CAPITAL UNIVERSITY OF SCIENCE AND TECHNOLOGY, ISLAMABAD

Impact of Digital Leadership on Sustainable Creative Performance and Psychological Well-being: Mediating Role of Agile Response and Moderating Role of Organizational Culture

by

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A thesis submitted in partial fulfillment for the degree of Master of Science

in the

Faculty of Management & Social Sciences

Department of Management Sciences

2024

Dedicated to my parents who dedicated their life to teach me how to step forward

CERTIFICATE OF APPROVAL

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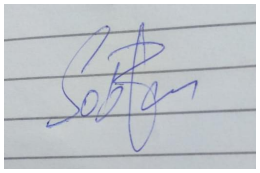

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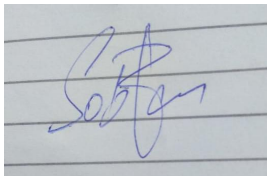

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Acknowledgement

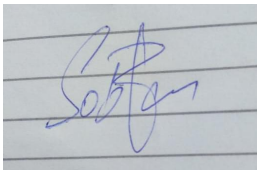
"Then which of the Blessings of your Lord will you deny."

(Surah Ar-Rehman)

First and foremost, to my creator, my life coach, the most gracious, the most beneficent, ALLAH S.W.T, I owe it all to you, Thank you. There have been many people who have walked alongside me, who have guided me through all these efforts. I would like to outstretch gratitude to each of them. I would like to extend special gratitude to my supervisor, **Dr. Shazia Faiz**, whose contributions in simulating suggestions and encouragement, helped me to coordinate my thesis work and especially in attaining the results. It was because of your continued support and guidance that I was able to do it.

Furthermore, I would also like to acknowledge the crucial role of **MR. Arslan Arshad** for support and encouragement throughout research work. Without you all, it was not possible! Here I am indebted to my parents especially my mother, for her efforts and encouragement throughout my educational career. It was you who stood by my side at every difficult moment and kept my morale high. It was your unconditional love, guidance, and belief in me who brought me here. For all the comforts and support you provided me, words cannot express my gratitude for everything you have done for me.

I would like to express my cordial appreciation to all those who provided me the possibility to complete this thesis.



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Abstract

The current study aimed to find out how does digital leadership effect sustainable creative performance and psychological well-being: through the mechanism of agile response. Furthermore, the study investigated whether organizational culture moderated the positive relationship between digital leadership and agile response. Within the fast changing digital landscape, leadership tactics have a critical role in shaping both the welfare of employees and corporate outcomes. Data were collected from 275 individuals working in project based organization, IT Based industry & NGOS in Pakistan through structured questionnaires. Data were analyzed by using correlation and regression analysis through SPSS. The findings suggested that digital leadership was positively associated with sustainable creative performance and negatively associated with psychological wellbeing. Furthermore, agile response mediated the positive relationship between digital leadership and sustainable creative performance while, agile response fully mediated the negative relationship between digital leadership and psychological well-being. Moreover, the results support the claim that organizational culture strengthens the relationship between digital leadership and agile response. By focusing on responsive organizational culture framework, this study advances our understanding of how digital leadership may be used to promote an atmosphere that is supportive for sustainable creative performance and employee well being.The study is concluded by discussing the practical and theoretical implications along with the limitations.

Keywords: Digital Leadership, Sustainable Creative Performance, Psychological Well-being, Agile Response , Organizational Culture.

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Chapter 1

Introduction

1.1 Background of the Study

Digital leadership as a leadership style used with digital tools in the virtual world. Digital leadership is the ability to recognize and cultivate the abilities and skills required to involve every member of the company in the process of digitization (Larjovuori, Bordi, Mäkiniemi, & Heikkilä-Tammi, 2016). The concept of leadership has changed into digital leadership (Hesse, 2018). The extant literature acknowledges the significance of digital leadership and describes its concepts, origins, and traits. It also skims over issues pertaining to digitization, the internet, systems, and organizations. Additionally, it confirms, at least in part, the connection between digital leadership and innovation management (Wasono & Furinto, 2018), market orientation (Mihardjo, Sasmoko, Alamsyah, & Elidjen, 2019), dynamic capability, strategic alliances, and other variables. Notwithstanding the widespread understanding of the critical role that digital leadership plays in innovation and digital transformation, the literature's findings are comparatively scant.

According to earlier studies, specific leadership philosophies, such as distributed leadership, parespective leadership, inclusive leadership (Gong, Liu, Rong, & Fu, 2021), and transformational leadership (Cheng, Davenport, Johnson, Vella, & Hickie, 2019), can favorably affect exploratory innovation. Even with these noteworthy additions, there is still gap in the literature that must be filled in order to

progress this field of study both conceptually and empirically. Digital leadership represents one of those innovations. Highlighting the significant contribution that digital leadership makes to corporate innovation. Capabilities related to big data analysis have also drawn attention and are thought to be essential for businesses to achieve digitalization (Mikalef, Pappas, Krogstie, & Giannakos, 2018).

The majority of industries are dominated by multinational firms, and only a small number of extremely specialized markets allow medium-sized businesses to assert themselves as market leaders (Buchler, 2018). This development represents the culmination of the digital transformation. AI, It, and Big Data lead to the emergence of new digital business models (Mikfeld, 2016). The simple conclusion that this growth leads to is that, in today's world of globalization and internalization, digitization is essential. In the era of digital transformation, remarkable market success is unlikely to persist without multinational, if not global, company activity. As a result, digital leadership viewed as multicultural leadership given the increasingly heterogeneous nature of our workforce. Cultures collide, and leaders who deal with staff members and clients from different cultural origins will always need to be proficient in working across cultural boundaries (Kreutzer, Neugebauer, & Pattloch, 2017).

1.2 Gap Analysis

The intersection of digital capabilities and sustainable performance in contemporary corporate environments is attracting the attention of both researchers and practitioners (Najrani, 2016). Numerous studies examining this intricate relationship have been conducted in recent years, and the findings consistently show that advanced digital capabilities and long-term corporate success are mutually advantageous (Talwar & Koury, 2017). Advanced digital capabilities encompass a wide range of technologies and activities, with data analytics and digital platforms being essential elements (Temelkova, 2018). The Impact of digital leadership on sustainable creative performance has been studied. It also has limitations. The subjects of this empirical study were general companies in Shandong Province in

China and Chungcheongbuk-do in Korea. Therefore, for generalization, empirical research over a wider geographical area is needed (Kreutzer et al., 2017).

According to the Job Demands Resources model, high job demands that are not met with adequate job resources are linked to a decline in psychological well-being and an increased risk of work-related issues. Developed and even few developing countries becoming technologically advance in their businesses (Munandar & Munthe, 2019). In turn, the business is getting competitive advantage but simultaneously the psychological health of employees may be impacted. Thus, present study explores the dual impact of digital leadership, how it paces up the flow of info and response, contrary to that engaging employees constantly and impact their psychological well-being. Zeike, Bradbury, Lindert, and Pfaff (2019) studied the impact of digital leadership on psychological well-being. They suggested that further research should investigate whether improving digital leadership negatively effecting well-being of managers.

Brosseau, Ebrahim, Handscomb, and Thaker (2019) define an agile response as an organization that is made up of separate, static units, where quick response is mandatory, whereas (Najrani, 2016) explains it as having an active team network with a hierarchical structure that facilitates quick learning and decision-making. Agile response is the ability to adapt to changes in the market by shifting resources to capitalize on them. Agile response and digital leadership are positively correlated, as several studies have shownExtant research compliments (Bellis, Cunial, & Trabucchi, 2024) that digital leaders are essential for developing an agile response that helps businesses adapt and successfully changes in the competitive market. Digital executives are aware of how crucial technology is to the success of their companies. They make investments in infrastructure and digital capabilities to enable agile practices. By offering strategic direction, encouraging innovation, enabling technology, fostering collaboration, developing talent, keeping an eye on the consumer, and adopting data-driven decision-making, digital leadership has a good influence on agile response.

Agile response and sustained creative performance are significantly positively correlated. Agile companies may try new concepts and creative solutions and results in sustainable creative performance. Companies that used agile approaches were

more likely to report advances in innovation and creativity. Alyahya, Aliedan, Agag, and Abdelmoety (2023), gave a clue that a business with a potential to be agile will be better sustainable creative performance. On the other end few suggested that team members may become more stressed as a result of agile development and fast pace. Pitafi (2024) gave a clue that agile response and psychological well-being (PWB) supposed to be negatively related. Thus, this study attempts to uncover the connection among between the variables.

Benitez, Arenas, Castillo, and Esteves (2022) gave a clue digital leadership and sustained creative performance can be mediated by agile response. Digital leadership and sustained creative performance are mediated by agile response. Agile response enables organizations to achieve lasting creative success in the dynamic business landscape by fostering an atmosphere that fosters creativity and invention, while also enabling swift adaptation and reaction to market dynamics. Businesses that successfully apply agile approaches to put the innovative concepts produced by digital leadership into practices will be well-positioned to experience sustained growth and innovation. While agile response helps organizations to swiftly adapt and respond to new opportunities and problems, digital leadership encourages creativity and innovation (Westerman, Bonnet, & McAfee, 2014). Additionally, the connection between PWB and digital leadership can be explained through underlying mechanism of agile response. Pitafi (2024), agile response, indicates adaptability, flexibility, and continuous, response can negatively associated psychological well-being and lessen the detrimental effects of digital leadership on PWB. Organizational culture is a major source of long-term competitive advantage. It's essential to the success of projects involving organizational change and a determinant of organizational performance. According to Martínez-Caro, Cegarra-Navarro, and Alfonso-Ruiz (2020), organizational culture in the age of the digital workforce needs to encompass digital workplace practices. The digital organizational culture is a collection of common beliefs and understandings about how organizations operate in a digital environment. Although digital leadership has been praised for its capacity to improve responsiveness, flexibility, and adaptation, yet it brings some challenges as well. Workers may feel unstable and insecure, which may cause them to feel powerless, uncontrollable, and less satisfied with their jobs and might

hesitate to respond quickly. But supportive organizational culture can help them to meet challenges and minimize the negative vibes. The way that organizational culture influences the interaction between agile response and digital leadership is very important. In an organizational culture that values creativity, flexibility, and teamwork, digital leadership—which is defined by a forward-thinking vision, employee empowerment, and data-driven decision-making—effectively promotes agile response (Meier, Kropp, Anslow, & Biddle, 2018).

1.3 Problem Statement

In the rapidly evolving landscape of contemporary organizations, the influence of digital leadership on the intertwined dynamics of sustainable creative performance and psychological well-being remains an under explored area. As businesses increasingly embrace digital transformation, it is imperative to investigate the extent to which digital leadership practices contribute to or hinder the sustainable creative performance of employees and their overall psychological well-being. Additionally, the roles played by agile response as a potential mediator and organizational culture as a moderating factor in this relationship merit thorough examination.

By addressing these issues, this research aims to contribute valuable insights into the intricate dynamics of digital leadership, shedding light on its potential to foster sustainable creativity and enhance the psychological well-being of employees, with due consideration to the mediating role of agile response and the moderating influence of organizational culture.

1.4 Research Questions

Based on the specific problems, the present study is intended to find answers to these questions.

1. Does Digital Leadership affect Sustainable Creative Performance?
2. Does digital leadership affect psychological well-being?

3. Does digital leadership positively affect agile response?
4. Does agile response positively affect sustainable creative performance?
5. Does agile response positively affect psychological well-being?
6. Does agile response mediate the relationship between digital leadership and sustainable creative performance?
7. Does agile response mediate the relationship between digital leadership and psychological well-being?
8. Does organizational culture moderate the relationship between digital leadership and agile response?

1.5 Research Objectives

The set objectives of this study are stated below:

1. To investigate the relationship between digital leadership and sustainable creative performance.
2. To examine the relationship between digital leadership and psychological well-being.
3. To explore the relationship between digital leadership and agile response.
4. To examine the relationship between agile response and sustainable creative performance
5. To investigate the relationship between agile response and psychological well being
6. To explore the mediating role of agile response between digital leadership and sustainable creative performance.
7. To examine the mediating role of agile response between digital leadership and psychological well-being
8. To investigate the moderating role of organizational culture between digital leadership and agile response.

1.6 Significance of the Study

This research adds to the increasing amount of literature on digital leadership by clarifying how it affects sustainable creative performance and psychological well-being. Organizations can acquire important insights into efficient leadership practices in the digital era by determining the mechanisms by which digital leadership affects these results. For an organization to succeed in the quickly changing business environment of today, sustainable performance is essential. Through an examination of the connection between sustainable creative performance and digital leadership, this research offers companies' tactics to support innovation and creativity while maintaining long-term sustainability and success. Organizations are becoming more aware of the detrimental psychological repercussions of digital leadership, like stress and burnout. Through examining how digital leadership affects psychological well-being. This study provides businesses with a road map for managing change and uncertainty by analyzing the mediating function of agile response and highlighting the significance of organizational agility in relation with digital leadership, sustainable performance and wellbeing.

This study emphasizes the significance of cultivating organizational cultures that support and align with digital leadership initiatives by examining the moderating role of organizational culture. This will help organizations optimize the efficacy of their leadership practices and improve their overall performance. The study's conclusions have applications for managers and leaders who want to improve worker happiness and organizational performance in the digital age. Through an awareness of the ways in which agile response, digital leadership, and organizational culture interact, leaders may create customized plans and actions that promote long-term success and well-being.

Finally, the study's conclusions are unique to the Pakistani environment. The integrated model that was suggested was studied with a focus on Pakistan's IT sector, NGOS and project-based companies. Because work environments differ in Asian contexts from those in the West, this study will yield novel insights on Pakistani society

1.7 Supporting Theory

Ludwig von Bertalanffy first formalized the theory in the early 1950s. His ideas became the foundation for what we now refer to as systems theory of management. The term "system theory of management" describes a goal-oriented mechanism made up of several components that interact and are related to one another so that the total effort of all the components is higher than the sum of their individual parts. To put it simply, the system theory sees an organization as a system made up of several components that must cooperate in order to fulfill its objectives. An organization is, in fact, a system. Considering that a system is made up of several subsystems, each of which is connected to the others. One subsystem's actions have an impact on the other subsystem.

According to the system approach, every system is made up of three components that interact with their surroundings to function: input, process, and output. As a system, an organization consists of three inputs: process (operation), product (profitability), and input (human, physical resource). Through the mediating role of agile response and the moderating role of organizational culture, system management theory helps clarify how digital leadership promotes sustained creative performance. Digital leaders actively interact with the external digital environment, seeing the company as an open system. They make use of digital tools, data, and technology to obtain information, adjust to change, and generate new opportunities. They are aware of how various internal and environmental elements that affect performance and creativity are interconnected. For the purpose of maximizing creative potential and fostering synergy, they encourage knowledge sharing and collaboration between teams and departments. To track development, evaluate the effects of projects, and gain knowledge from both triumphs and mistakes, digital leaders place a strong emphasis on ongoing feedback loops. This data-driven strategy fosters innovation and ongoing development.

Systems theory highlights how different organizational components are interdependent. In the context of this research digital leadership, sustainable creative performance, agile response and organizational culture are all interrelated. Modifications or actions in one area may have repercussions for the entire system.

According to systems theory, feedback loops are crucial for preserving system stability and promoting adaptability. The feedback mechanisms that exist between agile response, organizational culture, digital leadership, and sustainable creative performance can play a critical role in this model. A culture that emphasizes agility, for example, might be fostered by competent digital leadership, and this would improve creative performance and create a positive feedback loop. According to systems theory, organizations display emergent features, or traits or actions that result from system constituents interacting with one another. This research probably looks at how organizational culture, agile response, and digital leadership work together to produce emergent results in long-term creative performance. According to systems theory, interactions within a system are frequently nonlinear, which means that little changes made in one place can have disproportionately big consequences in another. This nonlinear link may be seen in this model in the way that creative performance results can be greatly impacted by a little change in organizational culture that is mediated by agile responses and affected by digital leadership. Systems theory studies complex systems, which include many interconnected parts and feedback loops. This research recognizes the complexity of organizational dynamics and seeks to comprehend the ways in which organizational culture, digital leadership, and agile response combine to impact creative performance that is sustainable in this complicated context.

A thorough understanding of the intricate relationships within an organization can be obtained by applying the system theory of management to a model that investigates the detrimental effects of digital leadership on psychological well-being, with agile response acting as a mediating factor and organizational culture acting as a moderating factor. System theory aids in identifying how different components of an organization are interrelated. It highlights how modifications to one area of the system can have repercussions on other areas as well, including psychological health. High standards, continual connectivity, and a fast-paced work environment are characteristics of digital leadership, which can exacerbate stress and have a detrimental impact on psychological health. The communication methods of digital leaders, such as their greater reliance on digital platforms, may have a negative effect on psychological well-being by negatively affecting interpersonal

connections.

In this situation, agile response serves as a moderator by impacting the organization's ability to adjust to the changes brought forth by digital leadership. Being immobile can worsen the consequences on psychological health by making the workplace inflexible and stressful. Using agile methods frequently entails giving staff decision-making authority. Empowerment offers a sense of control and autonomy, which has a good impact on psychological well-being.

Positive company cultures can mitigate the detrimental effects of digital leadership on mental health. Work-life balance, mental health resources, and employee well-being are valued in cultures that might mitigate harmful consequences. The communication standards that are part of the company culture have the potential to either exacerbate or lessen the detrimental psychological effects of digital leadership. Addressing issues and promoting a healthier work environment can be facilitated by open and honest communication.

Chapter 2

Literature Review

2.1 Digital Leadership

Digital leadership, according to (Zhong, 2017), entails supplying and upholding a digital organization, fostering and promoting professional progress based on technology, leading and inspiring digital change, and creating and sustaining a digital learning culture.

2.2 Sustainable Creative Performance

The ability to continuously produce innovative and practical solutions while reducing adverse effects on the environment and society and guaranteeing long-term economic sustainability is referred to as sustainable creative performance. People that exhibit high levels of creativity are typically viewed as resources that may be used to increase or maximize team and organizational productivity. In accordance with (Denison, Nieminen, & Kotrba, 2014), we speculate that people exhibiting high levels of sustainable creative performance would also be more adept at understanding new knowledge, have higher levels of internal drive for innovation, and speak more fluently about emerging technologies. The capacity to sustain a high degree of creativity over time without tiring out or losing productivity is known as sustainable creative performance. To maintain coming up with fresh concepts

and creating creative work, it's important to discover an efficient yet pleasurable way to work.

2.3 Psychological Well-Being

Negative psychological well-being refers to a state of distress characterized by the absence of positive emotions and the presence of adverse mental states. It encompasses a diverse range of experiences that can significantly impact an individual's quality of life and functioning. (Bradburn, 1969) established the first differentiation between positive and negative affect in his seminal work on the structure of psychological well-being.

2.4 Agile Response

The "Agile Manifesto," which was put forth by 17 professionals in the USA in 2001, is a popular term for the agile methodology concept (Highsmith, 2009). The Manifesto advocated four agile development foundation values I.e., "Individuals and interactions over processes and tools"; ii) "Working software over comprehensive documentation"; iii) "Customer collaboration over contract negotiation"; and iv) "Responding to change over following a plan."

2.5 Organizational Culture

Defining digital organizational culture as a collection of common beliefs and understandings about how organizations operate online. Digital organizational culture is specifically about commitment, continuity, flexibility, and purpose (Denison et al., 2014). Traditionally, organizational culture has been viewed as a long-standing and largely stable aspect that may be challenging to alter significantly. However, organizational members can recognize change and make necessary adjustments in the digital context by developing new digital strategies to formally and informally reinforce it (Costanza, Blacksmith, Coats, Severt, & DeCostanza, 2016).

2.6 Digital Leadership and Sustainable Creative Performance

According to Tanniru (2018) digital leadership is a process that necessitates an agile business and IT architecture in order to quickly realize ideas, enhancing and maintaining an innovation culture. Digital leadership, as defined by (Stana, Fischer, & Nicolajsen, 2018), is a technology-enabled social influence process that can take place at any organizational level and aims to change an individual's, group's, or organization's attitude, emotion, thinking, behavior, and performance. (Mihardjo et al., 2019) contends that digital leadership is a byproduct of digital culture and skill, in contrast to the prevalent belief or majority. Digital leadership, according to (Antonopoulou, Halkiopoulos, Barlou, & Beligiannis, 2021), is accomplishing an information-related objective while balancing the use of information-related technologies and human resources. The competencies that modern leaders ought to have in terms of digital know-how were explored by (Schiuma, Schettini, Santarsiero, & Carlucci, 2022). Lastly, Peng (2022) asserts that by utilizing digital insight, digital decision making, digital implementation, and digital guidance to guarantee that their objectives are fulfilled, individuals or organizations in the era of digital technology can fully transform teams, entire organizations, and employees into digital thinkers.

Digital leadership, is "the capacity to influence people to literally embrace it." The literature claims that those who possess creative ideas in a digital setting, inspire their staff in a digital setting, maintain a sustainable line of communication with staff members in a digital setting, and are adept at creating digital strategies are the epitome of digital leadership. We might say that the idea is defined for two different reasons if we are to categorize the research in the literature.

Companies are racing to attain sustainable creative performance (SCP) as a result of globalization and dynamic marketplaces (Ahmad, Liu, Irfan, & Álvarez-García, 2022). In order to achieve SCP, enterprises of all sizes and types have made investments in both tangible and intangible resources. Organizations must become more innovative as a result of globalization in order to maintain their competitive

edge (Nureen, Liu, Ahmad, & Irfan, 2022). The capacity to sustain a high degree of creativity over time without tiring out or losing productivity is known as sustainable creative performance. To maintain coming up with fresh concepts and creating creative work, it's important to discover an efficient yet pleasurable way to work.

Emerging economies have struggled over the past 20 years with a lack of technology to enable sustainable creative performance (Anwar & Ali Shah, 2020). Thus, cutting-edge technology is crucial and can strengthen the company's position in the market. Consequently, several businesses are considering implementing new technology that has the potential to greatly enhance their business performance (Liang, 2017). Innovative technologies like artificial intelligence (AI) and virtual reality are used by digital leaders to promote experimentation, data-driven decision making, and creative breakthroughs that result in more sustainable solutions. Digital leaders are encouraged and their performance is supported when foreign technology is amplified through mergers and acquisitions (Dickson, Espa, Gabriele, & Mazzitelli, 2021). Decentralizing decision-making and granting staff members more control over their job are common components of digital leadership. This can increase motivation, a sense of ownership, and staff involvement, which will result in more creative production that is sustainable.

The intersection of digital leadership and sustainable performance in contemporary corporate environments is attracting the attention of both researchers and practitioners. Numerous studies examining this intricate relationship have been conducted in recent years, and the findings consistently show that advanced digital capabilities and long-term corporate success are mutually advantageous (Talwar & Koury, 2017). Advanced digital capabilities encompass a wide range of technologies and activities, with data analytics and digital platforms being essential elements (Temelkova, 2018). Businesses can take full advantage of the potential of data-driven insights, optimize operations, and make better decisions thanks to these features.

By doing this, they help a business maintain its competitive edge and provide additional significant benefits to its long-term performance (Petrucci & Rivera, 2018). To start, data analytics makes it easier for companies to comprehend their

clients, marketplaces, and internal procedures (Larsson & Lilja, 2019). Making educated judgments that allow organizations to identify inefficiencies, reduce expenses, and distribute resources as effectively as possible requires this knowledge Furthermore, companies can quickly adapt to changing market dynamics and environmental challenges thanks to digital capabilities (Temelkova, 2020). Digital tools can be used to quantify impact, monitor progress, and enforce performance accountability for both teams and individuals. Ensuring that creative endeavors are in line with the organization's sustainability objectives can be facilitated by this transparency.

In the complex current economic environment, where sustainability is both a moral imperative and a strategic advantage, this adaptability is crucial for navigating its complexities (Titareva, 2021). Consequently, these data-driven improvements lead to less costs, less of an impact on the environment, and more operational sustainability. Second, different stakeholder groups can communicate and work together more easily thanks to digital platforms Digital platforms provide a solid foundation for creating enduring relationships, whether through promoting employee involvement in environmental initiatives, customer interaction through e-commerce channels, or open supply chain management. These businesses battle with rivals that use digital technology in the tumultuous market (Akter, 2020). The adoption of digital technology is correlated with the success of new ventures, but it also depends on how innovative small businesses may be (Adams, Hough, Proeschold-Bell, Yao, & Kolkin, 2017). Furthermore, companies can quickly adapt to changing market dynamics and environmental challenges thanks to digital leadership (Temelkova, 2020). In the complex current economic environment, where sustainability is both a moral imperative and a strategic advantage, this adaptability is crucial for navigating its complexities. If companies can leverage digital technologies to shift to more sustainable operations; they will have a greater chance of long-term success (Antonopoulou et al., 2021). In conclusion, a wealth of data consistently supports the idea that advanced digital capabilities like data analytics and digital platforms have a positive impact on society. positive association with long-term as businesses continue to recognize the significance of digitalization in achieving sustainability goals, investing in these competencies becomes not only

a strategic imperative but also a method of achieving long-term success in an increasingly complicated and interconnected environment.

A foundation for comprehending how digital leadership can establish an atmosphere that supports long-term creative performance is offered by system theory of management. Digital leaders may drive businesses toward creative, lasting solutions by encouraging interconnection, adaptability, openness, emergence, and feedback loops. By leveraging technology, digital leaders may create cross-functional teams and break down departmental and organizational walls to improve communication and collaboration. Real-time data and feedback are made possible by digital tools, which let businesses quickly adjust to shifting internal dynamics and market situations. This kind of learning and improvement culture is essential for long-term creative success.

According to system theory, organizations are open systems that communicate with their surroundings on a continual basis. Technology can be used by digital leaders to establish connections with external stakeholders, obtain a variety of viewpoints, and gain access to fresh information and resources. Increased sustainability results from this openness, which also ensures that innovative solutions are in line with the larger context. Within the organization, feedback loops can be created with the use of digital tools. Executives can monitor the effects of innovative projects, gauge the advancement of sustainable objectives, and utilize the outcomes to guide subsequent actions. This closed-loop approach guarantees that innovative endeavors are in line with long-term goals and promotes ongoing improvement.

H1: There is a positive relationship between digital leadership and sustainable creative performance.

2.7 Digital Leadership and Psychological Well-Being

The idea of well-being is frequently defined in terms of its positive characteristics, such as happiness, life satisfaction, and flourishing. But it's important to

recognize and comprehend the "dark side" of psychological health, if unfavorable factors are involved. Examining these disadvantages requires looking at the ways in which wellbeing can be compromised and have negative effects. Innovation has led to significant advancements in human existence. The ability to use information technology devices efficiently is necessary for productive access to and use of data assets due to the modernization of innovation (Anshari, Almunawar, Shahrill, Wicaksono, & Huda, 2017). There are already 5.3 billion ICT users worldwide, and that number is predicted to rise to several millions (Andrews & McKennell, 1980). In the twenty-first century, the majority of associations want their employees to be better prepared and able to adapt to the newest applications of technology. Mental health and psychological well-being are intimately associated, and psychological well-being has a big impact on people at work. Employees with poor mental health may perform poorly at work, which could result in poor decision-making, a rise in absenteeism, a lack of enthusiasm and commitment, a hostile work environment, and a higher likelihood of conflicts within the workgroup. The psychological well-being and health of employees are significantly influenced by work-related aspects and working conditions (Fiedler, Pfaff, Soellner, & Pförtner, 2018). It is recommended that managers and executives engage in extended communication through a variety of technology-based channels, including email, intranet, messaging apps, video conferencing platforms and applications, and other technologies (Sanders, Nguyen, Bouckenooghe, Rafferty, & Schwarz, 2020). The increasing need for these technological tools might cause leaders and managers to feel distressed, which can have an impact on their psychological health. In order to ensure that the organization's digital transformation is successful, leaders are also confronting the greatest hurdles. Leaders and upper management typically view the digital transformation processes in organizations as a significant challenge (Westerman et al., 2014).

Currently, managers and leaders must oversee the organization's digital transformation, stay up to date on emerging digital technologies, and make difficult decisions in highly unpredictable situations. As a result, they must use digital leadership as a resource to enhance managers' ability to deal with increasingly complex, uncertain, and stressful situations (Mullan & Wajcman, 2019). The most crucial roles in the implementation of digital transformation are played by

managers and leaders, who must be able to motivate and influence employees in addition to acting as digital players capable of utilizing digital tools and carrying out the organization's digital strategies (Cortellazzo, Bruni, & Zampieri, 2019). Technostress, or chronic stress connected to technology use, is caused by the blurring of work-life boundaries caused by constant connectivity and accessibility. Reduced cognitive performance, anxiety, and sleep difficulties are among possible symptoms of this (Peng, 2022). Certain digital leadership techniques, like continuous performance reviews or staff monitoring software, can foster a sense of mistrust and surveillance, which heightens anxiety and paranoia.

Two components are necessary for effective digital leadership: possessing the attitudes and skills needed to use technology and having a clear understanding of the processes involved in digital transformation and the tools needed to implement digital strategies within the company (Zeike, Choi, Lindert, & Pfaff, 2019). Individuals' psychological well-being has a substantial impact on their mental health and their psychological well-being at work (Fiedler et al., 2018). Feelings of alienation, exhaustion, and bitterness can result from constant digital communication and dissolved borders. It may be impossible for leaders to "leave work," which has an adverse effect on their general well-being and personal lives. Cognitive overload and decision fatigue can result from being inundated with emails, texts, and data on a regular basis. Leaders may feel anxious and frustrated as a result of having trouble concentrating, setting priorities, and coming to wise conclusions (cho, 2023). While working at a robotic pace is often classified as a stressful activity that is bad for you, the high demands of digital work can be difficult or helpful.

Digitalization can be interpreted as either an inspiring boost and a challenge stressor, or as an excessive demand and a hindrance stressor (Leclercq-Vandelannoitte, 2022). Stress caused by technology can be defined as a state in which people are unable to manage their information overload or integrate technology in a sensible way into their daily lives. Digital solutions allow for remote work in knowledge and office jobs. While work-home overflow is generally viewed as a bad stressor, teleworking opportunities have also been shown to improve general wellbeing and, for instance, attentive parenting (Farivar & Richardson, 2021). Zoom fatigue, a teleconference phenomenon, has been linked to dissatisfaction with the shift of

work-related meetings from the workplace to the home (Schlesselman, Cain, & DiVall, 2020).

On the other hand, there is less information available regarding the perception of teleconferences as motivating and stimulating (Esfahani & Abbasirad, 2021). Insufficient in-person interactions can weaken emotional bonds and cause feelings of alienation and isolation. This might be especially difficult for leaders who get their inspiration and motivation from personal relationships.

While digital leadership has many advantages, it can also have some detrimental effects on people's psychological health, both for the leaders and those they lead. For example, it has been observed that the amount of time spent responding to emails increases the perception of being overwhelmed. In addition, the fear of missing out on emails or other information from coworkers, managers, or clients might influence technology use at work and at home, which has a detrimental effect on motivation and general well-being (Bughin, LaBerge, & Mellbye, 2017). An inability to detach from work might affect relationships and leisure activities in one's personal life. Guilt, loneliness, and a decline in job satisfaction may result from this. Continuous monitoring can exacerbate stress and performance anxiety by making one feel as though they are being watched and evaluated all the time. This may have a negative impact on a leader's self-esteem and general health (Dignan, 2024). Those in a team who depend on human interaction may experience emotions of alienation and detachment if they primarily rely on digital communication. Collaboration, trust, and general psychological health may be hampered by this.

Digital leadership may be impeded by employer opportunism, external interests, and nostalgia, in addition to detrimental impacts on employee well-being that jeopardize productivity, work-life balance, and the nature of work in the future. Under organizational level limits, employee stress from job intensification lowers productivity (Amankwah-Amoah, Khan, Wood, & Knight, 2021). An increase in digital employment may be linked to worse mental health and less workability (Boerner, 2021). Continuous observation can provide the impression that one is being watched and evaluated all the time, which can raise stress levels and anxiety related to performance. This may have a negative impact on a leader's self-esteem

and general health. Due to Digital leadership components of the unpleasant feeling of technostress brought on by an imbalance between people and the technology environment in which they perform their profession, which workers describe as their subjective experience of technostress (Rios-de-Deus, 2021).

There is a correlation between increased workplace stress and the four risk factors due to digital leadership dispersed teamwork, mobile work, continual availability, and ineffective technical assistance. Numerous symptoms, including anxiety, physical disease, behavioral tension, technophobia, mental exhaustion, memory impairment, poor concentration, irritability, feeling weary, and sleeplessness, have been linked to technostress due to digital leadership in the literature. Recent research has indicated that among the most common effects of digital leadership are decreased worker productivity, job performance, job satisfaction, and organizational commitment also, there is an increase in the intention to leave the company and a drop in the intention to utilize ICT (Molino et al., 2020). Workplace psychosocial stress is made worse by digitalization. Employee well-being is at risk due to digitalization's increased time constraints and demanding workload. Part of the mediation of the effects of digitalization on psycho-social hazards is done by occupational health. Psycho-social dangers at work, like time constraints and the challenge of building positive relationships with coworkers, are significant sources of harm to employees and cannot be disregarded (Palumbo, 2021).

The idea of system management can provide insight into the ways in which digital leadership techniques may have an adverse effect on the psychological health of employees. Organizations are seen under system management theory as open systems that depend on interactions with their surroundings to exchange resources and information. Employees may become unduly reliant on their leaders and more susceptible to their demands as a result of tight coupling brought about by digital leadership techniques like micromanagement and continuous communication. This loss of independence may increase stress and detract from wellbeing. There are feedback loops in systems, where past inputs affect present inputs. The way a leader communicates digitally might set off a feedback loop that amplifies itself. For instance, workers may become anxious from receiving emails or messages all the time, which would encourage them to reply even more frequently. This would

lead to a vicious cycle of increased stress and communication. The quick and heightened feedback loop may be harmful to one's mental state.

H2: There is significant negative relationship between digital leadership and psychological well-being.

2.8 Digital Leadership and Agile Response

Businesses and sectors face a range of issues in an increasingly digital world, including shifting consumer behavior, heightened market dynamics, and new advances in information technology (IT). Companies and sectors are working hard to become flexible in order to respond to change in digital innovation and transformation as a result of the new digital environment (Lee, 2019). The agile development technique, in contrast to traditional plan-based approaches that need significant documentation and meticulous pre planning, represents an iterative development strategy that prioritizes rapid deployment, responsiveness to change, and customer needs. (Fuchs & Hess, 2018) carried out two in-depth case studies, developed an agile transformation process for large enterprises, and offered managerial advice.

A case study on the issue of knowledge management and the transformation process for IT agile adaption as the organization transforms was given by (Olteanu, 2018). Agile is an excellent management approach for handling issues like unpredictability and quick company changes. In addition to being used by businesses outside of the software and IT sectors, the agile methodology is also becoming more widely accepted outside of the confines of its current uses, which include software development (SD) and IT-related projects. Agile transformation is becoming more and more popular as a key component of effective digital transformation. Agility was described as "the ability to creatively respond to a rapidly changing business environment" by (Highsmith, 2009) one of the creators of the agile manifesto.

Furthermore, we outline three ideals that agile response to change, Initially, it provides clients with value instead of adhering to project limitations (schedule, cost, scope). Secondly, instead of handling tasks, take charge of teams. Third, don't just follow project plans; actively adapt to changes. Digital leaders may quickly develop and modify products and services in response to shifting market demands

by using data to analyze client trends and wants (Frankowska & Rzeczycki, 2020). Use agile concepts to handle crises and make fast adjustments to changing circumstances. Now that the Fourth Industrial Revolution is well underway in the early 2020s, we must comprehend where and how the agile concept introduction is heading in the new framework of digital transformation.

Agile companies are simply better suited to handle problems and adapt to unpredictability. These businesses possess the ambition, ability to anticipate, and execution strength to take advantage of fresh business prospects. They are able to swiftly discontinue unneeded product lines, launch new ones, reorganize workflows, acquire new competencies, and implement new technologies as needed. Thus, businesses that have developed business agility have a greater chance of expanding, becoming more profitable, and remaining relevant in the market over time. In spite of required changes in strategic orientations, Agile response is defined as the capacity to recognize, plan, and manage an ongoing flow of innovation, change, and learning in a way that supports strategy execution (Olatunji, Abimbola, Samuel, et al., 2020).

Developing products and services, organizational structures, skill sets, and adopt digital leadership skills are just a few of the business aspects that frequently need to change in order to become more agile (Joiner, 2019). As a result, a lot of academics and industry players demand that businesses have agility the capacity to see uncertainty as a chance and propel fast-paced corporate growth in response to shifting strategic contexts. Numerous academics and industry professionals have acknowledged the advantages (Accenture, 2018) and a growing number of businesses have begun to spearhead this kind of change. In order to successfully navigate the ever-changing digital landscape, agile reaction and digital leadership go hand in hand. Digital leaders foster an environment where people are enabled to quickly adapt to changes by encouraging vision, innovation, and risk-taking (Mendez, 2018). Digital leaders are visionary navigators who support the integration of technology into every facet of the company, not just those who are tech-savvy. The strategic vision for leveraging technology to accomplish business objectives is established by digital leaders. Agile teams may navigate and make decisions with the help of this vision. An agile culture where information flows

easily and choices are made close to the point of action is fostered by digital leaders who support cross-functional teams and open communication (Vial, 2021).

Digital leaders that are well-versed in digital technology are able to employ agile tools, make well-informed judgments, and successfully manage technological disruptions (Frankowska & Rzeczycki, 2020). This encourages a responsive culture. Digital leaders eliminate bureaucratic barriers that obstruct agility and dismantle organizational silos. They facilitate information exchange and cross-functional cooperation, which helps teams work fast. Strong digital leadership promotes agile workplaces that reward experimentation, innovation, and ownership, which results in a more inventive and engaged workforce (Akkaya & Tabak, 2020). Digital leaders cultivate a feedback loop and ongoing learning culture. As a result, teams are able to adjust to new knowledge, improve their methods, and eventually grow more flexible. Data and analytics are used by digital leaders to give teams advice and insights in real time. This facilitates agile responses and data-driven decision-making. Organizations with agility can take advantage of opportunities and counter risks before rivals do, giving them a long-term competitive edge (Shams, Vrontis, Belyaeva, Ferraris, & Czinkota, 2021).

It is explained that agile businesses have a distinct vision, a shared objective that permeates the entire organization. According to (De Smet, Lurie, & St George, 2018), this "north star" directs employees to constantly reevaluate how to add value and motivates them to look for ways that they, both individually and as teams, may help to have a bigger influence. Agile businesses are devoted to working with and for their many stakeholders, including partners, investors, employees, and larger communities. They are also highly customer-oriented and value-driven (De Smet et al., 2018). Because of the strong organizational motivation generated by the shared vision, agile businesses are better equipped to respond to opportunities and challenges.

Understanding the organization as a complex system of interrelated pieces is emphasized by system management theory. This helps digital leaders develop a more comprehensive viewpoint by encouraging them to think about how technology affects every part of the company, not just specific projects. This viewpoint is essential to ensuring that efforts in digital leadership complement and facilitate

agile response throughout the system. Systems must adapt in order to survive as they are susceptible to outside forces. This adaptability is welcomed by digital leadership, which sees change as an opportunity rather than a danger. This is in complete accordance with the concepts of agile response, allowing the company to promptly adjust to shifts in the marketplace, technological advancements, and client needs. System management theory emphasizes how crucial feedback loops are to enhancing system performance. By aggressively seeking out input from teams and consumers, utilizing data analytics to obtain insights, and refining procedures and tactics in light of new information, digital leaders can establish these loops.

H3: There is a positive relationship between digital leadership and agile response.

2.9 Agile Response and Sustainable Creative Performance

The ability to continuously produce high-quality creative work over an extended period of time without exhausting organizational or individual resources is referred to as sustainable creative performance. It places a focus on taking a long-term view that strikes a balance between creativity and factors related to health, the environment, and the economy. Sustainable creative performance is the combination of environmental, economic, and social performance that gives a company a competitive edge and benefits society and the environment (Du, Bstieler, & Yalcinkaya, 2022). Creative performance can be defined as the quantity of original thoughts or actions that a worker produces while carrying out their duties. It could entail, for example, creating fresh approaches to old issues, examining and resolving brand-new issues, or producing fresh answers to old ones. Whether working in sales or customer service, frontline staff members regularly deal with issues relating to customers and are frequently given the chance to demonstrate their inventiveness (Ye, 2020 & karatape, 2020). Employees that exhibit high levels of thriving are anticipated to experience a feeling of growth and affluence, making them less likely to experience stagnation. Therefore, acquiring new knowledge,

abilities, and opportunities is linked to prospering (Jaiswal & Dhar, 2017). This might be lead sustainable creative performance. According to (Kleine, Rudolph, & Zacher, 2019), people are best positioned to identify chances for growth and transformation when they are actively learning. Since learning is a major antecedent of Sustainable creative performance, it is also regarded as being of utmost importance in the context of frontline staff.

Over the past twenty years, rising economies have encountered the challenge of inadequate technology to facilitate long-term, sustainable creative performance (Anwar & Ali Shah, 2020). Thus, cutting-edge technology is crucial and can strengthen the company's position in the market. As a result, some businesses are considering implementing new technologies that can greatly enhance their business performance (Lieu, 2017). Sustainable creative performance creating original concepts and solutions. creating art that fulfills its objectives and appeals to viewers, generating a variety of concepts and adjusting to shifting circumstances. Sustainable creative performance reducing the negative effects of creative activities and products on the environment, Increased creativity at work leads to fresh and practical solutions being produced for challenges for which no one else has come up with a solution. This enhances the possibility of tasks being completed and, thus, improves job performance (Gray, Knight, & Baer, 2020).

The capacity for evolution and adaptation is essential for creative achievement in the fast-paced world of today. Agile approaches welcome change as a chance for progress since they place a strong emphasis on iterative development, which may result in improved long-term creative performance. The Agile response is the ability of react quickly and comprehensively to the evolving needs of clients (Recker, Holten, Hummel, & Rosenkranz, 2017). Two aspects of agile response are response extensiveness and response efficiency. Response efficiency is tied to the resources needed to respond, whereas response extensiveness is related to the quantity, size, and variety of the answer (Lee, 2019). Agile response promotes a culture of experimentation by encouraging quick prototyping and testing. This enables creative teams to optimize their approach for best results, learn from triumphs and errors, and swiftly iterate on concepts.

Businesses that possess agile response are better able to adapt their operations, alter course fast, foresee changes in the external environment, and give customers greater control (Gilgor, 2019). Crucially, providers' agile response is also essential for smoothly and successfully implementing changes in the highly competitive global market (Al Humdan, Shi, Behnia, & Najmaei, 2020). Agile workflows with continuous feedback loops make sure that teams are always adapting to changing market trends and user needs. This flexibility reduces the possibility of creative fatigue and stagnation, resulting in a more sustained flow of creativity. Agile places a strong emphasis on transparent communication and cross-functional teams. This encourages cooperation and dismantles silos, enabling different viewpoints to contribute to the creative process.

In order for businesses to react swiftly and efficiently to sustainable creative performance in the business environment, agile response and sustainable creative performance are a crucial strategic match (Al Humdan et al., 2020). Furthermore, according to (Nath & Agrawal, 2020), the advancement of agile response can facilitate the application of long-term Creative sustainable performance practices. (Geyi, 2020) imply that in order to maximize the benefits of implementing sustainable creative practices, agile capabilities are essential. Frequent sprints and retrospectives provide teams the chance to evaluate their progress, pinpoint problems, and cooperatively modify their strategy. Long-term creative sustainability depends on team morale and motivation being raised by this shared ownership and accountability. Agile helps teams concentrate on the most crucial creative projects by prioritizing tasks according to their worth and impact.

The sustainable creative performance of a company is significantly impacted by agile response (Panichayakorn & Jermsittiparsert, 2019). As per the available research, companies exhibiting agile response have the ability to augment their overall sustainable performance by meeting customer demands, improving operational competence, promptly responding to market uncertainties, and generating new opportunities. Three essential core competencies—agile response, digital potential, and inventive ideas—improve organizational performance. (Werder et al., 2021). Agile approaches provide a strong foundation for improving long-term creative output. Creative teams may handle the constantly changing terrain with

more agility and resilience by embracing change, promoting collaboration, and setting priorities wisely. This will eventually lead to long-term creative success.

The theory of system management can offer significant perspectives on how adaptable change management fosters long-term creative output. According to this theory, organizations are open systems that interact with and change in response to their surroundings. This viewpoint is supported by agile approaches, which place a strong emphasis on adapting to shifting consumer demands, market trends, and rivalry. Creative teams may continuously improve their work and stay relevant over time thanks to this adaptability, which promotes sustainable performance. This paradigm highlights how different parts of a system are interrelated. Agile methods encourage cooperation and communication between various roles and departments because of their emphasis on cross-functional teams and comprehensive project management. Because of its interconnection, creative output is guaranteed to be influenced by a wide range of viewpoints and specialties, producing well-rounded, long-lasting solutions. Self-regulation and feedback loops are the main topics of this theory (Liu, Chan, Yang, & Niu, 2018).

Agile combines frequent retrospectives with iterative development to create feedback loops that let teams swiftly modify their strategy in response to performance. This ongoing learning and development promote sustained performance by preventing stagnation and preserving creative momentum. These links between agile practices and system management theory demonstrate how agile response contributes to the development of flexible, cooperative, and encouraging work cultures that foster long-term creative output.

H4: There is significant positive relationship between agile response and sustainable creative performance.

2.10 Agile Response and Psychological Well-Being

The definition of psychological well-being is the actualization and full accomplishment of a person's potential who can accept their past with all of its advantages

and shortcomings (self-acceptance), exhibit autonomy and an independent attitude, build positive relationships with others, master the environment (environmental mastery), have a purpose in life (personal growth), and develop themselves. Age, social and economic standing, culture, gender, social support, religiosity, and personality are all associated with psychological well-being (Dewi & Mulyo, 2017).

In other hand Negative factors that impact people's well-being include stress, pessimism, depressive moods, anxiety, loneliness, and negative moods. In the modern office, workers often have to balance several demands, tight deadlines, and a heavy workload. The employee may feel pressured and exhausted as a result, which could influence their decision to resign (Yusuf, Menhat, Abubakar, Ogbuke, et al., 2020). Yukongdi and Shrestha (2020) posits that negative wellbeing is an adverse affective state that is typified by emotions such as tension, annoyance, and frustration that stem from internal conflicts that workers face. It includes poor physical and mental health as well as compromised physiological processes brought on by an imbalance between the demands placed on employees' time and talents (Sun et al., 2021). Negative' well-being could be characterized as the cognitive and emotive response to perceived deficit in the aforementioned categories. Thus, components of positive well-being include life satisfaction, a positive attitude, and energy, whereas components of negative well-being include distress, a negative mood, symptoms, and hyperarousal.

A recent national survey indicates that an increasing proportion of workers in the services sector are experiencing burnout (Rad & Rad, 2021). Long hours and overwork can result from the need for quick turnaround times and continual development, particularly in fast-paced workplaces. The main factors that contribute to burnout are excessive overtime work, unfair compensation, and a heavy workload. The increased workload may be associated with agile processes, particularly in cases when firms adopt agile with little to no organizational adaption (Rad & Rad, 2021). Anxiety and worry can be brought on by frequent changes and unclear deadlines for certain people. The focus on iteration and feedback might feel like unrelenting inspection, which undermines confidence and causes self-doubt. The intermingling of work and personal life in agile environments may lead to an unbalanced work-life schedule and elevated stress levels.

A person may work from home occasionally or full-time, from multiple workstations in different offices, from co-working spaces with other businesses, or even from a coffee shop. Additionally, it may cause people to focus more on results and less on working hours or face time in the office. Along with the challenges and opportunities that come with growing globalization and new technology, a growing number of people also want to work more flexibly. Five main dimensions related to (i) emotional, (ii) cognitive, (iii) social, (iv) professional, and (v) psychosomatic experiences in an agile working environment are examined in (Charalampous, 2020). Our jobs are becoming more and more centered upon the usage of information and communication technology (ICT) as we live in a digital age (Russell & Grant, 2020).

Another research assesses the amount to which the agile methodology can impact anxiety, happiness, melancholy, and enthusiasm levels According to a different study, bipolar disorders and conduct disorders were the least often observed mental health and well-being categories, while anxiety disorders and general well-being were the most usually reported (Cheng et al., 2019). Despite the knowledge that insufficient physical activity poses a serious risk to an individual's health as well as the health of their organization, many modern jobs involve extended periods of continuous sitting and few opportunities for physical movement (Thompson, 2020).

An important workplace problem that affects both individual and organizational health is stress. According to the survey, stress is still common in Agile teams, especially among the less experienced members. Additionally, the authors saw that novice to Agile placed more emphasis on technical than on collaborative practices, which they surmised would be the reason for the stress (Meier et al., 2018). Agile working in today's environment means using technology to work flexibly across many locations, time zones, and other factors. In order to adjust to an agile working environment, employees routinely turn on digital notifications, but little is known about the potential effects this may have on their well-being and ability to perform well at work. A recent study Uther, Cleveland, and Jones (2020) examines the role of physiological responses to digital message alerts (as a measure of hyper vigilance) and if these indices are associated with views of a poor

work-life balance. After analyzing these data, the authors came to a conclusion about how to interrupt the physiological hyper vigilance cycle brought on by an unbalanced work-life schedule .

In the current economic climate, an organization's capacity for change determines whether it succeeds or fails (Wong, 2021). Businesses compete in a global marketplace with more aware consumers who have higher expectations for goods and services. In previous years, a lot of emphasis has been paid to agile response the capacity of an individual reinvent itself, adapt, change quickly, and prosper in a fast-paced, unclear, and unstable environment (Aghina, 2018). Agile methods, which prioritize continuous delivery and quick iteration, may result in higher workloads and more pressure on staff members to perform and adapt all the time. This may lead to increased workloads and long-term stress, which can have detrimental effects on one's physical and mental health (such as anxiety and burnout) as well as sleep patterns and cardiovascular problems.

The notion of system management offers a useful framework for comprehending the possible detrimental effects of agile response on mental health. Agile work environments prioritize quick iteration and cross-functional teams, resulting in complex, interdependent systems where one person's contributions have a substantial impact on others. This may increase personal accountability and worry about the system's overall performance. System theory serves as a helpful reminder that modifications made to one area of the system can have unanticipated effects elsewhere. Agile demands can therefore put undue strain on one team member, which can have a domino effect and harm other people's wellbeing (Uther et al., 2020). Because agile techniques promote ongoing availability through communication tools and expectations, they might cause blurring of the barriers between work and personal life. Employees who have easy access to work may find it difficult to set limits, which can result in a work-life imbalance and lower psychological well-being. Agile approaches place a high importance on short iterations and feedback, which may result in rapid feedback loops that increase stress and strain.

According to system theory, there are multiple methods for systems to equifinality, or desired outcomes. If one agile feedback loop such as continuous iteration is overemphasized, it may overlook other elements that are just as important for

long-term success such as staff wellbeing. The significance of borders within bigger systems is acknowledged by system theory. In agile work contexts, blurring these lines can upset people's homeostasis and increase stress and burnout.

H5: There is a significant negative relationship between agile response and psychological well-being.

2.11 Mediating Role of Agile Response between Digital Leadership and Sustainable Creative Performance

Organizations must harness and develop the power of digital technologies to generate their competitive edge as society grows more reliant on technology (Sheninger, 2019). In a successful workplace, (Roe, 2018) identified seven qualities and abilities that a digital leader should possess. These included intellectual curiosity, a grasp of the nature of people and customers, a clear vision, passion, and purpose, the capacity to use analytics, communication, and delegating. A digital leader must possess agility, flexibility, and adaptability to handle the ever-evolving landscape of the digital world. For the digital transformation to be successful, a digital leader must also foster adaptability in the workplace. Sustainable creative performance is a broad term that includes the capacity to continuously produce and deliver high-caliber creative work while preserving individual wellbeing and reducing adverse effects on the environment and society. It all comes down to finding a balance between sustainability, productivity, and innovation. Many academic disciplines, including business and education, have examined the of sustainable creative performance (Altinay, Madanoglu, Kromidha, Nurmagambetova, & Madanoglu, 2021). However, workers' creative thinking skills are seen as essential resources for their society's achievements. Additionally, businesses greatly depend on the inventiveness of their workforce (Zhu, Gardner, & Chen, 2018).

Research has highlighted the importance of sustainable creative performance as a crucial component that is highly susceptible to individual and environmental influences and influences various outcomes for both people and companies. In

situations when things are changing quickly, agile response is seen as essential to gaining and maintaining a competitive advantage over rivals. Being able to continuously shift between a number of fleeting, transient competitive advantages is therefore more important to being agile today than simply being able to recognize early indicators of change in order to defend an existing position (McGrath, 2019). Agile response is a dynamic quality that refers to the capacity to recognize and adapt to changes in the surrounding environment. Additionally, there is a delay between detecting and reacting, which can be minimized by making decisions more quickly and efficiently (Park, El Sawy, & Fiss, 2017).

Agile response functions as a bridge between digital leadership and, sustained creative performance akin to a deft diplomat adroitly navigating a delicate dance. It encourages a dynamic interaction between the guiding principles and vision of digital leadership and the continuous creative flow required for sustained success. The goal of digital leader is to continuously optimize the company so that it can quickly detect and react to changes in the market. It is quite uncommon for this kind of transformation to happen naturally and does not happen by accident (Maryanne, 2018). The digitalization of businesses has led to the digitization of leaders and the creation of the concept of digital leadership. Owing to the infrequency of spontaneous digital transformation, organizations need digital leaders who can organize and carry out methodical actions toward digitalization, enable their staff to act in line with this objective, adjust to changes, and create plans that strike a balance between technology and human factor. The traits of digital leaders can aid in the digital transformation process because disruptive technology adoption is required to increase productivity, value creation, and social welfare (Ebert & Duarte, 2018).

When the organization adopt digital technology, they must gain sustainable creative performance. Digital leaders place a high priority on the deliberate development of a culture of digital learning across the entire organization. There are specific challenges in managing and addressing these new business settings as a result of the workplace's continued use of smart technology, leading to an increase in digital workplaces (Haddud & McAllen, 2018). The strategic direction is established by digital leadership, which also outlines possibilities and goals within

the digital ecosystem. These broad goals are translated into manageable actions by agile response, which divides them into manageable chunks that creative teams may easily comprehend and carry out. Accordingly, rather than just digitizing business processes and transactions or integrating new digital technology into the organizational context, the digital transformation process demands a leader capable of creating and managing a radical change strategy (Yıkılmaz & Sürücü, 2021).

The agile mentality prioritizes providing continuous value to clients as the main objective of work; it supports small team collaboration through incremental, iterative methods and strives for enterprise-wide agility through networked operation (Denning, 2017). According to (Stachowiak & Szulc, 2021), agile response as a holistic approach to the business issues of generating profitability in rapidly evolving global marketplaces that are distinguished by high quality, performance, and personalization of the offered goods and services. Innovation and the capacity to adjust to changing market conditions are essential for digital leadership. Agile response offers the resources and attitude needed to welcome change. Rapid development cycles and cross-functional teams facilitate the exploration and execution of new ideas quickly, enabling creative teams to react quickly to trends and audience preferences. This agility ensures that the creative output is current and innovative, enabling digital leadership to maintain its leading-edge vision. According to (Bushey, 2019) "employee agility is a prerequisite for organizational agility and can be enhanced through information systems, training, and empowerment." According to (Wei, Pitafi, Kanwal, Ali, & Ren, 2020), "agile response " refers to the capacity to promptly and effectively respond to changes and seize them as chances for personal growth. Agile response guarantees that creativity thrives within the parameters of the digital vision, leading to long-term success and value creation in the dynamic digital world by serving as a bridge between digital leadership and sustainable creative performance. Recall that the goal is to create a dynamic harmony between vision and creativity by identifying the sweet spot where innovation and execution meet.

Organizations are seen under system management theory as open systems that dynamically interact with both their internal and external contexts. Within this

system, sustainable creative performance, agile reaction, and digital leadership are not discrete elements but rather interdependent parts. Digital leadership forms the vision for the organization's digital transformation by establishing the strategic direction and goals. Agile response promotes flexibility and ongoing development by offering the framework operational for carrying out the digital goal. A creative performance that is sustainable is one in which innovation thrives without sacrificing an individual's quality of life or the environment (Ogbeibu, Senadjki, & Gaskin, 2018). Agile techniques such as: In order to ensure that creative efforts stay on track with the expanding digital vision, short iterations and feedback loops allow for rapid experimentation, learning, and course correction.

Thus we assume that cross-functional collaboration facilitates smooth communication and breaks down silos between digital leadership and creative teams, allowing for speedy decision-making and alignment. Data-driven decision-making gives resource allocation and project prioritization an objective foundation, ensuring that creative efforts are concentrated on high-impact initiatives that best support the digital strategy.

H6: Agile response mediates the relationship between digital leadership and sustainable creative performance.

2.12 Mediating Role of Agile Response between Digital Leadership and Psychological Well-Being

While essential to a happy life, psychological well-being can be compromised by a number of unfavorable circumstances. These drawbacks affect not just our feelings and mood but also our relationships, cognitive functioning, and general well-being. According to research, pastors are among the many professions where wellbeing negatives is a necessary component of the work like stress, depression, burnout, over bunded etc (Adams et al., 2017). Negative well-being Characterized by persistent low mood, loss of interest, and feelings of worthlessness, depression can significantly impact daily life and relationships. (Image of a person sitting alone

in a dark room, feeling hopeless). Emotional distress associated with demands and pressures that are difficult to manage in day-to-day living When people are unable to manage the emotional stress of their jobs due to digitalization, it leads to emotional tiredness (Mohamed, Nikmat, Hashim, Shuib, & Raduan, 2021).

A leader's ability to contribute to the shift towards a knowledge community and proficiency in technology is what defines digital leadership (Shah, 2020). Bringing digital transformation to life and enabling organizations to realize their full potential in the digital sphere may be summed up as the goals of digital leaders. To make these goals easier to accomplish, digital knowledge and experience are essential. Your understanding of digital technology and expertise will help you identify the kinds of problems that could arise in the digital world and the steps that need to be taken to solve them. A digital leader needs to have a digital skill set, which is the set of competencies needed to understand digital technologies, manage them with ease, and use them wisely (Hesse, 2018). The focus on speed and agility can result in excessive workloads and deadline pressure, which puts leaders under a lot of strain and raises the possibility of burnout. (Illustration of a stressed-out person buried in paperwork).

Agile response, which refers to a company's capacity to quickly adjust to changes in the market and in technology while preserving efficiency and effectiveness, is a crucial component in the dynamic business environment (Kumkale, 2022). Agile approaches demand quick iterations and modifications, which results in a dynamic, fast-paced work atmosphere. Some people may find this invigorating, but others may experience long-term tension and anxiety as a result of feeling like they're always on edge and waiting for the next shift.

Digital leadership has been linked to mental health problems. Internet-based multitasking and communication overload, according to (Reinecke et al., 2017) it leads to burnout and anxiety in adults between the ages of 14 and 65. Using digital networks increases the risk of information overload, which can negatively impact wellbeing and lead to depression, according to longitudinal research. Constantly being available via technology and having regular feedback loops can lead to a feeling of pressure and constant assessment, which erodes trust between managers

and staff. Employees may feel nervous and scrutinized, and leaders may feel compelled to micromanage. In order to be effective on a global scale, organizations must become more and more "fast." The adoption of novel technology and heightened competition provide an ongoing challenge to the lifestyles and well-being of workers (Paskvan & Kubicek, 2017). The emphasis on quick turnaround times may result in excessive workloads and short deadlines. This can put a great deal of strain on managers and staff, which can eventually result in burnout from overwork and tiredness. (Illustration of a person with an irritated expression, drowning in paperwork). (Zappalà, Swanzy, & Toscano, 2022) found that, in a sample of homemakers, the workload had a detrimental effect on wellbeing. Although convenient, flexible work options might drive leaders and teams to work longer hours and blur boundaries. This might make it challenging to put one's own needs first and detach, which can exacerbate stress and burnout. (Illustration of a person using a laptop and strewn documents to work late at night at a kitchen table while their family sleeps in the background.)

The same findings were obtained by Aalto, Heponiemi, Josefsson, Arffman, and Elovainio (2018) in a sample of doctors, who discovered a negative correlation between workload and wellbeing. People can always stay in touch and have access to the most recent information thanks to technology. Positive features of this possibility include their ability to solve difficulties in real life. But as we've already mentioned, there are a number of drawbacks to this continual connectivity, including effects on work and wellbeing. Atanasoff and Venable (2017) emphasized the negative effects of digitalization on employees' general health and well-being and how it often makes pre-existing stress worse. Although agile response is incredibly flexible and effective, it may also have a negative effect on the wellbeing of leaders and their teams and the relationship between digital leadership and well-being.

The "new normal" remote and hybrid work environments have been more prevalent mostly due to the profound changes that digital technology bring about in the nature of work and office architecture (Krehl & Büttgen, 2022). Hence, digital transformation creates highly technologically advanced, dynamic workplaces where staff members are under constant pressure to adjust to changing circumstances that effect their mental and physical health (Schwarzmüller, Brosi, Duman,

& Welpe, 2018). Constantly being available via technology and having regular feedback loops can lead to a feeling of pressure and constant assessment, which erodes trust between managers and staff. Employees may feel nervous and scrutinized, and leaders may feel compelled to micromanage. (Illustration of a supervisor watching over a worker's shoulder while they are doing their job; the worker appears uneasy and uninspired). Agile modifications may result in regular changes to plans and priorities, which can leave staff members feeling lost and uncertain about their future. Employee unease and a decline in leadership confidence might result from this ambiguity. Organizations are seen under system management theory as open systems that are continuously interacting with their surroundings. This may put too much strain on the system and exacerbate tension and anxiety (Matthes, Karsay, Schmuck, & Stevic, 2020). Feedback loops are essential to the stability and adaptability of a system. With digital tools providing hyper-visibility, regular feedback and quick adjustments can engender a sense of perpetual review and pressure in agile environments. The system's feedback processes may become overloaded as a result, impairing function and raising anxiety levels. Systems are more vulnerable to entropy, a propensity for chaos and inefficiency, as they get more sophisticated. Thus we can conclude that agile settings can grow complex since they are iterated often and undergo constant change. This intricacy can raise system entropy, which can have detrimental effects on wellbeing in the long run by decreasing productivity and increasing dissatisfaction due to information overload and communication difficulties.

H7: Agile response mediates the relationship between digital leadership and psychological well being.

2.13 Moderating Role of Organizational Culture between Digital Leadership and Agile Response

According to Martínez-Caro et al. (2020), digital workplace practices must be a part of organizational culture in the age of the digital workforce. Culture is a set

of attitudes, ideas, values, and beliefs that shape organizational behavior. The common values, beliefs, attitudes, and behaviors that define an organization are referred to as its organizational culture. It's the unseen glue that binds a group of people together and guides workflow. In addition to attracting and keeping great personnel, a good organizational culture can also increase employee engagement and spur creativity. An organization's common values, presumptions, views, and customs that are instilled in new employees are referred to as its organizational culture (Shahriari & Allameh, 2020).

Employers now have the difficulty of keeping their workforces on board. Workers are one of the most important resources in every organization, and in order to accomplish their objectives, companies need to leverage the talents and qualities of their workforce. In the competition, steadfast and dedicated forces prevail (Mousa & Othman, 2020). People are compelled by culture to behave in accordance with certain values; hence, management can change organizational procedures to more environmentally friendly procedures by promoting green values and beliefs. An organization's rules and criteria that specify how its members are expected to act are part of its organizational culture. According to (Mokhtar, 2016), organizational culture is defined by researchers as the extent to which employees adhere to responsible norms and practices. Numerous elements influence organizational culture, such as the organization's size, history, leadership, and industry. It's critical to remember that corporate culture is dynamic. It may alter as the organization does throughout time. Organizational culture, according to (Achille, 2003) research, is a conglomeration of values, resources, beliefs, communication, and streamlined behavior that gives society direction. Through a variety of learning processes founded on the appropriate distribution of resources, the fundamental concept of culture is revealed. (Mulang, 2021) define organizational culture as a set of values, beliefs, and coping mechanisms that people can learn to live with and adapt to inside an organization. Members of the organization typically realize organizational culture.

The way that organizational culture influences the interaction between digital leadership and agile response is very important. It serves as the fertile ground where agile methods and digital leadership are sown. Changes in digitalization

have brought about changes in the nature and performance of leadership. These include the creation of new communication principles, expanded datasets and instant access to information, changes in leadership education that have led to an increase in the use of big data analysis for decision-making, and the emergence of new leadership roles like CTO and virtual teams (Nadkarni & Prügl, 2021). According to Kane, Phillips, Copulsky, and Andrus (2019), these developments need that leaders use new, dynamic, and continuous learning leadership, or digital leadership, to guide businesses toward achieving their digital strategic goals. The five essential skills for leaders that digital leadership highlights are creativity, critical thinking and inquisitiveness, curiosity, in-depth knowledge, global vision, and teamwork.

Organizational culture is regarded as a major contributor to organizational effectiveness, a source of long-term competitive advantage, and a necessary component of programs involving organizational change. According to (Martínez-Caro et al., 2020), digital workplace practices must be part of organizational culture in the age of the digital workforce. They defined digital organizational culture as a set of common beliefs and understandings about how an organization operates in a digital environment. Duerr, Holotiuk, Wagner, Beimborn, and Weitzel (2018) state that the following are necessary for organizational culture adaptation to the digital environment: (1) As a result of creative internal cooperation techniques (2) Digital standards and goals that are deemed essential to the new business culture are called values. (3) The fundamental tenets of businesses functioning in the digital era center on the necessity of fusing IT with innovation or power equality, which gives workers agency by incorporating their suggestions into the digital plan.

Recent advances in digital technology and the expansion of the digital transformation movement are causing a shift in traditional company strategies and operations. Agile practice adoption is facilitated by a culture that emphasizes risk-taking, open communication, teamwork, and learning. Agile adaptations are facilitated by a culture that values experimentation and views failure as a teaching opportunity. Furthermore, according to (Duerr et al., 2018), culture that is digitalize promotes creativity and the generation of new knowledge, which helps to support

the development of new products and services. Computers play a key role in culture where the digital leadership have, but in order to implement digital change, businesses must staff personnel with computer skills. In addition, companies need to view this shift to a digital mindset as a strategic opportunity for growth and profitability. Due to their duty to select, prepare, train, and influence one or more followers, leaders are vital members of an organization (Muniroh, Hamidah, & Abdullah, 2022). Teams that have a culture that embraces change and thrives on uncertainty are better able to adapt to changing environments. Agile processes, on the other hand, are difficult for a culture that demands consistency. To attain organizational stability, enterprises need to address culture. Without digital leaders—masters of strategic thinking who leverage every wave of digital technology to create new business opportunities that benefit their clients—it is hard to adapt to digital culture (de Araujo, Priadana, Paramarta, & Sunarsi, 2021). The benefits of digital leadership for agile response are enhanced by a robust and well-aligned company culture. Leaders may accelerate adaption and promote agile adoption by using the cultural values.

System management theory provides insightful explanations of how organizational culture influences the relationship between agile response and digital leadership. It is believed that organizations are open systems that interact and change with their surroundings on a regular basis. Agile response and digital leadership are examples of internal procedures aiming to maximize adaptability. The underlying system architecture is shaped by cultural norms and values, which influence relationships, communication, and decision-making. Digital leadership practices, including as role modeling, communication, and resource distribution, have an impact on the cultural environment. Individuals' interactions and activities inside a system collectively shape its culture. It displays emergent characteristics that are not predictable from the activities taken separately. Although the system can be gently prodded toward a desired cultural condition by strong leadership, culture eventually changes on its own (Zhang & Cao, 2018).

Consequently, it can be assumed that the culture reinforces the efficacy of digital leadership and prompt action. Their effect is amplified in a supportive society; friction results from a resistant one. Within an organization, several teams and

departments might be viewed as subsystems with distinct subcultures. Permeable subsystems facilitate knowledge transfer and collaboration, which is ideal for agile processes. Strong cultural barriers between teams, on the other hand, can obstruct communication and inhibit the application of agile.

H8: Organizational culture moderates the relationship between digital leadership and agile response this relationship is strengthen the impact between digital leadership, sustainable creative performance and psychological wellbeing

2.14 Research Model

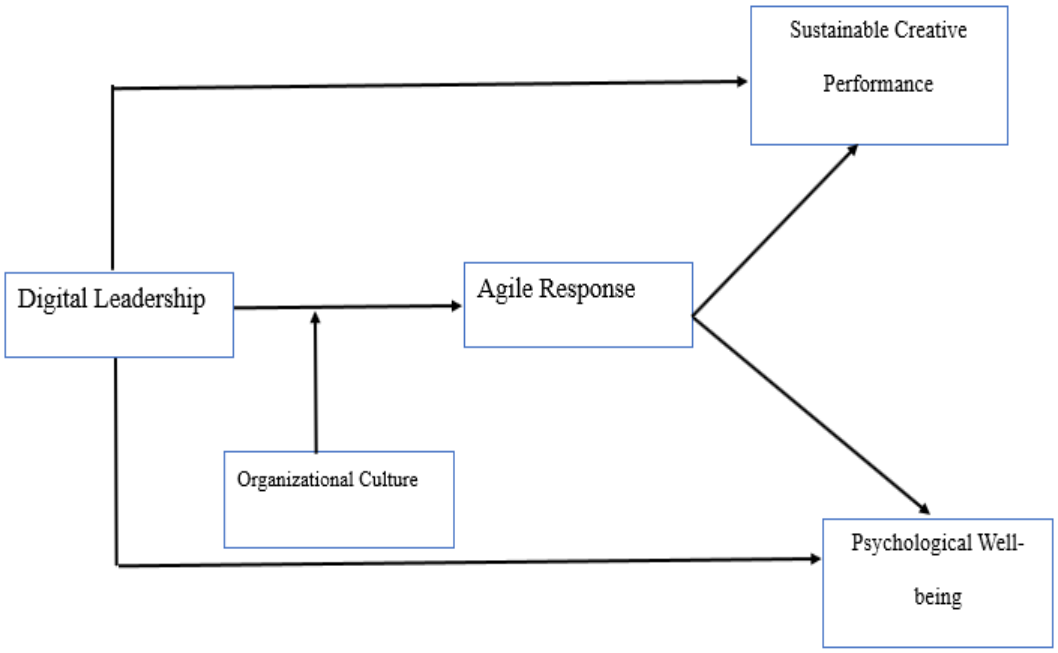

FIGURE 2.1: Research Model

2.15 Summary of Research Hypotheses

H1: There is a positive relationship between digital leadership and sustainable creative performance

H2: There Is significant negative relationship between Digital Leadership and Psychological Well-Being

H3: There is a Positive relationship between Digital Leadership and Agile response

H4: There is Significant Positive relationship between agile response and sustainable creative Performance

H5: There is a significant negative relationship between Agile Response and Psychological Well-Being

H6: Agile Response mediates the relationship between Digital Leadership and sustainable Creative performance

H7: Agile Response mediates the relationship between Digital Leadership and Psychological well Being.

H8: Organizational Culture moderates the relationship between Digital Leadership and Agile Response

Chapter 3

Research Methodology

3.1 Research Design

The research methodology was explained using the step-by-step paradigm that (Saunders, Townsend, et al., 2018) provided. This section of the study outlines the methodology, research design, research type, data collection techniques, data analysis units, and procedure needed to evaluate the theoretical framework that has been proposed. Research design entails a number of rational choices, such as the study's purpose, location, interference, temporal aspect, and analysis unit (Sekaran & Bougie, 2016). Additionally, it is the effective method that social science researchers employ most frequently. The research methodology used in this study was established by (Saunders et al., 2018).

3.1.1 Type of Study

The current study investigate how digital leadership affects sustainable creative performance and psychological wellbeing by using mediating role of agile response and moderating role of organizational culture in order to obtain reliable results from Pakistan's project-based 0rganizations. IT sector and NGOS were focused for necessary data. Quantitative data was gathered and examined in order to evaluate the research hypothesis. A self-administered questionnaire was used in the survey approach to get the data. The research question has been addressed using the deductive method in order to provide more precise results. The study

employs a quantitative research approach, which is widely recognized for its ability to examine cause-and-effect linkages and facilitate hypothesis testing. Large-scale population opinions, attitudes, and practices can be ascertained by quantitative methods. Researchers in the social sciences use and favor quantitative research because it quantifies and measures the kind and extent of suggested links in a more dependable and efficient way (De Vries & Carlson, 2014).

3.1.2 Research Philosphy

In this study, the Positivism research philosophy was adopted. Positivism is a philosophy that asserts that empirical data gained through the senses is reliable and true knowledge originates from measurements and observations. Furthermore, it emphasizes that all observers must provide a description of something that is substantially the same for genuine knowledge to be assumed. The speculative deductive method formerly served to support positivism. Researchers asserts that positivist studies of ideal models are of importance to researchers in the social sciences. In positive research logic, the quantitative investigation of the technique's viewed as the best course of action. These presumptions help to construct the methodology and research plan that are used as a part of the research process. According to Saunders et al. (2018), the research philosophy is also subject to practical consideration, and the researcher's observations regarding the relationship between knowledge and phenomena heavily influence the selection of the research.

3.1.3 Quantitative Research

The research and findings of the current study are based on data collected from respondents through questionnaires, making it measurable. The data has been evaluated using a variety of statistical methods and tools, including SPSS 22.

3.1.4 Cross Sectional Study

It is a cross-sectional study. Respondent data from cross-sectional research is only collected once and utilized.

3.1.5 Unit of Analysis

For this study, the mid level employee, either manager of officer was the unit of analysis.

3.1.6 Population and Sample

3.1.7 Population

The population consists of managers and employees who work in various Pakistani IT based enterprises, project-based organizations and NGOS. Data was collected through questionnaires. In the organizations, over 384 questionnaires were given out. Participants received assurances on the privacy of the data they submitted for the study. A 71% response rate was achieved when 275 responses were taken into account for data analysis. In order to receive a response right away, questionnaires were distributed both directly and online. Online data collection is also the most convenient method, according to earlier studies. Furthermore, employing any one of the two methods described above has no discernible impact on the quality of the data, regardless of the data assortment strategy (Church, Elliot, & Gable, 2001). Owing to limitations in both time and resources, the previously indicated techniques have proven highly effective in gathering data for the current study.

Research studies found that approximately, there are 10 million NGOs worldwide, out of which only 25,000-35,000 exist in Pakistan. As of March 2023, the Pakistan Software Export Board (PSEB) counted 5,109 IT company registrations primarily based in Lahore, Karachi, and Islamabad/Rawalpindi. For this study data has been collected from 55 different project based organizations, NGOs and it sectors with in Pakistan.

3.1.8 Sampling

A probability sampling technique (simple random sampling) was used. Sampling is a common method for collecting data. Sampling is the most often utilized form of data collecting because it is very difficult to collect data from the complete

population due to time and resource constraints. For this reason, a certain category of working professionals was chosen since they accurately represent the intended audience. In order to conduct this study, companies that appeared to have an excessive workload were contacted, and as a result, supervisors there occasionally became more demanding of their assistants in an effort to meet deadlines. As a result, the study's sample was chosen to be a realistic representation of the target demographic and to include all the essentials necessary to get the desired results.

3.2 Instrumentation

3.2.1 Measures

A structured questionnaire based on the likert scale was utilized for this study. A reliability test revealed that all of these scales were acceptable. For every variable, an earlier version of the questionnaire was employed. Through the collection of those questions, a selected analysis from multiple authorized sources provided the information. The data was collected through adopted questionnaires. The variables of the study were digital leadership, sustainable creative performance, psychological well-being, agile response, and organizational culture. Questionnaires similarly comprise four demographic variables that contain information about the respondent experience, qualification, age, and gender.

3.2.2 Digital Leadership

A 9 items scale developed by Buyukbecse and Dikbas (2022) was used to measure the digital leadership. The sample item is " My leader has the ability to build and coordinate teams quickly ". It's a 5 point likert scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

3.2.3 Sustainable Creative Performance

A 5 items scale developed by George and Zhou (2002) was used to measure the sustainable creative performance. The sample item is "I always come up with

creative solutions to problems. “It’s a 5-point likert scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

3.2.4 Psychological Well-being

The original French version of the psychological well-being Manifestation Scale, developed by Massé et al. (1998) consists of 25 items measuring context-free psychological well-being. The sample item is ”I value the people I work with.” The 5-point likert-scale consisting options 1= Never,2= Rarely,3= Half the Time, 4=Frequently, 5=Always.

3.2.5 Agile Response

This study used six items scale to measure agile response. The first four items were adopted from Park et al. (2017), and the remaining two items were proposed based on the project complexity characteristics Baccarini (1996); Floricel, Michela, and Piperca (2016). The sample item is ”I had the abilities to respond to political changes that affected the project” It’s a 5 point likert scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

3.2.6 Organizational Culture

The 10 items scale developed by Van den Berg and Wilderom (2004) was used to measure organizational culture. The sample item is ”In my organization it is easy to reach an agreement, even on difficult issues.” It’s a 5-point likert scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree

3.2.7 Scales Summary

3.3 Statistical Tools

SPSS 22 was use for correlation, regression analysis. The regression analysis has been carried. It is frequently employed for determining the effect of one variable

TABLE 3.1: Scales Summary

Variables	**Scale**	**Items**
Digital Leadership	(Buyukbecse & Dikbas, 2022)	9
Sustainable Creative Performance	(George & Zhou, 2002)	5
Psychological Well-being	(Massé et al., 1998)	25
Agile Response	(Park et al., 2017; Baccarini, 1996; Floricel et al., 2016)	6
Organizational Culture	(Van den Berg & Wilderom, 2004)	10

on the dependent variable being studied. Regression analysis is a tool for examining how different factors affect the dependent variable. Regression analysis was ensured that the prior study of the elements was, in any case, supporting the acceptance or rejection of the hypothesis that was put forth. The sources (Hayes & Scharkow, 2013) were consulted for additional moderation and mediation analysis.

3.3.1 Pilot Testing

Pilot testing before moving on to operate on a larger scale is a very fruitful and successful method, as it has eliminated several hazards linked to money and time wasting. Therefore, a pilot study comprising of roughly fifty questionnaires was conducted to ascertain the respondents' awareness and compliance with the proposed hypothesis. Following the pilot testing, it was found that the scales were a perfect fit for additional analysis and that there were no significant issues with the variables.

3.4 Scales of Reliability

The total number of items in each construct is shown in the table along with the Cronbach's alpha values for a number of constructs. A measure of internal consistency called Cronbach's alpha shows how closely linked the pieces within a construct are to one another. A Cronbach's alpha estimate greater than 0.70 is regarded as sufficient for scale precision (Hair 2006). The alpha value for the construct in this study is as fellow: digital leadership (0.915), sustainable creative

performance (0.752), psychological well-being (0.927), agile response (0.825), organizational culture (0.937). Overall, these scores imply that the items inside each construct are closely connected, and they also show a high degree of internal consistency. All the variables' alpha values fall within the permitted range, hence the data derived from calculating Cronbach's alpha is trustworthy and suitable for additional calculations. By testing the same underlying notion consistently, the items within each construct in the study show strong internal consistency.

TABLE 3.2: Scales Reliability

Variable	**No of item**	**Cronbach's alpha**
Digital Leadership	9	0.91
Sustainable Creative Performance	5	0.75
Psychological Well-being	25	0.92
Agile Response	6	0.82
Organizational Culture	10	0.93

3.5 Sample Characteristics

In order to learn more about the characteristics of the sample, the study concentrated on a number of demographic variables. These characteristics included the respondents under investigation's age, gender, education and employment history. Through an analysis of these attributes, a more profound comprehension of the varied backgrounds and experiences within the sample was acquired.

3.5.1 Gender

The study indicates that there is still a significant difference in the proportion of male and female workers, even with the efforts made to support the gender equality principles. According to the data analysis, there is a noticeable overrepresentation of male employees, and the percentage of female participants is lower. Table 3.5.1 provides an overview of gender distribution with in sample of study. Out of 275 respondents 190 individuals identified as male accounting for 69.1% of the sample.

On the other hand 85 individuals identified as a female account for 30.9% of the sample.

Table 3.3: Frequency by Gender

Gender	**Frequency**	**Percentage**
Male	190	69.1
Female	85	30
Total	275	100

3.5.2 Age

Table 3.3 shows the age distribution of the respondents. 275 respondents made up the sample size, and they were divided into four age groups based on their age: 20 to 30, 31 to 40, 41 to 50, and 51 and above. Among the participants the largest group comprised individuals aged 31-40 with the frequency of 129, accounting for 46.9% of the sample. The second largest was those aged 20-30 with 83 participants representing 30.2% of sample. The age group of 41-50 consisted of 49 respondents, making up 17.8% of sample. Lastly, the smallest group individual aged 51 above, with only 14 participants, comprising 5.1% of sample.

Table 3.4: Frequency by Age

Age	**Frequency**	**Percentage**	**Cumulative**
20-30	83	30.2	30.2
31-40	129	46.9	77.1
41-50	49	17.8	94.9
51 above	14	5.1	100
Total	275	100	

3.5.3 Qualification

The distribution of educational backgrounds among the study participants is shown in **Table 3.5**. The 275 respondents in the sample were divided into different categories based on their educational backgrounds: PhD, MS/MPhil, MBA,

Bachelor, intermediate and any others. Among the participants the most prevalent educational qualification was master's degree with the frequency of 155 respondents accounting for 56.4 % of sample. The second largest consisted of individuals was holding the degree of MS/PHD degree with 54 respondents representing 19.6 % of sample, 49 respondents holding the bachelor degree representing 17.8% of sample, 8 swere qualifying for any other representing 3.3 % of sample.

Table 3.5: Frequency by Qualification

Education	**Frequency**	**Percentage**	**Cumulative**
Intermediate	8	2.9	24
Bachelors	49	17.1	21.1
Masters	155	56.4	80.4
MS	54	19.6	100
Any Others	9	3.3	
Total	275	100	

3.5.4 Experience

The distribution of job experience among the study participants is shown in **Table 3.6**. The sample consist of 275 respondent and and their work experience categorize as fellow. 0-1,2-5,5-10 & 10 above. Among the participant the largest group had 2-5 years of experience, with 168 participants representing 61.1 % of sample. The second largest group had 5-10 years of experience representing 20.7 % of sample, 39 respondents had the experience of 0-1 years representing 14.2 % of sample and 11 respondents had the experience of more than 10 years representing 4.0 % of sample.

Table 3.6: Frequency by Experience

Education	**Frequency**	**Percentage**	**Cumulative**
0-1	39	14.2	14.2
2-5	168	61.1	79.3
05-Oct	57	20.7	100
10 above	11	4	
Total	275	100	

Chapter 4

Results and Analysis

4.1 Results Analysis

Using programs like SPSS, descriptive statistics, Pearson correlation, moderation, and mediation were carried out to look at the correlation between all the variables.

4.1.1 Descriptive Analysis:

Using a variety of statistical techniques, descriptive statistics provide an overview of the observed details that are extracted from the data. Descriptive statistics of each variable such as digital leadership, sustainable creative performance, psychological well-being, agile response, organizational culture SPSS was also used to determine the means and standard deviations; the results are shown in Table 4.1 below. Greater agreement among respondents is shown by higher mean values, whereas greater disagreement among respondents is indicated by lower mean value.

Table 4.1: Descriptive Analysis

Variable	**N**	**Min**	**Max**	**Mean**	**Std**
Digital Leadership	275	1	5	4.3	0.64
Sustainable Creative performance	275	1	5	4.17	0.62
Psychological well-being	275	1	5	1.28	0.78
Agile Response	275	1	5	4.26	0.69
Organizational Culture	275	1	5	4.26	0.69

Table 4.1 Shows information regarding variables, the independent variable (Digital Leadership) has mean value of 4.30 and the stranded deviation is .64. The mean value of dependent variable (sustainable creative performance) is 4.17 with the slandered deviation of .62 while the mean value of dependent variable (psychological well-being) is 1.28 with the slandered deviation of .78. The moderator (organizational culture) has a mean value 4.26 with the standard deviation of .69. The value of the mean of mediator (agile response) is value 4.26 with the standard deviation of .69.

4.2 Control Variables

For control variables, an ANOVA test in one direction was performed using SPSS. One-way ANOVA was primarily used to determine whether demographic factors had any bearing on the dependent variable, which in this case was project success. Therefore, our main goal is to see the positive relationships that the model forecasted and their effects. All demographic factors were found to be insignificant on the dependent variable, allowing for the independent testing of the suggested correlations, according to the research.

Table 4.2: One-way ANOVA for SCP

Control Variables	**F**	**Sig**
Qualification	1.20	0.21
Age	0.93	0.42
Gender	0.35	0.69
Experience	0 .62	0.61

A one-way ANOVA test was used for the control variables to determine how the demographic variables affected the sustainable creative performance. A one-way ANOVA study was conducted with respect to the dependent variable " Sustainable Creative Performance " and numerous control factors, including gender, age, qualification and experience. The findings are shown in the table as above. The interpretation for each variable is as follows:

Gender: The F- Value of the gender is 0.35 and corresponding P -value is 0.69p. In this context the P-value is greater than 0.05, indicating the gender does not have significant impact on sustainable creative performance.

Age: The F- value for the age is 0.93 and P-value is 0.42. In this context age does not have significant impact on sustainable creative performance because P vale is more than 0.05.

Qualification: The F- value for education is 0.82 and P-value is 0.47. Again the P-value is greater than 0.05, indicating the qualification does not have significant impact on sustainable creative performance.

Experience: The F-value for experience is 6.2 and P-value is 0.61. As the P-value is greater than 0.05 indicating experience does not have significant impact on sustainable creative performance.

Table 4.3: One Way ANOVA For PWB

Control Variables	**F**	**Sig**
Qualification	1.93	0.09
Age	1.60	0.17
Gender	1.00	0.35
Experience	0.64	0.63

A one-way ANOVA test was used for the control variables to determine how the demographic variables affected the psychological well-being. A one-way ANOVA study was conducted with respect to the dependent variable " Psychological well-being." and numerous control factors, including gender, age, qualification and experience. The findings are shown in the table as above. The interpretation for each variable is as follows:

Gender: The F- Value of the gender is 1.0and corresponding P -value is 0.35 p. In this context the P-value is greater than 0.05, indicating the gender does not have significant impact on psychological well-being.

Age: The F- value for the age is 1.6 and P-value is 0.17. In this context age does not have significant impact on psychological well-being because P value is more than 0.05.

Qualification: The F- value for education is 1.93 and P-value is 0.09. Again the P-value is greater than 0.05, indicating the qualification does not have significant impact on psychological well-being.

Experience: The F-value for experience is 0.64 and P-value is 0.63. As the P-value is greater than 0.05 indicating experience does not have significant impact on psychological well-being.

4.3 Correlation Analysis

The correlation between variables is ascertained using correlation analysis. In order to ascertain the relationship between digital leadership, sustainable creative performance and psychological well-being, the current study will employ correspondence analysis. It will also examine the moderating effects of organizational culture and the mediating role of agile response. Using a correlation range of -0.1 to 0.1, Pearson devised a correlation analysis to determine the strength of the association. Positive signals indicate that the variables move in the same direction, while negative signals indicate the opposite direction of movement.

Analysis of table 4.4 shows signification positive relationship between digital leadership and sustainable creative performance under (r=.429** at p <0.01).Further more digital leadership has negatively associated with psychological well-being under (r=-.494 at p<0.01). Likewise digital leadership holds positive associating with agile response under (r=.403 at p<0.01). Also digital leadership holds positive association with organizational culture under (r=.478 at p<0.01).

More over there is a significant impact of agile response on sustainable creative performance where (r=.451 at p<0.01). Also there is negative impact of agile response on psychological well-being where (r=-.404 at p<0.01). Furthermore organizational culture holds positive association with agile response where (r=.243 at p <0.01

TABLE 4.4: Correlation Analysis

Variables	**1**	**2**	**3**	**4**	**5**
Digital leadership					
Sustainable creative performance	.429**	1			
Psychological well-being	-.494**	-.527**	1		
Agile response	.403**	.451**	-.404**	1	
Organizational culture	.478**	.403**	-.508**	.243**	1

4.4 Regression Analysis

Various techniques and tools are used for regression analysis, including the (Hayes & Preacher, 2014) full scale by using SPSS for the examination of mediation and moderation, and more in (Hayes & Scharkow, 2013) method bootstrapping techniques, which divide the data into small portions and bits to increase the relative accuracy of the data in the current study.

TABLE 4.5: Direct and Indirect Effect

Direct Effect	**B**	**S. E**	**P**	**LLCI**	**ULCI**
Digital Leadership → SCP	0.25	0.04	0.00	0.15	0.35
Digital Leadership → PWB	-0.47	0.06	0.00	-0.6	-0.34
Digital Leadership → Agile Response	0.56	0.07	0.00	0.41	0.71
Agile Response → SCP	0.2	0.03	0.00	0.13	0.27
Agile Response → PWB	-0.2	0.04	0.00	-0.3	-0.11
Indirect Effect	**B**	**S.E**	**P**	**LLCI**	**ULCI**
Digital Leadership → Agile Response → SCP	0.11	0.03	0.00	0.05	0.19
Digital Leadership → Agile Response → PWB	-0.11	0.03	0.00	-0.2	-0.05

H1: Digital Leadership and Sustainable Creative Performance

Hypothesis 1 shows that there is a favorable and significant link between digital leadership and sustainable creative performance. The regression coefficient (β value is 0.25) along with the p-value 0.000. The p-value of 0.000 demonstrates that the relationship is highly significant. When increasing the effect of digital leadership then sustainable creative performance increases. Therefore hypothesis 1 is accepted.

H2: Digital Leadership and Psychological Well-being

H2 show that there is negative relationship between digital Leadership and psychological wellbeing. The Regression coefficient (β value is -.47) along with the p-value 0.000. The p-value of 0.000 demonstrate that the relationship is negatively associated. When increasing the effect of Digital leadership the effect increase negatively on well-being of employees. Therefore hypothesis 2 is accepted.

H3: Digital Leadership and Agile Response

Digital Leadership is also positively linked with agile response at values (β value is .56 at p=0.000). With the increase effect of digital leadership, agile response also increase. Therefore hypothesis 3 is accepted.

H4: Agile Response and Sustainable creative performance

Agile response is positively linked with sustainable creative performance at values (β value is .20 at p=0.000). When increasing agile response the sustainable creative performance also increase. Consequently, agile response has positive effect on sustainable creative performance. So hypothesis 4 is accepted.

H5: Agile Response and Psychological Well-Being

H5 shows there is negative relationship between agile response and psychological wellbeing at values (β value is -.20 at p= 0.000). When increasing agile response effect negatively well- being of employees. Therefore hypothesis 5 is accepted.

H6: Agile Response mediates the relationship between Digital Leadership and Sustainable Creative Performance

Hypothesis demonstrates that agile response mediates the relationship between Digital Leadership and Sustainable creative performance. The outcomes show

in **Table 4.4** show that the indirect effect of digital leadership and sustainable creative performance has a LL of confidence of interval and UL of confidence of interval, .05, and two 0.19. Both ULCI and LLCI have the same sign that is a positive sign. Therefore, we can determine from here that mediation occurs. Hence, hypothesis 6, is also accepted, that agile response mediates the relationship between digital leadership and Sustainable Creative performance.

H7: Agile Response mediates the relationship between Digital Leadership and Psychological Well-being

Hypothesis demonstrates that agile response mediates the relationship between Digital Leadership and psychological wellbeing. The outcomes show in **Table 4.4** show that the indirect effect of digital leadership and psychological wellbeing has a LL of confidence of interval and UL of confidence of interval,-.20, and two -.05. Both ULCI and LLCI have the same sign that is a negative sign. Therefore, we can determine from here that mediation occurs between negative impacts on digital leadership on psychological wellbeing. Hence, hypothesis 7, is also accepted, that agile response mediates the relationship between digital leadership and psychological well-being.

Table 4.6: Moderation Effect

	B	**LLCI**	**ULCI**
Interaction Term DL X OC	0.14	0.02	0.26

DL = digital leadership, OC = organizational culture

H8: Organizational Culture moderate the relationship between digital leadership and Agile Response

For the moderation hypothesis H8 shows that organizational culture moderates the relationship between digital leadership, sustainable creative and psychological wellbeing. The LLCI value is .02 and ULCI is .26 both are positive values and both have positive signs which indicate that organizational culture moderate the relationship between digital leadership and agile response. So H8 is also accepted.

Table 4.7: Summary of Hypotheses

Hypothesis	Statements	**Results**
H1	Digital Leadership is positively related to sustainable creative performance.	**Supported**
H2	Digital Leadership is negatively related to psychological wellbeing.	**Supported**
H3	Digital leadership is positively related Agile response.	**Supported**
H4	Agile response is positively related to sustainable creative performance.	**Supported**
H5	Agile response is negatively related with psychological wellbeing	**Supported**
H6	Relationship between Digital leadership and sustainable creative performance is mediated by agile response.	**Supported**
H7	Relationship between Digital leadership and psychological wellbeing is mediated by agile response	**Supported**
H8	Organizational Culture moderates the relationship between Digital leadership and agile response such that this relationship is strengthen the impact between Digital leadership, Sustainable creative performance and Psychological Wellbeing.	**Supported**

Chapter 5

Discussion and Conclusion

5.1 Discussion

This chapter is organized into three main sections: the first looks at the results of the hypothesis; the second looks at the implications for practitioners and theory; and the third discusses the limitations and directions for further research. The goal of the study is to investigate the relationship between digital leadership, sustainable creative performance and psychological wellbeing by examining the moderating role of organizational culture and the mediating effects of agile response. Eight hypotheses in all, formulated in light of the literature, were examined in this study. All hypotheses were supported. This chapter's current portion deals with a full discussion of the suggested literature in light of current.

5.1.1 Hypothesis No.1: Digital Leadership is Positively Related to Sustainable Creative Performance

H1 demonstrate that digital leadership is positively connected with sustainable creative performance. These findings of the data analysis strong support of hypothesis that digital leadership role on sustainable creative performance. The intersection of digital capabilities and sustainable performance in contemporary corporate environments is attracting the attention of both researchers and practitioners (Najrani, 2016). Advanced digital capabilities encompass a wide range of

technologies and activities, with data analytics and digital platforms being essential elements (Temelkova, 2018). Niu, Park, and Jung (2022) gave a clue about digital leadership and sustainable creative performance. Collaboration, creativity, and sustainability are valued in the atmosphere that digital leadership fosters. Organizations may better support long-term sustainability goals by embracing flexibility, harnessing technology, and cultivating a culture of continuous learning. Giving their employees the freedom to experiment and try new things is how digital leaders empower their teams. Because they feel empowered to try new things and take chances, people are more likely to innovate in an environment where they are owned.

5.1.2 Hypothesis No. 2: There is Negative Relationship between Digital Leadership and Psychological Well Being

Hypothesis 2 displays that digital leadership is negatively linked with psychological wellbeing. An "always-on" culture could result from digital leadership's blurring of the lines between work and home life. Constant connectedness and the need for quick answers can lead to burnout, stress, and challenges striking a healthy work-life balance. Zeike, Bradbury, et al. (2019) gave a clue about how digital leadership effect wellbeing of the employees. Digital leaders frequently have unrestricted access to a multitude of communication channels and information. It can be difficult to keep up with the flood of emails, messages, and data, which can cause tension and anxiety. Digital leadership's fast-paced style, which emphasizes agility and prompt decision-making, can lead to high levels of pressure.According to Yukongdi and Shrestha (2020) low wellbeing is an unfavorable affective state marked by feelings like stress, aggravation, and frustration that result from internal conflicts that employees experience

This pressure may exacerbate stress and anxiety, which could have a detrimental effect on psychological health. Employees may experience feelings of loneliness as a result of the remote work and virtual communication that characterize digital leadership. A feeling of alienation and loneliness may be exacerbated by a lack

of in-person interaction. The advent of new digital tools and technology can lead to a condition known as techno stress, in which people experience anxiety or overload when utilizing new resources. Quick advancements in technology can exacerbate feelings of inadequacy and the desire to continuously learn new abilities. The introduction of new digital tools and technology can cause techno stress. In conclusion, the results of the data analysis prove that digital leadership is negativity related to psychological well-being.

5.1.3 Hypothesis No.3: There is Positive Relationship between Digital Leadership and Agile Response

Hypothesis 3 displays that digital leadership is positively associated with agile response. The results of hypothesis depict a significant and positive association between digital leadership and agile response (Bellis et al., 2024) gave a clue that companies with great digital leadership have a higher likelihood of using agile approaches and seeing positive results from their digital transformation efforts. The task of clearly outlining the organization's digital vision falls on digital leaders. This vision makes sure that the company is ready to face new challenges and trends while also keeping pace with the quickly evolving digital landscape. Artificial intelligence, cloud computing, and other technologies that facilitate quicker digital product and service creation, deployment, and iteration may fall under this category. Companies and sectors are working hard to become flexible in order to respond to change in digital innovation and transformation as a result of the new digital environment (Lee, 2019).

5.1.4 Hypothesis No. 4: There is Positive Relationship between Agile Response and Sustainable Creative Performance

In the present study hypothesis 4 got accepted. The results shows there is positive significant relationship between agile response and sustainable creative performance. Agile response and sustained creative performance are significantly

positively correlated. Agile companies may try new concepts and creative solutions and results in sustainable creative performance. Companies that used agile approaches were more likely to report advances in innovation and creativity. Businesses that successfully apply agile approaches to put the innovative concepts produced by digital leadership into practices will be well-positioned to experience sustained growth and innovation. While agile response helps organizations to swiftly adapt and respond to new opportunities and problems, digital leadership encourages creativity and innovation (Kniess, 2019).

Consequently, employees that are able to adjust and refine their ideas are more likely to be creative. Creative teams require flexibility to experiment, gather feedback, and continuously improve their processes. An agile approach offers this flexibility, continuous commitment to improvement is necessary for creative performance that is sustainable. Employees that foster an environment of ongoing improvement and learning are more likely to provide consistently excellent and creative work.people. According to (Kleine et al., 2019) are best positioned to identify chances for growth and transformation when they are actively learning. Since learning is a major antecedent of Sustainable creative performance, it is also regarded as being of utmost importance in the context of frontline staff. Organizations may create an atmosphere that fosters innovation and consistently produces high-quality, inventive creative outputs while also efficiently adapting to change by integrating agile approaches with an emphasis on maintaining creative performance. Through this integration, businesses may foster a culture of innovation and ongoing development and stay competitive in fast-paced industries.

5.1.5 Hypothesis No. 5: There is Negative Relationship between Agile Response and Psychological Well-being

In the present study hypothesis 5 got accepted. The result shows there is a negative relationship between agile response and psychological wellbeing. Agile response and psychological wellbeing are negatively correlated. Pitafi (2024) gave a clue

that agile response and psychological well-being (PWB) supposed to be negatively related. Although agile approaches are intended to improve responsiveness, flexibility, and collaboration, there are situations in which putting agile practices into practice may have detrimental effects on people's psychological health.

Agile approaches frequently include short development cycles, strict deadlines, and an ongoing emphasis on meeting delivery targets. Individual may become stressed and burn out as a result of the high pressure environment this can produce. Agile development's iterative process may result in ongoing tweaks and improvements, which could add to team members' workloads. Having to make quick decisions and iterate frequently might make one feel on edge all the time. Agile approaches may put work ahead of preserving a good work-life balance, especially in hectic workplaces.The increased workload may be associated with agile processes, particularly in cases when firms adopt agile with little to no organizational adaption (Rad & Rad, 2021) Longer working hours and a sense of unbalance may result from constant sprints and the need to achieve promptly. Agile methods can be quickly adopted, but it can be daunting without proper guidance and assistance. New methods may be difficult for individual to adjust to, which can cause stress and feelings of inadequacy.

5.1.6 Hypothesis No. 6: Agile Response Mediates the Relationship between Digital Leadership and Sustainable Creative Performance

In the present study hypothesis 6 got accepted. The results shows that agile response mediates the relationship between digital leadership and sustainable creative performance. Digital leadership and sustained creative performance are mediated by agile response. Benitez et al. (2022) gave a clue that digital leadership and sustained creative performance can be mediated by agile response. Agile response enables organizations to achieve lasting creative success in the dynamic business landscape by fostering an atmosphere that fosters creativity and invention, while also enabling swift adaptation and reaction to market dynamics. Businesses that successfully apply agile approaches to put the innovative concepts

produced by digital leadership into practices will be well-positioned to experience sustained growth and innovation. While agile response helps organizations to swiftly adapt and respond to new opportunities and problems, digital leadership encourages creativity and innovation.

The vision for innovation is defined by digital leadership, but the organization's ability to respond quickly to changes and put them into practice is what makes it agile. The vision of digital leadership may be more successfully translated into workable, creative solutions that support long-term creative performance by an agile company. According to Stachowiak and Szulc (2021) agile response as a holistic approach to the business issues of generating profitability in rapidly evolving global marketplaces that are distinguished by high quality, performance, and personalization of the offered goods and services cycles of development and improvement are the focus of agile approaches. Continuous learning and improvement of creative processes are made possible by this iterative method. Innovative ideas may be presented by digital leadership, and an agile reaction makes sure that these concepts are tried out, honed, and enhanced over time for long-lasting creative output. The digital world is dynamic and frequently unpredictable. Agile response enables swift modifications to plans and procedures, which aids firms in navigating this unpredictability. Thus, agile response serves as a mediator. It translates sophisticated digital concepts into workable, flexible procedures that support ongoing innovation and productivity in the quickly evolving digital environment. When agile response and digital leadership are combined, an atmosphere is created where innovation is not only started but also continuously fostered and enhanced over time.

5.1.7 Hypothesis No. 7: Agile Response Mediates the Relationship between Digital Leadership and Psychological Well-being

Hypothesis 7 displays that agile response mediates the link between digital leadership and psychological wellbeing. The connection between PWB and digital leadership can be explained through underlying mechanism of agile response (Pitafi,

2024). Agile response, indicates adaptability, flexibility, and continuous improvement, can support the promotion of negative psychological well-being and lessen the detrimental effects of digital leadership on PWB. It's possible for digital leaders to promote a culture of constant connectivity, making it harder to distinguish between work and personal life. Expectations for quick responses can result in long workdays and a lack of limits, which can negatively affect wellbeing.

Agile methods frequently rely on virtual communication platforms, which may cause problems with communication and feelings of loneliness that can affect mental health. Agile response can influence elements including workplace stress, ambiguity, work-life balance, autonomy, communication, and ongoing learning to mitigate the association between digital leadership and poor psychological well-being. Although agile approaches have the potential to improve adaptation and innovation, it is important to consider potential negative effects on employees' psychological health when implementing them.When people are unable to manage the emotional stress of their jobs due to digitalization, it leads to emotional tiredness (Mohamed et al., 2021).

5.1.8 Hypothesis No. 8: Organizational Culture Moderates the Relationship between Digital Leadership and Agile Response

Hypothesis 8 displays that organizational culture moderates the relationship between digital leadership and agile response. Organizational culture is a major source of long-term competitive advantage. It's essential to the success of projects involving organizational change and a determinant of organizational performance. According to Martínez-Caro et al. (2020), organizational culture in the age of the digital workforce needs to encompass digital workplace practices. The digital organizational culture is a collection of common beliefs and understandings about how organizations operate in a digital environment . Although digital leadership has been praised for its capacity to improve responsiveness, flexibility, and adaptation, yet it brings some challenges as well.

Workers may feel unstable and insecure, which may cause them to feel powerless, uncontrollable, and less satisfied with their jobs and might hesitate to respond quickly . In an organizational culture that values creativity, flexibility, and teamwork, digital leadership—which is defined by a forward-thinking vision, employee empowerment, and data-driven decision-making—effectively promotes agile response. The congruence between the innovative vision of digital leadership and the agile reaction can be strengthened by fostering a culture that celebrates innovation and rewards taking risks. There might be a higher openness to try new things and adjust fast in such a culture. Agile methodology deployment can be aided by a culture that values candid communication and teamwork. An atmosphere of cooperation and open communication facilitate the quick adaptation to changes brought forth by digital leadership.

The interaction between digital leadership and agile response is shaped by the organizational culture, which functions as a moderator. Positive relationships between digital leadership and agile response are likely to be facilitated by a culture that promotes creativity, teamwork, adaptability, and employee empowerment. However, a culture that is opaque, unwelcoming of change, or that disfavors taking risks could make it more difficult to apply agile approaches in response to digital leadership programs. In a digital landscape that is changing quickly, leadership initiatives to harmonize the organizational culture with agile methodologies and digital leadership principles can improve the organization's overall effectiveness. According to Martínez-Caro et al. (2020) digital workplace practices must be part of organizational culture in the Literature Review 40 age of the digital workforce.

5.2 Research Implications

5.2.1 Practical Implications

The study's practical implications offer a roadmap for organizations seeking to harness the benefits of digital leadership in promoting sustainable creative performance and enhancing the psychological well-being of their workforce. One

fundamental practical recommendation is the initiation of targeted leadership development programs. By investing in these programs, organizations can cultivate digital leadership competencies among their leaders, empowering them to navigate digital transformations effectively, foster innovation, and drive sustainability initiatives. These programs may include workshops, mentoring sessions, and experiential learning opportunities to hone the necessary skills.

Another crucial practical insight is the emphasis on fostering agile work practices. Recognizing the imperative of quick adaptation in the digital landscape, organizations can integrate agile methodologies into their operational frameworks. This involves creating agile teams, implementing iterative project management approaches, and providing comprehensive training on agile methodologies. This shift toward agility enables organizations to respond adeptly to rapid changes, ensuring resilience in the face of digital challenges.

The study underscores the significance of aligning organizational culture with digital leadership principles. To practically implement this recommendation, organizations should assess their current culture and, if necessary, embark on cultural alignment initiatives. These efforts may involve communicating and reinforcing digital leadership values, fostering a culture of innovation, and cultivating an environment that prioritizes employee well-being. In addressing the well-being of employees, organizations can take practical steps to implement well-being programs. These initiatives encompass workshops on stress management, mental health awareness campaigns, and the establishment of support mechanisms such as counseling services and employee assistance programs. By prioritizing employee well-being, organizations not only enhance the mental health of their workforce but also contribute to sustained creative performance.

Furthermore, integrating sustainable practices into digital strategies is pivotal for organizations aspiring to be socially responsible. Conducting environmental impact assessments, exploring sustainable technologies, and incorporating green initiatives in digital processes are practical actions that align with corporate social responsibility goals. This commitment to sustainability not only positively impacts the environment but also instills a sense of purpose among employees, fostering sustainable creative contributions.

Lastly, recognizing the dynamic nature of the digital landscape, organizations should offer continuous learning opportunities. Establishing learning and development programs, providing access to online courses, and encouraging a culture of continuous up skilling ensure that employees remain adaptable and equipped to meet evolving digital challenges. Overall, the study's practical implications provide a comprehensive guide for organizations aiming to leverage digital leadership for sustainable creative performance and the well-being of their workforce in the ever-evolving digital age.

5.2.2 Theoretical Implications

The theoretical implications of the Impact of digital leadership on sustainable creative performance and psychological well-being, considering the mediating role of agile response and moderating role of organizational culture, can be effectively understood through the lens of systems theory of management. Systems theory views organizations as complex entities made up of interrelated parts that work together to achieve common goals. Systems theory emphasizes the interconnectedness of various components within an organization. In this context, digital leadership, sustainable creative performance, psychological well-being, agile response, and organizational culture are all interconnected elements. Digital leadership influences organizational culture, which in turn impacts the agility of the organization's response to challenges. Sustainable creative performance and psychological well-being of employees are influenced by both digital leadership practices and organizational culture. Systems theory also highlights the presence of feedback loops within organizations. The mediating role of agile response in the relationship between digital leadership and sustainable creative performance, as well as psychological well-being, can be seen as a feedback loop mechanism. Agile responses to challenges and changes in the environment provide feedback to digital leaders, informing their decisions and strategies for enhancing creative performance and well-being. Systems theory suggests that organizations exhibit emergent properties that cannot be fully explained by analyzing individual parts alone. In this case, the relationship between digital leadership, sustainable creative performance, and psychological well-being may lead to emergent properties such as

innovation, employee engagement, and overall organizational resilience. The moderating role of organizational culture influences how these emergent properties manifest within the organization. Systems theory acknowledges the nonlinearity and complexity of organizational dynamics. The impact of digital leadership on sustainable creative performance and Psychological well-being is not a simple, linear relationship. Instead, it involves multiple nonlinear interactions and feedback loops. Similarly, the moderating role of organizational culture adds another layer of complexity, as different cultural norms and values may interact with digital leadership practices in unpredictable ways. Systems theory emphasizes the importance of adaptation and evolution for organizational survival and success. Digital leadership practices that promote agility and innovation enable organizations to adapt to changing environments and evolve over time. The mediating role of agile response highlights the importance of dynamic capabilities in responding to challenges and opportunities in the digital age.

5.3 Limitations

The study's sample, drawn from project-based organizations, NGOs, and the IT sector, may not fully capture the diversity of organizational structures and practices across various industries.

The study's focus on project-based organizations, NGOs, and the IT sector may restrict the variability in industry types. Different industries may have unique dynamics and challenges that influence leadership, innovation, and sustainability differently. The study's cross-sectional design, collecting data at a single point in time, may limit the ability to establish causal relationships or capture changes over time. Longitudinal studies would provide a more comprehensive understanding of the dynamic relationships between digital leadership, sustainable creative performance, and psychological well-being. The reliance on self-report measures for variables such as psychological well-being and sustainable creative performance introduces the potential for response bias. Future studies can go for dyadic response. External factors, such as economic conditions or global events, could impact the project-based organizations, NGOs, and IT sectors during the study period. These

external influences may not be fully controlled for and could confound the study's findings. Acknowledging these limitations is crucial for contextualizing the study's findings and recognizing the specific boundaries within which the conclusions can be applied. Researchers should consider these constraints when interpreting the results and extend caution in generalizing findings beyond the studied sectors and sampling approach.

5.4 Future Directions

Moving forward, several promising avenues for future research can be identified to enhance the depth and breadth of our understanding of the interplay between digital leadership, sustainable creative performance, and psychological well-being. One crucial direction involves expanding the study to encompass a more diverse range of sectors, going beyond project-based organizations, NGOs, and the IT sector. A comparative sectorial analysis could unveil sector-specific dynamics, allowing for a more nuanced exploration of how digital leadership influences sustainable creative performance and psychological well-being across various industries.

Embracing longitudinal studies represents another pivotal future direction. The dynamic nature of the digital landscape calls for a closer examination of how these relationships evolve over time. Longitudinal research designs would provide invaluable insights into the causal pathways between digital leadership, sustainable creative performance, and psychological well-being, offering a more nuanced understanding of the temporal dynamics at play. An intriguing aspect for future investigation involves exploring the moderating role of organizational size. Different-sized organizations may encounter unique challenges and opportunities in the context of digital leadership, influencing the outcomes of sustainable creative performance and psychological well-being differently. Examining moderation by organizational size can offer tailored insights applicable to both small and large enterprises.

Cultural dimensions present a rich avenue for future research, wherein integrating cultural influences as moderators can enhance the study's cross-cultural validity.

Understanding how cultural factors interact with digital leadership to impact sustainable creative performance and psychological well-being can provide valuable insights for organizations operating in diverse cultural contexts. Taking a closer look at team-level dynamics as potential mediators represents a compelling future direction. Investigating how team collaboration, communication, and cohesion mediate the relationship between digital leadership and outcomes can provide a granular understanding of the mechanisms at play within organizational units, contributing to a more holistic view of the impact of digital leadership.

Additionally, researchers could explore the impact of specific digital technologies on the relationships under study. Examining how different technologies, such as artificial intelligence or collaboration tools, moderate or mediate the relationships between digital leadership, sustainable creative performance, and psychological well-being can reveal the unique contributions of technology to organizational dynamics. Ensuring a more inclusive representation within the NGO category, considering factors such as size, mission, and operational focus, is crucial for future research. This approach ensures a more comprehensive understanding of how digital leadership influences sustainable creative performance and psychological well-being across diverse types of NGOs.

5.5 Conclusion

The foremost perseverance of the study is to expose the influence of digital leadership on sustainable creative performance and psychological well-being. Moreover, this study has shown the role of agile response as a mediator among the relationship between digital leadership, sustainable creative performance and psychological well-being: Besides this research has explored therole of organizational culture as a moderator between the relationship between digital leadership and agile response. The main contribution that this study has donated a significant amount in the available literature because there has been restrained work over the digital leadership on sustainable creative performance and psychological well-being along with agile response as a mediator and organizational culture as a moderator. The findings of the study not only contributes to the existing body of knowledge

on leadership in the project based organizations, NGOS and IT sector but also provides actionable insights for organizations aiming to foster innovation and organizational culture. The study highlights the need for leaders in the project based organizations, NGOS and IT sector in Pakistan to embrace digital approaches, cultivate a culture of agile response and exhibit high organizational culture to effectively navigate the complex interplay between leadership, knowledge dynamics, and innovation within the unique cultural context. Our study contributes various theoretical as well as practical implications and also provides new ways to other scholars for future studies.

Bibliography

Aalto, A.-M., Heponiemi, T., Josefsson, K., Arffman, M., & Elovainio, M. (2018). Social relationships in physicians' work moderate relationship between workload and wellbeing—9-year follow-up study. *European journal of public health*, *28*(5), 798–804.

Achille, M. A. (2003). Defining health at work. i. the conceptual basis of a model of occupational health. *Reconciling organizational performance and psychological health at work*, 65–90.

Adams, C. J., Hough, H., Proeschold-Bell, R. J., Yao, J., & Kolkin, M. (2017). Clergy burnout: A comparison study with other helping professions. *Pastoral Psychology*, *66*, 147–175.

Ahmad, B., Liu, D., Irfan, M., & Álvarez-García, J. (2022). Unleashing the mechanism among salesforce control system, salesforce ambidexterity, and emotional exhaustion to enhance the competitive advantage of organizations. *Frontiers in Psychology*, *13*, 909656.

Akkaya, B., & Tabak, A. (2020). The link between organizational agility and leadership: A research in science parks. *Academy of Strategic Management Journal*, *19*(1), 1–17.

Al Humdan, E., Shi, Y., Behnia, M., & Najmaei, A. (2020). Supply chain agility: a systematic review of definitions, enablers and performance implications. *International Journal of Physical Distribution & Logistics Management*, *50*(2), 287–312.

Altinay, L., Madanoglu, G. K., Kromidha, E., Nurmagambetova, A., & Madanoglu, M. (2021). Mental aspects of cultural intelligence and self-creativity of nascent entrepreneurs: The mediating role of emotionality. *Journal of business research*, *131*, 793–802.

Alyahya, M., Aliedan, M., Agag, G., & Abdelmoety, Z. H. (2023). Understanding the relationship between big data analytics capabilities and sustainable performance: The role of strategic agility and firm creativity. *Sustainability*, *15*(9), 7623.

Amankwah-Amoah, J., Khan, Z., Wood, G., & Knight, G. (2021). Covid-19 and digitalization: The great acceleration. *Journal of business research*, *136*, 602–611.

Andrews, F. M., & McKennell, A. C. (1980). Measures of self-reported well-being: Their affective, cognitive, and other components. *Social indicators research*, *8*, 127–155.

Anshari, M., Almunawar, M. N., Shahrill, M., Wicaksono, D. K., & Huda, M. (2017). Smartphones usage in the classrooms: Learning aid or interference? *Education and Information technologies*, *22*, 3063–3079.

Antonopoulou, H., Halkiopoulos, C., Barlou, O., & Beligiannis, G. N. (2021). Associations between traditional and digital leadership in academic environment: During the covid-19 pandemic. *Emerging Science Journal*, *5*(4), 405–428.

Anwar, M., & Ali Shah, S. Z. (2020). Managerial networking and business model innovation: Empirical study of new ventures in an emerging economy. *Journal of Small Business & Entrepreneurship*, *32*(3), 265–286.

Atanasoff, L., & Venable, M. A. (2017). Technostress: Implications for adults in the workforce. *The career development quarterly*, *65*(4), 326–338.

Baccarini, D. (1996). The concept of project complexity—a review. *International journal of project management*, *14*(4), 201–204.

Bellis, P., Cunial, M., & Trabucchi, D. (2024). Mastering hybrid worlds through digital leadership: The role of agility in fostering innovation. *Business Horizons*.

Benitez, J., Arenas, A., Castillo, A., & Esteves, J. (2022). Impact of digital leadership capability on innovation performance: The role of platform digitization capability. *Information & Management*, *59*(2), 103590.

Bradburn, N. M. (1969). The structure of psychological well-being.

Brosseau, D., Ebrahim, S., Handscomb, C., & Thaker, S. (2019). The journey to an agile organization. *McKinsey & Company, May*, *10*, 14–27.

Bughin, J., LaBerge, L., & Mellbye, A. (2017). The case for digital reinvention.

Bushey, N. (2019). Enhancing organizational agility within the human resources function.

Buyukbecse, & Dikbas. (2022). A study on digital leadership scale (dls) development. *Kahramanmaraş Sütçü İmam Üniversitesi Sosyal Bilimler Dergisi*, *19*(2), 740–760.

Charalampous, M. (2020). A review of the agile working literature in relation to five facets of well-being. *Agile Working and Well-Being in the Digital Age*, 93–105.

Cheng, V. W. S., Davenport, T., Johnson, D., Vella, K., & Hickie, I. B. (2019). Gamification in apps and technologies for improving mental health and well-being: systematic review. *JMIR mental health*, *6*(6), e13717.

Cortellazzo, L., Bruni, E., & Zampieri, R. (2019). The role of leadership in a digitalized world: A review. *Frontiers in psychology*, *10*, 1938.

Costanza, D. P., Blacksmith, N., Coats, M. R., Severt, J. B., & DeCostanza, A. H. (2016). The effect of adaptive organizational culture on long-term survival. *Journal of Business and Psychology*, *31*, 361–381.

de Araujo, L. M., Priadana, S., Paramarta, V., & Sunarsi, D. (2021). Digital leadership in business organizations. *International Journal of Educational Administration, Management, and Leadership*, 45–56.

Denison, D., Nieminen, L., & Kotrba, L. (2014). Diagnosing organizational cultures: A conceptual and empirical review of culture effectiveness surveys. *European Journal of Work and Organizational Psychology*, *23*(1), 145–161.

Denning, P. J. (2017). Remaining trouble spots with computational thinking. *Communications of the ACM*, *60*(6), 33–39.

De Smet, A., Lurie, M., & St George, A. (2018). Leading agile transformation: The new capabilities leaders need to build 21st-century organizations. *McKinsey & Company*, *15*, 1–27.

De Vries, N. J., & Carlson, J. (2014). Examining the drivers and brand performance implications of customer engagement with brands in the social media environment. *Journal of Brand Management*, *21*, 495–515.

Dewi, D. S., & Mulyo, M. (2017). Psychological well being pada siswa tunanetra. *Jurnal Psikologi Pendidikan dan Perkembangan*, *6*(1), 11–23.

Dickson, M. M., Espa, G., Gabriele, R., & Mazzitelli, A. (2021). Small businesses and the effects on the growth of formal collaboration agreements: additional insights and policy implications. *Applied Economics*, *53*(46), 5397–5414.

Du, S., Bstieler, L., & Yalcinkaya, G. (2022). Sustainability-focused innovation in the business-to-business context: Antecedents and managerial implications. *Journal of Business Research*, *138*, 117–129.

Duerr, S., Holotiuk, F., Wagner, H.-T., Beimborn, D., & Weitzel, T. (2018). What is digital organizational culture? insights from exploratory case studies.

Ebert, C., & Duarte, C. H. C. (2018). Digital transformation. *IEEE Softw.*, *35*(4), 16–21.

Esfahani, M. S., & Abbasirad, K. (2021). Managing user engagement in virtual event platforms. In *Ispim conference proceedings* (pp. 1–12).

Farivar, F., & Richardson, J. (2021). Workplace digitalisation and work-nonwork satisfaction: The role of spillover social media. *Behaviour & Information Technology*, *40*(8), 747–758.

Fiedler, S., Pfaff, H., Soellner, R., & Pförtner, T.-K. (2018). Exploring the association between health literacy and psychological well-being among industry managers in germany. *Journal of Occupational and Environmental Medicine*, *60*(8), 743–753.

Floricel, S., Michela, J. L., & Piperca, S. (2016). Complexity, uncertainty-reduction strategies, and project performance. *International Journal of Project Management*, *34*(7), 1360–1383.

Frankowska, M., & Rzeczycki, A. (2020). Reshaping supply chain collaboration-the role of digital leadership in a networked organization. In *Boosting collaborative networks 4.0: 21st ifip wg 5.5 working conference on virtual enterprises, pro-ve 2020, valencia, spain, november 23–25, 2020, proceedings 21* (pp. 353–364).

Fuchs, C., & Hess, T. (2018). Becoming agile in the digital transformation: The process of a large-scale agile transformation.

George, J. M., & Zhou, J. (2002). Understanding when bad moods foster creativity and good ones don't: the role of context and clarity of feelings. *Journal of applied psychology*, *87*(4), 687.

Gong, L., Liu, Z., Rong, Y., & Fu, L. (2021). Inclusive leadership, ambidextrous innovation and organizational performance: the moderating role of environment uncertainty. *Leadership & Organization Development Journal*, *42*(5), 783–801.

Gray, S. M., Knight, A. P., & Baer, M. (2020). On the emergence of collective psychological ownership in new creative teams. *Organization Science*, *31*(1), 141–164.

Haddud, A., & McAllen, D. (2018). Digital workplace management: exploring aspects related to culture, innovation, and leadership. In *2018 portland international conference on management of engineering and technology (picmet)* (pp. 1–6).

Hayes, A. F., & Preacher, K. J. (2014). Statistical mediation analysis with a multicategorical independent variable. *British journal of mathematical and statistical psychology*, *67*(3), 451–470.

Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: does method really matter? *Psychological science*, *24*(10), 1918–1927.

Hesse, A. (2018). Digitalization and leadership-how experienced leaders interpret daily realities in a digital world.

Highsmith, J. (2009). *Agile project management: creating innovative products*. Pearson education.

Jaiswal, N. K., & Dhar, R. L. (2017). The influence of servant leadership, trust in leader and thriving on employee creativity. *Leadership & Organization Development Journal*, *38*(1), 2–21.

Joiner, B. (2019). Leadership agility for organizational agility. *Journal of Creating Value*, *5*(2), 139–149.

Kane, G. C., Phillips, A. N., Copulsky, J., & Andrus, G. (2019). How digital leadership is (n't) different. *MIT Sloan Management Review*, *60*(3), 34–39.

Kleine, A.-K., Rudolph, C. W., & Zacher, H. (2019). Thriving at work: A meta-analysis. *Journal of Organizational Behavior*, *40*(9-10), 973–999.

Kniess, J. (2019). Bentham on animal welfare. *British Journal for the History of Philosophy*, *27*(3), 556–572.

Krehl, E.-H., & Büttgen, M. (2022). Uncovering the complexities of remote leadership and the usage of digital tools during the covid-19 pandemic: A qualitative diary study. *German Journal of Human Resource Management*, *36*(3), 325–352.

Kreutzer, R. T., Neugebauer, T., & Pattloch, A. (2017). Digital business leadership. *Digital Transformation–Geschäftsmodell-Innovation–agile Organisation–Change-Management*.

Kumkale, İ. (2022). Organizational agility. In *Organizational mastery: The impact of strategic leadership and organizational ambidexterity on organizational agility* (pp. 37–52). Springer.

Larjovuori, R.-L., Bordi, L., Mäkiniemi, J.-P., & Heikkilä-Tammi, K. (2016). The role of leadership and employee well-being in organizational digitalization. *Tiziana Russo-Spenaand Cristina Mele*, *1159*.

Leclercq-Vandelannoitte, A. (2022). Is employee technological "ill-being" missing from corporate responsibility? the foucauldian ethics of ubiquitous it uses in organizations. In *Business and the ethical implications of technology* (pp. 33–55). Springer.

Lee, J. (2019). A study on research trend analysis and topic class prediction of digital transformation using text mining. *International journal of advanced smart convergence*, *8*(2), 183–190.

Liu, S., Chan, F. T., Yang, J., & Niu, B. (2018). Understanding the effect of cloud computing on organizational agility: An empirical examination. *International Journal of Information Management*, *43*, 98–111.

Martínez-Caro, E., Cegarra-Navarro, J. G., & Alfonso-Ruiz, F. J. (2020). Digital technologies and firm performance: The role of digital organisational culture. *Technological Forecasting and Social Change*, *154*, 119962.

Massé, R., Poulin, C., Dassa, C., Lambert, J., Bélair, S., & Battaglini, A. (1998). The structure of mental health: Higher-order confirmatory factor analyses of psychological distress and well-being measures. *Social indicators research*, *45*, 475–504.

Matthes, J., Karsay, K., Schmuck, D., & Stevic, A. (2020). "too much to handle": Impact of mobile social networking sites on information overload, depressive symptoms, and well-being. *Computers in Human Behavior*, *105*, 106217.

McGrath, R. (2019). *Seeing around corners: How to spot inflection points in business before they happen.* Houghton Mifflin.

Meier, A., Kropp, M., Anslow, C., & Biddle, R. (2018). Stress in agile software development: practices and outcomes. In *Agile processes in software engineering and extreme programming: 19th international conference, xp 2018, porto, portugal, may 21–25, 2018, proceedings 19* (pp. 259–266).

Mendez, A. H. (2018). *Improving project performance through implementation of agile methodologies in the renewable energy construction industry* (Unpublished doctoral dissertation). The George Washington University.

Mihardjo, L., Sasmoko, S., Alamsyah, F., & Elidjen, E. (2019). The influence of digital leadership on innovation management based on dynamic capability: Market orientation as a moderator. *Management Science Letters*, *9*(7), 1059–1070.

Mikalef, P., Pappas, I. O., Krogstie, J., & Giannakos, M. (2018). Big data analytics capabilities: a systematic literature review and research agenda. *Information systems and e-business management*, *16*, 547–578.

Mikfeld, B. (2016). Zur einführung: Trends, diskurse, klärungsbedarfe. *Arbeit weiter denken. Werkheft*, *1*.

Mohamed, S., Nikmat, A., Hashim, N. A., Shuib, N., & Raduan, N. J. N. (2021). Burnout and its relationship to psychological distress and job satisfaction among academicians and non-academicians in malaysia. *International Journal of Higher Education*, *10*(1), 85–92.

Molino, M., Ingusci, E., Signore, F., Manuti, A., Giancaspro, M. L., Russo, V., ... Cortese, C. G. (2020). Wellbeing costs of technology use during covid-19 remote working: An investigation using the italian translation of the technostress creators scale. *Sustainability*, *12*(15), 5911.

Mousa, S. K., & Othman, M. (2020). The impact of green human resource management practices on sustainable performance in healthcare organisations: A conceptual framework. *Journal of cleaner production*, *243*, 118595.

Mulang, H. (2021). The effect of competences, work motivation, learning environment on human resource performance. *Golden Ratio of Human Resource Management*, *1*(2), 84–93.

Mullan, K., & Wajcman, J. (2019). Have mobile devices changed working patterns in the 21st century? a time-diary analysis of work extension in the uk. *Work, employment and society*, *33*(1), 3–20.

Munandar, J. M., & Munthe, R. C. F. (2019). How technology affects behavioral intention (case study of online transportation in indonesia and thailand). *The South East Asian Journal of Management*, *13*(2), 5.

Muniroh, M., Hamidah, H., & Abdullah, T. (2022). Managerial implications on the relation of digital leadership, digital culture, organizational learning, and innovation of the employee performance (case study of pt. telkom digital and next business department). *Management and Entrepreneurship: Trends of Development*, *1*(19), 58–75.

Nadkarni, S., & Prügl, R. (2021). Digital transformation: a review, synthesis and opportunities for future research. *Management Review Quarterly*, *71*, 233–341.

Najrani, M. (2016). The endless opportunity of organizational agility. *Strategic Direction*, *32*(3), 37–38.

Nath, V., & Agrawal, R. (2020). Agility and lean practices as antecedents of supply chain social sustainability. *International Journal of Operations & Production Management*, *40*(10), 1589–1611.

Niu, S., Park, B. I., & Jung, J. S. (2022). The effects of digital leadership and esg management on organizational innovation and sustainability. *Sustainability*, *14*(23), 15639.

Nureen, N., Liu, D., Ahmad, B., & Irfan, M. (2022). Exploring the technical and behavioral dimensions of green supply chain management: a roadmap toward environmental sustainability. *Environmental Science and Pollution Research*, *29*(42), 63444–63457.

Ogbeibu, S., Senadjki, A., & Gaskin, J. (2018). The moderating effect of benevolence on the impact of organisational culture on employee creativity. *Journal of Business Research*, *90*, 334–346.

Olatunji, F., Abimbola, A., Samuel, T. A., et al. (2020). Empirical assessment of the link between succession planning and business agility. *EMPIRICAL ASSESSMENT OF THE LINK BETWEEN SUCCESSION PLANNING AND BUSINESS AGILITY*, *52*(1), 15–15.

Olteanu, C. G. (2018). It agile transformation. *Academy of Economic Studies. Economy Informatics*, *18*(1), 23–31.

Palumbo, R. (2021). Curbing the drawbacks of digitization on psycho-social risks at work in educational institutions. preliminary evidence from europe. *Quality Assurance in Education*, *29*(2/3), 84–100.

Panichayakorn, T., & Jermsittiparsert, K. (2019). Mobilizing organizational performance through robotic and artificial intelligence awareness in mediating role of supply chain agility. *International Journal of Supply Chain Management*, *8*(5), 757–768.

Park, Y., El Sawy, O. A., & Fiss, P. (2017). The role of business intelligence and communication technologies in organizational agility: a configurational approach. *Journal of the association for information systems*, *18*(9), 1.

Peng, B. (2022). Digital leadership: State governance in the era of digital technology. *Cultures of Science*, *5*(4), 210–225.

Petrucci, T., & Rivera, M. (2018). Leading growth through the digital leader. *Journal of Leadership Studies*, *12*(3), 53–56.

Pitafi, A. H. (2024). Enterprise social media as enablers of employees' agility: the impact of work stress and enterprise social media visibility. *Information Technology & People*.

Rad, D., & Rad, G. (2021). Theories of change in agile psychology. *Technium Soc. Sci. J.*, *21*, 570.

Recker, J., Holten, R., Hummel, M., & Rosenkranz, C. (2017). How agile practices impact customer responsiveness and development success: A field study. *Project management journal*, *48*(2), 99–121.

Reinecke, L., Aufenanger, S., Beutel, M. E., Dreier, M., Quiring, O., Stark, B., ... Müller, K. W. (2017). Digital stress over the life span: The effects of communication load and internet multitasking on perceived stress and psychological health impairments in a german probability sample. *Media Psychology*, *20*(1), 90–115.

Russell, E., & Grant, C. (2020). Introduction to agile working and well-being in the digital age. *Agile working and well-being in the digital age*, 3–17.

Sanders, K., Nguyen, P. T., Bouckenooghe, D., Rafferty, A., & Schwarz, G. (2020). Unraveling the what and how of organizational communication to employees

during covid-19 pandemic: Adopting an attributional lens. *The Journal of Applied Behavioral Science*, *56*(3), 289–293.

Saunders, M. N., Townsend, K., et al. (2018). Choosing participants. *The Sage handbook of qualitative business and management research methods*, 480–494.

Schiuma, G., Schettini, E., Santarsiero, F., & Carlucci, D. (2022). The transformative leadership compass: six competencies for digital transformation entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, *28*(5), 1273–1291.

Schlesselman, L. S., Cain, J., & DiVall, M. (2020). Improving and restoring the well-being and resilience of pharmacy students during a pandemic. *American journal of pharmaceutical education*, *84*(6), ajpe8144.

Schwarzmüller, T., Brosi, P., Duman, D., & Welpe, I. M. (2018). How does the digital transformation affect organizations? key themes of change in work design and leadership. *Management Revue*, *29*(2), 114–138.

Sekaran, U., & Bougie, R. (2016). *Research methods for business: A skill building approach*. john wiley & sons.

Shahriari, M., & Allameh, S. M. (2020). Organizational culture and organizational learning: does high performance work systems mediate? *Journal of Workplace Learning*, *32*(8), 583–597.

Shams, R., Vrontis, D., Belyaeva, Z., Ferraris, A., & Czinkota, M. R. (2021). Strategic agility in international business: A conceptual framework for "agile" multinationals. *Journal of International Management*, *27*(1), 100737.

Sheninger, E. (2019). *Digital leadership: Changing paradigms for changing times*. Corwin Press.

Stachowiak, B., & Szulc, P. (2021). Astaxanthin for the food industry. *Molecules*, *26*(9), 2666.

Stana, R.-A. B., Fischer, L. H., & Nicolajsen, H. W. (2018). Review for future research in digital leadership. In *Information systems research conference in scandinavia (iris41)*.

Sun, X., Qiao, M., Deng, J., Zhang, J., Pan, J., Zhang, X., & Liu, D. (2021). Mediating effect of work stress on the associations between psychological

job demands, social approval, and workplace violence among health care workers in sichuan province of china. *Frontiers in public health*, *9*, 743626.

Talwar, R., & Koury, A. (2017). Artificial intelligence–the next frontier in it security? *Network Security*, *2017*(4), 14–17.

Tanniru, M. R. (2018). Digital leadership. In *Management of information systems.* IntechOpen.

Temelkova, M. (2018). Skills for digital leadership-prerequisite for developing high-tech economy. *International Journal of Advanced Research in Management and Social Sciences*, *7*(12), 50–74.

Temelkova, M. (2020). Digital leadership added value in the digital smart organizations. *Journal of Engineering Science and Technology Review*, 252–257.

Thompson, A. (2020). Physical activity and sedentary behaviour in the digital workspace. *Agile Working and Well-Being in the Digital Age*, 107–116.

Uther, M., Cleveland, M., & Jones, R. (2020). Digital distractions: The effect and use of digital message alerts and their relationship with work-life balance. *Agile Working and Well-Being in the Digital Age*, 63–76.

Van den Berg, P. T., & Wilderom, C. P. (2004). Defining, measuring, and comparing organisational cultures. *Applied psychology*, *53*(4), 570–582.

Vial, G. (2021). Understanding digital transformation: A review and a research agenda. *Managing digital transformation*, 13–66.

Wasono, L. W., & Furinto, A. (2018). The effect of digital leadership and innovation management for incumbent telecommunication company in the digital disruptive era. *International Journal of Engineering and Technology*, *7*(2.29), 125–130.

Wei, C., Pitafi, A. H., Kanwal, S., Ali, A., & Ren, M. (2020). Improving employee agility using enterprise social media and digital fluency: Moderated mediation model. *IEEE Access*, *8*, 68799–68810.

Werder, K., Richter, J., Hennel, P., Dreesen, T., Fischer, M., & Weingarth, J. (2021). A three-pronged view on organizational agility. *IT Professional*, *23*(2), 89–95.

Westerman, G., Bonnet, D., & McAfee, A. (2014). *Leading digital: Turning technology into business transformation.* Harvard Business Press.

Yıkılmaz, İ., & Sürücü, L. (2021). Dijital çağda liderliğin yeni yüzü: Dijital liderlik. *İ. Tarakçı, ve B. Göktaş (Eds..), Dijital Gelecek Dijital Dönüşüm-2 içinde (301-317), İstanbul: Efe Akademi*.

Yukongdi, V., & Shrestha, P. (2020). The influence of affective commitment, job satisfaction and job stress on turnover intention: A study of nepalese bank employees. *Review of Integrative Business and Economics Research*, *9*, 88–98.

Yusuf, Y., Menhat, M. S., Abubakar, T., Ogbuke, N. J., et al. (2020). Agile capabilities as necessary conditions for maximising sustainable supply chain performance: An empirical investigation. *International Journal of Production Economics*, *222*, 107501.

Zappalà, S., Swanzy, E. K., & Toscano, F. (2022). Workload and mental well-being of homeworkers: The mediating effects of work-family conflict, sleeping problems, and work engagement. *Journal of Occupational and Environmental Medicine*, *64*(10), e647.

Zeike, S., Bradbury, K., Lindert, L., & Pfaff, H. (2019). Digital leadership skills and associations with psychological well-being. *International journal of environmental research and public health*, *16*(14), 2628.

Zeike, S., Choi, K.-E., Lindert, L., & Pfaff, H. (2019). Managers' well-being in the digital era: Is it associated with perceived choice overload and pressure from digitalization? an exploratory study. *International journal of environmental research and public health*, *16*(10), 1746.

Zhang, Q., & Cao, M. (2018). Exploring antecedents of supply chain collaboration: Effects of culture and interorganizational system appropriation. *International journal of Production economics*, *195*, 146–157.

Zhong, L. (2017). Indicators of digital leadership in the context of k-12 education. *Journal of Educational Technology Development and Exchange (JETDE)*, *10*(1), 3.

Zhu, Y.-Q., Gardner, D. G., & Chen, H.-G. (2018). Relationships between work team climate, individual motivation, and creativity. *Journal of management*, *44*(5), 2094–2115.

Appendix-A

Questionnaire

Dear Respondent

I am student of MS/M-Phil Management Sciences at Capital University of Science and Technology Islamabad. I am conducting a research on a topic titled "**Impact of Digital Leadership on Sustainable Creative Performance and Psychological Well-being: Mediating Role of Agile Response and Moderating Role of Organizational Culture**". You can help me by completing the attached questionnaire, you will find it quite interesting. I appreciate your participation in my study and I assure that your responses will be held confidential and will only be used for education purposes.

Sincerely,

Soban Ali,

MS Research Scholar,

Faculty of Management and Social Sciences,

Capital University Science and Technology, Islamabad.

Section 1: Demographics

Gender	1- Male 2- Female 3- Prefer not to say
Age(years)	1 (20-30), 2 (31-40), 3 (41-50), 4 (51-above)
Qualification	1 (Inter), 2 (Bachelor), 3 (Masters), 4 (MS/PhD.), 5 (Any other)
Experience(years)	1 (0-1), 2 (2–5), 3 (5-10), 4 (10-above)

Section 2: Digital Leadership

Please tick the relevant choices: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

Items					
1. My leader has an innovative vision.	1	2	3	4	5
2. My leader has the ability to build and coordinate teams quickly.	1	2	3	4	5
3. My leader has up-to-date knowledge and skills about digital technologies and digital transformation.	1	2	3	4	5
4. My leader acts proactively in the digital transformation process in organization.	1	2	3	4	5
5. My leader balances new and existing business areas, modern trends and past traditions, and innovation and integration.	1	2	3	4	5
6. My leader finds ways to attract new digital talent to organization.	1	2	3	4	5
7. My leader Encourages employees when encountering difficulties in the digital transformation process	1	2	3	4	5
8. My leader acts as a guide and role model for those who work in the digital transformation process.	1	2	3	4	5

9. My leader focuses on employees' wellbeing during digital transformation	1	2	3	4	5

Section 3: Sustainable Creative Performance

Please tick the relevant choices: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

Items					
1 .I come up with creative solutions to problems.	1	2	3	4	5
2. I come up with new and practical ideas to improve performance.	1	2	3	4	5
3.I search out new technologies, processes, techniques, and/or product ideas.	1	2	3	4	5
4. I am not afraid to take risks.	1	2	3	4	5
5. I analyze the problems from new perspectives.	1	2	3	4	5

Section 4: Psychological Well -Being

Please tick the relevant choices: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

Items					
1. I value the people I work with	1	2	3	4	5
2. I find my job exciting.	1	2	3	4	5
3. I know I am capable of doing my job.	1	2	3	4	5
4. I feel that my work is recognized.	1	2	3	4	5
5. I want to take initiative in my work.	1	2	3	4	5
6 I enjoy working with the people at my job.	1	2	3	4	5
7. I like my job.	1	2	3	4	5
8 I feel confident at work	1	2	3	4	5

9. I feel that my work efforts are appreciated.	1	2	3	4	5
10. I care about the good functioning of my organization.	1	2	3	4	5
11. I get along well with the people at my job.	1	2	3	4	5
12. I am proud of the job I have	1	2	3	4	5
13. I feel effective and competent in my work	1	2	3	4	5
14. I know that people believe in the projects I work on	1	2	3	4	5
15. I like to take on challenges in my work	1	2	3	4	5
16 I have a relationship of trust with the people at my job	1	2	3	4	5
17. I find meaning in my work.	1	2	3	4	5
18. I feel that I know what to do in my job.	1	2	3	4	5
19. feel that the people I work with recognize my abilities.	1	2	3	4	5
20. I want to contribute to achieving the goals of my organization.	1	2	3	4	5
21. I feel that I am accepted as I am by the people I work with.	1	2	3	4	5
22. I have a great sense of fulfillment at work.	1	2	3	4	5
23. I know my value as a worker	1	2	3	4	5
24. I feel that I am a full member of my organization	1	2	3	4	5
25. I want to be involved in my organization beyond my work duties	1	2	3	4	5

Section 5: Agile Response

Please tick the relevant choices: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

Items	**1**	**2**	**3**	**4**	**5**

1. I had the abilities to respond to political changes that affected the project	1	2	3	4	5
2. I had the abilities to respond to economic changes that affected the project	1	2	3	4	5
3. I had the abilities to respond to policy changes that affected the project	1	2	3	4	5
4. I had the abilities to respond to social value changes (e.g. awareness of environmental issues, safety standard and climate change) that affected the project	1	2	3	4	5
5. I had the abilities to respond to technology changes that affected the project	1	2	3	4	5
6. I had the abilities to respond to rapidly changing tasks in the projec	1	2	3	4	5

Section 6: Organizational Culture

Please tick the relevant choices: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

Items					
1. Individual working in different department have common view	1	2	3	4	5
2. We have a value system that determine the manner of business that have clear and consistent vale	1	2	3	4	5
3. My organization gives freedom to employees to deviate from the rule	1	2	3	4	5
4. We have ethical values which differentiate right from wrong and guiding our behavior	1	2	3	4	5
5. Our employees have the chance to introduced their ideas before management makes decisions	1	2	3	4	5

6. There is Ethical code that guides our behavior and tell us right from wrong	1	2	3	4	5
7. My organization have a strong culture	1	2	3	4	5
8. In my organization it is easy to reach an agreement, even on difficult issues	1	2	3	4	5
9. In my organization there is a clear agreement about the right way and wrong way to do things	1	2	3	4	5
10. People from different part of this organization shared a common view	1	2	3	4	5