideas and question established wisdom.

Their leadership style combines structure and flexibility, allowing for both innovation and execution. Effective innovation leaders have a distinctive set of values (openness, trust, and tolerance), strengths (self-awareness, emotional intelligence, and resilience), and practices (collaboration, empowerment, and market knowledge).

Their ability to connect seemingly unconnected themes and inspire independent thinking adds to their efficacy.

The Innovation Leadership Theory focuses on the activities and attitudes leaders must adopt to create an environment conducive to innovation. This idea emphasizes the importance of leadership in fostering creativity, encouraging risk-taking, and using multiple views to create continuous improvement and progress inside organizations.

2.4 Leadership and Organizational Change Models

Models such as Kotter's Eight-Step Change Model emphasize the role of leadership in driving change. Through their vision and influence, innovation leaders play a critical role in leading digital transformation efforts and ensuring that innovation is at the heart of this change. Digital transformation is inherently about change, and successful change requires strong leadership. Kotter's model and other organizational change theories emphasize the role of leadership in creating a vision, communicating it, and empowering employees to embrace the transformation. Innovation leaders are at the forefront of this process, ensuring that the organization adopts new

technologies and develops a culture of continuous innovation. This perspective is practical and widely applicable to real-world digital transformation efforts (Kotter, 1995).

2.5 Balanced Scorecard (BSC) theory

The Balanced Scorecard (BSC) theory assesses an organization's digital transformation success. Robert Kaplan and David Norton created the Balanced Scorecard (BSC) to monitor and manage organizational performance by integrating strategy to actionable objectives from four perspectives: financial, customer, internal processes, and learning and growth.

It seeks to overcome the limits of standard financial measurements based on historical performance and does not account for intangible assets such as staff skills or customer relationships (Akbarzadeh, 2012).

Using the Innovation Leadership Theory, I aim to comprehend the role of innovation leadership in the context of digital transformation. Additionally, I intend to utilize the Balanced Scorecard (BSC) theory to evaluate the successful attainment of digital transformation by companies through innovation leadership.

2.6 Summary

The literature review investigated several studies to understand digital transformation and innovation leadership, and engaged in many professional literature reviews about the relationship between them, as studied in several articles. Digital transformation is a complicated, continuing process that affects many elements of a company, including strategy and operations, team dynamics, and environmental sustainability. To thrive in this shift, organizations must develop dynamic capabilities, foster inventive teams, and continually adapt to changing digital environments.

Effective leadership is important to the success of digital transformation programs.

Innovation leadership is critical for nurturing creativity and promoting innovation in organizations.

Successful digital transformation is strongly reliant on good innovation leadership, which includes building trust, encouraging agile and transformational leadership styles, and harnessing digital technologies to generate organizational innovation and adaptability.

The chapter's review shows that past studies are primarily focused on understanding how to conduct digital transformation. They summarize the main characteristics of leadership in the era of digital transformation, the opportunities of digital transformation, six innovative thinking skills, and recommendations for managers to become innovation leaders. Limited progress has been made on the relationship between digital transformation and innovation leadership. What is missing from past studies is a study on the relationship between digital transformation and innovation leadership.

In summary, while previous studies have extensively explored the importance of leadership in driving and maintaining innovation, preparing for leadership thinking innovation that drives successful digital transformation across countries, and fostering ongoing innovation for successful digital transformation.

Studies have shown that firms must continuously innovate to remain competitive in today's fast-paced and unpredictable business environment. Leaders play a critical role in fostering and maintaining an innovative culture. Future research is also offered to investigate and confirm the innovation leadership framework better, and for additional research and practical frameworks to assist leaders in developing the skills and mentality required for innovation.

However, there is a notable gap in understanding how innovation leadership influences digital transformation and the relationship between digital transformation and innovation leadership.

This study aims to address this gap by investigating the role of innovation leadership in digital transformation and recognizing how the usage of innovation leadership contributed to their success.

CHAPTER III: RESEARCH METHODOLOGY

3.1 Overview of the research problem

Firms are encouraged to investigate the opportunities emerging from digital technology and foster agility to quickly adapt to the dynamic environment and meet market developments. In today's quickly changing corporate environment, digital transformation has emerged as a vital driver of organizational success and survival around the world. As businesses embark on their digital transformation journeys and business model innovation, the role of leadership in directing and coordinating this change has become increasingly important (Ramadan et al., 2023). Organizational success is seen to depend on innovation. Organizations must be adaptable and innovative to survive and thrive in a fast-changing environment. This necessitates the development of novel problem-solving strategies. Innovation is the process of developing, implementing, and adopting creative ideas. In today's competitive corporate world, innovation is critical to success. Businesses must be able to adapt in order to deliver products or services that address changing environmental conditions. Thus, innovation is highly valued in organizations (Clapham & Meyer, 2024).

Therefore, it is necessary to research and focus on the relationship between innovation leadership and digital transformation. This study seeks to close this gap by investigating the role of innovation leadership in digital transformation and acknowledging how innovation leadership contributes to its success.

3.2 Operationalization of Theoretical Constructs

Although there are various domain research methodologies, the three most common are quantitative, mixed-method, and qualitative methods. Qualitative data is distinguished by non-

comparable observations, which are frequently articulated in normal language and focus on small samples, specific cases, and situations. Quantitative data, on the other hand, is analyzed in vast numbers using systematic sampling and reported numerically. Qualitative methods are particularly useful for exploring causal relationships, especially when research is in an early, exploratory stage, or when studying single cases or small numbers of cases. Multimethod research combining qualitative and quantitative methods is becoming more common. This strategy takes advantage of both methods' benefits but offers integration and standards issues (Gerring, 2024).

The current research utilizes a multimethod research methodology and tries to determine the evaluation and synthesis of all relevant studies and research, numerical conversion based on a document review relevant to the topic through the use of resources from the Web of Science, Google Scholar, ResearchGate, etc.

The study focuses on investigating the role of innovation leadership in digital transformation. A questionnaire survey is selected to collect data on how innovation leadership will affect digital transformation and to determine how businesses can use innovation leadership to carry out successful digital transformation.

3.3 Research Purpose and Questions

The actual purpose of conducting this research is focused on the role of innovation leadership in digital transformation. This research has attempted to find how businesses can achieve successful digital transformation using innovation leadership.

To collect data for the current research, it has been decided to choose thirty various companies based in Dubai and Germany.

Specific aims

RO1: To analyze the role of innovation leadership in digital transformation.

RO2: To evaluate how businesses can implement successful digital transformation using innovation leadership.

Research questions

The study will address the following research questions:

1. What is the role of innovation leadership in digital transformation?

2. How can businesses carry out successful digital transformation by using innovation leadership?

Hypotheses

H1-Innovation leadership has an important role in digital transformation.

H2-Innovation leadership helps businesses to carry out successful digital transformation.

3.4 Research Design

The current research focuses on understanding the role of innovation leadership in digital transformation. To resolve the research problem for this study, the current research adopted primary qualitative and quantitative data. Data collection is vital in statistical analysis. Research methodologies are divided into two categories: primary and secondary data. As the name implies, primary data is one that the researcher collects primary data for the first time, whereas secondary data is already acquired or created by others (Ajayi, n.d.).

Qualitative research aims to investigate and comprehend complex social processes using non-numerical data such as words, images, or observations. Quantitative research entails gathering and analyzing numerical data to identify patterns, correlations, and trends.

Qualitative research Strengths include in-depth exploration of attitudes, behaviors, and values, and the ability to conduct open-ended inquiry, which can provide additional insight into complicated social processes, although there is no optimal combination of qualitative and quantitative research approaches (Choy, 2014).

I would utilize qualitative and quantitative research methodology and determine the evaluation and synthesis of all relevant studies and research, numerical conversion based on a document review relevant to the topic through the use of resources from the Web of Science, Google Scholar, ResearchGate, etc.

Explanatory Style is a person's consistent manner of explaining why things happen, focusing on three dimensions: the cause is due to oneself or external sources. The reason is considered permanent or transient. The cause affects multiple aspects of life or only one (Explanatory Style, n.d.).For this study, the research design of explanatory research was considered.

A questionnaire survey is selected to gather insights on how innovation leadership influences digital transformation and how businesses can leverage innovation leadership for successful digital transformation.

3.5 Population and Sample

The population for the research was thirty managers from various companies in Dubai and Germany. The survey questionnaires were designed to apply heterogeneity, where the target respondents came from different genders, educational backgrounds, positions, and ethnicities.

The study distributed questionnaires to 30 managers of various companies in Dubai and Germany.

The survey was conducted among the employees of companies in higher positions, and the questions prepared were related to determining how businesses can carry out successful digital transformation by using innovation leadership. Google Forms was used to prepare the survey questionnaire, and it was emailed to the employees for their responses. After collecting the raw data, the data was tabulated to make sure that it points out the elements supporting innovation leadership's role in digital transformation.

3.6 Participant Selection

The research sample consisted of employees of companies in higher positions across Dubai and Germany. The research used purposive sampling. Sampling is the process of selecting a small, representative group from a larger population to draw conclusions. It is effective for researching tiny populations with special traits. Despite its limitations, it enables researchers to collect extensive, concentrated data based on informed decisions (Neetij & Bikash Thapa, n.d.). Convenience sampling, often called Haphazard or Accidental Sampling, selects participants based on their accessibility, proximity, and willingness to participate. It is commonly employed in quantitative research and stresses ease of access and quick data collection; however, it is prone to bias and is not generalizable.

Purposive sampling is commonly employed in qualitative research. It aims to obtain rich, detailed data from relevant individuals. Purposive sampling uses data saturation to calculate sample size, whereas convenience sampling uses statistical power (Etikan, 2016). Purposive sampling is quite helpful in ensuring that the research yields the desired results, and it is

extremely effective when the goal is to gain a thorough understanding of a single topic rather than produce statistically generalizable results, so choosing it is justified.

3.7 Instrumentation

The data was extracted using both primary and secondary methods. The study used questionnaire surveys as the primary data source, and the secondary method analyzed papers and scholarly journal articles to obtain a general overview of how innovation leadership will affect digital transformation and determine how businesses can use innovation leadership to carry out successful digital transformation. The study used company managers to ensure the validity and correct interpretation of respondent responses to interview questions to achieve reliability and generalizability.

The process of creating a questionnaire aided the data collection technique. A structured questionnaire with closed-ended questions and three open-ended questions was created to collect survey respondents' viewpoints. This questionnaire was distributed via email and LinkedIn to respondents, and the replies were collected using the same technique.

Before doing the survey, respondents were advised that their responses would be kept anonymous and confidential, and that they might withdraw at any moment. This information was included in the participant information page attached to the initial email, assuring ethical data gathering practices. The questions included choices, making the survey process shorter and more effective.

The use of purposive sampling made it easy to select the appropriate type of respondents for the survey, depending on the study's requirements. Managers were directly contacted via email or LinkedIn messaging and invited to participate in the survey. It is critical to recognize that several key factors contributed to the success of data collection. First, the company assured us that they

allowed their managers to participate in the survey with informed consent while maintaining privacy and confidentiality. It is also critical to note that the guidelines and successful qualitative data-gathering techniques were addressed for the study.

The participants' confidence was built by providing extensive information about the research. While collecting data for the study, it was guaranteed that no bias was present in the survey method. As a result, the current study will use an online process survey. When designing the questions, simple language was employed. It is vital to remember that avoiding irrelevant queries is also essential in this situation. This demonstrates that the researcher worked hard to ensure that survey responses were effective and contributed to the results.

3.8 Data Collection Procedures

3.8.1 Data Collection from Organizations in Dubai and Germany

The research aimed to conduct an analysis of organizations in Dubai and Germany, mainly focusing on their management and leadership practices. An online survey was used to gather the necessary data, providing flexibility and comprehensive insights from participants.

Effective survey planning entails defining clear objectives, creating a questionnaire, and selecting a representative sample. Budgeting, scheduling, and maintaining adequate population coverage are all important factors. Surveys can be administered in a variety of ways, including mail, phone, in-person interviews, and newer means such as internet surveys. Each strategy has both advantages and disadvantages (Scheuren, n.d.).

Data from online platforms must be accessed to be used in the current investigation. To collect replies from respondents, an online survey was used. Conducting surveys online made it convenient for participants to respond at their own pace, encouraging broader participation and easy access.

Information such as company names, addresses, phone numbers, and email addresses was obtained from publicly available data on company websites. This data was crucial for contacting relevant organizations and individuals for the study.

The selected companies were chosen based on their knowledge of organizational development principles. Email invitations and a participant information sheet were sent to the managers, explaining the study's purpose and obtaining consent. This ensured the ethical integrity of the research process through informed consent.

Participants for the surveys were selected through purposive sampling, with clear instructions provided to help them complete the questions effectively. Participation was voluntary, with the option to withdraw at any time.

After the survey was completed, the responses were analyzed using SPSS software. The survey data was visualized using charts to reflect the level of support for each research question, while the open-ended questions data was coded and analyzed for emerging themes.

This multi-method approach, which combined online surveys with closed-ended and open-ended questions, provided a richer and more complete understanding of organizational leadership and management in Dubai and Germany.

3.8.2 Gaining Access to Data from Dubai and Germany

The current study focused on innovation leadership and how companies applied digital transformation by using innovation leadership. Therefore, it is imperative to collect data from Dubai and Germany's management and leadership sectors. It is essential to get access to data from online platforms to gain access to data for the current study. An online survey was conducted to gather the respondents' responses. It is also imperative to consider that company information was collected on the website and LinkedIn. Several studies on digital transformation

across industries have identified Dubai and Germany as crucial hubs, and sources include PwC, Deloitte, and local government publications. Major news sites, including Gulf News and Khaleej Times, routinely publish updates on firms' digital initiatives. Some global rankings and prizes, such as the "Digital Transformation Awards" or "Forbes Middle East Top Companies," help identify organizations that succeed in digital transformation in Dubai and Germany.

These sources were significantly helpful in accessing various kinds of data, such as information regarding the company name, address, phone number, and email address.

The researcher has collected certain companies that successfully applied digital transformation. After gathering the email addresses of these firms, the researcher will email the companies or send them a message via LinkedIn expressing the desire to participate in this research. Consent was obtained directly through email or LinkedIn messages, where participants were informed about the purpose of the research and assured of confidentiality and the voluntary nature of their participation. This approach ensured ethical standards were upheld throughout the data collection process, which is crucial for maintaining the ethical value of the research.

3.8.3 Process of data Collection

The survey used an organic process to get the most responses from the study. After choosing survey participants using purposive sampling, a strong emphasis was placed on ensuring their ability to participate effectively in the survey. Before the survey, questions and detailed instructions were provided outlining how the survey should be completed. They have the option to withdraw from the survey at any moment because it is voluntary. After completing the survey, it is critical to ensure that all participants submit their responses. This was indicated in the study directions. After collecting the data, the researcher worked on exploring it. The answers to each question were analyzed using SPSS software.

After analyzing the data, it was presented in the form of charts. This helped with understanding the extent to which the researchers ' respondents support the questions. In the survey process, an attempt was made to ensure that sensitive questions were avoided. The respondents were reassured at every stage that their data was private and confidential. The survey did not ask for personal data about the employees. This reassured their faith in the survey. While developing the survey questions, a significant amount of time was spent on the design. This helped in grouping questions according to the independent and dependent variables. This also helped keep the survey participants' confidence intact for the research.

The researcher adopted a flexible approach to organizing qualitative data from the open-ended questions, primarily utilizing technology. Software applications such as Microsoft Word and Excel facilitated analysis and comparison, allowing responses to be systematically coded, interpreted, and summarized.

To ensure confidentiality, each participant was assigned an alphanumeric code beginning with "P," followed by a sequential number (P1 to P30). All open-ended responses from the 30 participants were carefully reviewed and coded immediately upon collection to guarantee accuracy and consistency.

3.9 Data Analysis

The current study concentrated on conducting research with the help of the SPSS program for analyzing survey data.

The advantage of using SPSS in research is known for simplifying data administration and analysis, allowing educators and students to focus on statistical ideas rather than tedious calculations (Innovation as an initiator of the development, n.d.).

As a result, it is critical to consider that this program is significantly effective for conducting the data analysis. The survey data were examined using SPSS, which included several essential statistical tests.

The study employed regression analysis, presenting results through Model Summary, ANOVA, and Coefficient tables to determine the relevance and association between the research variables. The SPSS program was used to confirm that the data interpretation was in line with the research purpose. This directed the researcher to test the research hypotheses based on the significance of the relationship between the variables for the study.

The study employed purposive sampling to gather qualitative data through open-ended questions. The data obtained from both closed-ended and open-ended survey questions were triangulated to ensure comprehensive analysis and validation of the findings. Triangulation helps to confirm findings, mitigates methodological flaws, and provides deeper insights into the research topic. It also improves the study's validity and trustworthiness, allowing researchers to be more confident in their findings (Triangulation_in_Research11, n.d.).

Triangulation was employed to validate the study's findings by cross-referencing data collected from survey responses and comparing qualitative insights from open-ended questions with quantitative data. This process facilitated identifying common patterns and enhanced the credibility and robustness of the research outcomes.

3.9.1 Reliability and Validity of the Study

Reliability refers to a metric's consistency. Validity refers to how well a measure's scores represent the variable for which it was designed (Reliability and Validity of Measurement, n.d.). Reliability and validity are critical in quantitative investigations to ensure replicability and correctness. Researchers stress impartiality and measurable facts, and they frequently collect data

using standardized instruments. The triangulation strategy, utilized in both paradigms, increases the validity of conclusions by merging multiple sources of data or perspectives (Golafshani, 2003). The study used member checks to ensure data consistency and trustworthiness.

Qualitative research delves into the complexities of human behavior, attitudes, and experiences, with a focus on nuance and context. Ensuring trustworthiness is critical for establishing the credibility and dependability of qualitative results. Credibility, transferability, dependability, and confirmability are among the factors considered.

Credibility is achieved through extended involvement, persistent observation, and triangulation; transferability is achieved through comprehensive and detailed explanations; dependability is achieved through rigorous documentation and the creation of an audit trail; and confirmability is achieved through peer debriefing, member checking, and reflexive journaling. Establishing reliability in qualitative research is critical for shaping future research directions and increasing cumulative knowledge. Trustworthy qualitative research findings are also useful in shaping policy decisions and enhancing service delivery in a variety of domains. While there are limitations to qualitative research, such as subjectivity and resource constraints, the rigorous use of trustworthiness metrics considerably improves its precision and dependability (Ahmed, 2024).

3.9.2 Ethical Considerations

The protection of human subjects through the application of suitable ethical norms is essential in all research studies (Roshaidai & Arifin, 2018).

Participants will be thoroughly informed about the study's objectives, procedures, potential risks, and benefits. Before conducting the survey, Informed consent was obtained before data collection began. Since the study involved human participants, it was important to uphold key ethical standards during the data collection process. Instead of using formal consent forms,

participants were contacted via email and LinkedIn messages, which included clear information about the study. The message explained the purpose of the research and the assurance of anonymity and confidentiality. Consent was considered obtained when participants proceeded to complete the survey after reading this information. Furthermore, it is critical to note that voluntary involvement must be ensured. This indicates that participants were given the option to quit answering the survey questions at any time. It is also crucial to verify that the survey participants are not damaged in any way. Participants' names will be kept private, and any data collected will be anonymized whenever possible to preserve privacy.

When it comes to research ethics, it is critical to recognize the importance of anonymity. Any information that could help identify survey participants cannot be published. This allows us to verify that survey participants are comfortable participating in the research data collection process. By following these ethical principles, our study hopes to respect participants' rights and well-being while ensuring that the data collected is accurate and appropriately managed.

3.10 Research Design Limitations

The current study did the analysis using primary qualitative and quantitative data. However, the current research design has limitations that must be addressed. The qualitative procedure has significant disadvantages because the findings are not generalizable due to the tiny sample sizes. Furthermore, qualitative research frequently offers difficult interpretation and analysis processes and time-consuming data processing processes (Taherdoost, 2022).

Furthermore, it's unclear whether small business managers answered survey questions honestly and accurately.

Finally, the study's limitations include a lack of generalizability and participants' willingness to provide their information openly.

3.11 Conclusion

The present chapter of the study concludes that a systematic strategy for managing the research methodologies was used. This study aimed to solve research challenges utilizing primary qualitative and quantitative data. Primary qualitative and quantitative data were gathered through a survey with managers from various Dubai and German sectors. This chapter also stated that explanatory research was undertaken for the study.

The current chapter of the dissertation focused on conducting the survey using a questionnaire. The questionnaire contains closed-ended questions and three open-ended questions. This chapter explains that in conducting the survey, various ethical considerations were borne in mind. Informed consent was obtained from both employees and organizations.

This chapter further emphasized the importance of understanding the ethical implications of anonymity and secrecy and the need to recognize that there is no risk of harm. It also explained how survey questions were designed and mentioned that this research used SPSS software to analyze data. Qualitative analysis of open-ended responses was conducted using Excel/Google Sheets, with codes categorized into overarching themes based on content analysis.

The chapter also detailed how the research was validated and reliable.

CHAPTER IV: RESULTS & FINDINGS

4.1 Overview of the chapter

This chapter presents the results of the quantitative data analysis using SPSS as the statistical tool and the qualitative data analysis using Excel. Data collection and analysis were conducted according to the approach outlined in Chapter Three. To gather relevant data, I distributed surveys to 100 companies in Dubai and 100 companies in Germany, and a total of 30 companies participated in the survey, providing valuable insights. This includes collecting data by surveying participants from Dubai and German companies selected through the purposive sampling method, while also considering the statistical tests that need to be performed. In evaluating the results, this chapter aims to test the two hypotheses, determine the role of innovation leadership in digital transformation, and understand how organizations can achieve effective digital transformation through innovation leadership.

An attempt was made to maintain the emphasis by creating a sampling under the purposive sampling method, the focus was on firms with digital transformation experience, specifically targeting managers and leaders to fill out the survey. Further detailed demographic information based on gender, age, educational qualifications, roles in the organization, industry type, and the number of employees has been statistically presented as a percentage of respondents.

The survey included 44 closed-ended questions and three open-ended ones, allowing for both quantitative and qualitative analysis. To encourage participation, I designed the survey in an online format, ensuring accessibility and a wider reach. The collected data, presented in this chapter through various charts and graphical representations, serves as the basis for further analysis and discussion. The survey data collected by close-ended questionnaires were assessed by performing reliability, validity, and normality tests in SPSS. The open-ended questions were

examined in Excel to identify themes and initial codes. The correlation and regression analysis results were further interpreted using a comparative perspective. Based on the statistical tests, the final results were presented in relation to the hypotheses. However, this chapter does not give a full explanation of the data; the attention is limited to a brief interpretation of the statistical findings.

4.1.1 Reliability test result

In 1951, Lee Cronbach created alpha, which is a value between 0 and 1, to quantify the internal consistency of a test or scale. The degree to which every item in a test measures the same idea or construct is known as internal consistency, and it is related to how related the test's components are to one another. The allowable alpha ranges from 0.70 to 0.95, according to various reports (Tavakol and Dennick, 2011).

Table 4.1.1 reliability

Section	Number of Items	Cronbach's Alpha
Organizational Digital Transformation Status	4	.916
Innovation Leadership	3	.801
Organizational Readiness	3	.837
Challenges and Opportunities	4	.777
Outcomes and Future Directions	3	.638
Support for Innovation	2	.793
Collaboration and Communication	2	.816
Risk Taking and Experimentation	4	.838

Cultural Impact	2	.672
Outcomes of Innovation Leadership	3	.878
Role of Innovation Leadership and Resource allocation and empowerment	4	.807
Measuring success and continuous improvement	2	.845

The reliability of each construct in the questionnaire was assessed using Cronbach's Alpha to determine internal consistency. Constructs measured with three or more items demonstrated good to excellent reliability, with alpha values ranging from 0.777 to 0.916. These included constructs such as Innovation Leadership, Organizational Readiness, Risk-Taking, and Experimentation. Several constructs were measured using two-item scales. While two-item measures can be less stable, most showed good internal consistency, with Cronbach's Alpha values ranging from 0.672 to 0.845. Overall, the reliability analysis supports the internal consistency of most of the constructs used in this study, justifying their inclusion in further statistical analyses.

4.1.2 Validity test result

The KMO test evaluates the data's eligibility for factor analysis. In other words, it evaluates the sample size. KMO values of 0.8-1.0 suggest acceptable sampling. KMO levels range from 0.7 to

0.79, while those between 0.6 and 0.69 are considered mediocre. KMO values below 0.6 indicate inadequate sampling and require corrective action. If the value is less than 0.5, the factor analysis results may not be applicable to the data. For sample sizes under 100, an average value of more than 0.6 is considered acceptable (Shrestha, 2021).

Table 4.1.2. Validity test result

Section	KMO	Bartlett's Test (χ^2, df, p)	No. of Factors	Eigenvalue	Variance Explained (%)
Organizational Digital Transformation Status	.838	$\chi^2 = 71.996$, df = 6, p < 0.001	1	3.219	80.47%
Innovation Leadership	0.672	$\chi^2 = 27.977$, df = 3, p < 0.001	1	2.146	71.55%
Organizational Readiness	0.642	$\chi^2 = 37.998$, df = 3, p < 0.001	1	2.294	76.47%
Challenges and Opportunities	0.656	$\chi^2 = 39.407$, df = 6, p < 0.001	1	2.453	61.33%

Outcomes and Future Directions	0.552	$\chi^2 = 12.278$, df = 3, p = 0.006	1	1.744	58.12%
Support for Innovation and collaboration and communication	0.740	$\chi^2 = 61.536$, df = 6, p < 0.001	1	2.902	72.55%
Risk Taking and Experimentation	0.675	$\chi^2 = 52.809$, df = 6, p < 0.001	1	2.703	67.58%
Cultural Impact	0.500	$\chi^2 = 7.534$, df = 1, p = 0.006	1	1.506	75.29%
Outcomes of Innovation Leadership	0.748	$\chi^2 = 44.497$, df = 3, p < 0.001	1	2.453	81.78%
Role of Innovation Leadership	0.500	$\chi^2 = 3.705$, df = 1, p = 0.054	1	1.361	68.06%

Resource allocation and empowerment	0.500	$\chi^2 = 14.425$, df = 1, p < 0.001	1	1.657	82.86%
Measuring success and continuous Improvement	0.500	$\chi^2 = 20.766$, df = 1, p < 0.001	1	1.737	86.85%

Table 4.1.2.1 Validity of V10, V11, V12, and V13 - Organizational Digital Transformation Status

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V10	3.74	.944	27
V11	3.70	.993	27
V12	3.59	1.047	27
V13	3.11	1.251	27

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.838
Bartlett's Test of Sphericity	Approx. Chi-Square	71.996
	df	6
	Sig.	<.001

Communalities		
	Initial	Extraction
V10	1.000	.742

V11	1.000	.793
V12	1.000	.811
V13	1.000	.872

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.219	80.472	80.472	3.219	80.472	80.472
2	.347	8.682	89.154			
3	.275	6.887	96.042			
4	.158	3.958	100.000			

Component Matrix[a]	
	Component
	1
V10	.862
V11	.891
V12	.901
V13	.934

a. 1 components extracted.

The factor analysis results strongly support the construct validity of items V10 to V13, with a KMO measure of 0.838 and a significant Bartlett's test ($p < .001$). A single factor was extracted, explaining 80.47% of variance, and all communalities were high (0.742–0.872). Item loadings ranged between 0.862 and 0.934, indicating a strong association with the underlying factor.

Table 4.1.2.2 Validity of V14, V15, and V16 - Innovation Leadership

KMO and Bartlett's Test	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.	.672

Bartlett's Test of Sphericity	Approx. Chi-Square	27.977
	df	3
	Sig.	<.001

Communalities

	Initial	Extraction
V14	1.000	.613
V15	1.000	.797
V16	1.000	.736

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.146	71.546	71.546	2.146	71.546	71.546
2	.553	18.418	89.964			
3	.301	10.036	100.000			

Component Matrix[a]

	Component
	1
V14	.783
V15	.893
V16	.858

a. 1 components extracted.

The validity analysis indicates acceptable construct validity for items V14 to V16, as demonstrated by a KMO value of 0.672 and a significant Bartlett's test ($p < .001$). One factor was extracted, explaining 71.55% of the total variance, and communalities ranged from 0.613 to 0.797, suggesting good item reliability. Factor loadings between 0.783 and 0.893 further confirm the items' strong association with the underlying construct.

Table 4.1.2.3 Validity of V17, V18, and V19 - Organizational Readiness

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V17	3.62	1.049	29
V18	3.72	1.066	29
V19	3.83	.759	29

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.642
Bartlett's Test of Sphericity	Approx. Chi-Square	37.998
	df	3
	Sig.	<.001

Communalities		
	Initial	Extraction
V17	1.000	.696
V18	1.000	.874
V19	1.000	.724
Extraction Method: Principal Component Analysis.		

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.294	76.469	76.469	2.294	76.469	76.469
2	.503	16.772	93.240			
3	.203	6.760	100.000			

Component Matrix[a]	
	Component
	1
V17	.834
V18	.935
V19	.851
a. 1 components extracted.	

The validity analysis presented in Table 4.1.5 demonstrates adequate construct validity for items V17 to V19, indicated by a KMO of 0.642 and a significant Bartlett's test ($p < .001$). A single component explains 76.47% of the variance, and the communalities ranged from 0.696 to 0.874, highlighting the good reliability of items. Strong factor loadings (0.834–0.935) further confirm a robust association with the underlying construct.

Table 4.1.2.4 Validity of V20, V21, V22, and V23 – Challenges and Opportunities

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
V20	3.48	.986	29
V21	3.59	.946	29
V22	3.34	1.045	29
V23	3.76	.786	29

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.656
Bartlett's Test of Sphericity	Approx. Chi-Square	39.407
	df	6
	Sig.	<.001

Communalities

	Initial	Extraction
V20	1.000	.572
V21	1.000	.493
V22	1.000	.630
V23	1.000	.759

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.453	61.326	61.326	2.453	61.326	61.326
2	.914	22.860	84.186			
3	.372	9.288	93.474			

4	.261	6.526	100.000			

Component Matrix[a]	
	Component
	1
V20	.756
V21	.702
V22	.794
V23	.871
a. 1 components extracted.	

The validity analysis indicates acceptable construct validity for items V20 to V23. The KMO measure of sampling adequacy is 0.656, accompanied by a significant Bartlett's test ($p < .001$). One component was extracted, accounting for 61.33% of total variance, and communalities range from 0.493 to 0.759, with factor loadings between 0.702 and 0.871, suggesting the items reliably measure a single underlying construct.

Table 4.1.2.5 Validity of V24, V25, and V26 – Outcomes and Future Directions

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V24	3.66	.974	29
V25	3.83	.848	29
V26	4.03	.731	29

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.552
Bartlett's Test of Sphericity	Approx. Chi-Square	12.278
	df	3
	Sig.	.006

Communalities		
	Initial	Extraction
V24	1.000	.750

V25	1.000	.481
V26	1.000	.513

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.744	58.122	58.122	1.744	58.122	58.122
2	.818	27.252	85.374			
3	.439	14.626	100.000			

Component Matrix[a]	
	Component
	1
V24	.866
V25	.693
V26	.716
a. 1 components extracted.	

The validity analysis shows marginally acceptable construct validity for items V24 to V26. The KMO measure of sampling adequacy is relatively low (0.552), yet Bartlett's test remains significant (p = .006). One factor explains 58.12% of total variance, with communalities ranging from moderate (0.481) to good (0.750), and factor loadings from 0.693 to 0.866, indicating acceptable, though somewhat weaker, validity.

Table 4.1.2.6 Validity of V27, V28, V29, and V30 – Support for Innovation, Collaboration and Communication

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V27	3.83	.848	29
V28	3.86	.915	29
V29	4.07	.704	29

V30	3.90	.817	29

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.740
Bartlett's Test of Sphericity	Approx. Chi-Square	61.536
	df	6
	Sig.	<.001

Communalities		
	Initial	Extraction
V27	1.000	.551
V28	1.000	.868
V29	1.000	.759
V30	1.000	.724

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.902	72.547	72.547	2.902	72.547	72.547
2	.608	15.207	87.754			
3	.332	8.311	96.065			
4	.157	3.935	100.000			

Component Matrix[a]	
	Component
	1
V27	.743
V28	.932
V29	.871
V30	.851
a. 1 components extracted.	

The validity analysis demonstrates strong construct validity for items V27 to V30. The KMO value of 0.740 and a significant Bartlett's test ($p < .001$) support the suitability for factor

analysis. A single factor accounts for 72.55% of total variance, with high communalities (0.551 to 0.868) and strong factor loadings (0.743 to 0.932), clearly indicating these items measure one underlying construct effectively.

Table 4.1.2.7 Validity of V31, V32, V33, and V34 – Risk-Taking and Experimentation

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
V31	3.71	.854	28
V32	3.75	.701	28
V33	3.89	.786	28
V34	3.57	.879	28

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.675
Bartlett's Test of Sphericity	Approx. Chi-Square	52.809
	df	6
	Sig.	<.001

Communalities

	Initial	Extraction
V31	1.000	.678
V32	1.000	.640
V33	1.000	.656
V34	1.000	.728

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.703	67.578	67.578	2.703	67.578	67.578
2	.834	20.850	88.428			
3	.257	6.433	94.860			
4	.206	5.140	100.000			

Component Matrix[a]	
	Component
	1
V31	.824
V32	.800
V33	.810
V34	.853
a. 1 components extracted.	

The validity analysis demonstrates good construct validity for items V31 to V34. The KMO measure (0.675) and significant Bartlett's test ($p < .001$) confirm that the data is appropriate for factor analysis. A single factor explains 67.58% of total variance, with substantial communalities (0.640–0.728) and strong factor loadings (0.800–0.853), indicating that these items effectively capture a single underlying construct.

Table 4.1.2.8 Validity of 35 and 36 – Cultural Impact

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V35	3.89	.994	28
V36	3.64	1.026	28

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	7.534
	df	1
	Sig.	.006

Communalities		
	Initial	Extraction
V35	1.000	.753
V36	1.000	.753

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.506	75.288	75.288	1.506	75.288	75.288
2	.494	24.712	100.000			

Component Matrix[a]	
	Component
	1
V35	.868
V36	.868
a. 1 components extracted.	

The validity analysis shows moderate construct validity for items V35 and V36. Although the KMO value is at the minimal acceptable threshold (0.500), Bartlett's test remains significant (p = .006). A single component explains 75.29% of the variance, with good communalities (0.753 for each) and strong factor loadings (0.868), indicating both items reliably measure a common underlying construct.

Table 4.1.2.9 Validity of V37, 38, and V39 – Outcomes of Innovation Leadership

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V37	3.66	.897	29
V38	4.07	.651	29
V39	3.83	.711	29

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.748
Bartlett's Test of Sphericity	Approx. Chi-Square	44.497
	df	3
	Sig.	<.001

Communalities		
	Initial	Extraction
V37	1.000	.822
V38	1.000	.805
V39	1.000	.827

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.453	81.776	81.776	2.453	81.776	81.776
2	.291	9.690	91.466			
3	.256	8.534	100.000			

Component Matrix[a]	
	Component
	1
V37	.906
V38	.897
V39	.909
a. 1 components extracted.	

The validity analysis demonstrates strong construct validity for items V37 to V39. The KMO value of 0.748 and a significant Bartlett's test ($p < .001$) confirm the suitability of the data for factor analysis. One factor explains 81.78% of the variance, with high communalities (0.805–0.827) and very strong factor loadings (0.897–0.909), indicating that all items reliably measure a common underlying construct.

Table 4.1.2.10 Validity of V40, and V41 – Role of Innovation Leadership

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V40	3.93	.842	29
V41	3.86	.789	29

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	3.705
	df	1
	Sig.	.054

Communalities		
	Initial	Extraction
V40	1.000	.681
V41	1.000	.681

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.361	68.060	68.060	1.361	68.060	68.060
2	.639	31.940	100.000			

Component Matrix[a]	
	Component
	1
V40	.825
V41	.825
a. 1 components extracted.	

The validity analysis suggests borderline construct validity for items V40 and V41. The KMO value is at the minimum acceptable level (0.500), and Bartlett's test is not statistically significant (p = .054), which weakens the justification for factor analysis. However, one factor explains 68.06% of the variance, with acceptable communalities (0.681) and strong, equal factor loadings (0.825), indicating both items moderately align with a common underlying construct.

Table 4.1.2.11 Validity of V42, and V43 – Resource Allocation and Empowerment

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V42	3.61	.916	28
V43	3.82	.863	28

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	14.425
	df	1
	Sig.	<.001

Communalities		
	Initial	Extraction
V42	1.000	.829
V43	1.000	.829

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.657	82.864	82.864	1.657	82.864	82.864
2	.343	17.136	100.000			

Component Matrix[a]	
	Component
	1
V42	.910
V43	.910
a. 1 components extracted.	

The validity analysis shows strong construct validity for items V42 and V43. Although the KMO value is at the minimum threshold (0.500), the Bartlett's test is highly significant ($p < .001$), supporting the suitability for factor analysis. A single factor explains 82.86% of the variance,

with high communalities (0.829) and very strong factor loadings (0.910), indicating both items reliably measure a common underlying construct.

Table 4.1.2.12 Validity of V44, and V45 – Measuring success and continues improvement

Descriptive Statistics			
	Mean	Std. Deviation	Analysis N
V44	3.66	.897	29
V45	3.86	.789	29

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.500
Bartlett's Test of Sphericity	Approx. Chi-Square	20.766
	df	1
	Sig.	<.001

Communalities		
	Initial	Extraction
V44	1.000	.869
V45	1.000	.869

Communalities		
	Initial	Extraction
V44	1.000	.869
V45	1.000	.869

Total Variance Explained						
	Initial Eigenvalues			Extraction Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.737	86.853	86.853	1.737	86.853	86.853
2	.263	13.147	100.000			

Component Matrix[a]	
	Component
	1

V44	.932
V45	.932
a. 1 components extracted.	

The validity analysis shows strong construct validity for items V44 and V45. Despite the KMO being at the minimum acceptable value (0.500), Bartlett's test is highly significant ($p < .001$), confirming suitability for factor analysis. A single factor explains 86.85% of the total variance, with very high communalities (0.869) and identical, strong factor loadings (0.932), indicating both items reliably measure a shared underlying construct.

In summary, construct validity was assessed through exploratory factor analysis (EFA) for all sections of the questionnaire. Constructs measured by three or more items demonstrated strong factor structures, with KMO values generally above 0.6, significant Bartlett's tests, and high total variance explained. Items consistently loaded onto single factors with loadings above 0.7 and communalities exceeding 0.5. For constructs measured using only two items, factor analyses were performed individually. Despite the methodological limitations of two-item scales, all pairs showed strong loadings (ranging from 0.825 to 0.932), high communalities, and acceptable KMO values (≥ 0.500), with significant or near-significant Bartlett's test results. These findings collectively support the construct validity of the instrument used in this study.

4.1.3 Normality test result

Proper use of statistical tools is essential in all fields of study. Statistics are commonly misunderstood in writing. The most frequent statistical procedures are correlation, regression, and experimental design. All of them rely on the assumption that observations follow a normal distribution. The populations from which samples are taken are believed to be regularly distributed (Rani Das, 2016).

Normality assessment was carried out by utilizing exploratory statistical analysis with SPSS. The distribution of the data was assessed using two statistical tests: the Shapiro-Wilk and Kolmogorov-Smirnov tests. Before performing inferential statistical analysis, it was critical to confirm the assumption of normality, which underpins many parametric tests. In addition to statistical tests, visual examination methods like histograms and Q-Q plots were used. Skewness and kurtosis values were also investigated to have a better understanding of the data distribution's form and symmetry.

Table 4.1.3.1 Normality of V10, V11, V12, and V13 - Organizational Digital Transformation Status

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V10	.349	27	<.001	.803	27	<.001
V11	.284	27	<.001	.865	27	.002
V12	.281	27	<.001	.845	27	<.001
V13	.220	27	.002	.892	27	.009

The Shapiro-Wilk test, skewness, kurtosis, and descriptive statistics were used to determine the normality of variables V10–V13. In the Shapiro-Wilk test, all four variables deviated significantly from normality ($p < .01$). However, skewness and kurtosis readings for V11-13 were within the permissible range of ±1, indicating an almost normal distribution. In contrast, V10 had a higher degree of skewness (-1.208) and kurtosis (1.869), indicating a negatively skewed and peaked distribution. Despite this, all variables were maintained for further analysis due to their theoretical relevance, and parametric approaches were deemed appropriate given their robustness to modest deviations from normality in small samples.

Table 4.1.3.2. Normality of V14, V15 and V16- Innovation Leadership

	Tests of Normality					
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V14	.370	30	<.001	.721	30	<.001
V15	.319	30	<.001	.844	30	<.001
V16	.327	30	<.001	.838	30	<.001

Normality for variables V14 through V16 was assessed using the Shapiro-Wilk test, skewness, kurtosis, and descriptive statistics. All three variables produced statistically significant Shapiro-Wilk test results ($p < .001$), indicating non-normality. V15 and V16, however, showed skewness and kurtosis within acceptable ranges (Skewness = -0.674 and -0.891; Kurtosis = -0.443 and 0.389, respectively), suggesting that their distributions were approximately normal. In contrast, V14 exhibited high negative skewness (-1.715) and elevated kurtosis (3.962), indicating a non-normal, peaked distribution. Despite this, given the small sample size and the robustness of parametric tests, the variables were retained for further analysis, with V14's deviation noted as a potential limitation.

Table 4.1.3.3 Normality of V17, V18, and V19 - Organizational Readiness

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V17	.296	29	<.001	.866	29	.002
V18	.326	29	<.001	.833	29	<.001
V19	.348	29	<.001	.802	29	<.001

Normality for the variables V17 to V19 was assessed using the Shapiro-Wilk test, skewness, kurtosis, and descriptive statistics. The Shapiro-Wilk test indicated significant deviations from normality for all three variables ($p < .05$). However, skewness values were all below -1, and kurtosis values ranged from 0.078 to 0.944 — all within the acceptable range of ±1, indicating

approximately symmetrical and mesokurtic distributions. The similarity between mean and median values and the consistency of trimmed means further support the assumption of approximate normality. Therefore, despite the statistical test results, the distributions were considered sufficiently normal for parametric analysis.

Table 4.1.3.4 Normality of V20, V21, V22 and V23– Challenges and Opportunities

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V20	.321	29	<.001	.814	29	<.001
V21	.290	29	<.001	.854	29	<.001
V22	.252	29	<.001	.895	29	.007
V23	.379	29	<.001	.762	29	<.001

The Shapiro-Wilk test, skewness, kurtosis, and descriptive statistics were used to determine the normality of variables V20–V23. The Shapiro-Wilk test found substantial deviations from normality in all four items ($p < .05$). However, skewness readings ranged from -0.951 to -0.363 and kurtosis values from -0.964 to 0.959, all falling below the commonly recognized ±1 threshold. The means and medians were tightly aligned, and trimmed means were almost identical to untrimmed means, indicating distribution symmetry. Based on these findings, the variables were determined to be nearly normally distributed and appropriate for parametric analysis.

Table 4.1.3.5 Normality of V24, V25 and V26– Outcomes and Future Directions

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V 24	.294	29	<.001	.848	29	<.001
V 25	.215	29	.001	.858	29	.001
V 26	.243	29	<.001	.812	29	<.001

The Shapiro-Wilk test, skewness, kurtosis, and descriptive statistics were used to determine the normality of variables V24–V26. The Shapiro-Wilk test showed that all three variables varied significantly from a normal distribution ($p < .001$ for V24 and V26; $p = .001$ for V25). The skewness values for all variables were within the permissible range of ±1 (ranging from -0.471 to -0.027), while the kurtosis values for V26 were slightly lower (-1.031), but still within the parameters normally deemed acceptable in social science research. Descriptive statistics confirmed the data's symmetry by showing that the means and medians were almost identical. Based on this, the distributions were declared roughly normal and suitable for parametric analysis.

Table 4.1.3.6 Normality of V27 and V28– Support for Innovation

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V27	.339	29	<.001	.809	29	<.001
V28	.284	29	<.001	.849	29	<.001

Normality for variables V27 and V28 was assessed using the Shapiro-Wilk test, as well as skewness, kurtosis, and descriptive statistics. The Shapiro-Wilk test indicated statistically significant deviations from normality for both variables (V27: $W = 0.809$, $p < .001$; V28: $W = 0.849$, $p < .001$). However, the skewness and kurtosis values for both variables (Skewness = -0.782 and -0.612; Kurtosis = 0.484 and -0.159, respectively) fell within the acceptable range of ±1, suggesting that the data were not heavily skewed or peaked. The similarity between mean and median values and the consistency of trimmed means further support the assumption of approximate normality. Thus, the variables were deemed suitable for use in parametric analyses.

Table 4.1.3.7 Normality of V29 and V30– Collaboration and Communication

Tests of Normality

Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Statistic	df	Sig.	Statistic	df	Sig.
V29	.263	29	<.001	.807	29
V30	.240	29	<.001	.859	29

The Shapiro-Wilk test was used to analyze normality in V29 and V30, as well as skewness, kurtosis, and descriptive statistics. Both variables had significant Shapiro-Wilk test results (V29: W = 0.807, p <.001; V30: W = 0.859, p =.001), indicating non-normality. However, the skewness and kurtosis values were within acceptable ranges (skewness: -0.097 and -0.223; kurtosis: -0.850 and -0.521), indicating that the distributions were roughly normal. The near-normality assumption is supported by the proximity of the mean and median values, as well as the absence of outliers. Thus, the variables were deemed appropriate for use in parametric analysis.

Table 4.1.3.8 Normality of V31, V32, V33 and V34– Risk-Taking and Experimentation

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V31	.238	28	<.001	.875	28	.003
V32	.318	28	<.001	.826	28	<.001
V33	.340	28	<.001	.805	28	<.001
V34	.223	28	.001	.881	28	.004

Normality was evaluated for variables V31 through V34 using the Shapiro-Wilk test, skewness, kurtosis, and descriptive statistics. Although the Shapiro-Wilk test indicated significant deviations from normality for all four variables (p-values ranging from < .001 to .004), the skewness and kurtosis values fell within the acceptable range of ±1. Specifically, skewness ranged from -0.789 to -0.058, and kurtosis ranged from -0.543 to 0.968. Additionally, the means and medians were closely aligned, and no significant outliers were observed. Based on these

findings, the data for V31 to V34 were considered approximately normal and suitable for parametric analysis.

Table 4.1.3.9 Normality of 35 and 36 – Cultural Impact

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V35	.257	28	<.001	.850	28	<.001
V36	.315	28	<.001	.821	28	<.001

Normality for V35 and V36 was assessed using the Shapiro-Wilk test, skewness, kurtosis, and descriptive indicators. The Shapiro-Wilk test showed significant results for both variables (V35: $W = 0.850$, $p < .001$; V36: $W = 0.821$, $p < .001$), indicating deviations from normality. Skewness and kurtosis for V36 fell within acceptable limits (Skewness = -0.527, Kurtosis = -0.802), suggesting a roughly normal distribution. However, V35 showed a moderate negative skew (-0.990) and slightly elevated kurtosis (1.313), indicating a somewhat peaked and left-skewed distribution. Despite these findings, the overall distribution shapes were deemed sufficiently normal for parametric analyses, supported by the proximity of means and medians and the absence of outliers.

Table 4.1.3.10 Normality of V37,38, and V39 – Outcomes of Innovation Leadership

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V37	.236	29	<.001	.880	29	.003
V38	.301	29	<.001	.790	29	<.001
V39	.251	29	<.001	.801	29	<.001

Normality for variables V37, V38, and V39 was determined using the Shapiro-Wilk test, skewness, kurtosis, and descriptive statistics. The Shapiro-Wilk test showed that all three

variables varied considerably from a normal distribution ($p < 0.05$). The skewness and kurtosis values for all variables were within the permissible range of ±1 (-0.185 to 0.263, -0.894 to -0.443), indicating generally normal distribution forms. Furthermore, the similarity of mean and median values, as well as the absence of outliers, lends support to the near-normality assumption. Regardless of the substantial Shapiro-Wilk test results, these variables were regarded as adequately normal for parametric analyses.

Table 4.1.3.11 Normality of V40 and V41 – Role of Innovation Leadership

Tests of Normality						
	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V40	.291	29	<.001	.842	29	<.001
V41	.328	29	<.001	.821	29	<.001
a. Lilliefors Significance Correction						

Normality was assessed for V40 and V41 using the Shapiro-Wilk test, kurtosis, and descriptive statistics. The Shapiro-Wilk results indicated statistically significant deviations from normality for both V40 ($W = 0.842$, $p < .001$) and V41 ($W = 0.821$, $p < .001$). However, the skewness values (-0.634 and -0.679) and kurtosis values (0.230 and 0.661) for both variables fell within the acceptable range of ±1, suggesting only mild deviations. Additionally, the proximity of the means and medians and the consistency of trimmed means support the assumption of approximate normality. Therefore, despite the statistical significance, both variables were considered sufficiently normal for use in parametric analyses.

Table 4.1.3.12 Normality of V42 and V43 – Resource Allocation and Empowerment

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V42	.273	28	<.001	.868	28	.002
V43	.261	28	<.001	.868	28	.002
a. Lilliefors Significance Correction						

Normality was evaluated for the variables V42 and V43 using skewness, kurtosis, and descriptive statistics. For V42, the skewness was -0.341 and kurtosis -0.545, while for V43, the skewness was -0.377 and kurtosis -0.295. All values fall within the acceptable range of ±1, indicating that the distributions are approximately normal. Additionally, the mean and median values were closely aligned, and the trimmed means did not differ substantially, further supporting the assumption of normality. These variables were therefore considered suitable for parametric analysis.

Table 4.1.3.13 Normality of V44 and V45 – Measuring success and continues improvement

Tests of Normality						
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
V44	.305	29	<.001	.847	29	<.001
V45	.328	29	<.001	.821	29	<.001

Normality was assessed for the variables V44 and V45 using the Shapiro-Wilk test, skewness, kurtosis, and visual inspection of histograms and Q-Q plots. The Shapiro-Wilk test indicated that both V44 ($W = 0.847$, $p < .001$) and V45 ($W = 0.821$, $p < .001$) significantly deviated from normality. However, skewness and kurtosis values for both variables (Skewness = -0.503 and -0.679; Kurtosis = -0.319 and 0.661, respectively) were within acceptable ranges (±1), suggesting only mild deviations. While the data do not meet strict normality, the distribution is considered sufficiently normal for parametric analyses in the context of this research.

To assess the data's suitability for parametric analysis, normality was evaluated using the Shapiro-Wilk test and assessments of skewness, kurtosis, and descriptive statistics for each variable. While the Shapiro-Wilk test results indicated statistically significant deviations from normality for most variables ($p < .05$), this is common in small to moderate samples.

Importantly, most variables' skewness and kurtosis values remained within the acceptable range of ±1, suggesting that the distributions were approximately symmetrical and mesokurtic. In a few instances (e.g., V10 and V14), higher skewness and kurtosis values were observed, indicating deviations from normality; however, these were acknowledged and retained due to their theoretical significance. Visual indicators such as the closeness of means and medians, consistent trimmed means, and reasonable ranges further supported the assumption of approximate normality. Therefore, despite the results of formal tests, the data were considered sufficiently normal to proceed with parametric analyses such as correlation and regression.

4.2 Demographic information

4.2.1 Gender distribution

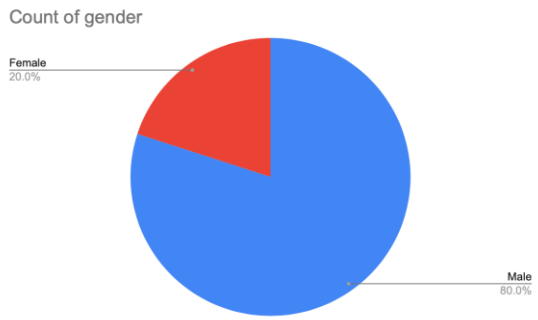

Figure 4.2.1. Gender of survey participants

An analysis of the respondents' gender distribution revealed that 20.0% were female and 80.0% were male.

4.2.2 Age distribution

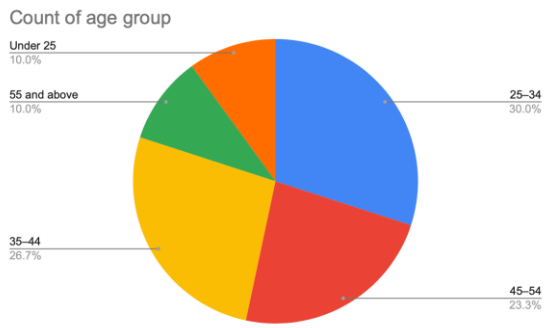

Figure 4.2.2. Age of survey participants

Almost 30% of total responses were from 25-34 year olds, followed by 26.7% of 35-44 year olds and 23.3% of 45-54 year olds. The remaining group consisted of 10.0% of people aged 55 and over and 10.0% of people under the age of 25. As a result, the majority of respondents were between the ages of 25 and 34, including Generation Y and Gen Z, both of whom have extensive experience in management and leadership.

4.2.3 Education qualification

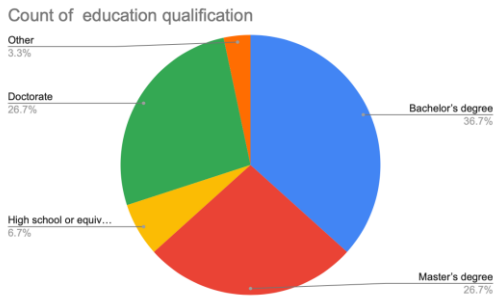

Figure 4.2.3: Educational qualification of survey participants

26.7% of participants have a master's degree, 36.7% have a bachelor's degree, while 26.7% of all respondents have a PhD, 6.7% have a high school diploma, and 3.3% have another degree. As a result, the majority of respondents have a bachelor's degree or higher, and their feedback has improved the data quality.

4.2.4 Work Experience in Dubai organization

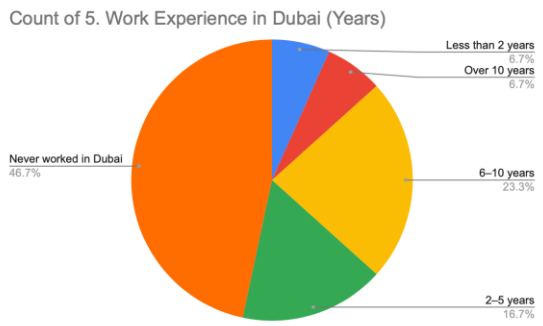

Figure 4.2.4: Experience in Dubai organization of survey participants

The distribution of respondents based on their job experience in Dubai shows that nearly half (46.7%) had never worked there. Among individuals with experience, the majority had 6-10 years of work experience (23.3%), followed by 2-5 years (16.7%). Respondents with less than two years of experience and those with more than ten years of experience each make up 6.7% of the total. This suggests that, while a sizable proportion of participants had no job experience in Dubai, those who have are primarily mid-level professionals with up to a decade of experience.

4.2.5 Role in the organization

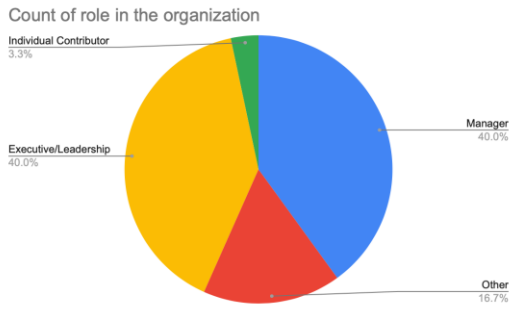

Figure 4.2.5: Role in the organization

Purposive sample criteria were used to choose survey respondents with the objective of gathering perspectives from individuals in crucial organizational roles. The breakdown shows that 40.0% of respondents were managers, with another 40.0% holding executive or leadership positions. Those classified as "Other" accounted for 16.7%, while only 3.3% were individual contributions.

This sample technique ensured that the perspectives acquired were predominantly those of managers and leaders, which aligned with the study's goal of exploring insights from individuals in decision-making and strategic roles.

4.2.6 Leadership experience

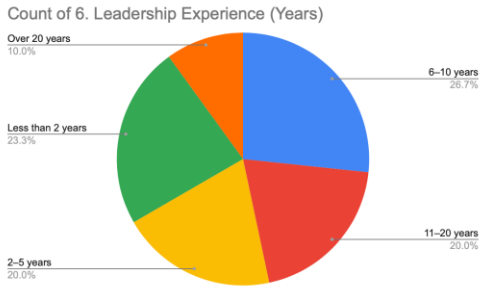

Figure 4.2.6: leadership experience

The respondents' leadership experience ranged, with the majority having moderate to considerable experience. Specifically, 26.7% had 6-10 years of leadership experience, whereas 23.3% had less than two years. Both the 2-5 year and 11-20 year experience groups accounted for 20.0% of respondents, with 10.0% reporting more than 20 years of leadership experience. This distribution represents a wide range of leadership tenures, with a substantial representation from mid-career professionals, which supports the study's goal of including opinions from experienced leaders via purposive sampling.

4.2.7 Number of Employees in Organization

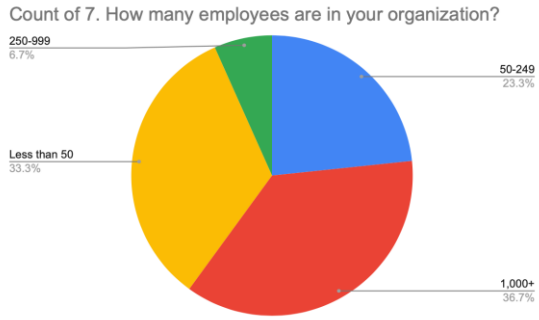

Figure 4.2.7: Number of Employees in Organization

The size of the respondents' organizations varied greatly. The majority (36.7%) reported working for large firms with more than 1,000 employees, while 33.3% worked for smaller organizations with fewer than 50 people. Organizations with 50-249 employees accounted for 23.3% of the sample, while medium-sized organizations with 250-999 employees comprised just 6.7% of the respondents. This variation in organizational size provides a comprehensive view of leadership and digital transformation techniques across various business scales.

4.2.8 Organizational Industry

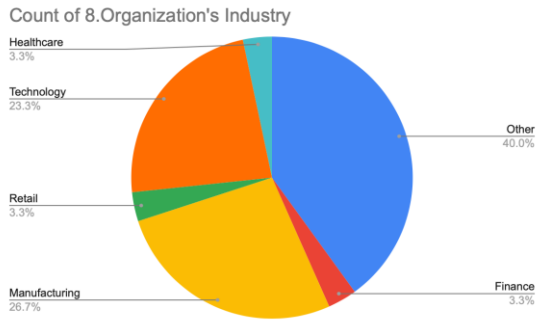

Figure 4.2.8: Organizational Industry

The respondents came from a wide range of industries, with the majority (40.0%) falling under the category "Other," reflecting a diversified mix of sectors not explicitly mentioned in the poll. Manufacturing was the most often mentioned industry, accounting for 26.7% of respondents, followed by technology at 23.3%. Healthcare, finance, and retail each accounted for 3.3% of respondents. This industrial distribution reflects a broad organizational context, with a focus on the manufacturing and technology sectors, which supports the study's goal of capturing cross-sectoral insights about leadership and digital transformation.

4.3 Correlation analysis result

Correlation, in its broadest sense, is a measure of the relationship between variables. In correlated data, a change in the magnitude of one variable corresponds to a change in the magnitude of another variable, either in the same direction (positive correlation) or opposite direction (negative correlation). A Spearman rank correlation can be used to measure a monotonic link in data that is not regularly distributed, ordinal data, or has meaningful outliers. Both correlation coefficients are scaled so that they range from -1 to +1, where zero implies that there is no linear or monotonic relationship (Schober & Schwarte, 2018).

Table 4.3: Pearson correlation

Correlations			
		DT_total	IL_total
DT_total	Pearson Correlation	1	.840**
	Sig. (2-tailed)		<.001
	N	30	30
IL_total	Pearson Correlation	.840**	1
	Sig. (2-tailed)	<.001	
	N	30	30
**. Correlation is significant at the 0.01 level (2-tailed).			

A Pearson correlation analysis was conducted to examine the relationship between innovation leadership and digital transformation. Results showed a strong, positive, and statistically significant correlation between the two variables, $r(30) = .840$, $p < .001$. This suggests that higher levels of innovation leadership are correlated with greater digital transformation within the organization.

4.4 Regression analysis

Regression analysis is a statistical tool for analyzing relationships between variables (Sykes, 1993).

The process of estimating the linear equation's coefficients using one or more independent variables that best predict the value of the dependent variable, which should be quantitative, is known as linear regression (Introduction to Multivariate Regression Analysis, 2010).

Table 4.4: Model summary

Variables Entered/Removed[a]			
Model	Variables Entered	Variables Removed	Method
1	IL_total[b]	.	Enter
a. Dependent Variable: DT_total			
b. All requested variables entered.			

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.840[a]	.706	.696	.38905
a. Predictors: (Constant), IL_total				

4.5 ANOVA

Analysis of variance (ANOVA) is the most efficient parametric method available for the analysis of data from experiments. It was devised originally to test the differences between several different groups of treatments, thus circumventing the problem of making multiple comparisons between the group means using t-tests. ANOVA is a method of great complexity and subtlety with many different variations, each of which applies in a particular experimental context (Armstrong et al., 2002).

Table 4.5: ANOVA

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	10.193	1	10.193	67.345	<.001[b]
	Residual	4.238	28	.151		
	Total	14.432	29			
a. Dependent Variable: DT_total						
b. Predictors: (Constant), IL_total						

Table 4.6 Coefficient

Coefficients[a]								
		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
Model		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1	(Constant)	.382	.406		.940	.355	-.450	1.213
	IL_total	.870	.106	.840	8.206	<.001	.653	1.087
a. Dependent Variable: DT_total								

A simple linear regression analysis was conducted to examine whether innovation leadership predicts digital transformation. The results showed that the model was statistically significant, $F(1, 28) = 67.345$, $p < .001$, and accounted for 70.6% of the variance in digital transformation ($R^2 = .706$).

Innovation leadership was found to be a significant predictor of digital transformation ($B = 0.870$, $p < .001$), indicating that for every one-unit increase in innovation leadership, digital transformation increases by approximately 0.87 units. This finding supports the hypothesis that strong innovation leadership is positively associated with higher levels of digital transformation.

4.7 Three open-ended questions

First Question: What do you think has been the biggest factor contributing to the success (or challenges) of digital transformation in your organization?

Table 4.7.1 Distribution of Responses to Survey Question 1

Participant	***Response***	***Initial codes***	***Theme***
P01	Communication in digital forms	digital communication	Digital Communication Benefits
P02	Blank – no response		
P03	Support from leadership	leadership involvement-implementation support	Supportive Leadership

P04	The biggest factor contributing to the success (or challenges) of digital transformation in our organization is effective leadership and employee adaptability. Strong leadership drives strategic vision, while employee willingness to embrace new technologies ensures smooth implementation. Challenges often arise from resistance to change, lack of technical skills, or insufficient infrastructure.	effective leadership-employee adaptability-strategic direction-tech acceptance-resistance to change-skill gap-infrastructure limitations	Leadership and Strategy Employee Engagement Resource and Infrastructure Challenges
P05	Blank – no response		

P06	Digital transformation is a significant change for all organizations, and managing this change is one of the greatest challenges companies face. At our organization, we embrace Kotter's Organizational Change Theory, emphasizing employee training and effective communication of the transformation strategy as key factors for success.	Digital transformation is a significant change Kotter's Organizational Change employee training transformation strategy effective communication	Strategic change management, Kotter's theory, training, strategy communication

P07	Success Factors: Strong Leadership Employee Adoption Modern Technology Agility & Innovation Customer Focus Challenges: Resistance to Change Legacy Systems Skill Gaps Budget Limits Security & Compliance	Strong Leadership, Employee Adoption, Modern Technology, Agility & Innovation, Customer Focus, Resistance to Change, Legacy Systems, Skill Gaps, Budget Limits	Strong Leadership, Employee Adoption, Modern Technology, Agility & Innovation, Customer Focus, Resistance to Change, Legacy Systems, Skill Gaps, Budget Limits

P08	Some barriers for older employees to adapt new digital technology were seen; however, with proper training, everyone in the organization eventually accepted and benefited from this transformation.	Older employees struggled Adaptation difficulties Proper training Eventual acceptance Organization benefited	age-related resistance, technology adoption gap, training support, post-training acceptance, overall success
P09	cost saving and automation	Reduced manual work Cost savings Faster completion of tasks Automation	cost efficiency reduced workload time efficiency process automation
P10	Passion	leadership passion, motivational leadership, vision alignment, employee inspiration	leadership passion, motivational leadership, vision alignment, employee inspiration
P11	Blank – no response		
P12	Blank – no response		

P13	Having a strong team that specialize in digital transformation.	Specialized team Expertise guiding the process Smooth implementation Organizational support through specialists	capability building digital transformation team internal digital expertise team-led transformation
P14	Blank – no response		
P15	Blank – no response		
P16	Blank – no response		
P17	Blank – no response		
P18	Investment in technology, leadership vision, innovation mindset, digital skills	Investment in Technology, Leadership Vision, Innovation Mindset, Digital Skills	Investment in Technology, Leadership Vision, Innovation Mindset, Digital Skills
P19	Blank – no response		
P20	Contributing to success comes as a Shared Responsibility and One should be willing to share knowledge and learn new things	Shared responsibility Willingness to share knowledge Willingness to learn Cultural mindset of openness	learning culture continuous learning knowledge sharing collaborative contribution

P21	Readiness for change	change readiness	Readiness for Change
P22	The most significant factor influencing the success of digital transformation in my engagements is the clarity and alignment of client objectives with actionable AI strategies. Well-defined, measurable, and directly informing AI solutions lead to successful projects. Conversely, ambiguity or lack of alignment causes challenges in scope, implementation, and perceived value.	Clarity of client objectives Alignment with AI strategies Actionable, goals Challenges from ambiguity Issues in scope and value perception	strategic clarity, AI-business alignment, measurable objectives, misalignment, scope creep
P23	Blank – no response		
P24	AI Products for Internal use for managing and trainings	AI for internal use Workflow management Personalized employee training Automation of repetitive tasks Tailored learning experiences	adaptive learning internal AI application AI-assisted task management AI-product process automation training

P25	Strong leadership commitment and employee adaptability have been the biggest factors contributing to the success of digital transformation in our organization.	Leadership commitment Employee adaptability Success in transformation	Leadership Commitment and Workforce Agility
P26	One of the foremost challenges in digital transformation journey is the resistance to change within organizational culture. Employees and leadership must be aligned with the digital vision, fostering a mindset that embraces innovation and continuous learning.	resistance to change embedded within the organizational culture, alignment between leadership and employees, innovation, adaptability, and continuous learning.	Cultural Readiness for Digital Transformation
P27	Budget and leadership point of view and future strategy of my company	Budget Leadership Future strategy	Budget Leadership Future strategy
P28	Adoption of digital transformation quickly	quick transformation, employee agility	Rapid Adoption and Organizational Agility

P29	Availability of funds	financial readiness	Financial Resources and Budget
P30	Artificial intelligence	automation	Adoption of Artificial Intelligence

Twenty out of thirty participants responded to Question One. The qualitative insights gathered through open-ended responses reveal a complex but coherent picture of what drives and challenges digital transformation within organizations. Strong leadership commitment and employee adaptability are two interdependent forces at the core of successful transformation efforts. Leadership was widely recognized for setting the digital vision, fostering motivation, and guiding strategy, while employees played a crucial role in embracing change and ensuring implementation on the ground.

Several enabling factors emerged across participant responses, including investment in technology, specialized digital teams, a proactive innovation mindset, and the development of digital skills through targeted training. Organizations that moved quickly and showed organizational agility, particularly during times of disruption, were more likely to achieve visible progress.

Cultural dimensions also played a vital role. The importance of a collaborative culture, where knowledge sharing and continuous learning are normalized, was consistently highlighted. Participants noted that digital transformation is not an individual or leadership-driven effort alone, but a shared responsibility across the organization.

Modern tools such as artificial intelligence were noted not just for their potential in customer-facing services, but also for internal use including workflow management and personalized employee training. However, the success of these tools was closely tied to strategic alignment: transformation projects were most effective when clear, measurable business objectives were aligned with AI implementation strategies.

On the other hand, several barriers were identified, including resistance to change, legacy systems, budget constraints, and gaps in digital skills, particularly among older employees. However, these barriers were often overcome with leadership support and proper training, demonstrating that readiness and responsiveness can significantly mitigate common challenges.

In summary, the qualitative data paints a picture of digital transformation as a strategic, cultural, and technological journey. Its success depends on a blend of visionary leadership, employee readiness, targeted investment, and a deeply embedded culture of learning and collaboration.

2-In your opinion, what is the role of leadership in fostering innovation within your organization? How can businesses imply digital transformation by using innovation leadership?

Table 4.7.2 Distribution of Responses to Survey Question 2

Participant	***Response***	***Initial codes***	***Theme***
P01	marketing using digital tools	Use of digital tools Digital transformation in marketing	marketing digitalization digital tool adoption
P02	Blank – no response		

P03	Leadership encourages everyone across the board to innovate and rewards the best innovations	Leadership encourages innovation Inclusive innovation culture Rewarding innovation Employee motivation to innovate	innovation encouragement organization-wide support innovation recognition motivational leadership
P04	Leadership fosters innovation by setting a vision, encouraging creativity, and supporting risk-taking. Businesses can drive digital transformation through innovation by adopting new technologies, promoting a digital mindset, and enhancing customer experiences.	Leadership sets a vision Encouraging creativity Supporting risk-taking Adoption of new technologies Promoting a digital mindset Enhancing customer experience	visionary leadership creativity support innovation risk tolerance technology adoption digital culture customer-centric innovation
P05	Blank – no response		

P06	At Circle Bit Group, leadership plays a vital role in fostering innovation by embracing AI as a transformative technology, encouraging a culture of continuous learning, and driving digital adoption. Innovation leadership ensures that AI and digital transformation are not just an enhancement but a core driver of business transformation—optimizing workflows, improving decision-making, and enabling intelligent automation.	Leadership embraces AI Encouraging continuous learning Driving digital adoption AI as a core business driver Optimizing workflows Improving decision-making Enabling intelligent automation	AI-Focused Innovation Leadership for Business Transformation
P07	Blank – no response		
P08	Blank – no response		
P09	leadership should set a good example and lead the innovation. Implications should be done by internal specialists.	leadership sets example Leadership leads innovation Internal specialists implement Practical implications	role modeling innovation leadership internal expertise implementation capability

P10	Innovation leadership is a key Element	Importance of innovation leadership Central role of leadership	essential leadership element leadership centrality
P11	Blank – no response		
P12	Blank – no response		
P13	Role of leadership is to promote the benefits and to help with the hardships involved in digital transformation.	Leadership promotes benefits Leadership supports through challenges Managing change and difficulties Encouraging positive outlook	benefit communication hardship support change management motivational leadership
P14	Blank – no response		
P15	Blank – no response		
P16	Blank – no response		
P17	Blank – no response		
P18	Role of leadership is pivotal; innovation leadership imply digital transformation by strategy culture of experimentation	Pivotal role of leadership Innovation leadership Culture of experimentation Strategy-driven digital transformation	Innovation Leadership through a Strategic Culture of Experimentation
P19	Blank – no response		

P20	A Leader should never become a liability to the Organization	Leadership accountability Potential negative leadership impact Leader as an organizational liability Importance of leadership competence	accountable leadership leadership risk leadership liability competent leadership
P21	By acting as a role model, fostering digitalization, change communication, clearance of vision for all	Acting as a role model Fostering digitalization Communication of change Clear vision for everyone	Role Modeling and Visionary Communication in Digital Leadership

P22	Leadership plays a crucial role in fostering innovation by cultivating a culture that encourages experimentation, risk-taking (within defined boundaries), and the continuous exploration of new technologies and methodologies. This includes providing the resources, autonomy, and psychological safety necessary for individuals and teams to propose and develop innovative solutions. Businesses can strategically implement digital transformation through innovation leadership by: * Setting a clear vision for digital advancement: Leaders articulate the strategic importance of digital transformation and inspire the organization to embrace change. * Championing experimentation and	Crucial role of leadership Culture of experimentation and risk-taking Providing resources, autonomy, psychological safety Clear digital vision Championing experimentation Cross-functional collaboration Digital skills development Innovation and digital metrics	Strategic Innovation Leadership and a Culture of Experimentation for Digital Transformation

	pilot projects: Encouraging and supporting the testing of new digital technologies and approaches, even if some fail. * Breaking down silos and fostering collaboration: Facilitating cross-functional teams to leverage diverse perspectives in identifying and implementing digital solutions. * Investing in digital literacy and skills development: Equipping the workforce with the necessary knowledge and abilities to contribute to and adopt digital innovations. * Establishing metrics for innovation and digital transformation: Tracking progress and demonstrating the value of these initiatives to stakeholders.		

P23	Blank – no response		
P24	Major	Significant role of leadership Critical factor High-impact factor	Significant Importance of Leadership
P25	Leadership fosters innovation by creating a culture of adaptability and vision, enabling digital transformation through strategic guidance and empowerment.	Leadership fosters innovation Culture of adaptability Visionary leadership Strategic guidance Empowerment of employees	Visionary and Empowering Leadership for Adaptive Innovation
P26	Effective leadership is crucial for managing the minutiae of digital transformation, integrating technology into organizational processes to facilitate learning, collaboration, and agility, enabling companies to adapt to market shifts, reduce uncertainty and enhance decision-making.	Effective leadership managing detailed changes Technology integration into processes Facilitating learning, collaboration, agility Adapting to market shifts Reducing uncertainty Enhanced decision-making	Leadership-Driven Technological Integration for Organizational Agility

P27	Leadership has a big role, businesses can imply digital transformation easily by using innovation Leadership	Big role of leadership Digital transformation via leadership Innovation leadership as enabler Ease of digital transformation	Innovation Leadership as a Facilitator of Digital Transformation
P28	Front lead	Leaders actively taking initiative Visible leadership presence Direct involvement of leaders Leading from the front	Proactive and Visible Leadership
P29	The tune at the top has been supportive of digital transformation, especially in the way our audits are now conducted using TeamMate.	Supportive leadership Digital transformation in audits Specific tool implementation (TeamMate) Leadership-driven change	Top-Level Leadership Support for Digital Auditing
P30	Blank – no response		

The qualitative data reveal that leadership plays a central and multifaceted role in driving digital transformation through innovation. Participants emphasized that leaders are not only expected to set a clear digital vision but also to model the behaviors they wish to see, such as adaptability, risk-taking, and openness to experimentation. Effective leadership fosters a supportive

environment marked by psychological safety, collaboration, and digital literacy, empowering employees to participate in innovation processes.

A recurring theme was the importance of innovation leadership, which bridges vision with execution by promoting a culture of experimentation, supporting pilot projects, and encouraging continuous learning. The responses also highlighted the role of leadership in clear communication during change, breaking down organizational silos, and creating measurable pathways for transformation success. Tools such as AI and digital marketing platforms were seen as essential, but their effectiveness hinged on strategic leadership alignment and internal capability building.

Moreover, responses pointed to the collaborative nature of transformation, where leadership and internal specialists share responsibility. Leadership that is visible, proactive, and supportive is perceived not just as a driver of transformation but as a catalyst for long-term organizational agility, innovation, and growth.

In summary, digital transformation is not merely a technological shift but a strategic leadership endeavor, enabled by culture, clarity, and collective participation, hallmarks of effective innovation leadership.

3-In your opinion, to what extent has leadership directly influenced the success or failure of digital transformation initiatives in your organization?

Table 4.7.3 Distribution of Responses to Survey Question 3

Participant	***Response***	***Initial codes***	***Theme***
P01	to a great extent	Strong Leadership Influence	Role of Leadership in Digital Transformation

P02	Blank – no response		
P03	To a great extent	Strong Leadership Influence	Role of Leadership in Digital Transformation
P04	Leadership plays a crucial role in the success or failure of digital transformation. Strong leadership ensures clear vision, strategic execution, and employee engagement, leading to success. Weak leadership, lack of direction, or resistance to change can result in failure.	Crucial Role of Leadership Clear Vision and Strategic Execution Employee Engagement Through Leadership Leadership Weakness Causes Failure Resistance to Change as Barrier	Role of Leadership in Digital Transformation Strategic Direction and Planning Leadership and Organizational Culture Barriers Due to Leadership Gaps Change Management Challenges
P05	Blank – no response		

P06	Leadership has been a defining factor in the success of digital transformation initiatives at Circle Bit Group. By embracing AI and investing in advanced digital platforms, our leadership has ensured that digital transformation is not just a technical upgrade but a strategic shift that enhances efficiency, automation, and data-driven decision-making.	Leadership as Key Success Factor Strategic Role of Leadership Adoption of Advanced Technologies (AI, Platforms) Digital Transformation as Strategic Shift Efficiency and Automation through Leadership Data-Driven Decision-Making Enabled by Leadership	Data-Driven Culture and Leadership Support Role of Leadership in Digital Transformation Leadership and Strategic Vision Technology Adoption and Innovation Digital Transformation as Business Strategy Operational Efficiency Through Digital Tools

P07	Role of Leadership in Innovation: Set Vision & Strategy – Define clear innovation goals. Encourage a Culture of Experimentation – Promote risk-taking and learning. Invest in Technology & Talent – Provide resources for innovation. Enable Collaboration – Foster cross-functional teamwork. Lead by Example – Embrace and advocate for change. Using Innovation for Digital Transformation: Adopt Emerging Technologies – AI, automation, and cloud computing. Enhance Customer	Culture of Experimentation Investment in Tech & Talent Collaboration Enablement Leading by Example Adoption of Emerging Technologies Customer-Centric Innovation Process Optimization via Tech Agile Team Development Leveraging External Ecosystems Vision and strategy setting	Define clear innovation goals Promote risk-taking and learning Provide resources for innovation Foster cross-functional teamwork Embrace and advocate for change AI, automation, and cloud computing Personalization and digital services Use data and AI for efficiency Foster adaptability and quick decision-making Partner with startups and tech leaders

	Experience – Personalization and digital services. Optimize Processes – Use data and AI for efficiency. Develop Agile Teams – Foster adaptability and quick decision-making. Leverage Ecosystems – Partner with startups and tech leaders.		

P08	Most of the time, employees are reluctant to change and transformation as they are used to their current situation. Role of leadership is crucial to push the organization accept the change and see strategic impacts for the future of the organization.	Employee Resistance to Change Leadership Driving Change	Change Management Challenges Role of Leadership in Transformation
P09	leadership and willpower is key	Importance of Leadership Willpower as a Driving Force Leadership Commitment	Role of Leadership in Transformation Leadership Traits and Personal Drive Leadership and Organizational Change Readiness
P10	100%	Full Influence of Leadership Leadership as Critical Success Factor	Role of Leadership in Digital Transformation Leadership Impact and Accountability
P11	Blank – no response		

P12	Blank – no response		
P13	Leadership is critical in influencing the success of digital transformation as it drives the rest of the company to move along with the leaders.	Leadership as Critical Influence Driving Organizational Alignment Leadership Mobilizes the Company	Role of Leadership in Digital T Leadership and Organizational Culture transformation Leadership as a Change Enabler
P14	Blank – no response		
P15	Blank – no response		
P16	Blank – no response		
P17	Blank – no response		
P18	Leadership has influence on the success or failure of digital transformation initiatives leadership determines digital transformation efforts are sustained or translated into real business value	leadership Influence on Outcomes Sustainability of Transformation Efforts Leadership Drives Business Value Leadership as a Success/Failure Determinant	Role of Leadership in Digital Transformation Long-Term Impact and Continuity Strategic Value Creation Through Leadership Leadership Impact and Accountability

P19	Blank – no response		
P20	Leadership should motivate the Talents should accept both success and failures equally, should not be biased in sharing the opinion and thought leadership	Motivating and Empowering Talent Balanced Attitude Toward Outcomes Fairness and Unbiased Communication Exercising Thought Leadership	Leadership and Talent Development Leadership and Organizational Culture Ethical Leadership and Trust Leadership Vision and Influence
P21	90%	High Leadership Influence Quantified Success Attribution	Role of Leadership in Digital Transformation Leadership Impact and Accountability

P22	Leadership significantly impacts the success of digital transformation initiatives. Their vision, resource commitment, communication strategies, and organizational culture influence adoption, effectiveness, and sustainability. Strong leadership provides direction, buy-in, and support, while weak or misaligned leadership creates roadblocks, resistance, and failure.	Leadership Vision Resource Commitment by Leadership Leadership Communication Strategies Cultural Influence of Leadership Leadership Drives Adoption and Effectiveness Strong Leadership Enables Support Weak Leadership Causes Resistance	Leadership and Strategic Vision Leadership Support and Investment Leadership and Organizational Communication Leadership and Organizational Culture Adoption and Implementation Success Factors Enablers of Transformation
P23	Blank – no response		
P24	They are key people	Leadership as Key Stakeholders	Role of Leadership in Digital Transformation

P25	Leadership has significantly influenced the success of digital transformation initiatives by driving vision, aligning teams, and ensuring consistent execution.	Leadership Drives Vision Team Alignment Through Leadership Leadership Ensures Execution Significant Leadership Influence	Leadership and Strategic Vision Leadership and Organizational Culture Operational Leadership and Implementation Role of Leadership in Digital Transformation Barriers to Transformation
P26	To a great extent, we can say, it has been successful.	High but Not Absolute Success Level Perceived Success of Digital Transformation	Outcomes of Digital Transformation Effectiveness of Leadership in Transformation
P27	Leadership has a big role because it is involved in shaping my company's future strategy and vision, guiding employees, and allocating the budget so leadership plays the most important role	Leadership Shapes Strategy and Vision Leadership Guides Employees Leadership Allocates Resources Leadership as the Central Driving Force	Leadership and Strategic Vision Leadership and Organizational Culture Leadership Support and Investment Role of Leadership in Digital Transformation

P28	Partially	Partial Leadership Influence	Role of Leadership in Digital Transformation
P29	Senior management has always stressed the need for our audits to be carried out using automated systems and funds have consistently been allocation for these.	Consistent Resource Allocation Leadership Advocacy for Automation	Leadership Support and Investment Role of Leadership in Digital Transformation
P30	Blank – no response		

The qualitative analysis of open-ended responses reveals a strong and consistent consensus among participants: leadership plays a central, defining role in the success or failure of digital transformation initiatives. Across various responses, leadership was repeatedly identified as the primary driver of vision, strategic alignment, resource allocation, and organizational culture. Participants emphasized that strong leadership ensures clear direction, fosters employee engagement, promotes innovation, and sustains transformation efforts over time. Leadership's ability to embrace emerging technologies, align teams, and build a data-driven culture was seen as vital for realizing the full potential of digital initiatives.

Conversely, several responses highlighted that weak, misaligned, or inconsistent leadership can hinder transformation, creating resistance to change, a lack of execution, and a failure to translate digital efforts into business value.

Several major patterns emerged:

Leadership is considered not only influential but also necessary, with some participants attributing 90-100% of transformation success to leadership.

Effective leaders are regarded as motivators, strategists, communicators, and ethical role models who guide organizations through difficult situations.

Leadership is also expected to accept both success and failure in a balanced manner, develop cross-functional collaboration, and engage in thought leadership that inspires long-term cultural change. In summary, the findings confirm that the success of digital transformation is deeply intertwined with leadership quality and engagement. Organizations aiming for sustainable digital progress must invest in leadership development, clarity of vision, and inclusive decision-making to drive transformation forward.

Not all participants answered every open-ended question, so missing responses were excluded from the qualitative analysis for each respective item.

4.8 Triangulation

Triangulation is defined as "the combination of methodologies used to study the same phenomenon." The triangulation metaphor comes from navigation and military strategy, when numerous reference points are used to determine an object's exact position. Given basic geometric concepts, many viewpoints allow for increased precision. Organizational researchers might improve their judgment by gathering many types of data related to a single issue (Todd & Jick, 1979).

This research integrates two primary sources of data:

Quantitative Data: Collected through an online survey administered to managers and executives from 30 organizations. This survey measured digital transformation maturity and innovation leadership levels using validated Likert-scale instruments.

Qualitative Data: Obtained from open-ended questions in a survey conducted with senior management and leaders from the same organizations, aimed at exploring deeper insights into their experiences, challenges, and outcomes related to innovation leadership and digital transformation.

Quantitative Analysis:

Utilized SPSS statistical software.

Conducted descriptive statistics to summarize demographic data.

Performed ANOVA and regression analysis to test hypotheses regarding the relationship between innovation leadership and digital transformation outcomes.

Qualitative Analysis:

Responses to open-ended questions were compiled in Microsoft Excel.

Data were reviewed manually and coded thematically.

Patterns and recurring themes were identified through systematic coding.

Table 4.8.1: Triangulation of Findings for Research Question 1

Research question	**quantitative result**	**qualitative insight**	**Triangulation Outcome**

Has Innovation leadership an important role in digital transformation?	Linear regression showed IL_total significantly predicted DT_total ($F = 67.345$, $p < .001$, $R^2 = 0.706$).	Respondents emphasized leadership as a key driver the success of digital transformation is deeply intertwined with leadership quality and engagement	Confirmed and expanded

Table 4.8.2: Triangulation of Findings for Research Question 2

Research question	**quantitative result**	**qualitative insight**	**Triangulation Outcome**
Does Innovation leadership help businesses to carry out successful digital transformation?	Innovation leadership was found to be a significant predictor of digital transformation ($B = 0.870$, $p < .001$)	Open-ended responses revealed leadership plays a central and multifaceted role in driving digital transformation through innovation.	Confirmed and expanded

Triangulation was employed in this study to increase the credibility and validity of the findings by integrating insights from multiple data sources, including survey responses. Data were gathered through quantitative and qualitative surveys from 30 companies. Quantitative Findings from the survey were compared with qualitative responses across key themes such as

organizational readiness, leadership behavior, and cultural impact. This thematic approach facilitated the cross-verification of insights and revealed consistencies and divergences across sources. Triangulation confirmed that Leadership has an important and diverse role in driving digital transformation through innovation, and the success of digital transformation is intricately connected with leadership quality and engagement.

To improve the interpretation of quantitative data and capitalize on the effect of triangulation, this study combined qualitative findings to provide contextual explanations and validate patterns discovered in the statistical analysis. The study found a substantial association ($r(30) = .870$, $p < .001$) between innovative leadership and digital transformation. This suggests that leadership style has a major impact on digital progress. To investigate this link further, open-ended replies were evaluated. Participants highlighted how leaders encourage change by establishing a clear vision, encouraging risk-taking, enabling open communication, and supporting continual learning, all of which are consistent with the statistical findings.

Furthermore, while quantitative data verified statistical relationships, qualitative comments highlighted underlying variables such as cultural resistance, legacy systems, and the critical role of middle management in implementing digital strategy. This relationship between qualitative insights and quantitative trends enabled a more sophisticated understanding of how innovative leadership manifests in practice and affects transformation outcomes. Using this triangulated method, the study provides a more complete, reliable, and credible understanding of the dynamics of leadership and digital change.

4.9 Summary of Findings

This study aimed to explore whether innovation leadership plays an important role in digital transformation and how businesses successfully implement digital transformation through

innovation leadership. Data were collected through a combination of surveys across 30 companies undergoing varying levels of digital transformation.

Using quantitative methodologies such as correlation analysis, regression analysis, and ANOVA, the study investigates how innovation leadership influences organizational readiness, obstacles, opportunities, and overall digital transformation results. The correlation analysis reveals significant positive associations between innovative leadership and digital transformation status, demonstrating that proactive leadership styles are significantly associated with effective digital implementations. A regression study reveals innovative leadership as a key predictor of digital transformation success, highlighting the importance of leadership in fostering effective technical change. This chapter also employs ANOVA, suggesting that stronger innovation leadership capabilities significantly predict higher digital transformation maturity. Companies with stronger innovation leadership capabilities face fewer challenges and achieve better transformation outcomes.

Finally, triangulation approaches are used to validate and enrich the quantitative results by combining findings from both quantitative analyses and additional qualitative insights gained from surveys. This detailed examination emphasizes the importance of innovative leadership as a catalyst in effectively navigating digital transformation, laying the groundwork for the subsequent discussions and conclusions in the next chapters.

CHAPTER V: DISCUSSION & ANALYSIS

5.1 Introduction

The preceding chapter presented a detailed examination of the findings of the SPSS analysis of the data collected from participants, evaluating the two hypotheses. Qualitative analysis is also suggested to provide more complete knowledge and support the quantitative results. This chapter seeks to determine whether the study outcome meets the research objectives in order to assure the viability of the research. The major goal of this research was to investigate the impact of innovative leadership in fostering digital transformation across organizations and how businesses implement digital transformation by using innovation leadership. This study used a structured survey of selected organizations to investigate critical characteristics such as organizational readiness, cultural effect, support for innovation, risk-taking behavior, and the outcomes related to digital transformation projects. This chapter analyzes the findings in relation to the study topics. The conversation is organized around the primary topics and variables identified through data analysis, emphasizing patterns, contradictions, and developing ideas. Particular emphasis is placed on how innovation leadership affects the strategic and operational components of digital transformation.

This chapter also discusses the study's theoretical, practical, and methodological effects, acknowledging its limits and suggesting options for further research. By connecting empirical findings to known theories and real-world circumstances, this chapter intends to contribute to a better understanding of how innovation leadership influences the digital evolution of modern businesses.

5.2 Discussion of Research Question One

Research Question 1 aimed to determine whether innovative leadership had a substantial impact on digital transformation within firms. A quantitative study revealed a strong, positive, and statistically significant relationship between the two variables. This suggests that greater levels of innovation leadership correspond to increased levels of digital transformation in the organization. Research showed that innovation leadership is a crucial factor in predicting digital transformation. The demographic breakdown shows that 80% of respondents are managers or have executive leadership roles. Their expertise and strategic responsibilities within their firms highlight the importance and relevance of their viewpoints to this study.

The quantitative results showed a strong correlation between innovation leadership and digital transformation outcomes. This was supported by qualitative feedback, where several managers emphasized the role of innovation leadership and empowerment in digital success.

The findings from this research closely match existing literature, emphasizing leadership vision, strong communication skills, and openness to risk-taking as key factors driving digital transformation. The study's findings align with a growing body of literature emphasizing that leadership is a critical enabler of digital transformation and innovation. As Appio et al. (2021) observed, while research at the intersection of digital transformation and innovation management is still scattered, there is a clear consensus that leadership provides the strategic direction, motivation, and coordination necessary to navigate digital change.

This study confirms that leaders who articulate a compelling digital vision and empower their teams are more likely to foster a culture receptive to innovation an insight echoed by House (2004), who define leadership as the ability to influence and motivate individuals to achieve organizational goals. Moreover, Sainger (n.d.) and the authors of Strategy, Not Technology,

Drives Digital Transformation (n.d.) underscore that strategy and leadership drive successful transformation. This was reflected in the participant responses, where digital initiatives succeeded only when supported by strong leadership commitment.

The practical aspect of innovation leadership, as highlighted by Govindarajan and Trimble (2013), is also reflected in the findings. Participants noted that challenges such as resistance to change and lack of strategic alignment can hinder digital transformation efforts unless leaders ensure effective implementation, not just idea generation**.**

This study also reinforces earlier findings by Agbor (2008) and Hosmer (n.d.) about the critical role of organizational culture in digital transformation. Participants emphasized the importance of creating a collaborative environment where continuous learning and shared responsibility are encouraged. This aligns closely with Abbas & Asghar's (2010) ideas about visionary leadership driving long-term innovation.

Porfírio et al. (2021) further support this view by emphasizing that managerial traits and leadership styles play a more influential role in progressing digital transformation than structural company characteristics. Similarly, Kokot et al. (2021) and Larjovuori et al. (2018) found that strategic vision, enabling leadership styles, and cultural change are essential components of successful transformation efforts, findings that were mirrored in this study's data.

Additionally, the role of innovation-focused leaders as defined in The International Handbook on Innovation (n.d.) and by Agbor (2008) reinforces the importance of creativity, adaptability, and vision qualities identified among effective leaders in the qualitative responses gathered here.

Finally, while Hughes et al. (2018) confirm the importance of leadership in fostering innovation, they also call for more systematic and theory-driven research, a gap that this study seeks to address by linking leadership behaviors with specific digital transformation outcomes.

Overall, the qualitative insights from this research illustrate digital transformation as a combined strategic, cultural, and technological journey, deeply reliant on visionary leadership, strategic alignment, employee engagement, and a supportive learning culture. It supports and enhances existing literature by clearly illustrating leadership's central role in successful digital transformations.

Triangulation was critical in ensuring the validity and depth of this study's findings. While Chapter 4 described the precise methodologies used to integrate quantitative and qualitative data, this section focuses on how the triangulated approach helped to provide a more complete picture of the study issues. The open-ended replies from corporate leaders and employees added vital context and elaboration to the statistical findings, notably regarding the impact of innovation leadership on digital transformation efforts. While the quantitative data showed a substantial relationship between leadership vision and digital preparedness, the qualitative comments highlighted the importance of open communication, employee empowerment, and agility in achieving digital objectives. By comparing trends across both data sources, the study was able to validate core themes, find new insights, and give a more nuanced understanding of how leadership impacts digital transformation activities.

The qualitative replies not only confirmed major statistical findings, such as the strong correlation between leadership vision and digital transformation but also revealed numerous unexpected insights. For example, while the survey data stressed the importance of top-level leadership, open-ended replies identified middle managers as critical change agents who frequently bridge strategic direction and operational implementation. Furthermore, while quantitative studies evaluated risk-taking moderately, qualitative comments indicated a significant level of concern regarding cultural aversion to experimenting and fear of failure

within firms. These disparities highlight the significance of triangulation in revealing underlying dynamics that may not be fully represented by numerical analysis alone. Finally, this approach gave a more complex and accurate knowledge of the elements that influence digital transformation outcomes.

5.3 Theoretical Implications

This study was underpinned by three major theoretical frameworks: the Balanced Scorecard Theory, the Theory of leadership, and organizational change models such as Kotter's 8-Step Change Model.

Innovation leadership is a method and philosophy that blends different leadership philosophies to inspire and encourage staff members to produce goods, services, and innovative ideas. The innovative leader plays a crucial part in the practice of innovation leadership (Alharbi, 2021). The leadership dimension revealed strong alignment with the theory of innovation leadership. Leaders who communicated a compelling digital vision, inspired team engagement, and encouraged experimentation were perceived as key drivers of successful transformation. Improving an organization's ability to adapt can lead to greater success. Kotter's 8-Step approach for managing change, based on considerable research, contributes to organizational success in a rapidly changing world. An emergent method to change is used when an organization has to make changes (Laig & Abocejo, 2021).Furthermore, while Kotter's organizational change model received some support, particularly in the areas of vision development and communication, other processes, such as achieving short-term victories or forming a leadership coalition, were less obvious. This highlights the need to adapt traditional change models to the fast-paced, less hierarchical situations that are frequently associated with digital transformation.

These findings help to expand existing theoretical models by focusing on specific contextual nuances that develop in digital transformation scenarios. For example, identified differences in leadership effectiveness necessitate a refining of transformational and innovation leadership theories, particularly to embrace digital fluency, cross-functional collaboration, and the ability to lead in virtual or hybrid environments. The limited emphasis on structured change stages indicated in Kotter's model suggests that in digitally developing businesses, linear and prescriptive change models may need to evolve into more rapid and adaptive frameworks. Overall, the study offers a foundation for reconsidering classic management theories in the face of quickly changing digital worlds.

These findings provide significant theoretical contributions by underlining how digital transformation challenges established conceptions of leadership and strategic management, particularly in varied organizational settings such as Dubai and Germany. Applying the Balanced Scorecard revealed that non-financial dimensions, such as innovation culture, digital talent development, and internal process flexibility, are more important than ever in determining transformation success. This emphasizes the need for future Balanced Scorecard updates to include digital agility, employee-driven innovation, and technology integration as essential performance measures. Similarly, while innovation leadership theory was widely supported, this study found that in cross-cultural, digitally oriented contexts, leadership effectiveness is more dependent on fostering collaboration, empowering decentralized teams, and leading in hybrid or remote settings than on traditional structured influence. Furthermore, Kotter's linear model of organizational change appeared to be only partially applicable; many organizations, particularly in Dubai, opted for more flexible, experimental ways to transformation, avoiding formal change

coalitions or short-term gains. These findings highlight the importance of building more flexible, culturally responsive transformation models for fast-moving digital ecosystems.

The study's findings have significant practical implications for organizational leaders who want to achieve successful digital transformations. First, the research emphasizes the importance of innovative leadership in improving organizations' digital readiness. Leaders who have a clear digital vision, support risk-taking, and foster an innovative culture are more likely to achieve positive transformation results. Organizations should prioritize leadership development programs that foster these qualities. Furthermore, while top-level leadership determines strategic direction, open-ended replies demonstrated that intermediate managers frequently serve as crucial change agents, putting plan into practice. This emphasizes the importance of empowering middle management through focused training, enhanced autonomy, and participation in decision-making. Furthermore, the study underlines the significance of a positive organizational culture, one that fosters collaboration, constant learning, and adaptability. Firms should put in place internal mechanisms that encourage innovation and provide safe conditions for testing. In industries like real estate, automotive, retail, healthcare, and logistics, where digital disruption is fast, these insights can help executives shape nimble, future-ready businesses. By implementing these implications, company leaders can better handle technology changes and maintain a long-term competitive advantage.

While this study provides valuable insights into the relationship between digital transformation and innovative leadership inside firms, some limitations must be acknowledged, which may affect the findings' interpretation and generalizability. This study used a sample of 30 organizations, which may not accurately represent the diversity and complexity of digital transformation efforts across industries or geographic locations. Despite careful selection of

firms from relevant industries, the limited sample size limits the capacity to generalize the findings beyond the study population. The study was mostly based on self-reported data obtained through questionnaires. While efficient in capturing impressions and experiences, this method may be prone to response bias or social desirability bias. Participants may have presented their organizations or leadership techniques in a more positive light, affecting the data's objectivity. The study used a cross-sectional design, with data collected at a particular point in time. Because digital transformation is a constant and dynamic process, the research may not fully account for changes in organizational practices or leadership behavior over time. A longitudinal approach could provide more information about how innovation leadership matures alongside digital transformation activities. Most of the companies included in this research are based in a specific regional or cultural context. As a result, organizational behaviors, leadership styles, and digital maturity may reflect local norms and conditions. Therefore, the findings may not be fully applicable to organizations operating in different cultural, technological, or economic environments. The study used a defined conceptual framework to evaluate digital transformation and innovation leadership. While this provided structure and clarity, it may have limited the inclusion of other significant aspects, such as market circumstances, consumer expectations, and employee digital capabilities, all of which could have an impact on transformation outcomes. Additional research should look into other elements that may influence digital transformation outcomes, including organizational culture, employee digital literacy, external environmental factors, and customer-centric innovation techniques. Future research should include a broader and more diversified sample of businesses from other industries and geographical regions. This would boost the findings' generalizability and allow for comparisons across industries, organizational sizes, and levels of digital maturity. To capture the changing nature of digital

transformation and leadership practices, future research should use longitudinal approaches. Tracking changes over time would provide more insight into how firms adapt to digital technology and how leadership approaches change during the transformation process.

5.4 Discussion of Research Question Two

Question two was about how companies implement digital transformation through innovation leadership.

The regression analysis showed that innovative leadership is a significant predictor of digital transformation success ($F(1, 28) = 67.345$, $p < .001$), accounting for 70.6% of the variance ($R^2 = .706$). This implies that businesses seeking to undertake digital transformation should emphasize establishing leadership characteristics that enable innovation, such as encouraging risk-taking, promoting a common vision, and facilitating collaborative problem-solving.

The correlation analysis indicates that higher levels of innovation leadership are associated with higher levels of organizational digital transformation. The qualitative findings confirm that the success of digital transformation is deeply intertwined with leadership quality and engagement. Organizations aiming for sustainable digital progress must invest in leadership development, clarity of vision, and inclusive decision-making to drive transformation forward.

About accomplishing digital transformation through innovation leadership. The qualitative findings indicate that digital transformation is more than just a technological shift; it is a strategic leadership endeavor enabled by culture, clarity, and collaborative engagement, all of which are marks of good innovation leadership. The quantitative data shows a strong association between digital transformation and innovative leadership.

This study's findings corroborate and expand on current literature on the significance of innovative leadership in implementing digital transformation. According to Şen and Eren (2012),

navigating today's complicated and fast shifting corporate environment requires innovation leadership. This is consistent with the current findings, which demonstrate that innovative leadership has a major impact on the success of digital transformation programs. Leaders who inspire and encourage teams in the face of uncertainty are critical to the long-term success of transformation efforts in a globalized and technologically advanced market. Similarly, Schiuma et al. (2022) investigated the role of leadership in promoting digital transformation and proposed hypotheses to create a framework for identifying a digital transformative leader. The current study empirically backs up this claim by finding that key innovative leadership competencies, such as vision-setting, empowerment, and support for experimentation, can predict the success of digital efforts. This is similar to Imran et al.'s (2020) findings, which link effective digital transformation leadership to change management, empowerment, and the capacity to lead diverse teams. These findings emphasize the need for firms to invest in leadership development that is adapted to the needs of the digital transition. However, as Appio et al. (2021) pointed out, research in this field is fragmented. This study helps to bridge that gap by providing a quantitative and qualitative view on how innovation leadership behaviors influence digital transformation outcomes, resulting in a more cohesive framework for future research and practical application.

This research also draws on the Balanced Scorecard Theory. The balanced scorecard consists of financial measurements that reflect the outcomes of previous activities. It also supplements financial metrics with operational measures on customer happiness, internal procedures, and the organization's innovation and improvement activities, operational measures that are key drivers of future financial success (Kaplan & Norton, n.d.).The findings support and expand these theories within the context of digital transformation. For instance, the Balanced Scorecard's

emphasis on learning and growth, internal processes, and strategic alignment was reflected in respondents' recognition of innovation, digital upskilling, and process improvement as central enablers of transformation. These results suggest that organizations implementing digital initiatives must focus beyond financial metrics and integrate innovation-related capabilities into strategic performance measurement. The use of the Balanced Scorecard in this study highlights the growing importance of non-financial variables like innovation culture, digital capabilities, and staff adaptability in assessing organizational performance. This means that future Balanced Scorecard updates should place a greater emphasis on adaptability and continual learning.

The findings from Research Question Two provide significant practical implications for organizations undergoing digital transformation, particularly regarding the role of innovation leadership. Given the stated problems and opportunities, firms should build strong communication and collaboration systems. Organizations that successfully navigated digital transformation usually used platforms and technologies that allowed for good cross-departmental collaboration and open communication. Practically, this entails investing in digital technologies and training programs that improve virtual teamwork and knowledge exchange. The study emphasizes the significance of controlled risk-taking and experimentation in achieving innovative solutions. Practical methods include creating rules or guidelines that promote experimentation while successfully managing associated risks. Organizations can benefit from clearly defined limitations that boost experimentation while protecting them from immediate consequences for failure, establishing a safe environment conducive to innovation.

Furthermore, firms should integrate their performance evaluation systems with innovation goals, expanding beyond typical financial indicators to incorporate innovation-specific. Incorporating

metrics for measuring innovation outcomes and cultural indicators can strengthen strategic alignment and guarantee that innovative leadership is recognized and rewarded.

The findings for Research Question Two, while giving significant practical insights, had limits. The sample size was rather small, limiting the findings' generalizability across diverse organizational contexts. Observations within organizations and direct interviews may have provided more detailed, nuanced data. Data collection via surveys was difficult and time-consuming due to the unwillingness of many organizations to participate, implying that alternate approaches such as interviews and organizational observation may have been more effective and efficient.

Several visible recommendations for practice are provided, including implementing and constantly updating digital communication platforms to improve collaboration and transparency. Create clear rules for organized experimentation, combining creativity with risk management. Revise performance evaluation criteria to include innovation-driven measures; Tailor digital transformation initiatives to industry demands, especially in sectors experiencing fast technology upheaval.

Implementing these practical steps, while acknowledging their limitations, will considerably improve the organization's capacity for successful digital transformation through effective innovation leadership.

The current study searched for to investigate the impact of innovation leadership on digital transformation within organizations in Dubai and Germany, as well as to determine how to implement digital transformation through innovation leadership, thereby bridging the gap in understanding leadership roles in managing digital initiatives. The findings clearly demonstrate

that good innovation leadership has a major impact on an organization's preparation for and successful execution of digital transformation.

The study's findings show that visionary leadership, risk tolerance, and effective communication are essential for digital efforts. Furthermore, this study emphasizes the critical, yet frequently underestimated, role of middle managers in operationalizing strategic innovation.

Theoretically, this research adds to existing leadership theories by experimentally verifying the important relationship between innovative leadership behaviors and successful digital transformation. Organizations can use these insights to improve their leadership development programs, creating the skills and culture necessary for continual innovation.

Despite limitations in sample size and methodological constraints, the findings provide valuable information for practitioners and researchers.

Overall, this study emphasizes the importance of dynamic, innovation-focused leadership for managing the obstacles and opportunities of digital change.

5.5 Discussion of Hypotheses

This part describes the results of the hypotheses developed in this study, which were based on the statistical analyses performed in Chapter 4. The goal was to investigate how innovative leadership influences digital transformation within firms. Each hypothesis is presented below in the context of the quantitative and qualitative data and backed by relevant literature.

Hypothesis 1 proposed that Innovation leadership has an important role in digital transformation. This hypothesis was supported by the regression analysis ($B = 0.870$, $p < .001$), This finding supports the hypothesis that strong innovation leadership is positively associated with higher levels of digital transformation. This result aligns with the findings of Schiuma et al. (2022) and Kokot et al. (2021), who emphasized leadership as a driver of digital transformation. Şen and

Eren (2012), Abbas & Asghar (2010) found that leadership has a crucial impact on improving performance throughout transformation. This finding is consistent with previous research, such as Imran et al. (2020), Schiuma et al. (2022), and Larjovuori et al. (2018), which underlined the need for leaders to cultivate a culture of innovation and adaptability to navigate digital disruption. This finding is also echoed in qualitative responses. For instance, several managers emphasized that Innovation Leadership was widely recognized for bridging vision with execution by promoting a culture of experimentation, supporting pilot projects, and encouraging continuous learning. The responses also highlighted the role of leadership in clear communication during change, breaking down organizational silos, and creating measurable pathways for transformation success.

Hypothesis 2 proposed that Innovation leadership helps businesses to carry out successful digital transformation. The study found a significant positive correlation between innovation leadership and digital transformation readiness ($r(30) = .840$, $p < .001$) behaviors such as encouraging risk-taking, supporting innovation, and fostering collaboration, and indicators of digital preparedness across the surveyed firms. This indicates that higher levels of innovation leadership are associated with higher levels of digital transformation within the organization. These findings are in line with the work of Imran et al. (2020) noted that leaders play an important role in facilitating organizational readiness by fostering a culture of empowerment, adaptability, and continuous development. Their research found that executives with a clear digital vision and the ability to inspire adaptation are better equipped to prepare their firms for the uncertainties of digital transformation.

Schiuma et al. (2022) strengthened this connection with their Transformative Leadership Compass, stating that leadership's ability to manage culture, empower teams, and integrate

digital knowledge into strategic planning has a significant impact on organizational readiness. According to their findings, when leaders advocate innovation and integrate it with business goals, firms are more likely to demonstrate the internal capability and drive required to effectively adopt digital changes. In addition to the quantitative evidence, the qualitative responses in this study underscored the importance of leadership in preparing the workforce for transformation. Respondents frequently mentioned that visible, supportive leaders who model change and promote open communication made it easier to break down silos and align departments toward shared goals. This aligns with prior research suggesting that organizational readiness is not just about infrastructure or technology but also about mindset, alignment, and leadership-driven cultural evolution. The findings demonstrate that the success of digital transformation is closely linked to the quality and involvement of leaders. Leadership was consistently cited as the driving force for defining a clear vision, achieving strategic alignment, allocating essential resources, and cultivating a culture that values continual innovation. In this sense, innovation leadership acts as both an architect and the driver of digital transformation. Together, these findings confirm that innovation leadership plays a foundational role in shaping an organization's capacity and willingness to embrace digital transformation. Proactive, inclusive, and future-oriented leaders are instrumental in fostering readiness at both strategic and operational levels.

Overall, the findings give strong empirical support for the study's theoretical frameworks, which include the Balanced Scorecard's emphasis on learning and growth and leadership theories that emphasize vision, empowerment, and cultural alignment. These findings support the idea that innovation leadership is critical in creating the environment for successful digital transformation.

5.5.1 Organizational Practice: Creating a Transformation-Ready Culture

Companies aiming at successful digital transformation have to participate in leadership development initiatives that aim beyond operational excellence and concentrate on producing visionary, adaptable, and culturally intelligent leaders. These leaders need to be ready to:

Present a clear and compelling vision of transformation.

Decentralized decision-making and encourage autonomy within teams to empower them.

Encourage an environment of constant learning and exploration.

Align digital projects with the overall organizational mission and values.

Leaders who actively foster an innovative culture and encourage calculated risk-taking help their firms navigate technological change. The learning and growth dimension of the Balanced Scorecard becomes a pillar since it enables companies to examine intangible assets such as staff competency, leadership quality, and creative potential.

5.5.2 Educational Implications: Integrating Leadership in Transformation

Curricula and training programs in academic and professional development contexts should emphasize the relationship between leadership and digital strategy more. Educational institutions can develop future leaders by:

MBA and executive education programs will now include modules on innovative leadership and digital strategy.

Using case studies of digital transformation driven by great leadership to demonstrate theoretical frameworks in action.

Creating simulations and initiatives that allow students to experience the obstacles of driving digital change in organizational settings.

5.5.3 Consulting and Advisory Services: Strategic Alignment, Leadership Coaching

The study's findings imply that consultants and advising companies should rethink digital transformation projects in terms of leadership capacity and cultural readiness. Here are some key considerations for consultants:

Leadership capability assessments are being conducted as part of the transition diagnostics.

Conducting leadership alignment seminars to connect vision and strategy across departments.

Coach top leaders on the behaviors and mindsets that promote creativity.

Create dashboards linked with the Balanced Scorecard to track leadership and culture metrics in addition to typical financial and operational KPIs.

These practical measures help to ensure that transformation efforts are not just technologically sound but also sustainable and people-centered, boosting the likelihood of long-term viability.

5.6 Summary

This chapter presented a thorough discussion and analysis of the findings gained from both quantitative and qualitative data collected to investigate the role of innovative leadership in promoting digital transformation and how to implement digital transformation by using innovation leadership. The investigation revealed several key themes, including the fundamental relevance of leadership vision, strategic communication, and risk tolerance as enablers of effective digital transformation. Quantitative regression and ANOVA studies revealed strong positive connections between effective innovation leadership and organizational readiness for digital initiatives. The qualitative findings highlighted the bridging function of middle managers, who transform top-level strategy into operational practice. The chapter also addressed limitations such as limiting sample size, potential response bias, and methodological issues inherent in survey-based research.

The results confirmed a significant role of innovation leadership in enabling digital transformation, both proposed hypotheses were supported. Practical implications for innovation leadership and digital transformation were outlined. The next chapter will present final conclusions and recommendations for future research and practice.

CHAPTER VI:

SUMMARY, IMPLICATIONS, AND RECOMMENDATIONS

6.1 Summary

This chapter summarizes the research conducted on digital transformation and innovation leadership, emphasizing the main goals and offering the important results of the quantitative and qualitative studies. Emphasizing the wider relevance of the study's results, it also addresses practical consequences and suggests directions for future research.

The purpose of this study was to investigate the relationship between innovation leadership and digital transformation in businesses, with a particular focus on how innovation leadership influences successful transformation. The results of the research show a strong correlation between effective digital transformation projects and innovative leadership. Between leadership vision, strategic alignment, risk-taking, and organizational preparation, quantitative study revealed notable relationships. A key component turned out to be leadership vision; companies whose leaders clearly and persuasively presented a vision for digital transformation reported more success in such initiatives.

Innovation leadership and digital transformation had a high positive and statistically significant association. This suggests that higher degrees of innovative leadership correlate with higher levels of digital transformation inside the firm. This immediately addresses Research Question 1, proving that innovation leadership is critical in promoting digital transformation.

Complementing these results were qualitative insights that underlined the critical part middle management plays in turning high-level ideas into useful activities. The qualitative answers underlined how important open communication, teamwork, and cultural preparedness are as fundamental tools enabling digital change.

Participants emphasized many essential factors vital for the successful execution of digital initiatives, including strong leadership commitment that has emerged as a crucial catalyst, enhancing employee engagement, adaptability, and organizational buy-in across all levels. Employee adaptability and engagement were consistently highlighted as essential success elements. The willingness of employees to adopt new technology was significantly affected by leadership behaviors, especially through proactive assistance, transparent communication, and ongoing motivation.

Innovation mindset and agility were recognized as cultural traits vital for managing swift technological transformation. Organizations that fostered a culture of experimentation, learning, and adaptability saw more seamless transitions and improved results in their digital transformation initiatives.

Notwithstanding these favorable factors, numerous substantial obstacles were frequently noted, such as resistance to change, particularly among staff familiar with conventional techniques, presented significant challenges.

Legacy systems often constrained technological capabilities and impeded innovation.

Budget constraints limited the scope and pace of digital projects, underscoring the necessity for careful financial planning.

To overcome these limitations, organizations should invest in technology updates and ongoing employee training, Foster an innovative culture with clear communication from top leadership to eliminate opposition and increase staff involvement, and Empower middle managers to be important change agents in implementing strategic digital visions through agile and adaptable leadership.

The study adds to academic literature by providing empirical support for the conceptual link

between leadership and digital innovation, thereby filling a gap identified in prior research. In practice, it emphasizes the importance of businesses cultivating innovation-driven leadership techniques in order to effectively manage digital transition, thereby assisting leaders in harmonizing vision, encouraging agility, and fostering a culture of experimentation and adaptation. These practical consequences highlight the necessity of combining strong leadership practices with targeted human resource and technological investments to achieve the best digital transformation results.

6.2 Implications

The findings are valuable for organizational leaders looking to improve digital transformation outcomes. Leaders are expected to create and convey clear digital visions, cultivate a supportive corporate culture that values innovation, and actively engage middle management as change agents. Organizations should prioritize tightly connecting their strategic objectives with digital activities and creating a climate that encourages risk-taking and experimentation. Leaders in businesses, especially those at the middle and senior levels, should not see digital transformation as just a technical or IT-driven process. Instead, they should see it as a big transition that requires leaders who can adapt. The study demonstrates that leaders that cultivate a culture of innovation, cooperation, and digital preparedness are more inclined to spearhead successful transformation programs.

The qualitative study showed numerous repeating themes across participant replies, highlighting crucial enablers of digital change. Respondents repeatedly stressed the value of open communication across hierarchical levels, employee empowerment in decision-making, and organizational agility in adapting to technological change.

Furthermore, it was considered necessary to build an innovative culture, promote departmental

collaboration, and encourage continual learning in order to match digital initiatives with business goals. These variables combine to provide a flexible and resilient organizational environment capable of supporting long-term change activities.

In addition, practical solutions include ongoing training and empowerment programs for middle managers, enhancing internal communication systems, and incorporating innovation indicators into corporate performance appraisals.

Business schools and executive education providers ought to incorporate digital transformation and innovation leadership into their courses. In the fast-paced digital economy, old-fashioned forms of leadership may not work. By include real-world case studies, simulations, and hands-on digital tools in their lessons, teachers can help present and future leaders get ready for the changing needs of the corporate world.

6.3 Recommendations for Future Research

Future research can address the limitations noted in this study by widening the scope and conducting longitudinal studies to better understand the long-term effects of leadership styles on digital transformation. Furthermore, using a bigger and more diverse sample from various geographic and industrial contexts may improve the generalizability of results.

Future research could benefit from integrating surveys, in-depth interviews, and observational methodologies to gain a better understanding of organizational dynamics. Investigating individual industry case studies, particularly in sectors significantly influenced by digital disruption, such as finance, healthcare, and retail, would also provide useful comparative views. Furthermore, more empirical study into innovation-driven transformation processes is required to better understand how organizational structures and leadership styles promote radical or disruptive innovation as Heilemann & Faix (2023) mentioned, to be competitive in the face of

the ever-evolving corporate environment, organizational structures must be innovative and transformation processes must be implemented. Future orientation necessitates innovation, which requires a suitable leadership style to be successfully applied in the organization. In general, there is a dearth of empirical research on innovation-driven transformation processes, and there is also a lack of linkage to the adoption of disruptive or radical innovation in businesses. Future research should focus on the factors required for inclusion in complete transformation strategies, as well as the development and validation of an innovative transformation model.

6.4 Conclusion

This study provides valuable insights into the role of innovation leadership in effectively navigating digital transformation programs. The findings highlight the important role of visionary leadership, strategy alignment, and middle-management involvement in producing successful digital outcomes. This study, which addresses both theoretical and practical ramifications, provides a complete overview and concrete advice for leaders navigating the complexity of digital transformation. Finally, supporting innovative leadership is critical for firms seeking long-term growth and competitive advantage in an increasingly digital world.

APPENDIX A

SURVEY COVER LETTER

Dear Sir or Madam,

I hope you're doing well. I am conducting research as part of my thesis at the Swiss School of Business and Management, focusing on digital transformation. Given your company's expertise in this area, I would greatly appreciate your insights.

I am reaching out to invite your organization to participate in a short survey. Your input would be invaluable. The process is straightforward and will take approximately 30 minutes. All responses will remain confidential and will be used solely for academic purposes.

Please let me know if you'd be open to participating or if you have any questions. I'd be happy to provide more details. Looking forward to your response.

Best regards,

Nooshin Movahedpour

APPENDIX B

INFORMED CONSENT

I am conducting a survey as part of my thesis to explore the role of innovation leadership in digital transformation. Your participation in this survey will provide valuable insights and help advance understanding in this area.

Key Information:

Purpose: To gather perspectives on innovation leadership and digital transformation.

Time Required: Approximately 30 minutes.

Voluntary Participation: You can withdraw at any time without any consequences.

Privacy: Your responses will remain anonymous and confidential.

Consent: By completing the survey, you confirm that you have read this information and agree to participate.

Please find the survey that is attached.

If you have any questions or concerns, please do not hesitate to contact me

at nooshinmovahedpour@gmail.com

Thank you for considering this request. Your contribution is greatly appreciated!

Best regards,

Nooshin Movahedpour

REFERENCES

Abbas, W. and Asghar, I. (2010) *THE ROLE OF LEADERSHIP IN ORGANIZATIONAL CHANGE Relating the Successful Organizational change to Visionary and Innovative Leadership*.

Adjei, D. (2013) 'Innovation Leadership Management', *International Journal of ICT and Management*, p. 103.

Agbor, E. (2008) 'Creativity and Innovation: The Leadership Dynamics', *JSL-Creativity and Innovation-Page 39 Journal of Strategic Leadership*, 1(1), pp. 39–45.

Ahmed, S.K. (2024) 'The pillars of trustworthiness in qualitative research', *Journal of Medicine, Surgery, and Public Health*, 2, p. 100051. Available at: https://doi.org/10.1016/j.glmedi.2024.100051.

Ajayi, V.O. (no date) *Primary Sources of Data and Secondary Sources of Data*.

Akbarzadeh, F. (2012) *THE BALANCED SCORECARD (BSC) METHOD: FROM THEORY TO PRACTICE*, *Arabian Journal of Business and Management Review (OMAN Chapter*.

Alharbi, I.B.A. (2021) 'Innovative Leadership: A Literature Review Paper', *Open Journal of Leadership*, 10(03), pp. 214–229. Available at: https://doi.org/10.4236/ojl.2021.103014.

Appio, F.P. *et al.* (2021) 'Digital Transformation and Innovation Management: A Synthesis of Existing Research and an Agenda for Future Studies', *Journal of Product Innovation Management*. Blackwell Publishing Ltd, pp. 4–20. Available at: https://doi.org/10.1111/jpim.12562.

Armstrong, R.A., Eperjesi, F. and Gilmartin, B. (2002) 'The application of analysis of variance (ANOVA) to different experimental designs in optometry', *Ophthalmic and Physiological Optics*, pp. 248–256. Available at: https://doi.org/10.1046/j.1475-1313.2002.00020.x.

Bag, S. *et al.* (2021) 'Roles of Innovation Leadership on Using Big Data Analytics to Establish Resilient Healthcare Supply Chains to Combat the COVID-19 Pandemic: A Multimethodological Study',

IEEE Transactions on Engineering Management [Preprint]. Available at: https://doi.org/10.1109/TEM.2021.3101590.

Berman, S.J. (2012a) 'Digital transformation: Opportunities to create new business models', *Strategy and Leadership*, 40(2), pp. 16–24. Available at: https://doi.org/10.1108/10878571211209314.

Berman, S.J. (2012b) 'Digital transformation: Opportunities to create new business models', *Strategy and Leadership*, 40(2), pp. 16–24. Available at: https://doi.org/10.1108/10878571211209314.

Bharadwaj, A. *et al.* (2013) 'Digital business strategy: Toward a next generation of insights', *MIS Quarterly: Management Information Systems*, 37(2), pp. 471–482. Available at: https://doi.org/10.25300/MISQ/2013/37:2.3.

Bonnet Didier and Westerman George (2020) *The New Elements of Digital Transformation*. Available at: www.capgemini.com;

Bounfour, A. (no date) *Progress in IS Digital Transformation From Lean Production to Acceluction*. Available at: http://www.springer.com/series/10440.

Buckingham, M.B. (2014) *DIGITAL TRANSFORMATION Digital Edition*.

'ChemicalEngineeringasaGeneralPurposeTechnology (1)' (no date).

Choy, L.T. (2014) *The Strengths and Weaknesses of Research Methodology: Comparison and Complimentary between Qualitative and Quantitative Approaches*, *IOSR Journal Of Humanities And Social Science (IOSR-JHSS*. Available at: www.iosrjournals.org.

Clapham, M.M. and Meyer, C.K. (2024) *LEADERSHIP FOR CREATIVITY AND INNOVATION*, *Journal of Business and Educational Leadership*.

Dimitar Blagoev and Zornitsa Yordanova (2015) *Company Innovative Leadership Model Summary*.

Ebert, C. and Duarte, C.H.C. (2018a) 'Digital Transformation', *IEEE Software*, 35(4), pp. 16–21. Available at: https://doi.org/10.1109/MS.2018.2801537.

Ebert, C. and Duarte, C.H.C. (2018b) 'Digital Transformation', *IEEE Software*, 35(4), pp. 16–21. Available at: https://doi.org/10.1109/MS.2018.2801537.

Etikan, I. (2016) 'Comparison of Convenience Sampling and Purposive Sampling', *American Journal of Theoretical and Applied Statistics*, 5(1), p. 1. Available at: https://doi.org/10.11648/j.ajtas.20160501.11.

Explanatory Style (no date).

Fagerberg, J., Mowery, D. and Nelson, R.R. (2003) *Innovation: A Guide to the Literature*. Available at: http://tikpc51.uio.no/teari/teari.htm.

Furjan, M.T., Tomičić-Pupek, K. and Pihir, I. (2020) 'Understanding Digital Transformation Initiatives: Case Studies Analysis', *Business Systems Research*, 11(1), pp. 125–141. Available at: https://doi.org/10.2478/bsrj-2020-0009.

Gerring, J. (2024) 'Qualitative Methods', 6, p. 47. Available at: https://doi.org/10.1146/annurev-polisci-092415.

Gobble, M.A.M. (2018) 'Digital Strategy and Digital Transformation', *Research Technology Management*, 61(5), pp. 66–71. Available at: https://doi.org/10.1080/08956308.2018.1495969.

Golafshani, N. (2003) *Understanding Reliability and Validity in Qualitative Research*, *The Qualitative Report*. Available at: http://www.nova.edu/ssss/QR/QR8-4/golafshani.pdf.

Govindarajan, V. (2016) *The Three Box Solution: A Strategy for Leading Innovation - Book - Faculty & Research - Harvard Business School*, *Harvard Business Review Press*. Available at: https://www.hbs.edu/faculty/Pages/item.aspx?num=50752 (Accessed: 6 May 2024).

Govindarajan, V. and Chris Trimble (2013) *Beyond the Idea: How to Execute Innovation in Any Organization - Book - Faculty & Research - Harvard Business School*, *Martin's Press*.

Available at: https://www.hbs.edu/faculty/Pages/item.aspx?num=48482 (Accessed: 6 May 2024).

Hai, T.N., Van, Q.N. and Tuyet, M.N.T. (2021a) 'Digital transformation: Opportunities and challenges for leaders in the emerging countries in response to covid-19 pandemic', *Emerging Science Journal*. Ital Publication, pp. 21–36. Available at: https://doi.org/10.28991/esj-2021-SPER-03.

Hai, T.N., Van, Q.N. and Tuyet, M.N.T. (2021b) 'Digital transformation: Opportunities and challenges for leaders in the emerging countries in response to covid-19 pandemic', *Emerging Science Journal*. Ital Publication, pp. 21–36. Available at: https://doi.org/10.28991/esj-2021-SPER-03.

Heilemann, G. and Faix, W.G. (2023) 'Transformation process meets innovation leadership—an analysis of new challenges in change theory', *Leadership, Education, Personality: An Interdisciplinary Journal*, 5(1–2), pp. 13–20. Available at: https://doi.org/10.1365/s42681-023-00034-7.

Horth, D. (no date) *Innovation Leadership How to use innovation to lead effectively, work collaboratively, and drive results*.

Hosmer, C. (no date) *Leadership and innovation 37*.

House, R. (2004) '2004, 2007 Studies - GLOBE Project'.

Hughes, A. *et al.* (2018) *ORE Open Research Exeter TITLE Leadership, creativity, and innovation: A critical review and practical recommendations A NOTE ON VERSIONS*. Available at: http://hdl.handle.net/10871/32289.

Imran, F. *et al.* (2020) 'Leadership Competencies for Digital Transformation: Evidence from Multiple Cases', in *Advances in Intelligent Systems and Computing*. Springer, pp. 81–87. Available at: https://doi.org/10.1007/978-3-030-50791-6_11.

'INNOVATION AS AN INITIATOR OF THE DEVELOPMENT' (no date).

‘innovation leadership in digital enterprise’ (no date).

Introduction to Multivariate Regression Analysis (2010). Greece.

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

Kaplan, R.S. and Norton, D.P. (no date) *The Balanced Scorecard-Measures that Drive Performance*. Available at: https://hbr.org/1992/01/the-balanced-scorecard-measures-that-drive-performance-2.

Kho, A. (2020) *The Relationship Between Digital Transformational Leadership Styles and Knowledge-Based Empowering Interaction for Increasing Organisational Innovativeness Quality Management Strategies View project Millennial Transformational Leadership on Organizational Performance in Indonesia Fishery Startup View project*. Available at: www.ijicc.net.

KLEIN, M. (2020) ‘LEADERSHIP CHARACTERISTICS IN THE ERA OF DIGITAL TRANSFORMATION’, *Business & Management Studies: An International Journal*, 8(1), pp. 883–902. Available at: https://doi.org/10.15295/bmij.v8i1.1441.

Kokot, K., Kokotec, I.D. and Calopa, M.K. (2021) ‘Impact of leadership on digital transformation’, in *2021 IEEE Technology and Engineering Management Conference - Europe, TEMSCON-EUR 2021*. Institute of Electrical and Electronics Engineers Inc. Available at: https://doi.org/10.1109/TEMSCON-EUR52034.2021.9488620.

Kotarba, M. (2018) ‘Digital transformation of business models’, *Foundations of Management*, 10(1), pp. 123–142. Available at: https://doi.org/10.2478/fman-2018-0011.

Kotter, J.P. (1995) *Leading Change: Why Transformation Efforts Fail Harvard Business Review*.

Kraus, S. *et al.* (2021) ‘Digital Transformation: An Overview of the Current State of the Art of Research’, *SAGE Open*, 11(3). Available at: https://doi.org/10.1177/21582440211047576.

Kraus, S. *et al.* (2022) 'Digital transformation in business and management research: An overview of the current status quo', *International Journal of Information Management*, 63. Available at: https://doi.org/10.1016/j.ijinfomgt.2021.102466.

Kremer, H., Villamor, I. and Aguinis, H. (2019) 'Innovation leadership: Best-practice recommendations for promoting employee creativity, voice, and knowledge sharing', *Business Horizons*, 62(1), pp. 65–74. Available at: https://doi.org/10.1016/j.bushor.2018.08.010.

Kruse, K. (2013) *CEO of LEADx and author of Great Leaders Have No Rules. What Is Leadership?*

Laig, R.B.D. and Abocejo, F.T. (2021) 'Change Management Process in a Mining Company: Kotter's 8-Step Change Model', *Journal of Management, Economics, and Industrial Organization*, pp. 31–50. Available at: https://doi.org/10.31039/jomeino.2021.5.3.3.

Lamarre, E. *et al.* (2023) *The Value of Digital Transformation*, *Harvard Business Review Press*. Available at: https://hbr.org/2023/07/the-value-of-digital-transformation (Accessed: 24 April 2024).

Larjovuori, R.L., Bordi, L. and Heikkilä-Tammi, K. (2018) 'Leadership in the digital business transformation', in *ACM International Conference Proceeding Series*. Association for Computing Machinery, pp. 212–221. Available at: https://doi.org/10.1145/3275116.3275122.

Lindgren, P. (2012) 'Business Model Innovation Leadership: How Do SME's Strategically Lead Business Model Innovation?', *International Journal of Business and Management*, 7(14). Available at: https://doi.org/10.5539/ijbm.v7n14p53.

Majchrzak, A., Markus, M.L. and Wareham, J. (2016) 'Designing for Digital Transformation: Lessons for Information Systems Research from the Study of ICT and Societal Challenges', *MIS Quarterly*, 40(2), pp. 267–277. Available at: https://doi.org/10.25300/MISQ/2016/40:2.03.

Matt, C., Hess, T. and Benlian, A. (2015) 'Digital Transformation Strategies', *Business and Information Systems Engineering*. Gabler Verlag, pp. 339–343. Available at: https://doi.org/10.1007/s12599-015-0401-5.

McCarthy, P., Sammon, D. and Alhassan, I. (2022) 'Digital Transformation Leadership Characteristics: A Literature Analysis', *Journal of Decision Systems*, 32(1), pp. 79–109. Available at: https://doi.org/10.1080/12460125.2021.1908934.

Nadkarni, S. and Prügl, R. (2021) 'Digital transformation: a review, synthesis and opportunities for future research', *Management Review Quarterly*, 71(2), pp. 233–341. Available at: https://doi.org/10.1007/s11301-020-00185-7.

Neetij, ♦ and Bikash Thapa, R.♣ (no date) *A STUDY ON PURPOSIVE SAMPLING METHOD IN RESEARCH*. Available at: http://study.com/academy/lesson/what-is-sampling-in-research-definition-methods-importance.html,.

Petrucci, T. and Rivera, M. (2018) 'Leading Growth through the Digital Leader', in *Journal of Leadership Studies*. Wiley-Blackwell, pp. 53–56. Available at: https://doi.org/10.1002/jls.21595.

Plekhanov, D., Franke, H. and Netland, T.H. (2023) 'Digital transformation: A review and research agenda', *European Management Journal*, 41(6), pp. 821–844. Available at: https://doi.org/10.1016/j.emj.2022.09.007.

Porfírio, J.A. *et al.* (2021) 'Leadership characteristics and digital transformation', *Journal of Business Research*, 124, pp. 610–619. Available at: https://doi.org/10.1016/j.jbusres.2020.10.058.

Promsri Chaiyaset (2019) 'The Developing Model of Digital Leadership for a Successful Digital Transformation', *GPH-International Journal of Business Management* [Preprint].

Ramadan, M. *et al.* (2023) 'Toward Digital Transformation and Business Model Innovation: The Nexus between Leadership, Organizational Agility, and Knowledge Transfer', *Administrative Sciences*, 13(8). Available at: https://doi.org/10.3390/admsci13080185.

Rani Das, K. (2016) 'A Brief Review of Tests for Normality', *American Journal of Theoretical and Applied Statistics*, 5(1), p. 5. Available at: https://doi.org/10.11648/j.ajtas.20160501.12.

Reliability and Validity of Measurement (no date).

'retrieve' (no date).

Rogers, D.L. (2016) *THE DIGITAL TRANSFORMATION PLAYBOOK Rethink your business for the digital age*.

Roshaidai, S. and Arifin, M. (2018) *Ethical Considerations in Qualitative Study*, *International Journal of Care Scholars*.

Sainger, G. (no date) *Leadership in Digital Age: A Study on the Role of Leader in this Era of Digital Transformation*.

Scheuren, F. (no date) *What is a Survey*.

Schiuma, G. *et al.* (2022) 'The transformative leadership compass: six competencies for digital transformation entrepreneurship', *International Journal of Entrepreneurial Behaviour and Research*, 28(5), pp. 1273–1291. Available at: https://doi.org/10.1108/IJEBR-01-2021-0087.

Schober, P. and Schwarte, L.A. (2018) 'Correlation coefficients: Appropriate use and interpretation', *Anesthesia and Analgesia*, 126(5), pp. 1763–1768. Available at: https://doi.org/10.1213/ANE.0000000000002864.

Schork, S., Heblich, B. and Terzidis, O. (no date) *Effective Innovation Leadership*.

Schwarzmüller, T. *et al.* (2018) 'How does the digital transformation affect organizations? Key themes of change in work design and leadership', *Management Revue*, 29(2), pp. 114–138. Available at: https://doi.org/10.5771/0935-9915-2018-2-114.

Schwertner, K. (2017) 'Digital transformation of business', *Trakia Journal of Science*, 15(Suppl.1), pp. 388–393. Available at: https://doi.org/10.15547/tjs.2017.s.01.065.

Şen, A. and Eren, E. (2012) 'Innovative Leadership for the Twenty-First Century', *Procedia - Social and Behavioral Sciences*, 41, pp. 1–14. Available at: https://doi.org/10.1016/j.sbspro.2012.04.001.

Shrestha, N. (2021) 'Factor Analysis as a Tool for Survey Analysis', *American Journal of Applied Mathematics and Statistics*, 9(1), pp. 4–11. Available at: https://doi.org/10.12691/ajams-9-1-2.

Solis Altimeter, B. (2018) *Custom research by Altimeter, a Prophet company on behalf of Sabre Hospitality Solutions DIGITAL TRANSFORMATION OF THE GUEST EXPERIENCE*. Available at: www.altimetergroup.com.

'Strategy, not Technology, Drives Digital Transformation' (no date).

Suwanto Suwanto, Sunarsi Denok and Achmad Willya (2022) 'Effect of Transformational Leadership, Servant Leadershi, and Digital Transformation on MSMEs Performance and Work Innovation Capabilities', *Central European Management Journal* [Preprint]. Available at: https://doi.org/10.57030/23364890.cemj.30.4.71.

Sykes, A.O. (1993) *An Introduction to Regression Analysis*. Available at: https://chicagounbound.uchicago.edu/law_and_economics.

Taherdoost, H. (2022) 'What are Different Research Approaches? Comprehensive Review of Qualitative, Quantitative, and Mixed Method Research, Their Applications, Types, and

Limitations', *Journal of Management Science & Engineering Research*, 5(1), pp. 53–63. Available at: https://doi.org/10.30564/jmser.v5i1.4538.

Tavakol, M. and Dennick, R. (2011) 'Making sense of Cronbach's alpha', *International journal of medical education*, pp. 53–55. Available at: https://doi.org/10.5116/ijme.4dfb.8dfd.

The International Handbook on Innovation (no date).

Todd, @ and Jick, D. (1979) *Mixing Qualitative and Quantitative Methods: Triangulation in Action*, *Administrative Science Quarterly*. Available at: http://links.jstor.org/sici?sici=0001-8392%28.

'Triangulation_in_Research11' (no date).

Verina, N. and Titko, J. (2019) 'Digital transformation: conceptual framework', in. Vilnius Gediminas Technical University. Available at: https://doi.org/10.3846/cibmee.2019.073.

Vial, G. (2019) *JOURNAL OF STRATEGIC INFORMATION SYSTEMS REVIEW Manuscript title: Understanding digital transformation: A review and a research agenda*.

Vlok, A. (2012) 'A leadership competency profile for innovation leaders in a science-based research and innovation organization in South Africa', *Procedia - Social and Behavioral Sciences*, 41, pp. 209–226. Available at: https://doi.org/10.1016/j.sbspro.2012.04.025.

Weberg, D.R. and Hagler, D. (2013) *Complexity Leadership Theory and Innovation: A New Framework for Innovation Leadership*.

'what-is-digital-transformation' (2023).

Zaoui, F. and Souissi, N. (2020) 'Roadmap for digital transformation: A literature review', in *Procedia Computer Science*. Elsevier B.V., pp. 621–628. Available at: https://doi.org/10.1016/j.procs.2020.07.090.

APPENDIX A

EXPLORING LEADERSHIP IN DIGITAL TRANSFORMATION

Purpose: This research aims to find the role of innovation leadership in digital transformation, consider successful businesses that have implemented it, and determine the role of innovation leadership in their success.

Digital transformation: Digital transformation is the process of using digital technology to improve how a business works, serves customers and stays competitive.

Example: Originally a DVD rental service, Netflix transformed into a streaming platform by adopting digital technology. This shift allowed customers to instantly access movies and TV shows online, changing how people consume entertainment.

Innovation leadership: Innovation leadership is the ability to inspire and guide individuals or teams to think creatively, embrace change, and implement new ideas or solutions that drive organizational growth and success. It combines visionary thinking, strategic decision-making, and the ability to foster a culture of collaboration and continuous improvement.

Example: An example of innovative leadership is Elon Musk and his role at Tesla. Musk has consistently driven innovation by encouraging his teams to think beyond conventional limits. Under his leadership, Tesla developed groundbreaking technologies such as long-range electric vehicles, advanced battery systems, and self-driving features. He fosters a culture of experimentation and bold thinking, pushing boundaries in the automotive and renewable energy industries.

Section 1: Participant Information

1. What is your age group?

o Under 25

o 25–34

o 35–44

o 45–54

o 55 and above

2.What is your gender?

o Male

o Female

o Prefer not to say

3. What is the highest level of education you have completed?

O high school or equivalent

O bachelor’s degree

O master’s degree

O doctorate

O other

4. What is your role in the organization?

O executive/leadership

O manager

O individual contributor

O other

5. How many years have you worked in organizations based in Dubai?

O less than 2 years

O 2–5 years

O 6–10 years

O over 10 years

O never worked in Dubai

6. How many years of experience do you have in leadership positions?

O less than 2 years

O 2–5 years

O 6–10 years

O 11–20 years

O over 20 years

7. How many employees are in your organization?

O less than 50

O 50-249

O 250-999

O 1,000+

8. In which industry does your organization operate?

O technology

O healthcare

O finance

O manufacturing

O retail

O other

Section 2: Organizational Digital Transformation Status

To what extent do you agree with the following statements:

9. I am familiar with the concept of digital transformation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

10. My organization has a formal digital transformation strategy.

O totally disagree

O disagree

O neutral

O agree

O totally agree

11.my organization has made significant progress in digital transformation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

12. My organization is at an advanced stage in its digital transformation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 3: Innovation Leadership

To what extent do you agree with the following statements:

13. Leadership is actively involved in driving digital transformation initiatives.

O totally disagree

O disagree

O neutral

O agree

O totally agree

14. My organization provides training for leaders on innovation leadership.

O totally disagree

O disagree

O neutral

O agree

O totally agree

15. My leaders are effective at fostering a culture of innovation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 4: Organizational Readiness

To what extent do you agree with the following statements:

16. My organization has strong digital capabilities.

O totally disagree

O disagree

O neutral

O agree

O totally agree

17. My organization invests in upskilling employees for digital transformation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

18. My organization is receptive to adopting new technologies.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 5: Challenges and Opportunities

To what extent do you agree with the following statements:

19. My organization successfully addresses the challenges faced in digital transformation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

20. There is low resistance to digital transformation within my organization.

O totally disagree

O disagree

O neutral

O agree

O totally agree

21. There are sufficient resources allocated to digital transformation in my organization.

O totally disagree

O disagree

O neutral

O agree

O totally agree

22. Leadership effectively addresses the primary challenges in driving digital transformation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 6: Outcomes and Future Directions

To what extent do you agree with the following statements:

23. Our organization’s digital transformation initiatives have led to measurable outcomes.

O totally disagree

O disagree

O neutral

O agree

O totally agree

24. I measure the success of digital transformation initiatives based on clear metrics and Outcomes.

O totally disagree

O disagree

O neutral

O agree

O totally agree

25. I believe digital transformation will remain a top priority for my organization over the next 5 years.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 7: Support for innovation

To what extent do you agree with the following statements:

26. Leaders frequently encourage employees to propose innovative solutions.

O totally disagree

O disagree

O neutral

O agree

O totally agree

27. Leadership allocates resources (time, budget, tools) to support innovative projects.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 8: Collaboration and communication

To what extent do you agree with the following statements:

28. Leadership is effective in fostering cross-departmental collaboration for digital Transformation initiatives.

O totally disagree

O disagree

O neutral

O agree

O totally agree

29. Leadership frequently communicates the progress of digital transformation efforts to Employees.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 9: Risk-taking and experimentation

To what extent do you agree with the following statements:

30. Leadership is comfortable with taking risks to implement new digital technologies.

O totally disagree

O disagree

O neutral

O agree

O totally agree

31. Leadership frequently encourages experimentation and learning from failures during Innovation processes.

O totally disagree

O disagree

O neutral

O agree

O totally agree

32. Leadership is open to taking calculated risks when implementing new digital solutions.

O totally disagree

O disagree

O neutral

O agree

O totally agree

33. Leadership manages resistance to change well during the digital transformation process.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 10: Cultural Impact

To what extent do you agree with the following statements:

34. Leadership fosters a culture that embraces change and innovation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

35. Leadership is inclusive in involving employees at all levels in digital transformation Decisions.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 11: Outcomes of innovation leadership

To what extent do you agree with the following statements:

36. Leadership has been successful in achieving digital transformation goals.

O totally disagree

O disagree

O neutral

O agree

O totally agree

37. Leadership has a significant impact on driving business innovation and digital growth.

O totally disagree

O disagree

O neutral

O agree

O totally agree

38. Innovation leadership has positively impacted the success of digital transformation Initiatives in my organization.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 12. Role of innovation leadership

To what extent do you agree with the following statements:

39. Leadership acts as a role model for adopting innovative digital tools and practices.

O totally disagree

O disagree

O neutral

O agree

O totally agree

40. Leadership frequently promotes innovative approaches to drive digital transformation.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 13. Resource allocation and empowerment

To what extent do you agree with the following statements:

41. Leadership adequately allocates resources (e.g., funding, personnel, technology) for digital Transformation projects.

O totally disagree

O disagree

O neutral

O agree

O totally agree

42. Leadership empowers employees to experiment and innovate in their roles.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Section 14. Measuring success and continuous improvement

To what extent do you agree with the following statements:

43. Leadership effectively defines and measures success in digital transformation initiatives.

O totally disagree

O disagree

O neutral

O agree

O totally agree

44. Innovation leadership frequently reviews and updates strategies to adapt to digital trends.

O totally disagree

O disagree

O neutral

O agree

O totally agree

Open-ended questions

1- What do you think has been the biggest factor contributing to the success (or challenges) of Digital transformation in your organization?

2-In your opinion, what is the role of leadership in fostering innovation within your Organization? How can businesses imply digital transformation by using innovation leadership?

3-In your opinion, to what extent has leadership directly influenced the success or failure of Digital transformation initiatives in your organization?

Thank you for sharing your insights! Your responses will play a valuable role in understanding The dynamics of innovation leadership in driving digital transformation.