LEADERSHIP IN THE AGE OF ARTIFICIAL INTELLIGENCE: ASSESSING THE EFFECT ON EMPLOYEE PERFORMANCE

by

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DISSERTATION

Presented to the Swiss School of Business and Management Geneva

In Partial Fulfillment
Of the Requirements
For the Degree

DOCTOR OF BUSINESS ADMINISTRATION

SWISS SCHOOL OF BUSINESS AND MANAGEMENT GENEVA

JANUARY, 2025

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ABSTRACT

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2025

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The dynamic nature of leadership necessitates continuous evolution to align with transformative technological advancements like Artificial Intelligence (AI). This study explores the relationship between leadership, AI adoption, and employee outcomes, emphasizing the pivotal role of leadership traits in AI-driven workplaces. Effective leadership now requires AI literacy, learning agility, empathy, and ethics to navigate complexities in leading organizations with Human-AI interaction.

The findings show that leadership traits collectively shape the success of AI initiatives. Leaders proficient in AI literacy drive organizational success through pathways involving AI development, usage, and team-building efforts. Empathy and ethics are shown to significantly impact employee outcomes by promoting fair, transparent, and people-centric AI implementations. The study further reveals that while learning agility contributes to adaptability, it requires support from technical expertise to maximize performance improvements.

This research highlights how leadership traits influence AI development and usage, which serve as mediators in enhancing employee performance, commitment, and satisfaction. AI literacy enables leaders to drive technological advancements, facilitating team cohesion and boosting organizational performance. Similarly, leaders' learning agility fosters adaptability, promoting a culture receptive to AI integration. Empathy emerges as a dual-force trait, enhancing AI adoption while nurturing positive work environments. Ethical leadership reinforces trust and transparency, critical for employee engagement and the responsible use of AI.

Findings offer practical implications for organizations navigating the AI era. By investing in leadership development programs emphasizing AI literacy, learning agility, empathy, and ethics, organizations can create a balanced approach to AI integration. Such investments not only address technical challenges but also enhance employee welfare, fostering commitment, performance, and satisfaction. These findings advance the understanding of leadership's critical role in ensuring sustainable and human-centric AI transformations, enabling organizations to harness AI's potential while maintaining a focus on employee well-being and ethical practices.

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CHAPTER 1

INTRODUCTION

1.1 Background

In an era characterized by rapid technological advancements and transformative changes, the concept of leadership has taken on a new dimension, intricately intertwined with the rise of artificial intelligence (AI). The term "artificial intelligence" was first used during the Dartmouth Conference in 1956, which is regarded as a turning point in the history of AI. However, due to constraints in processing power and AI approaches, advancement reached a standstill in the 1970s. In the 1980s, the area saw a rebirth with the development of machine learning algorithms and neural networks. Developments in language processing, pattern recognition, and decision-making systems occurred during this time. Significant advances in AI were made in the 21st century thanks to the availability of enormous amounts of data and processing power.

Early adopters of AI included businesses in the industrial, healthcare, and finance sectors. These sectors were the main users of AI technologies, which were used for predictive modeling, data analysis, and process automation. Although earlier implementations were constrained by complexity and expense, advances in cloud computing and AI democratization have enabled wider adoption across multiple industries, spurring innovation and transforming business models.

The term “artificial intelligence” was considered as the phenomenon of human intelligence being imitated and exhibited by machines (Helm et al., 2020). The AI

researchers in computer science have defined AI as the study of "intelligent agents, which are devices that perceive their environment and take actions to maximize their chance of success at some goal" (Poole, Mackworth and Goebel, 1998 quoted in Bini, 2018, p. 2358). This definition clearly exhibits the role of AI in achievement of desired outcomes.

Artificial intelligence (AI) has been remarkably adopted by companies during the past ten years, revolutionizing a number of industries in the process. This tendency has been brought to light by studies like those conducted by McKinsey & Company, which emphasize how AI technologies are changing customer interactions, company processes, and workflows. According to (Bughin and Hazan, 2017), businesses in a variety of industries are using AI more and more for jobs including supply chain management, customer support, and data analysis and decision-making.

The study by Manyika (2022) highlights the domains where computers are gradually, though not totally, displacing human work, highlighting the broadening scope of AI usage. This development demonstrates how corporations are beginning to realize how revolutionary AI can be in fostering creativity, efficiency, and competitive advantage. Around the world, businesses are fast changing due to artificial intelligence (AI). This is no longer some fantasy of the remote future. AI is being used by businesses of all kinds, and it's significantly changing the way they run. Machine learning, a subset of AI that enables algorithms to learn from and improve upon data, is one of the main forces behind its emergence. As a result, companies may automate processes, examine enormous volumes of data, and learn more about their customers.

The uses of AI in business are numerous and ever-expanding. AI can be seen in everything from AI-powered supply chain management that streamlines logistics to chatbots that offer customer support. AI is increasing the productivity, efficiency, and eventually competitiveness of organizations across a wide range of industries, including manufacturing, healthcare, banking, and retail. Many industries are undergoing a change due to artificial intelligence (AI), which provides data-driven insights and intelligent automation. For instance, in the financial industry, artificial intelligence (AI) uses algorithms to detect irregularities in transactions and immediately flag questionable conduct. Additionally, it personalizes investing advice and expedites loan applications. Another leading adopter is the healthcare industry. Artificial intelligence (AI) aids in medical diagnosis by examining patient data and medical imaging to detect possible ailments. Drug discovery using AI speeds up the creation of new treatments, and AI-powered virtual assistants may even conduct simple consultations and respond to patient inquiries.

E-commerce companies are among the first to use AI extensively for a variety of purposes, including improving customer experiences and increasing productivity. This includes employing chatbots driven by AI to provide round-the-clock customer service, tailoring product recommendations to increase sales, and putting fraud detection algorithms in place to safeguard transactions. AI is also being used for supply chain logistics optimization, dynamic pricing tactics, and the analysis of enormous volumes of customer data to enhance marketing campaigns and yield new insights.

In the AI era, the change in leadership style is imperative and it necessitates moving away from a more rigid and hierarchical structure towards a more collaborative and adaptable approach. Some of the crucial elements of this change are:

i) Transitioning from Top-Down to Collaborative: Historically, leadership was frequently autocratic, with few employees participating in decision-making processes. Modern leaders are aware that a wide variety of viewpoints can improve decision-making, and they place a high importance on teamwork and employee involvement.

ii) People-Oriented: In the past, task-oriented leadership styles prioritized completing tasks at any costs. The human side of leadership is being given more attention these days. The well-being of the employees is given top priority by leaders, who create an environment that inspires and encourages their colleagues.

iii) Adaptability: The corporate landscape is evolving. Today's leaders must be adaptive and agile to deal with the perpetual state of change. This necessitates promoting innovation and taking measured risks on the part of leaders in the general business as well as AI driven operations context.

iv) Rise of Technology: Leadership styles have also been altered by the development of technology, particularly AI tools. Leaders must be able to lead and inspire teams virtually as remote work becomes more prevalent. In order to make informed judgments, they also use technology to collect data and employee feedback.

Effective leadership now emphasizes teamwork, flexibility, and a people-centered approach rather than a command-and-control paradigm. The workforce's changing needs and those of the corporate community are reflected in this shift. Organizational leaders

that are forward-thinking are implementing AI strategically. This entails establishing a precise vision for how AI will help the company, and concentrating on particular use cases with quantifiable objectives. Leaders are also aware of the value of developing a workforce prepared for AI and how it may provide them a competitive edge and increase productivity. This entails upskilling staff members, encouraging an innovative culture, and making sure everyone is aware of how AI will support rather than replace their work. Careful change management is necessary for the adoption of AI to be effective. To reduce bias and guarantee responsible deployment, leaders are investing in high-quality data and ethical AI practices.

This is the time when it is crucial to delve into what leadership traits are the most significant in enabling AI development and usage while balancing the performance and ethical aspects of the organizational progress. With this objective, this research aims to investigate and draw insights regarding the relationships between leadership, artificial intelligence and employee performance.

1.2 Problem Statement

The concept of leadership is dynamic in nature and has been evolving with the changes in environment. With the advent of Artificial Intelligence (AI) and its fast growing applications, the need has emerged for leadership to transform for effectively leading the organizations adopting AI. The term “artificial intelligence” in the initial stages of study was considered as the phenomenon of machines being capable of imitating human intelligence and exhibit it in relevant situations (Helm et al., 2020). With

artificial intelligence playing the complementary as well as substituting role with respect to human employees, transformation of leadership roles and capabilities in the AI powered world is imperative to deal with the imminent complexities in terms of ethical considerations as well as Human-AI interaction.

Effective leadership is also the key to harnessing the opportunities arising from AI adoption as routine tasks are taken up by AI, leaving more room for employees to engage in creative tasks and enhance their welfare by providing them more time to think and innovate, communicate with leaders, and bond with the team members (Daugherty and Wilson, 2018).

As the nature of work changes with AI usage and the followers are now not only human but also AI followers, leadership needs to upgrade with the necessary skills and attitude along with ethics and agility for governing the organizations shaped by Human – AI synergy (Verhezen, 2020; Wang, 2021). Thus, leaders and leadership are crucial for appropriate development, successful implementation, and effective usage of AI for achieving the organizational goals by enhancing employees' performance (de Jong, 2020). It therefore becomes imperative to understand the nuances of the relationship between leadership, artificial intelligence and employee performance which is the focus of the present study.

1.3 Significance of the Study

This study delves into a critical area of contemporary organizational dynamics by examining the intricate relationship between leadership, artificial intelligence, employee

performance, commitment, and satisfaction. Study objectives have been methodically designed for comprehensively analyzing these interconnections. By assessing the impact of leaders' learning agility, AI literacy, ethics, and empathy on AI development, usage, and their subsequent effects on employee outcomes, the study seeks to provide significant contribution to theory as well as practice.

This research gives insights about mechanisms that underlie leadership, AI, and employee dynamics, offering valuable information for organizations aiming to navigate the evolving landscape of the modern workplace and optimize their leadership strategies for enhanced employee performance, commitment, and satisfaction in the era of artificial intelligence. Comprehending the part that leadership plays in the adoption and implementation of AI technologies is crucial for modern enterprises.

The strategic direction and culture of a business are shaped by leadership, and it also affects how well AI is integrated into day-to-day operations. Examining this complex relationship can help executives understand how to successfully lead AI adoption programs, overcome obstacles, and create a positive work atmosphere.

Furthermore, analysing how AI adoption affects worker performance provides insight into how well these technologies work to improve output, judgment, and general job satisfaction. Thus, understanding how leadership, employee performance, and AI adoption interact is crucial to maximizing organizational success in AI environments.

1.4 Research Questions and Objectives

The mechanism of leadership affecting employee commitment, performance and satisfaction in the AI era is far more complex than what it was traditionally. This research enquires into various aspects of the problem and attempts to answer the research questions arising from them.

RQ1: Firstly, there is the question about what leadership traits are more important in the AI era to bring about the desired employee outcomes?

RQ2: What effect do the traits like Leaders' Learning Agility, AI Literacy, Empathy and Ethics have on AI development and AI implementation in the organization?

RQ3: Do the employee outcomes like performance, commitment, and satisfaction get better with the leadership playing their role in the presence of AI implemented in the organizational processes at various levels?

All these questions warrant a thorough investigation which this research aims to cover. In accordance with the research questions outlined above, the main aim of the present study is to analyze the effect of leadership on employee performance, commitment, and satisfaction in the presence of artificial intelligence development and usage as mediators.

Following are the objectives of the study:

1. To assess the effect of Leaders' Learning Agility, AI Literacy, Empathy and Ethics on AI Development and the effect of AI development on AI usage in an organization.

2. To examine the effect of Leaders' AI Literacy on Employee Performance through AI Development and AI Usage as mediators.

3. To investigate the influence of Leaders' Learning Agility on Employee Performance through AI development and AI usage as mediators.

4. To assess the impact of Leaders' Empathy on employee commitment, performance and satisfaction in an organization and the mediating effect of AI Development, AI Usage and team building in these relationships.

5. To examine the effect of Leaders' Ethics on employee commitment, performance and satisfaction in an organization and the mediating effect of AI Development, AI Usage and team building in these relationships.

1.5 Definition of Terms

Artificial Intelligence (AI)

Artificial Intelligence (AI) can be defined as "a system's capability to correctly interpret external data, to learn from such data, and to use those learnings to achieve specific goals and tasks through flexible adaption" (Kaplan and Haenlein, 2019). Thus, this study considers a broad definition of AI. AI combines essence of both engineering and cognitive science. This is evident in the wide range of applications of artificial intelligence. A number of scientific disciplines are more or less necessarily depending on the application (Terstegen, Sandrock and Stowasser, 2022). The authors refer to artificial intelligence (AI) as "science" most of the time, but they also use phrases like "computer

program," "collection of technologies," and "machine capacity," among others. Most definitions of artificial intelligence share the following common idea: machine intelligence has the potential to approach or match human intelligence in certain areas, and it can supplement or replace some of the tasks currently carried out by managers and leaders. This will free up time for more creative tasks that previous department and organization leaders were unable to complete (Titareva, 2021).

Types of Artificial Intelligence (AI):

AI researchers contend that it's critical to distinguish between artificial general intelligence (Strong AI) and artificial narrow intelligence (Weak AI), the two main categories of AI. The ability of computers to learn on their own and surpass the initial design created by AI developers and other experts is correlated with strong AI. However, it is equally critical to discuss the second kind of AI, which is weak. A complicated software program that can tackle specific issues in a limited domain by carrying out automated operations is referred to as weak artificial intelligence (Terblanche *et al.*, 2022).

The weak AI that still requires human programming to function dominates the modern world. The AI revolution that the media exaggerates, in which AI computers rule the world and pose a threat to humanity is still quite some way off. In general, mass AI technologies today are not advanced enough to pose a threat to humanity. Policy makers, practitioners, and academics are therefore mainly concerned with the ethical and legal aspects of AI, particularly prior to its widespread transformation from a weak to a

powerful technology. It is in this context that the present study discusses the AI development and usage.

AI Literacy

The term "AI literacy" describes the capacity to recognize, apply, and assess AI-related products in accordance with moral principles similar to computer literacy (Tobin, 1983; Hoffman and Blake, 2003) and digital literacy (Ala-Mutka, 2011), among many other related literacies, AI literacy does not necessitate individuals being specialists in the underlying theory and advancements connected to AI. Rather, the ability to use AI products effectively and rationally would be considered an indicator of AI literacy.

Digital literacy and AI literacy are not the same. Using content related to digital literacy to directly describe AI literacy is inappropriate. For instance, a leader with strong digital literacy may not have the same level of AI literacy in some areas as someone who has never heard of the notion yet is adept at handling electronics. As a result, while the framework for developing digital literacy can help establish AI literacy, the tools for testing users' digital literacy are not adequate for measuring users' AI literacy.

AI literacy refers to “the ability to properly identify, use, and evaluate AI-related products under the premise of ethical standards” (Wang, Rau and Yuan, 2023). An individual is considered to be AI literate if they can make proficient use of AI products even if they do not have expertise in the theory and development of AI. Therefore, the main goals of basic AI literacy education are to understand AI and think critically about its results. According to (Long and Magerko, 2020), programming abilities and technical

knowledge are not typically seen as necessary qualifications or learning objectives for AI literacy. For the purpose of this study, the AI literacy scale given by Wang, Rau and Yuan (2023) has been considered.

Learning Agility

Learning agility has been broadly defined as "the willingness and ability to learn new competencies in order to perform under first-time, tough, or different conditions" (Lombardo and Eichinger, 2000). Leadership learning agility has been conceptualized as "the aptitude and willingness to learn from social experiences, and the drive to apply those lessons in new and challenging leadership roles" (Bouland-van Dam, Oostrom and Jansen, 2022). The present study utilizes this definition of Leadership Learning Agility for conceptualizing the variable in the integrated model developed for the study.

Adapting and responding to changing settings appears to be more vital than ever for leaders in modern firms. To be effective, leaders need to keep developing themselves (Calarco, 2020). In particular, because of the ever-evolving global economy, unpredictable economic settings, and overall unpredictability of organizational life, leaders must possess a high degree of adaptability to new conditions and difficulties (De Meuse, 2019).

Leaders have a big influence on the performance of their subordinates as well as the entire organization, which highlights the significance of learning agility for effective leadership (Hogan and Kaiser, 2005). Leadership learning agility, as determined by the leader's learning agility scale (LLAS), is defined as the capacity to apply newly acquired

knowledge in novel and demanding leadership tasks, as well as the readiness to learn from social encounters (Bouland-van Dam, Oostrom and Jansen, 2022). As a result, a leader's ability to adapt to change, also known as their learning agility, is crucial in the selection and training of future leaders.

Empathy

Leaders operate in a social context with their followers in the organization and therefore the emotional intelligence of a leader is considered to be an important leadership trait (Day, 2000). Empathy is the most significant aspect of a leader's emotional intelligence which has been identified as a strong influence on employees' commitment, performance, and satisfaction. Empathy refers to the ability of the leader to perceive and understand the emotions of the people working with them (Wong and Law, 2002).

Accordingly, empathy entails figuring out what other people are trying to accomplish as well as forming a bond with them via socialization and concern (Cuff *et al.*, 2016). Highly empathic leaders are able to identify the requirements of their followers and the ways in which procedural fairness might fulfill those demands. As a result, those executives in particular will address the concerns of the staff. Therefore, empathy in a leader is essential for implementing AI because it promotes comprehension, trust, cooperation, and a change-focused human perspective (Mahsud, Prussia and Yukl, 2010).

Leaders who exhibit empathy may alleviate fears, ease changes, and eventually assist staff in embracing and utilizing AI technologies for the good of the company. When a leader demonstrates empathy, trust and a feeling of community are created, which encourages workers to perform well while showing compassion. Artificial intelligence (AI) in the workplace expedites work and increases worker productivity, but also runs the danger of alienating people since it lacks empathy (Srinivasan and González, 2022). Productivity thrives when technology and empathy are balanced.

Ethics

Ethics are a set of moral standards of an individual or society which define what is to be deemed as right behaviour. Leader's ethics refer to the leader doing the right things, treating others well, and putting moral principles and standards at the forefront of managerial agenda (McCann and Holt, 2009).

Ethical leadership can be understood as a collection of ideas and procedures that help decision-makers in industries connected to artificial intelligence (AI) navigate the difficult moral choices brought about by these technologies (Baker-Brunnbauer, 2021). These puzzles cover a broad spectrum of subjects, such as algorithmic bias, data privacy, and the social effects of automation and AI-powered judgment. They also entail ensuring the equitable and responsible application of AI technology.

Whittlestone et al. (2019) assert that ethical leadership is essential to influencing artificial intelligence's (AI) good social impact and averting its possible negative effects. Leaders in the field of ethics who demonstrate empathy are better able to navigate

difficult judgments that have significant ethical ramifications. Research done by Brown and Treviño (2006) has shown that moral leaders can help their followers develop trust and commitment, which can lead to a variety of positive outcomes. These include enhanced job satisfaction, elevated employee morale, and better organizational performance. For AI technology to be in line with the values of justice, accountability, and transparency, ethical leaders must be present (Babalola *et al.*, 2019). Through this connection, ethical standards and ideals will be upheld and artificial intelligence will function as a catalyst for positive change.

AI Development

AI development refers to the process of designing, technically developing, and deploying AI-powered solutions. The creation of algorithms and systems that can carry out tasks that normally need human intelligence is known as artificial intelligence (AI) development (Russell and Norvig, 2016). This covers robotics, computer vision, natural language processing, and machine learning. Enhancing these systems' accuracy, efficiency, and performance are the main goals of AI development.

Studies have concluded that by allowing multi-layer neural networks to learn from enormous volumes of data, deep learning has dramatically enhanced AI capabilities (LeCun, Bengio and Hinton, 2015) Successful AI implementation focuses on matching AI strategies with overarching business goals, encouraging a culture that values data-driven decision-making, and consistently allocating resources for the required human and technological capital (Brynjolfsson and Mcafee, 2017).

The studies reviewed emphasize how important it is to innovate and adapt in iterative ways in order to preserve a competitive edge and meet changing market demands. In keeping with the view of human factor being imperative in AI development, the present study measures the same in terms of involvement of employees and leaders in AI development in context of the organization where AI is being implemented.

AI Usage

According to Davenport and Ronanki (2018), the main applications of AI are in advanced data analytics, human decision support, and routine task automation. For the present study, AI usage refers to a measure of the extent to which AI is being used in the organization. For arriving at this measure, the OECD definition of AI has been considered which is as follows: “An AI system is a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments. AI systems are designed to operate with varying levels of autonomy” (OECD, 2019). The measure of AI usage has been adapted from the scale suggested by (Montagnier and Ek, 2021).

The ability to use and take advantage of AI technology to carry out activities effectively is referred to as AI usage. It focuses on the different operational levels, such as the use of AI tools and applications in various operational areas such as marketing, production, logistics, etc. and their ability to integrate various AI tool and application kinds. . Cardon et al. (2023) examine the complex effects of artificial intelligence (AI) on a range of industries. They emphasized how artificial intelligence (AI) has the capacity to

revolutionize sectors including healthcare, finance, and education by improving productivity, creativity, and decision-making. They discussed the advantages and disadvantages of artificial intelligence (AI), including the necessity for legal frameworks, ethical issues, and data privacy concerns. The researchers offer a thorough assessment of AI's present condition and future course by examining case studies and empirical data, highlighting the significance of interdisciplinary cooperation to maximize AI's advantages while reducing its risks.

Team Building

A team is essentially any small group of individuals that have agreed to a set of performance goals, are dedicated to a shared objective, and use a mutually accountable method (Katzenbach and Smith, 1993). In other words, A team is a group of individuals working toward a single objective. teamwork is a type of group activity in which each member contributes in some way to a common task (Stone *et al.*, 2006). It may also incorporate individual tasks.

The practice of helping a group of people achieve their objectives is known as team building (Fapohunda, 2013). It involves defining the team's objectives, recognizing the obstacles to achieving those objectives, addressing those challenges directly, and offering the necessary resources to overcome them.

Employee Commitment

Employee commitment is the state in which workers have a strong interest in the objectives, principles, and vision of the company where they are employed (Meyer, Allen and Smith, 1993). This suggests that employee commitment extends beyond formal membership and encompasses a positive attitude toward the organization along with a strong willingness to exert significant effort in contributing to the organization's success and objectives. An employee's choice to remain a part of the organization, fully embrace its objectives, and provide the greatest contribution to its advancement can also be understood as an example of employee commitment (Schulz, Luthans and Messersmith, 2014).

Employee Performance

Employee performance is the degree to which members of an organization perform in terms of productivity, efficiency, and effectiveness in completing duties as assigned and achieving organizational objectives. Employee performance includes qualitative elements like customer satisfaction and teamwork in addition to quantitative outputs like production levels or sales numbers (Armstrong, 2006). Studies indicate that behaviors like attendance, punctuality, and commitment to corporate standards and values are also considered to be part of employee performance (Pradhan and Jena, 2017).

A key indicator of an organization's success is employee performance, which is impacted by a number of variables such as individual abilities, workplace motivation, and work environment. The primary objective of every business organization is to implement

effective strategies that motivate employees to enhance their job performance and strengthen the organization's competitive edge. Employee job performance has always been a major challenge in organizational management (Na-Nan, Chaiprasit and Pukkeeree, 2018).

Employee Satisfaction

The term "employee satisfaction" describes the favorable emotional state and happiness that workers feel about their jobs, work environments, and organizational experiences. It includes a range of factors, including coworker connections, pay satisfaction, promotion prospects, and the culture of the organization as a whole (Macdonald and MacIntyre, 1997).

Furthermore, research indicates that the pleasure of employees is contingent upon their judgments of justice, autonomy, and the meeting of their psychological needs in the workplace (Steindórsdóttir, Nerstad and Magnúsdóttir, 2020). The relationship between organizational outcomes and employee satisfaction is highlighted by studies and the importance of this relationship in promoting productivity, retention, and overall success of the business is also emphasized (Ababneh, 2020).

High income, excellent working conditions, possibilities for training and education, professional advancement, positive connections with coworkers, and any other benefits may all contribute to increased satisfaction with work (Verma and Kaur, 2023). The phrase "employee satisfaction" encompasses both the contentment of workers with

their jobs and their general contentment with the policies, atmosphere, and other aspects of the firm.

1.6 Summary

The convergence of human ingenuity and machine capabilities has ushered in a paradigm shift, necessitating leadership to evolve in order to accommodate the complexities and opportunities presented by AI in terms of ethical considerations as well as Human-AI interaction. As we stand at the crossroads of human creativity and algorithmic precision, understanding the nuances of leadership in the age of AI is essential not only for organizational success but also for the very fabric of societal progress. As AI continues to reshape economies, industries, and the nature of work itself, leadership needs to transform with the necessary skills and attitude along with ethics for helming the organizations where Human – AI interaction shapes the processes and their outcomes.

With most of the routine tasks expected to being taken up by artificial intelligence in the coming future, an investigation into what qualities and competence would be required by leaders while the development and usage of AI take place and how these can play an important role in the outcomes being achieved through a synergistic Human – AI interaction with people's team working with AI tools in terms of employee performance becomes imperative. A combined study on Leadership as a well-established phenomenon along with the rising influence of artificial intelligence must garner theoretical as well as practical interest.

The increasing application and use of AI have a significant impact on socio-technical work systems. Accordingly, leaders and leadership are crucial for successful development, implementation, and usage of AI for achieving the organizational goals by enhancing employees' performance. This study aims to investigate the effect of Leadership on Employee Performance in the presence of an AI environment, thus bringing out the essence of leadership in the age of AI.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

The concept of leadership is dynamic in nature and has been evolving with the changes in environment. With the advent of Artificial Intelligence (AI) and its fast growing applications, the need has emerged for leadership to transform for effectively leading the organizations adopting AI. The term “artificial intelligence” in the initial stages of study was considered as the phenomenon of machines being capable of imitating human intelligence and exhibit it in relevant situations (Helm et al., 2020). With artificial intelligence playing the complementary as well as substituting role with respect to human employees, transformation of leadership roles and capabilities in the AI powered world is imperative to deal with the imminent complexities in terms of ethical considerations as well as Human-AI interaction.

This chapter seeks to critically evaluate the existing body of literature on the relationship between artificial intelligence and leadership and how the AI can mediate the effects of leadership on employee performance. In this context, the chapter discusses the major themes of Leader AI literacy, Leader Learning Agility, Leader Empathy, Leader Ethics, AI Development, and AI Usage and their effects on employee outcomes for developing the conceptual model of the study for contributing to the body of knowledge by way of filling the existing gaps in the literature.

2.2 Inclusion Criteria

The literature review was carried out by searching relevant keywords on Google Scholar and the Scopus database. The keywords utilized for the search included: "Artificial Intelligence OR AI AND Leadership"; "Leader* Ethics AND Employee"; "Leader* Empathy AND Employee"; "AI Literacy"; "Leader* Agility OR Learning Agility"; and "Team Building AND Employee". These keywords were used in order to derive the research papers covering all the major variables and relationships aimed to be modelled in the present study.

Out of the search results, papers, book chapters, and dissertations were first shortlisted based on their titles and subsequently based on the Abstracts / Summary of the selected documents with relevant titles through a subjective assessment conducted by the researcher. Following sections present the details of the previous literature reviewed for the purpose of identifying the research gap and establishing the rationale for the present study.

2.3 Leadership and Artificial Intelligence

The research on leadership has been highly extensive and has spanned over a long period of time but artificial intelligence being a recent development, the relationship between leadership and AI has started being studied only recently. The definition of artificial intelligence has also been varied as presented by different researchers. Bughin and Hazan (2017, p.4) define AI as "The broad collection of technologies, such as computer vision, language processing, robotics, robotic process automation and virtual

agents that are able to mimic cognitive human functions." The AI concept was furthered by various researchers who emphasized on the role of AI in attaining the goals of an organization (Bini, 2018). The study examines the role of artificial intelligence (AI) in leadership with a focus on how AI technologies are changing organizational leadership dynamics and skills. The study highlights how improved data analytics, predictive insights, and automated decision-making processes offered by AI tools can increase leaders' capacities. The researcher draws attention to the revolutionary potential of AI in lowering cognitive load, boosting productivity, and encouraging data-driven strategies. According to the research, using AI in leadership can result in more knowledgeable and skillful decision-making. Leaders who use AI have enhanced flexibility, strategic thinking, and the capacity to handle challenging organizational issues. This change emphasizes how important it is for leaders to acquire new competencies and adjust to the rapidly changing technology environment.

The available literature in this area identifies three perspectives of AI in leadership – first, the "enhancement perspective" wherein AI is expected to assist leaders; second, the "replacement perspective" wherein the AI is expected to replace human leaders with time; and the third, "skeptical perspective" wherein the researchers argue that AI does not hold such immense potential as it is touted to hold (Titareva, 2021). The study is categorized into three main viewpoints in this paper: AI as an enhancer of leadership functions, AI as a potential replacement for human leaders and followers, and AI as an overhyped concept. In order to address the paucity of thorough evaluations and empirical evidence in this field, the researcher conducts a literature study to present a fair

assessment of these viewpoints. In the end, it seeks to understand how AI-based technologies impact contemporary organizational leadership, and it does so by identifying major themes in the scholarly and practical conversations from 2010 to 2020. This creates the foundation for future empirical study.

There is a lack of consensus among researchers regarding the effects of AI on leadership which stems from the two versions of AI that researchers refer to. One is the strong form of AI which can improve itself by learning on its own from its environment and experience, thus transcending the programs that originally created it. On the other end is the weak form of AI which can be used for automating the tasks performed by humans within a narrow domain. Currently, most of the organizations have adopted the weak form of AI which performs the role of an AI assistant and does not have the capability to replace human leaders but can very well assist leaders in enhancing their decision making capabilities (Bourton, Lavoie and Vogel, 2018).

However, there are researchers who argue that in future AI can replace human leadership and can perform well in the leadership roles (Quaquebeke and Gerpott, 2023). They investigated how AI could revolutionize leadership positions. They claim that AI has the potential to be more effective than human leaders because it can satisfy the psychological requirements of employees for mastery, autonomy, and a sense of belonging. According to the authors, if AI is able to absorb large amounts of data and pay close attention to detail without being constrained by human emotions or cognitive abilities, it may be more consistent and less biased than human leadership. They also

emphasize, how important it is for human leaders to comprehend AI's potential and successfully and morally incorporate it into organizational structures.

Bings and Schwenkmezger (2021) in their qualitative study of employees of companies from services, manufacturing and energy sector found that the usage of AI in leadership has not been very pronounced. On the other hand, it was also found that the leaders were actively creating structures to successfully adopt and implement AI in a qualitative study of school leaders (Tyson and Sauers, 2021). There are hardly any empirical studies to establish the significant effects of leadership and AI acting together on employee outcomes like employee performance, employee commitment and employee satisfaction.

Artificial intelligence (AI) can change management practices and what function it plays in leadership (Bagram, Ali and Qureshi, 2022). They looked into the ways AI technologies can help leaders make better decisions, increase the effectiveness of operations, and improve strategic planning. They found that AI can automate repetitive duties, promote more objective and informed decision-making, and offer insightful data analytics. These capabilities free up leaders' time to concentrate on more intricate and creative facets of their jobs. The authors do, however, also highlight the difficulties, including ethical dilemmas, the requirement for leaders to be knowledgeable about AI, and the significance of continuing to adopt a human-centered approach to leadership.

The study by Watson et al. (2021) investigates how artificial intelligence (AI) affects leadership, with a focus on how AI can improve decision-making and leadership efficacy. The researchers talk about how AI may help managers with data analysis,

problem-solving, and strategic planning, which would enhance the performance of the company as a whole. According to their findings, artificial intelligence (AI) may greatly assist leaders by enabling more timely and accurate information, enabling better-informed decision-making, and simplifying the automation of repetitive jobs. This makes it possible for leaders to concentrate more on the strategic and creative aspects of their jobs, which eventually promotes more creative and adaptable leadership.

The literature analysis shows that AI adoption places significant requirements on Strategic Transformation Process, Qualification and Competencies of Leaders, Organizational Culture and Human-AI Interaction (Peifer and Terstegen, 2024). In terms of competencies, leaders need AI Literacy (Wang, Rau and Yuan, 2023) and Learning Agility (Bouland-van Dam, Oostrom and Jansen, 2022) to be able to lead in an organization which adopts AI. Hence, the role of leader ethics, empathy, AI literacy and learning agility will become paramount in achieving organizational objectives in an AI enabled environment. The following sections discuss the role of these leadership traits in enhancement of employee outcomes through effective development and usage of AI.

2.3 Role of Leaders' AI Literacy

Artificial Intelligence Literacy or "AI literacy" is a recently coined term (Konishi, 2015; Kandlhofer *et al.*, 2016). It is used for describing the ability of non-experts without a computer science background (Laupichler *et al.*, 2022) or the people who do not possess the capacity to themselves develop AI applications, to comprehend, utilize, monitor, and assess the AI applications (Ng *et al.*, 2021). AI literacy has similarly been

defined as "a set of abilities that empowers individuals to critically evaluate AI technologies, effectively communicate and collaborate with AI, and utilize AI as a tool in online, home, and workplace contexts" (Long and Magerko, 2020).

AI literacy of the leaders has a significant role to play in the effective development and usage of AI in an organization. The study by Konishi (2015), explores the idea of AI literacy and highlights the significance of providing people with the information and abilities required to comprehend and utilize AI technologies. Konishi lists the fundamentals of technical knowledge, ethical awareness, and the capacity to evaluate AI applications critically as the elements of AI literacy. The report contends that developing AI literacy is essential for equipping individuals to make informed decisions, navigate the rapidly changing technology landscape, and address ethical and societal concerns as AI becomes more and more interwoven into daily life.

Pinski, Hofmann and Benlian (2023) conducted a text mining analysis of job postings and executive profiles available online and concluded that AI literacy is demanded of the executives and that in the coming future, executives across all roles must be expected to acquire a minimum level of general AI literacy. As put eloquently by (Semykoz (2018), “AI can find answers, but humans have to ask the right questions” and “Leaders pose questions to guide employees' thinking”. Another study explores the relationship between leadership and AI literacy, examining how leaders' comprehension of AI affects their ability to successfully lead enterprises in the digital era (Courtoy and Bastian, 2021). The researchers claim that because it gives them the skills to use AI technology ethically and strategically, AI literacy is an essential competency for

contemporary leaders. According to their findings, leaders who possess greater levels of AI literacy are more adept at fostering innovation, making data-driven decisions, and navigating the moral dilemmas raised by the application of AI. Therefore, AI literacy is required to enable the leaders in assessing the capabilities of AI programs and decide on the problems and tasks that can plausibly be assigned to AI tools for handling.

Kandlhofer et al. (2016) also looked into how educational robotics and programming activities might help become more AI literate. They underlined the importance of experiential learning in helping individuals understand and be more interested in AI ideas. The authors advocate incorporating AI education into school curricula in order to provide students with the knowledge and abilities they will need in an AI-dominated future. The study comes to the conclusion that experiential learning is essential for helping students become ethically conscious and literate in AI. They discovered that engaging in practical robotics and programming exercises significantly raises interest in STEM education and AI literacy.

The study by Laupichler et al. (2022) examines AI literacy, focusing on the importance of understanding AI concepts and implications among different stakeholders, including educators, students, and the general public. The researchers emphasize that understanding the ethical, societal, and economic implications of AI is just as important as having technical expertise when it comes to AI literacy. This research reveals alarming gaps in AI literacy, with many people not having an adequate understanding of the workings of AI systems and its wider implications. According to the study, increasing people's AI literacy is essential for giving them the capacity to interact critically with AI

technology, make wise judgments, and take part in debates around AI governance and policy. It emphasizes the necessity of public awareness campaigns and educational programs to raise AI literacy across a range of industries.

2.4 Role of Leaders' Learning Agility

Learning agility is a key trait imperative for leaders in order to adapt to the dynamic business environment. Learning Agility can be defined as "the willingness and ability to learn from experience, and subsequently apply that learning to perform successfully under new or first-time conditions" (Lombardo and Eichinger, 2000, p.323). Tyson (2020) explains how the leaders who have a "Love of learning", "Competitiveness" and "Innovativeness" are best suited for AI adoption. These traits combine in the phenomenon of learning agility. According to Tyson's research learning agility is an essential quality for effective leadership, particularly in the face of rapidly advancing technology and shifting consumer preferences. According to the researcher, self-awareness, mental flexibility, people agility, and change agility are crucial elements of learning agility. According to the research, leaders that possess a high degree of learning agility are better able to overcome challenges within their organizations, encourage creativity, and improve productivity. They are also better at handling unpredictability and managing different teams.

The concept of learning agility is explored in the study by Lombardo and Eichinger (2000), who define it as the capacity to apply knowledge gained from experiences to novel and unfamiliar situations. The study identifies key dimensions of

learning agility, including self-awareness, mental flexibility, experimentation, and performance under pressure. It highlights the importance of these qualities for both professional and personal growth, especially in quickly evolving contexts where flexibility is essential. According to the study, those who have a high level of learning agility are better able to handle challenging situations, lead effectively, and innovate. They discovered that effective leadership and creativity in dynamic situations depend on learning agility, which is defined by adaptability and the capacity to learn from experiences.

Learning agility is a complex concept that encompasses traits like experimentation, resilience, self-awareness, and mental flexibility. Through an analysis of diverse assessment methods and approaches, the research emphasizes the ways in which learning agility can be evaluated and enhanced in corporate environments (Church *et al.*, 2015). According to the authors, people with high learning agility are excellent at fostering innovation, managing difficult situations, and adjusting to change, which makes them important assets in leadership positions. High learning agility is essential for effective leadership and talent development, allowing people to adapt and flourish in changing circumstances, according to the main finding of their research.

Similarly, systematic review of literature on learning agility and its relationship with talent management asserts that learning agility is widely accepted by practitioners as the antecedent to potential performance and leadership development but also conclude that there is a lack of scientific studies for evaluating the role of learning agility in successful leadership (Milani, Setti and Argentero, 2021)

In their study Bouland-van Dam, Oostrom and Jansen (2022) identified three major dimensions to learning agility of leaders through literature review based deductive methodology followed by exploratory and confirmatory factor analyses. The leadership learning agility scale (LLAS) developed by them includes the dimensions of Developing Leadership, Seeking Feedback, and Developing Systematically and this scale is proposed to be adapted for the present study.

Another study focuses on how leaders' learning agility influences their ability to integrate AI technologies effectively within their organizations (Bettoni *et al.*, 2021). It proposes that leaders with high learning agility are more open to new ideas, quicker to adapt to technological changes, and more capable of driving AI adoption. They present a conceptual framework based on review of literature where they emphasize the role of learning agility on AI adoption by SMEs. The findings indicate that such leaders tend to overcome resistance to change, foster a culture of innovation, and implement AI solutions more successfully. The study underscores the importance of nurturing learning agility in leaders to enhance AI adoption and leverage its benefits for organizational growth and competitiveness.

The role of learning agility in AI adoption is an area not having any empirical investigations and the present study attempts to fill this gap in the literature. The present study also investigates the mediating role of AI development and AI usage on the relationship between leaders' learning agility and employee performance which again has not been studied in the extant literature.

2.5 Role of Leaders' Empathy

Empathy has been defined in various ways by different researchers, majorly in the cognitive or affective sense. There are studies that recognize empathy as a phenomenon which involves both cognitive and affective aspects. For instance, Barker (2008) defines empathy as "The act of perceiving, understanding, experiencing, and responding to the emotional state and ideas of another person." Similarly, empathy is defined as "A cognitive and emotional understanding of another's experience, resulting in an emotional response that is congruent with a view that others are worthy of compassion and respect and have intrinsic worth." (Barnett and Mann, 2013)

The study by Cornelis *et al.* (2013) examined the function of empathy in leadership and how it influences the performance of leaders and their subordinates. The researchers conducted a series of experiments and surveys to measure leaders' empathic accuracy and its impact on followers' perceptions of the leader, job satisfaction, and performance. The results showed that leaders with greater empathic accuracy are viewed more favorably by their followers, which increases employee satisfaction and improves team performance. The study also found that empathic leaders create a more encouraging and effective work environment because they are better at recognizing and responding to the wants and worries of their subordinates.

The effect of leader empathy on organizational outcomes and employee motivation has been studied through an analysis of interactions between superiors and subordinates (Mayfield and Mayfield, 2017). The researchers discovered that leaders who exhibit empathetic behaviors—like recognizing, responding to, and actively listening to

their subordinates' emotions—significantly increase employee motivation and engagement. The findings also showed that empathetic leadership raises productivity and organizational performance while simultaneously increasing employee loyalty and job happiness.

Studies have shown how team dynamics and performance in organizational contexts are impacted by a leader's empathy (Kock *et al.*, 2019). The researchers conducted a thorough analysis using questionnaires and performance measures to look at how leaders' empathy and ability to see things from different angles affect team cohesion, communication, and overall effectiveness. According to the study, leaders with higher empathy levels promote better team cohesion and communication, which boosts team productivity. Furthermore, empathic leaders were more adept at settling disputes and fostering a positive work atmosphere, both of which raised employee satisfaction and output. However, the literature does not exhibit a large pool of such empirical studies and warrants further investigation, more so in the presence of AI technologies in the organizations being used by both leaders and followers.

Barker (2008) explores the function of empathy in leadership, analyzing the ways in which the ability of leaders to comprehend and experience others' emotions affects their effectiveness. According to the research, leaders who possess empathy are more adept at developing strong bonds, trust, and a favorable workplace culture. According to the study, empathy is an essential part of emotional intelligence and is necessary for cohesive teams, efficient communication, and conflict resolution. The results show that

highly empathic leaders are more effective at inspiring their groups, raising employee satisfaction, and boosting overall productivity within the company.

In the AI literature, there comes to picture a growing trend of interest in development of AI systems which can behave empathetically and enhance user performance and satisfaction. McQuiggan and Lester (2006) argue that a data-driven methodology for developing empathetic AI tools can be based on human social interactions, thus inspiring the role empathetic leaders can play in development of empathetic AI which can assist in bringing out positive employee behaviours.

By creating a compassionate and understanding work atmosphere, leaders with high empathy levels had a good impact on their staff members' innovative ideas and creative thinking (Alshammari, N. Almutairi and Fahad Thuwaini, 2015). It has been discovered that leaders who possess empathy are more successful in promoting risk-taking, open communication, and idea sharing, all of which are essential elements of creativity and innovation in the workplace. Researchers emphasize that to build empathetic AI systems subjective views, intentions and socialization patterns of all major stakeholders must be taken into account, and data-based decisions alone cannot suffice (Srinivasan and González, 2022). This further elaborates the importance of empathetic leaders to govern the development and usage of AI.

2.6 Role of Leaders' Ethics

With the ongoing advancement of AI, leaders are expected to face ethical and moral dilemmas concerning AI, however, the research in the field of artificial intelligence

ethics is still in its infancy. AI ethics as a research area explores ethical challenges related to AI and applications, highlighting the necessity to address the construction of ethically sound artificial intelligence (Siau and Wang, 2018). Ethical AI pertains to AI systems that operate in a lawful manner, ensuring that AI projects within organizations respect human dignity and preserve individual wellbeing. This encompasses various concerns including transparency, privacy, fairness, and justice; preventing maleficence and weaponization; and establishing responsibility and accountability (Jobin, Ienca and Vayena, 2019; Roe *et al.*, 2022).

The ethical implications of artificial intelligence (AI) have been studied with a particular emphasis on how AI may affect ethical responsibilities and decision-making processes (Giubilini and Savulescu, 2018). The authors stress the need for precise ethical standards to regulate AI use, particularly in fields like healthcare, the military, and the legal system where choices can have a big influence on people's lives. The main findings indicate that ethical principles, such as responsibility, transparency, and justice, should be taken into consideration when designing AI. Additionally, they stress how crucial human supervision is in preventing any potential biases and harms that AI systems can cause.

In the future, AI systems are anticipated to become more integrated with humans and may even acquire their own moral standing, akin to being autonomous and independent actors (Bostrom and Yudkowsky, 2014). They advocate for rigorous safety measures, control mechanisms, and interdisciplinary research dedicated to artificial general intelligence (AGI) safety. Their work underscores the importance of proactive planning and international cooperation to manage the potential impacts of AGI

development. Therefore, AI needs to be developed with some “basic moral filters” that put a condition on the options of operational criteria which can be employed as inputs for decision making (Giubilini and Savulescu, 2018).

The study by Roe *et al.* (2022) emphasizes the importance of integrating ethical principles into AI design and implementation to ensure fairness, transparency, accountability, and respect for privacy. They explore various ethical challenges, such as bias in AI algorithms, the potential for job displacement, and the implications for privacy and surveillance. The findings highlight that while AI holds significant promise for advancing various sectors, these benefits must be balanced with robust ethical guidelines to mitigate risks and ensure equitable outcomes. The study concludes that interdisciplinary collaboration, inclusive stakeholder engagement, and ongoing ethical education are critical for fostering responsible AI practices and addressing the complex ethical issues that arise with AI technologies.

It is imperative to prevent the misuse of AI technology, and for the same it is crucial to emphasize the significance of an ethical approach to AI technologies and adhere to established regulations (Baker-Brunnbauer, 2021). Leaders of an organization which is adopting AI must shoulder the responsibility of ensuring that the ethical considerations are taken care of while developing and using the AI tools. Therefore, the ethics of the leaders themselves are highly important in determining the ethical development and usage of AI which works on the principles of transparency, justice and non-maleficence to ensure organizational development and sustainability. Leadership ethics are also important for achieving positive employee outcomes (Alshammari, N.

Almutairi and Fahad Thuwaini, 2015). It has been argued that ethical leaders' behaviors serve as the ideal for followers as the leaders are able to effectively communicate ethical standards and inspire ethical practices, leading to positive employee attitudes and behaviors (Brown and Treviño, 2006).

Moral leadership affects the performance and behavior of organizations. It has been highlighted that ethical leader, characterized by integrity, fairness, and transparency, foster a positive organizational culture and enhance employee morale and commitment (Sharma, Agrawal and Khandelwal, 2019). According to the study, these types of leaders foster greater levels of job satisfaction and productivity in addition to building trust and cooperation within teams. These leaders can reduce the likelihood of misconduct and unethical actions by encouraging moral behaviour and decision-making, which will ultimately contribute to long-term organizational success.

Moral leaders create an atmosphere of trust and respect in their organizations by continuously demonstrating honesty, accountability, and fairness. The results of the study show that these leaders improve organizational performance and decision-making in addition to raising staff morale and loyalty (Bello, 2012). Supervisors who act morally—that is, with justice, honesty, and empathy—have a favourable influence on the attitudes and behaviours of their employees (Park, Kim and Song, 2015). According to the study, moral leadership creates a trustworthy and encouraging work atmosphere that improves employee loyalty to the company, job satisfaction, and retention rates.

However, few other studies have found a weak or insignificant effect of ethical leadership on organizational commitment. The leader's ethical conviction as perceived by

employees which determines whether ethical leadership will have a strong or weak effect on employee commitment and deviance (Babalola *et al.*, 2019). This finding serves as the basis for the present study to measure leader ethics as perceived by employees. There have been no studies on the mediating role of AI between the relationship of leadership ethics and employee behaviors, which makes the present study novel in its approach.

2.7 AI and Employee Outcomes

Human – AI interaction has two different aspects – one is the human effect on AI development as determined by the traits of leadership governing the development and usage of AI in the organization as discussed in section 2.3. The other is the effect of AI on improving employee outcomes like performance, satisfaction, and commitment when employees participate in the AI development and adoption process, and use AI tools for assisting them in their jobs.

Plastino and Purdy (2018) highlighted a number of important advantages of incorporating AI into business processes. They argue that by automating repetitive operations, AI may significantly increase production and efficiency while allowing staff members to concentrate on complex and creative work. The paper also emphasizes how AI may stimulate innovation by identifying unexplored markets and maximizing the use of available resources. They gave an example of how strategically utilizing AI may boost an organization's overall performance, innovation, and competitiveness.

The study by Daugherty and Wilson (2018) investigated how artificial intelligence (AI) could revolutionize corporate strategy and operations. They argue that

AI, when integrated thoughtfully, can enhance human capabilities rather than replace them, fostering a collaborative environment where humans and machines work together. According to their research, artificial intelligence (AI) may greatly enhance productivity, creativity, and decision-making by managing repetitive chores and delivering insightful data analysis. The report also emphasizes how companies that use AI may become more adaptable and quicker to adjust to changes in the market. Verhezen (2020) emphasizes the revolutionary potential of artificial intelligence (AI) in automating business activities, with a focus on increased cost savings, accuracy, and efficiency. Automation powered by AI simplifies processes, lowers error rates, and expedites task completion, all of which greatly increase productivity.

Artificial intelligence (AI) can be a key component in reducing human bias in decision-making processes (Jarrahi, 2018). According to the study, unbiased and equal results may result from AI's capacity to analyze enormous volumes of data and spot patterns without the need for human intervention. The researcher does, however, also stress how crucial it is to carefully build and train AI systems to make sure they don't perpetuate or magnify preexisting biases in the data they study.

Artificial intelligence (AI) is affecting leadership as AI technologies are changing the responsibilities and skills of leaders (Keding, 2021). According to the study, artificial intelligence (AI) may greatly improve decision-making for leaders by giving them access to sophisticated data analytics, predictive insights, and automation tools. The researcher posits that AI usage takes up objective routine tasks and facilitates the human employees to concentrate on other evaluative, empathetic, and creative areas within the management.

In order to successfully use AI tools, he highlights that effective leaders in the AI era must cultivate digital literacy, strategic thinking, and ethical awareness. The results show that AI can boost organizational agility, stimulate innovation, and help executives manage complicated information better. AI can help in improving workers' productivity and even the organizational processes that can contribute to positive outcomes (Salmon-Powell, Scarlata and Vengrouskie, 2021).

All these studies have been conceptual in nature as they explored the connection between AI and organizational outcomes through case based method or literature review with an explicit lack of studies conducting an empirical investigation of the effect of AI on employee performance.

2.7 Summary

The literature review conducted to identify the research problem and gaps in the existing literature revealed that AI leadership is an emerging area of study. Most research in this field is exploratory, relying primarily on qualitative research frameworks or literature reviews. There is a clear lack of empirical studies on the effect of leadership on employee performance in an AI enabled organization with only a few studies discussing the empirical results of the effect of leadership on job performance in AI powered organizations (Matsunaga, 2022).

There is a dearth of studies focused on AI performance and human leadership despite the fact that without leadership, artificial intelligence cannot perform the way it is desired to (Pugliese, Acerbi and Marocco, 2015). With the rise in AI based tools and their adoption in industry, human AI leaders will have to actively engage themselves in

leading programmers and evaluating machine decisions after the programming (Smith and Green, 2018). Here the role of leader ethics, empathy, AI literacy and learning agility will become paramount.

Earlier studies have focused on exploration of the AI adoption and usage by leaders in qualitative or case based studies but there are no studies in the available literature which have empirically tested the effect of the various leadership aspects on AI development and usage and in turn the mediating effect of these AI variables on the relationship between leadership and employee performance. The present study therefore, is an attempt to fill this gap in literature. This study is expected to provide deeper insights about the competencies and traits of leaders relevant in an AI enabled organizational environment and their effect on AI development and usage which can further contribute to enhancement of the desired employee outcomes.

The present study aims to examine the effect of AI literacy of the leader on AI development and usage in the organization and also the mediating role of AI development and AI usage on the relationship between AI literacy of the leader and performance of employees. To the best of researcher's knowledge, these relationships have only been conceptualized in theoretical frameworks based on literature reviews and qualitative studies but have not been tested empirically, and therefore, the present study is an attempt to fill this gap in the literature.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents an outline of the proposed research methodology for undertaking the study. The methodology has been determined on the basis of research objectives after careful consideration of the available methods used in literature which are appropriate for the context of the study. The study is descriptive and analytical in nature and investigates the intricate relationships between leadership traits and employee outcomes including employee commitment, performance, and satisfaction in the presence of Artificial Intelligence playing a mediating role. The research framework has been developed after a rigorous literature review and measurement of latent constructs is proposed through adaptation of established scales in the context of study. The details of research design, sampling design, instrumentation, procedures, data analysis technique proposed to be used, and the ethical considerations have been presented in the following sections.

3.2 Research Design

The study follows a quantitative approach with a combination of descriptive and analytical research design. Descriptive research design is a type of research that aims to describe characteristics or functions of a phenomenon or a group of people systematically. It focuses on providing a detailed, factual account of what is happening.

The primary objective is to observe, describe, and document aspects of a situation as it naturally occurs.

The objectives of this study necessitate a descriptive design wherein the study first attempts to understand the level of the different variables included in the study as perceived by the employees working in organizations which have adopted AI in some way or the other. For this the research makes use of Descriptive Statistics like Mean and Standard Deviation for having an overview of the data related to the constructs.

Further, the study moves to the analytical research design for determining the influence of leadership variables like AI literacy, Agility, Empathy, and Ethics on AI development and usage and further the effect on employee performance, commitment, and satisfaction in organizations with artificial intelligence being applied.

Analytical research seeks to answer questions like "why" and "how" and focuses on understanding relationships, patterns, and causes. Its objective is to gain a thorough understanding and determine the dependencies among variables by conducting hypothesis testing. Structural Equation Modelling was used in this study for conducting the analytical research.

3.3 Research Framework and Hypotheses

The research framework has been developed after a rigorous literature review and measurement of latent constructs is proposed through adaptation of established scales in the context of study. The conceptual framework for the study involves the study of relationship of Leader’s AI Literacy (AIL), Learning Agility (LA), Empathy (EMP), and

Ethics (ETH) with AI Development (AID), AI Usage (AIU), and Team Building (TB) in the organization, and further their effect on Employee Outcomes including Employee Commitment (ECOM), Employee Performance (EPER), and Employee Satisfaction (ESAT).

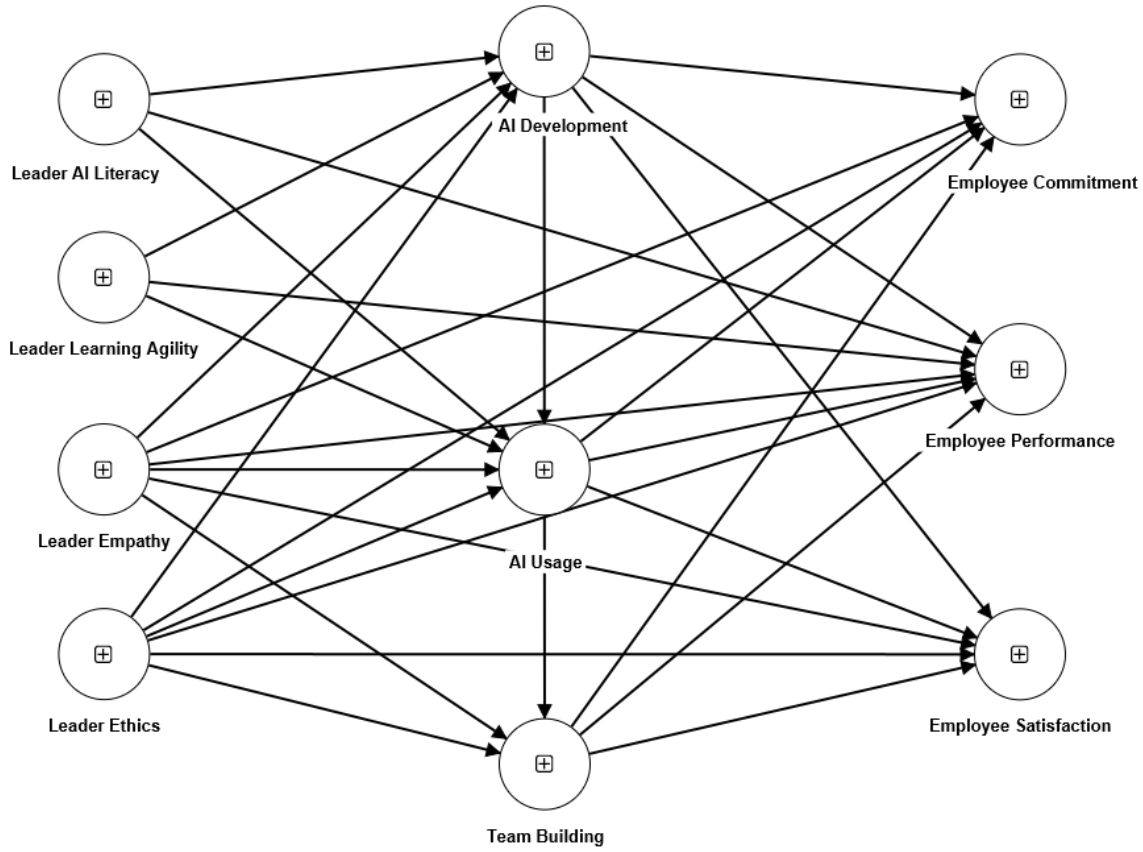

Figure 3.1

Proposed Research Framework

Figure 3.1 presents the model proposed for the study for achieving the objectives of this research as outlined in Section 3.2. The research framework derived from the review of literature attempts to fill the research gap existing in the extant literature by providing insights into the relationships that exist between the leadership and employee performance, commitment, and satisfaction in the age of Artificial Intelligence.

Based on the research objectives and framework, the hypotheses have been formulated for the study for investigating the direct effects of the independent variables as well as the expected mediation effects through quantitative data analysis technique of Partial Least Square Structural Equation Modelling (PLS-SEM).

Effect of AI on Employee Performance

AI significantly enhances productivity by allowing employees to focus on complex, creative tasks (Plastino and Purdy, 2018). Daugherty and Wilson (2018) found that well-integrated AI augments human abilities, fostering a collaborative human-machine environment. Their research shows that AI can boost creativity and decision-making by automating routine tasks and providing valuable data insights. Verhezen (2020) highlights that AI-driven automation streamlines processes, reduces error rates, and accelerates task completion, leading to substantial productivity gains. AI can also reduce human bias in decision-making (Jarrahi, 2018); however, AI systems need careful development to avoid reinforcing biases within training data. AI relieves human employees of routine tasks, enabling them to focus on evaluative, empathetic, and creative areas in management (Keding, 2021). Findings indicate that AI enhances

organizational agility, fosters innovation, and aids leaders in managing complex information, thereby improving productivity and organizational processes, which contribute to positive outcomes (Salmon-Powell, Scarlata, and Vengrouskie, 2021). Therefore, AI development and AI usage have been incorporated as the mediators in the hypothesized framework with leadership traits as the exogenous variables and employee performance, commitment, and satisfaction as the final dependent variables.

Effect of Leader's AI Literacy

Pinski, Hofmann, and Benlian (2023) conducted a text mining analysis on job postings and executive profiles found online, concluding that AI literacy is becoming a critical requirement for executives, with the expectation that, soon, all executive roles will demand a basic level of AI literacy. According to Courtoy and Bastian (2021), a leader's understanding of AI significantly impacts their ability to guide organizations in today's digital landscape by equipping them to use AI technology both strategically and ethically. Leaders who possess a higher degree of AI literacy tend to drive innovation, make informed, data-driven decisions, and effectively handle ethical challenges posed by AI's implementation. Therefore, AI literacy is vital for leaders to evaluate the capabilities of AI systems and determine which tasks can realistically be managed by AI tools.

Laupichler et al. (2022) highlight concerning gaps in AI literacy, noting that many individuals lack a sufficient understanding of AI's functions and its broader impacts. The study emphasizes that improving AI literacy is crucial to enabling individuals to critically engage with AI technology, make informed decisions, and participate meaningfully in

discussions surrounding AI governance and policy. Following hypothesis is thus framed for the study:

H1: Leader AI Literacy has a positive effect on Employee Performance through serial mediation of AI Development, AI Usage, and team building.

Effect of Leader's Learning Agility

The influence of leaders on the performance of their teams and organizations underscores the importance of learning agility for effective leadership (Hogan and Kaiser, 2005). In modern AI-enabled organizations, the ability to adapt to changing conditions is increasingly critical. Bettoni et al. (2021) suggested that leaders with high learning agility are more receptive to new ideas, adapt quickly to technological changes, and are more effective in promoting AI adoption. The findings indicate that agile leaders often overcome resistance to change, nurture a culture of innovation, and achieve greater success in implementing AI solutions, highlighting the importance of developing learning agility to maximize AI's potential for organizational growth and competitive advantage. Following hypothesis is thus framed to be tested:

H2: Leader learning agility has a positive influence on Employee Performance through serial mediation of AI Development, AI Usage, and team building.

Effect of Leader's Empathy

Empathy in leadership is pivotal for AI implementation, as it fosters understanding, trust, cooperation, and a human-centered approach to change (Mahsud,

Prussia, and Yukl, 2010). Empathetic leaders can alleviate concerns, facilitate transitions, and help employees embrace and leverage AI technologies for organizational benefit. While AI increases productivity and streamlines tasks, it lacks empathy, which can lead to worker alienation (Srinivasan and González, 2022).

Productivity is maximized when technology and empathy are balanced. McQuiggan and Lester (2006) propose that developing empathetic AI tools can draw from human social interactions, suggesting that empathetic leadership can inspire the development of such AI, which may foster positive employee behaviors. Researchers advocate for a design approach that considers the subjective perspectives, intentions, and social dynamics of all stakeholders, as data alone cannot suffice for developing empathetic AI (Srinivasan and González, 2022).

Studies demonstrate how empathy in leadership impacts team dynamics and organizational performance (Kock et al., 2019). Leaders with high empathy foster better team cohesion and communication, enhancing productivity. Empathetic leaders are also better at resolving conflicts and creating a positive work environment, which boosts employee satisfaction and productivity. Barker (2008) shows that empathetic leaders are particularly effective in motivating teams, increasing employee satisfaction, and enhancing overall productivity within the organization. By cultivating a compassionate work environment, leaders with high empathy positively influence innovation and creative thinking among their staff (Alshammari, N. Almutairi, and Fahad Thuwaini, 2015). This underlines the need for empathetic leaders to guide the responsible use and

development of AI. Following hypotheses related to leaders' empathy have thus been framed:

H3: Leader empathy has a positive effect on Employee Commitment serially mediated by AI Development, AI Usage and Team Building.

H4: Leader empathy has a positive effect on Employee Performance serially mediated by AI Development, AI Usage and Team Building.

H5: Leader empathy has a positive effect on Employee Satisfaction serially mediated by AI Development, AI Usage and Team Building.

Effect of Leader's Ethics

Ethical leadership is essential to ensure AI aligns with justice, accountability, and transparency principles (Babalola et al., 2019). AI ethics research shows the ethical issues associated with AI, underscoring the importance of developing ethically sound AI (Siau and Wang, 2018). Ethical AI includes concerns such as transparency, privacy, fairness, and justice; preventing harm and misuse; and establishing responsibility, all of which require ethical leadership during AI's design and deployment (Jobin, Ienca, and Vayena, 2019; Roe et al., 2022). As AI impacts ethical responsibilities and decision-making processes, it is crucial to establish precise ethical standards like accountability, transparency, and justice, to mitigate potential biases and harms from AI systems and to guide AI usage (Giubilini and Savulescu, 2018).

Moral leadership has a significant effect on organizational behaviour and performance. Ethical leaders characterized by integrity, fairness, and transparency foster

a positive culture, enhancing employee morale and commitment (Sharma, Agrawal, and Khandelwal, 2019). Ethical leaders create an atmosphere of trust by consistently demonstrating integrity, accountability, and fairness which improves both organizational performance and decision-making, while also increasing employee loyalty and morale (Bello, 2012). Supervisors who lead with justice, honesty, and empathy positively impact employee attitudes and behaviours (Park, Kim, and Song, 2015).

Based on the above insights from literature, the following hypotheses have been formulated to be tested in the present study:

H6: Leader ethics has a positive effect on Employee Commitment serially mediated by AI Development, AI Usage and Team Building.

H7: Leader ethics has a positive effect on Employee Performance serially mediated by AI Development, AI Usage and Team Building.

H8: Leader ethics has a positive effect on Employee Satisfaction serially mediated by AI Development, AI Usage and Team Building.

3.4 Population and Sample

The population for the study comprises of employees from organizations in India which have deployed AI in some form or the other in the organization and therefore can provide responses to the questions regarding AI development and AI usage in the organization. As the sampling frame for the study cannot be available to the researcher, therefore non probability sampling procedure is proposed to be used for drawing a

representative sample from the population (Neuman, 2014) based on judgement of the researcher considering the purpose of the study and categories in population.

Purposive or Judgement Sampling was used for drawing the sample representative of the population. Primary data was collected through an online survey of employees working at middle and senior level and having an experience of at least 2 years with minimum 1 year being served under the same leader selected using purposive sampling. The final sample included sampling units from different demographic categories with respect to age, gender, etc. and different sectors to which the organizations in the population belong in order to ensure representativeness of the sample to the population. Automotive, healthcare, defense, IT and telecommunications sectors are the major sectors using AI tools (Maheshwari, 2024) and therefore data was collected from organizations belonging to all these sectors in India.

The sample size for this study was calculated using power analysis performed with the G*Power software (Faul et al., 2009). Based on a 5% significance level, a 95% statistical power, and an assumed small effect size of 0.05, the minimum required sample size is 262. The sample for the study consists of 510 respondents which is large enough and well above the required minimum sample size for the required power of hypothesis tests.

3.5 Data Collection and Instrumentation

Primary data was collected through an online survey using a structured questionnaire consisting of screening questions related to the organization's AI usage,

and Employee's duration of experience in the organization followed by questions related to demographic variables and finally the items on Likert Scale for measurement of latent variables in the model. Informed consent statement was included in the beginning of the survey and only the participants who agreed to give informed consent were considered for responding to the survey questionnaire.

The survey instrument comprised of 3 screening questions related to the AI usage being done in the organization, respondents' experience in the present organization, and their experience of working under the current leader. Only those participants who had been associated with the current organization for at least 2 years and were working under the current leader since minimum 1 year, and reported that their organization was using AI in some form were forwarded to the next part of the survey.

The second part consisted of 5 questions related to demographics including age, gender, income, designation, and the sector to which their organization belonged. Demographic questions were followed by 76 statements to be marked on Likert scale and 14 Statements related to AI Usage to be answered in Yes or No. Pilot testing was done with a data of 67 respondents. One item of AI Development and two items of Employee Satisfaction were deleted as their loadings were lower than 0.4. Reliability indicator of all constructs after this deletion was found to be satisfactory (Cronbach's Alpha > 0.7).

The final instrument consisted of 6 statements measuring AI Literacy; 14 statements for Learning Agility; 4 statements for Empathy; 10 for Ethics; 16 items for Team building; 4 items for AI Development; 5 items for Employee Commitment; 6 for performance; and 8 for satisfaction. This was followed by 7 dichotomous (Yes/No)

statements for measuring AI usage in terms of the type of AI technology being used and 7 dichotomous (Yes/No) items for measuring AI Usage in terms of the type of processes in which AI was being used. The composite score of these two dimensions were used as the two items for AI Usage (OECD, 2021). The instrument is exhibited in Table 3.1 along with the sources from literature which were used to derive the items and Appendix A exhibits the final questionnaire.

Table 3.1

Survey Instrument

Construct	**Items**	**Reference**
Leader AI Literacy	My leader can distinguish between smart devices and non-smart devices.	(Wang, Rau and Yuan, 2023)
	My leader does not know how AI technology can help us.(R)	
	My leader can identify the AI technology employed in the applications and products we use.	
	My leader can evaluate the capabilities and limitations of an AI application or product after using it for a while.	

	My leader can choose a proper solution from various solutions provided by a smart agent. My leader can choose the most appropriate AI application or product from a variety for a particular task.	
Leader Learning Agility	At work, my leader participates in learning activities (e.g., trainings, workshops) to personally develop. At work, my leader carefully evaluates the feedback he/she receives from others to learn from it. At work, my leader puts effort in trying to develop contrasting influential styles (e.g., taking the lead and empowering others). My leader takes part in developmental activities to improve task- and relational skills at work. At work, my leader conceives feedback as a fundamental tool to performance improvement. My leader puts effort in getting better in influencing others to reach our project goals. My leader self-initiates learning activities to improve his/her and the team's job performance.	(Bouland-van Dam, Oostrom and Jansen, 2022)

	My leader acts upon the feedback he/she receives from peers to improve performance.	
	My leader participates in trainings to continue developing at work.	
	My leader examines patterns in his/her own behavior based on the feedback received from co-workers.	
	My leader takes part in educational programs besides the working activities.	
	My leader takes action when a colleague gives feedback to improve his/her performance.	
	My leader focuses on how to effectively lead towards our team goals at work.	
	My leader focuses on how to become an influencer in the organization to reach our targets.	
Leader Empathy	My leader always knows our emotions from our behavior.	(Wong and Law, 2002)
	My leader is a good observer of others' emotions.	

	My leader is sensitive to the feelings and emotions of others.	
	My leader has good understanding of the emotions of people around him/her.	
Leader Ethics	My leader deliberately fuels conflict among employees	(McCann and Holt, 2009)
	My leader is evil	
	My leader would falsify records if it would help his/her work situation	
	My leader lacks high morals	
	My leader would treat me better if I belonged to a different ethnic group	
	My leader is a hypocrite	
	My leader would steal from the organization	
	My leader would engage in sabotage against the organization	
	My leader would fire people just because (s)he doesn't like them if (s)he could get away with it	

	My leader would do things which violate organizational policy and then expect his/her subordinates to cover for him/her	
AI Development	AI tools for my organization were developed by own employees (including those employed in parent or affiliate enterprise) Commercial software or systems were modified by own employees (including those employed in parent or affiliate enterprise) Open-source software or systems were modified by own employees (including those employed in parent or affiliate enterprise) Commercial software or systems ready to use were purchased (including examples where it was already incorporated in a purchased item or system) ® External providers were contracted to develop or modify AI tools for my organization ®*	(Montagnier and Ek, 2021)
AI Usage	Does your enterprise use any of the following Artificial Intelligence technologies? (Yes/No)	(Montagnier and Ek, 2021)

a) Technologies performing analysis of written language (text mining)

b) Technologies converting spoken language into machine-readable format (speech recognition)

c) Technologies generating written or spoken language (natural language generation)

d) Technologies identifying objects or persons based on images (image recognition, image processing)

e) Machine learning (e.g. deep learning) for data analysis

f) Technologies automating different workflows or assisting in decision making (Artificial Intelligence based software robotic process automation)

g) Technologies enabling physical movement of machines via autonomous decisions based on observation of surroundings (autonomous robots, self-driving vehicles, autonomous drones)

Does your enterprise use Artificial Intelligence software or systems for any of the following purposes? (Yes/No)

	a) for marketing or sales b) for production processes c) for organisation of business administration processes d) for management of enterprises e) for logistics f) for ICT security g) for human resources management or recruiting	
Team Building	To what extent is the following true regarding teams in your organization: Setting project goals on a participatory basis by the team. Involving project team members in action planning to identify ways to achieve project goals. Making the basic goals of the project clear to the project team.	(D. A. Aga, Noorderhaven and Vallejo, 2016)

Letting the project team receive timely feedback on performance in relation to goals of the project.
Encouraging team members to meet with each other during the project.
Discussing relationships among project members frankly.
Discussing conflicts among project team members frankly.
Conducting training programs on communication skills for the project team.
Creating opportunities for sharing of feelings among the project team.
Clarifying role expectations of each team member.
Giving information about the shared responsibilities of team members.
Making project norms familiar to each team member.
Involving the project team(s) in identifying task-related problems.

	Involving the project team(s) in generating ideas concerning the causes of task-related problems.	
	Participation of the project team(s) in designing action plans to solve task-related problems of the project.	
	Engaging the project team(s) in the implementation of action plans to solve task-related problems.	
	Engaging the project team(s) in the evaluation of action plans to solve task-related problems.	
Employee Commitment	I would love to spend the rest of my career with this organization.	(Meyer, Allen and Smith, 1993)
	I feel as if this organization's problems are my own.	
	I feel a strong sense of "belonging" to my organization.	
	I feel "emotionally attached" to this organization.	
	I feel like a "part of the family" at my organization.	
	I have a strong sense of personal connection with this organisation.[#]	

Employee Performance	I maintain high standard of work. I am capable of handling my assignments without much supervision. I am very passionate about my work. I know I can handle multiple assignments for achieving organizational goals. I complete my assignments on time. My colleagues believe I am a high performer in my organization	(Pradhan and Jena, 2017)
Employee Satisfaction	I get along with supervisors* All my talents and skills are used I feel good about my job I receive recognition for a job well done I feel good about working at this company I feel close to the people at work I feel secure about my job I believe management is concerned about me	(Macdonald and MacIntyre, 1997)

	On the whole, I believe job is good for my physical health
	My wages are good*

® Reverse coded

* Deleted after pilot test due to loading less than 0.4

[#] Deleted from final analysis due to discriminant validity issues

3.6 Data Analysis Methods

In order to gain insights regarding the overall distribution of variables descriptive statistics were examined as the initial step. Further, the "Partial Least Square Structural Equation Modelling (PLS-SEM)" technique was used to achieve the analytical objectives of determining impact of leaders' qualities on employee performance in an AI environment.

Descriptive Statistics

Descriptive statistics are a set of coefficients used for summarizing data from a population or sample. These are used to present data in a manageable and comprehensible form, allowing for a quick understanding of the data's main characteristics. Key Descriptive Statistics include "Measures of Central Tendency" like "Mean" and "Measures of Dispersion" like "Standard Deviation" which shows how much the observed values deviate from the mean.

Descriptive statistics provide a simple summary of data that is easy to interpret, especially when dealing with large datasets. They help in data exploration and detecting patterns and trends in the variables under study.

Structural Equation Modelling

"Structural Equation Modelling (SEM)" technique is an approach in which relationship between constructs measured by multiple items are given by the path coefficients or the regression between them. This analysis technique is applied for achievement of the study objectives and answer the research questions.

"Structural Equation Modelling (SEM)" is of 2 types – "Covariance based SEM" (CB-SEM), and "Variance-based or PLS- SEM". PLS-SEM is considered appropriate for measuring formatively specified measurement models, or when distributional assumptions regarding the population are not met, and also preferred due to the predictive power (Chin, 1998; Hair et al., 2012).

Reflective constructs are measured through indicators which are correlated (Jarvis, Mackenzie and Podsakoff, 2003) while formative constructs are considered as being caused by the combination of indicators that form it (Diamantopoulos & Winklhofer, 2001).

Data was not Multivariate Normal evident from significant Mardia's multivariate skewness and kurtosis coefficients, and therefore PLS-SEM was considered appropriate instead of CB-SEM. Prediction related to improving employee performance in HEIs with specific reference to Northern India required good predictive power in the model which is

present in PLS-SEM. The hypothesized relationships have thus been tested through PLS-SEM approach using SmartPLS 4.1 software (Ringle, Wende and Becker, 2024).

i) Measurement Model Assessment

Initial evaluating of model begins with “measurement model assessment”. Reflective constructs applicable in study were evaluated as follows:

Firstly, the item loadings are estimated, and it is verified if the construct explains minimum 50 percent variation in the indicator which ultimately establishes that the item can be considered as reliable. For this condition to be met, indicator loadings exceeding 0.708 have been suggested in literature (Hair et al., 2022).

As the second step, “internal consistency reliability” of the constructs is assessed, by checking “composite reliability (CR)” and “Cronbach’s Alpha”. Values between 0.70 and 0.95 are considered satisfactory while 0.95 and higher are not desirable (Hair *et al.*, 2019a). While as a measure “Cronbach’s alpha” is conservative, “composite reliability” is liberal, and the construct’s true reliability falls somewhere within these two extreme values given by Rho A (ρ_A) (Dijkstra and Henseler, 2015).

Further the “convergent validity” of reflective constructs is measured through the “average variance extracted (AVE)” for indicators of each construct. AVE is the “mean of squared loadings” of the indicators and it should exceed 0.5 for construct explaining minimum 50% variance of items (Becker et al., 2023; Hair et al., 2022).

This is followed by discriminant validity checking to see if a construct can be considered distinct from other constructs in model. Fornell & Larcker (1981) proposed

that each construct's AVE should exceed "shared variance" of a construct with other model constructs measured as "squared inter-construct correlation".

"Heterotrait-Monotrait (HTMT) ratio" is considered better than "Fornell-Larcker method" and is calculated as ratio of "mean value of item correlations across constructs" to "geometric mean of the average correlations for the items measuring the same construct". HTMT values lower than 0.90 confirm satisfactory discriminant validity (Henseler, Ringle and Sarstedt, 2015a).

ii) Structural Model Assessment

Assessment parameters for structural model consist of "Coefficient of determination (R^2)", and significance level as well as relative size of the "path coefficients", along with Q square values derived from PLSpredict (Shmueli *et al.*, 2016a) for judging predictive relevance.

Collinearity assessment

Collinearity between independent variables was examined for eliminating bias in regression output. VIF values for independent constructs for respective endogenous variables were calculated which should be lower than 5 for eliminating chance of significant collinearity issues.

Path coefficients

The size of path coefficients provides insights regarding which independent variables are most relevant in affecting the dependent construct. As PLS-SEM is a non-parametric technique, the significance of path coefficients is evaluated by using bootstrapping procedure which gives the significance based on a distribution derived from running the model on 5000 subsamples generated from the sample data.

Explanatory Power

The R^2 of dependent variables refers to the percentage of variance that can be explained in dependent variable by the independent ones. R^2 indicates the SEM model's explanatory power, and it lies between 0 and 1. Values closer to 1 imply better explanation power of the model. There is a shortcoming of R^2 that it increases with the number of independent variables in the model. Therefore, Adjusted R^2 was also calculated which adjusts for number of predictors and sample size and helps in understanding if the model variables are contributing to its explanation.

Model Fit

Model fit in PLS-Sem is evaluated by using "Standardized root mean square residual (SRMR)" which measures the "squared discrepancy between observed correlations and the estimated correlations of indicators" (Hair et al., 2022). SRMR less than 0.08 is considered satisfactory but values up to 0.10 are acceptable (Kock, 2020).

Predictive Power

To judge the predictive accuracy of SEM model, calculation of Q^2 from "PLSpredict" was done. Positive Q^2 shows out-of-sample predictive power (Shmueli *et al.*, 2019a) with Q^2 above 0, 0.25 and 0.50 depicting small, medium and large predictive power (Hair *et al.*, 2019a). PLSpredict procedure runs calculations on training sample data for assessing how the model predicts results for holdout data. It runs employing "k-fold cross-validation principle". For the analysis 10 folds were made from the data and the estimation was 10 times as recommended by (Shmueli *et al.*, 2016a).

3.7 Ethics related to Human Subjects

This study does not include minors, individuals with disabilities, or other particular demographic groups and is designed to pose no foreseeable risk to participants.

Consent was obtained from participants through an explicit agreement, confirming their voluntary involvement in the study. An information sheet accompanied the questionnaire, outlining purpose of research and clarifying the use of data exclusively for research. Additionally, to protect participants' privacy, no personal identifiers were collected, guaranteeing that all responses remain fully anonymous.

3.8 Summary

The proposed study is quantitative in nature and follows a descriptive and analytical research design. Primary data were collected through a survey of employees working at middle and senior level and having an experience of at least 2 years with minimum 1 year being served under the current leader selected using purposive sampling.

Measurement instrument was designed by adapting the established scales for the various constructs to the context of the proposed study. The hypothesized model was assessed using Partial Least Square - Structural Equation Modelling (PLS-SEM) (Hair *et al.*, 2022b) using SmartPLS software.

CHAPTER 4
RESULTS

4.1 Introduction

For achieving study objectives, data was collected from 510 employees from organizations of different sectors where AI was being used via a structured questionnaire. This data was analyzed for descriptive statistics and "Partial Least Square Structural Equation Modelling (PLS-SEM)" with "SmartPLS 4.1" (Ringle et al., 2024) was conducted to examine the influence of exogenous leadership variables on employee performance with AI development, AI usage, and Team Building as serial mediators.

Sample demographics are given in Section 4.2 and Section 4.3 gives results of descriptive statistics analysis of the variables measured on summative scales. Section 4.4 exhibits PLS-SEM model results followed by Section 4.5 which presents the inference summary for all the tested hypotheses. Finally, Section 4.6 concludes the chapter with a summary of analysis methods applied in the study and the major results obtained.

4.2 Sample Demographics

Table 4.1 presents the characteristics of the sample with the percentage distribution of each demographic category. As evident from the table, the sample presents a diverse distribution across various demographic characteristics, reflecting a well-rounded representation of respondents. In terms of gender, the sample shows a

nearly balanced composition, with 50.8% identifying as male and 49.2% as female, providing an almost equal input from both genders.

Table 4.1

Sample Characteristics

Characteristic	**Frequency**	**Percent (%)**
Gender		
Male	259	50.8
Female	251	49.2
Age Group (Years)		
18-25	99	19.4
26-35	156	30.6
36-45	168	32.9
46-55	72	14.1
Above 55	15	2.9
Annual Income (INR)		
Below 5 lacs	62	12.2
5-15 lacs	67	13.1
16-25 lacs	116	22.7
26-35 lacs	165	32.4
36-45 lacs	59	11.6
Above 45 lacs	41	8.0
Experience in Present Organization		
2-5 years	171	42.8
5-10 years	122	30.5
More than 10 years	23	5.8

Experience under Current Leader		
1-5 years	312	78.0
5-10 years	67	16.8
More than 10 years	10	2.5
Sector		
Automotive	51	10.0
Banking & Financial Services	44	8.6
Consulting	20	3.9
Construction	26	5.1
Defense	42	8.2
Education	63	12.4
Healthcare	45	8.8
Information Technology	61	12.0
Telecommunications	36	7.1
Others	4	23.9
Designation Level		
Entry level	224	43.9
Middle level	171	33.5
Senior level	115	22.5

The age distribution reveals that the majority of respondents fall within the 26-45 age range, with the largest subgroup being those aged 36-45 years, making up 32.9% of the sample. This is followed closely by those in the 26-35 age group, comprising 30.6%. Younger participants aged 18-25 years account for 19.4%, while those aged 46-55 constitute 14.1%. The smallest representation comes from respondents above 55 years, making up only 2.9%, indicating limited participation from the older age demographic.

When considering annual income, the sample shows a spread across different income brackets, with the highest proportion of respondents earning between 26-35 lacs (32.4%), followed by those in the 16-25 lacs range at 22.7%. Smaller segments of the sample earn below 5 lacs (12.2%), between 5-15 lacs (13.1%), 36-45 lacs (11.6%), and above 45 lacs (8.0%), reflecting a wide economic range among respondents.

The distribution of experience within the current organization shows that most respondents have 2-5 years of tenure, accounting for 42.8% of the sample, while 30.5% have worked 5-10 years, and only 5.8% have more than 10 years of experience. In terms of experience under their current leader, a substantial 78.0% have 1-5 years, 16.8% have 5-10 years, and a minimal 2.5% have more than 10 years, suggesting that most respondents are relatively recent to their current leadership.

Sector-wise, respondents come from a variety of industries, with Education (12.4%) and Information Technology (12.0%) sectors showing the highest representation, followed by Healthcare (8.8%), Automotive (10.0%), and Banking & Financial Services (8.6%). Other sectors, such as Consulting and Defence, are represented to a lesser extent, with small portions from fields like Construction, Telecommunications, and others, adding to the overall diversity of the sample.

Entry level employees make up 43.9% of the sample followed by middle level (33.5%) and senior level (22.5%).

In conclusion, the sample appears reasonably representative, with a balanced gender distribution, diverse age ranges, and varying income levels, experience, and industry backgrounds. This diversity suggests that the sample provides a broad cross-

section of perspectives and the sample's varied demographics support a well-rounded view of the population under study.

4.3 Descriptive Statistics

Descriptive statistics are helpful in gauging the nature of data in a summarized form and provides insights regarding the data distribution which is the first objective of this study. The descriptive statistics for the variables under study in Table 4.2 provide an overview of the participants' responses, along with the degree of variability in their perceptions regarding the traits of their leaders, AI variables, and their self-reported commitment, performane, and satisfaction.

The mean score for "AI Development" is 4.225, indicating that, on average, participants have a moderately high perception of AI development within the organization. The observed scores range from a minimum of 1 to a maximum of 5, showing a full range of responses, from very low to very high levels of AI development. With a standard deviation of 0.793, there is moderate variability among respondents, suggesting some variation in experiences or perceptions of AI development efforts.

With a mean of 4.963, "AI Usage" is rated relatively high, implying that AI usage is generally well-regarded or prevalent. The range spans from 1.328 to 7, the widest range in the dataset, indicating diverse experiences regarding AI use. The standard deviation of 1.242 points to considerable variation, reflecting differences in the extent or frequency of AI application across participants.

Table 4.2

Descriptive Statistics

	Mean	Observed min	Observed max	Standard deviation
AI Development	4.225	1.000	5.000	0.793
AI Usage	4.963	1.328	7.000	1.242
Employee Commitment	4.240	1.000	5.000	0.748
Employee Performance	4.321	1.673	5.000	0.654
Employee Satisfaction	4.273	1.494	5.000	0.673
Leader AI Literacy	4.250	1.450	5.000	0.737
Leader Empathy	4.226	1.000	5.000	0.778
Leader Ethics	3.320	1.000	5.000	1.303
Leader Learning Agility	4.293	1.288	5.000	0.688
Team Building	4.279	1.313	5.000	0.646

"Employee Commitment" has a mean of 4.240, suggesting a moderately high level of commitment among employees on average. The observed values range from 1.000 to 5.000, encompassing the entire scale and indicating that while most participants may be relatively committed, some show low levels of commitment. The standard deviation of 0.748 suggests moderate variability, indicating a fair level of consistency in responses, with some divergence in commitment levels.

The mean score for "Employee Performance" is 4.321, indicating a generally high perception of performance among employees. The range of observed values (1.673 to 5.000) demonstrates a narrower span than some other variables, with a minimum score that is relatively high, suggesting that very low performance ratings are less common. The standard deviation of 0.654 signifies limited variability, indicating that most participants rate employee performance consistently high.

With a mean of 4.273, "Employee Satisfaction" is also rated fairly high, showing that employees are generally satisfied. Scores range from 1.494 to 5.000, capturing responses from low to high satisfaction levels. The standard deviation of 0.673 indicates limited variability, implying consistent responses across the sample, with relatively few deviations from the mean level of satisfaction.

The mean for "Leader AI Literacy" is 4.250, suggesting that leaders are perceived as somewhat knowledgeable in AI. The observed range (1.450 to 5.000) shows that while most ratings are high, there are instances of low literacy ratings. The standard deviation of 0.737 reflects moderate variability, indicating some diversity in perceptions of leaders' AI literacy.

"Leader Empathy" has a mean score of 4.226, which suggests that leaders are generally perceived as empathetic. The observed values span from 1 to 5, suggesting a range of perceptions, from low to high empathy among leaders. With a standard deviation of 0.778, there is moderate variation, indicating some differences in views on leaders' empathy levels.

The mean for "Leader Ethics" is lower at 3.320, indicating a more neutral to moderately positive view of leaders' ethical behavior, with responses potentially less favorable compared to other leadership traits. Observed scores vary from 1 to 5, indicating a full spectrum of opinions, from low to high ethical perceptions. The standard deviation of 1.303, the highest in the dataset, points to significant variation among respondents, suggesting diverse perceptions of leaders' ethics.

With a mean of 4.293, "Leader Learning Agility" is rated relatively high, reflecting a generally positive view of leaders' adaptability and learning. The range of scores from 1.288 to 5.000 shows that while agility is generally well-regarded, there are some lower ratings. The standard deviation of 0.688 indicates limited variability, implying that participants have relatively consistent perceptions of leader agility.

"Team Building" has a mean score of 4.279, suggesting that team-building practices are perceived positively on average. Observed values range from 1.313 to 5.000, indicating that although team-building is generally rated high, there are some instances of lower ratings. The standard deviation of 0.646 signifies limited variability, suggesting a fairly consistent positive perception of team-building activities.

4.4 PLS-SEM Analysis Results

Measurement Model Assessment

The first step in SEM evaluation is that of evaluating the measurement model. For this the PLS-SEM algorithm was run with SmartPLS 4 and following results were obtained:

i) Reliability & Convergent Validity of Constructs

Cronbach's Alpha, Rho A, and Rho C were calculated to test the reliability. "Convergent validity" was tested measured through the "average variance extracted (AVE)" for the indicators of respective construct (Hair *et al.,* 2018). Findings of indicator loadings, reliability measures, and convergent validity of the constructs are presented in detail in Table 4.3. Figure 4.1 also illustrates the measurement model results.

It can be seen that most of the item loadings are above the threshold of 0.7 except a few which are between 0.6 to 0.7 but those indicators are retained as the AVE of the construct is above 0.5.

Similarly, all internal consistency reliability measures i.e., Cronbach's Alpha, Rho_A, and Rho_C exceed the recommended threshold of 0.7 except the Cronbach's Alpha for AIU which is above 0.6 and hence satisfactory with composite reliability measures above 0.7 which implies that all the constructs in the model are reliable (Hair *et al.*, 2019).

Convergent validity of all the constructs is also established as the "Average Variance Extracted (AVE)" for all of them exceeds 0.5, indicating that the construct explains more than 50 percent of the variance in its indicators (Hair *et al.*, 2022).

Table 4.3

Reliability & Convergent Validity

Construct	**Item Loading**	**Cronbach Alpha**	**Rho A**	**Rho C**	**AVE**
Leader AI Literacy (LAIL)		0.862	0.863	0.897	0.592
LAIL1	0.768				
LAIL2	0.757				
LAIL3	0.803				
LAIL4	0.761				
LAIL5	0.768				
LAIL6	0.761				
Leader Learning Agility (LLA)		0.939	0.940	0.947	0.560
LLA1	0.705				
LLA2	0.735				
LLA3	0.776				
LLA4	0.760				
LLA5	0.750				
LLA6	0.740				
LLA7	0.775				
LLA8	0.741				
LLA9	0.733				
LLA10	0.741				
LLA11	0.726				
LLA12	0.754				
LLA13	0.760				
LLA14	0.772				

Leader Empathy (LEMP)		0.833	0.842	0.888	0.666
LEMP1	0.758				
LEMP2	0.828				
LEMP3	0.862				
LEMP4	0.814				
Leader Ethics (LETH)		0.960	0.968	0.965	0.733
LETH1	0.839				
LETH2	0.809				
LETH3	0.880				
LETH4	0.849				
LETH5	0.863				
LETH6	0.877				
LETH7	0.875				
LETH8	0.885				
LETH9	0.872				
LETH10	0.807				
AI Development (AID)		0.823	0.825	0.883	0.653
AID1	0.811				
AID2	0.783				
AID3	0.839				
AID4	0.798				
AI Usage (AIU)		0.632	0.700	0.840	0.724
AIU1	0.911				
AIU2	0.787				

Team Building (TB)		0.941	0.942	0.948	0.518
TB1	0.666				
TB2	0.726				
TB3	0.734				
TB4	0.701				
TB5	0.686				
TB6	0.699				
TB7	0.761				
TB8	0.697				
TB9	0.777				
TB10	0.725				
TB11	0.751				
TB12	0.666				
TB13	0.775				
TB14	0.679				
TB15	0.717				
TB16	0.711				
TB17	0.745				
Employee Commitment (ECOM)		0.885	0.887	0.916	0.686
ECOM1	0.798				
ECOM2	0.815				
ECOM3	0.821				
ECOM4	0.832				
ECOM5	0.873				

Employee Performance (EPERF)		0.854	0.856	0.892	0.579
EPERF1	0.728				
EPERF2	0.772				
EPERF3	0.761				
EPERF4	0.732				
EPERF5	0.801				
EPERF6	0.768				
Employee Satisfaction (ESAT)		0.894	0.895	0.915	0.575
ESAT1	0.735				
ESAT2	0.725				
ESAT3	0.793				
ESAT4	0.758				
ESAT5	0.738				
ESAT6	0.785				
ESAT7	0.800				
ESAT8	0.728				

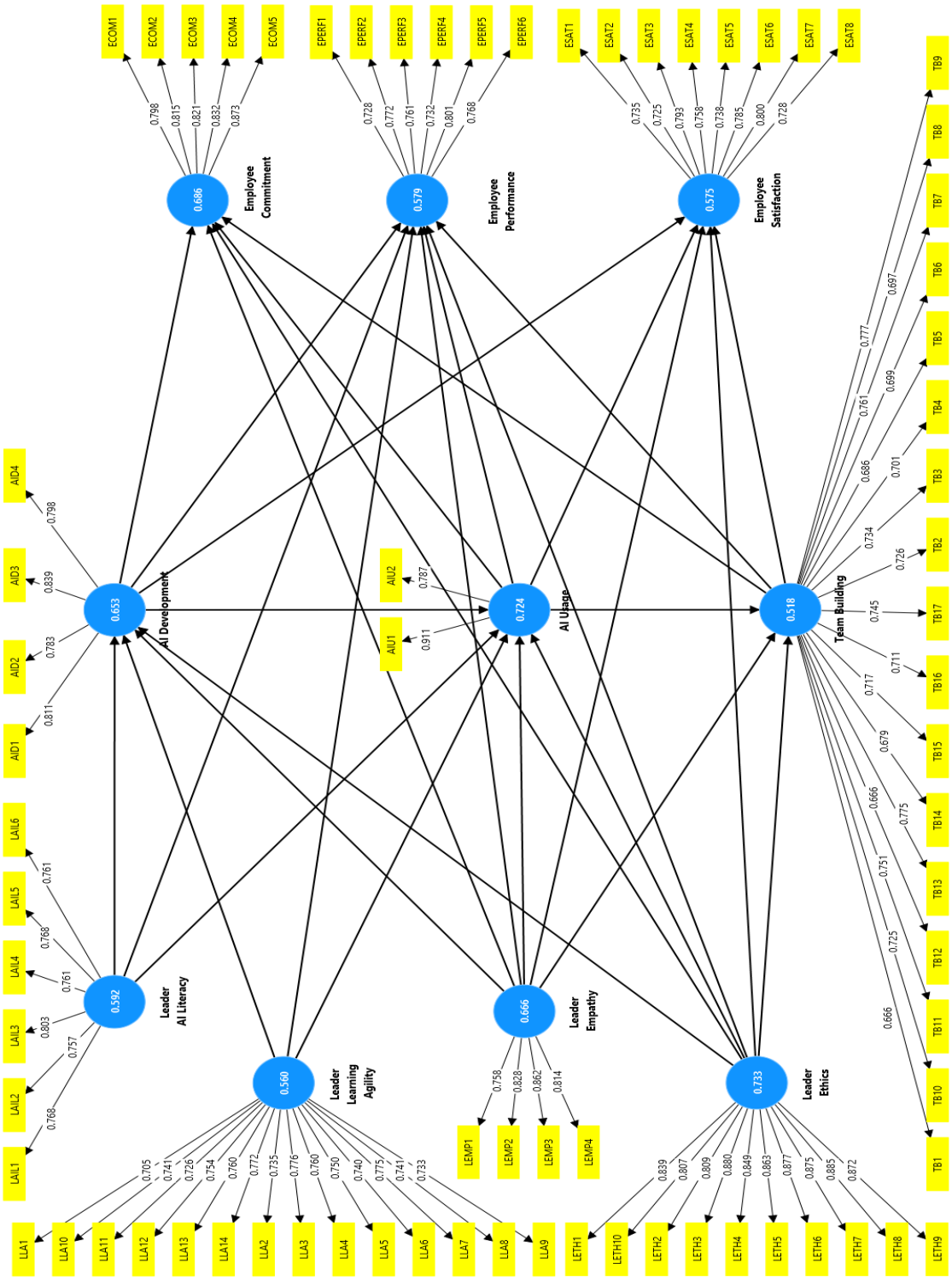

Figure 4.1

Measurement Model Results

ii) Discriminant Validity

Subsequently, the measurement model's discriminant validity was assessed traditionally through the “Fornell-Larcker criterion” (Fornell and Larcker, 1981) and also using the “Heterotrait-Monotrait (HTMT) criterion”, which recent studies suggest as a superior measure (Henseler, Ringle and Sarstedt, 2015a). Results are presented in Tables 4.4 and 4.5.

As exhibited in Table 4.4, discriminant validity of the latent variables is established as per Fornell-Larcker Criterion, which specifies that the “square root of AVE” for every construct (diagonal values in the table) must exceed the “correlation of different constructs”. Table 4.5 shows that discriminant validity of constructs is also established in accordance with the HTMT criterion which specifies that the ratios should preferably be below 0.85 and must not exceed 0.90 in case of variables that are similar in concept (Hair et al., 2019; Henseler et al., 2015).

Thus, it is seen that both criteria confirm constructs’ discriminant validity in the study, indicating that distinct constructs are empirically separate as required for valid results from Structural Equation Modelling.

Table 4.4

Discriminant Validity (Fornell Larcker)

	AID	**AIU**	**ECOM**	**EPERF**	**ESAT**	**LAIL**	**LEMP**	**LETH**	**LLA**	**TB**
AI Development	0.808									
AI Usage	0.550	0.851								
Employee Commitment	0.633	0.446	0.828							
Employee Performance	0.576	0.402	0.680	0.761						
Employee Satisfaction	0.648	0.455	0.700	0.755	0.758					
Leader AI Literacy	0.752	0.592	0.696	0.649	0.715	0.770				
Leader Empathy	0.681	0.509	0.716	0.651	0.745	0.716	0.816			
Leader Ethics	0.031	0.342	0.015	0.083	0.008	0.008	0.008	0.856		
Leader Learning Agility	0.713	0.528	0.738	0.628	0.727	0.800	0.722	0.041	0.748	
Team Building	0.676	0.507	0.706	0.706	0.768	0.760	0.720	0.040	0.782	0.789

Table 4.5

Discriminant Validity (HTMT)

	AID	**AIU**	**ECOM**	**EPERF**	**ESAT**	**LAIL**	**LEMP**	**LETH**	**LLA**	**TB**
AI Development										
AI Usage	0.750									
Employee Commitment	0.741	0.570								
Employee Performance	0.685	0.517	0.781							
Employee Satisfaction	0.754	0.576	0.897	0.864						
Leader AI Literacy	0.891	0.763	0.797	0.753	0.815					
Leader Empathy	0.819	0.670	0.825	0.762	0.854	0.842				
Leader Ethics	0.088	0.460	0.106	0.096	0.085	0.116	0.090			
Leader Learning Agility	0.808	0.652	0.807	0.699	0.870	0.889	0.867	0.091		
Team Building	0.765	0.633	0.770	0.786	0.835	0.841	0.804	0.091	0.830	

Structural Model Assessment

The second step in SEM evaluation is that of evaluating the structural model. For this the PLS-SEM algorithm was run followed by the Bootstrapping procedure with 5000 sub-samples for examining the significance of path coefficients using SmartPLS 4 and following results were obtained:

i) Multicollinearity Assessment

As evident in Table 4.6, inner VIF values for majority of the constructs do not exceed 3, thus ruling out any collinearity issues except for few which are also below 5 indicating that no serious collinearity exists.

Table 4.6

Inner VIF Values

INDEPENDENT -> DEPENDENT	**VIF**
AI Development -> AI Usage	2.616
AI Development -> Employee Commitment	2.406
AI Development -> Employee Performance	2.748
AI Development -> Employee Satisfaction	2.406
AI Usage -> Employee Commitment	1.876
AI Usage -> Employee Performance	2.012
AI Usage -> Employee Satisfaction	1.876
AI Usage -> Team Building	1.594
Leader AI Literacy -> AI Development	2.989

Leader AI Literacy -> AI Usage	3.515
Leader AI Literacy -> Employee Performance	3.926
Leader Empathy -> AI Development	2.653
Leader Empathy -> AI Usage	2.776
Leader Empathy -> Employee Commitment	2.481
Leader Empathy -> Employee Performance	2.899
Leader Empathy -> Employee Satisfaction	2.481
Leader Empathy -> Team Building	1.408
Leader Ethics -> AI Development	1.008
Leader Ethics -> AI Usage	1.011
Leader Ethics -> Employee Commitment	1.233
Leader Ethics -> Employee Performance	1.267
Leader Ethics -> Employee Satisfaction	1.233
Leader Ethics -> Team Building	1.182
Leader Learning Agility -> AI Development	3.620
Leader Learning Agility -> AI Usage	3.710
Leader Learning Agility -> Employee Performance	4.139
Team Building -> Employee Commitment	2.445
Team Building -> Employee Performance	3.173
Team Building -> Employee Satisfaction	2.445

ii) Path Model Estimation

Bootstrapping was conducted for 5000 subsamples to derive Path Coefficients along with their p values and Confidence intervals.

Direct Effects

Results of direct path coefficients are given in Table 4.7 and depicted in Fig 4.2.

Table 4.7

Direct Path Coefficients and their Significance

Path	Path Coefficient	T Statistic	p-value	Confidence Interval (Bias Corrected)	
				5%	95%
AI Development -> AI Usage	0.226*	3.414	0.000	0.113	0.332
AI Development -> Employee Commitment	0.145*	2.015	0.022	0.022	0.258
AI Development -> Employee Performance	0.063	0.736	0.231	-0.089	0.194
AI Development -> Employee Satisfaction	0.108#	1.442	0.075	-0.010	0.241
AI Usage -> Employee Commitment	0.023	0.456	0.324	-0.059	0.110
AI Usage -> Employee Performance	-0.099*	2.256	0.012	-0.170	-0.026
AI Usage -> Employee Satisfaction	0.001	0.021	0.492	-0.072	0.070
AI Usage -> Team Building	0.206*	5.368	0.000	0.142	0.269
Leader AI Literacy -> AI Development	0.448*	4.583	0.000	0.274	0.595
Leader AI Literacy -> AI Usage	0.299*	4.408	0.000	0.180	0.404
Leader AI Literacy -> Employee Performance	0.196#	1.630	0.052	-0.001	0.394

Leader Empathy -> AI Development	0.217*	2.590	0.005	0.083	0.355
Leader Empathy -> AI Usage	0.069	1.046	0.148	-0.039	0.180
Leader Empathy -> Employee Commitment	0.363*	4.730	0.000	0.233	0.484
Leader Empathy -> Employee Performance	0.242*	2.551	0.005	0.080	0.389
Leader Empathy -> Employee Satisfaction	0.355*	5.268	0.000	0.248	0.467
Leader Empathy -> Team Building	0.616*	14.882	0.000	0.543	0.681
Leader Ethics -> AI Development	-0.029	1.075	0.141	-0.073	0.014
Leader Ethics -> AI Usage	0.349*	9.747	0.000	0.289	0.408
Leader Ethics -> Employee Commitment	-0.036	1.009	0.157	-0.097	0.020
Leader Ethics -> Employee Performance	0.098*	2.756	0.003	0.039	0.158
Leader Ethics -> Employee Satisfaction	-0.026	0.823	0.205	-0.075	0.027
Leader Ethics -> Team Building	-0.035	1.127	0.130	-0.087	0.014
Leader Learning Agility -> AI Development	0.186*	1.951	0.026	0.041	0.353
Leader Learning Agility -> AI Usage	0.089#	1.341	0.090	-0.024	0.193
Leader Learning Agility -> Employee Performance	-0.017	0.140	0.444	-0.219	0.184
Team Building -> Employee Commitment	0.337*	4.283	0.000	0.220	0.479
Team Building -> Employee Performance	0.399*	4.173	0.000	0.236	0.549

*Note: * and # shows significant at 5% and 10% respectively*

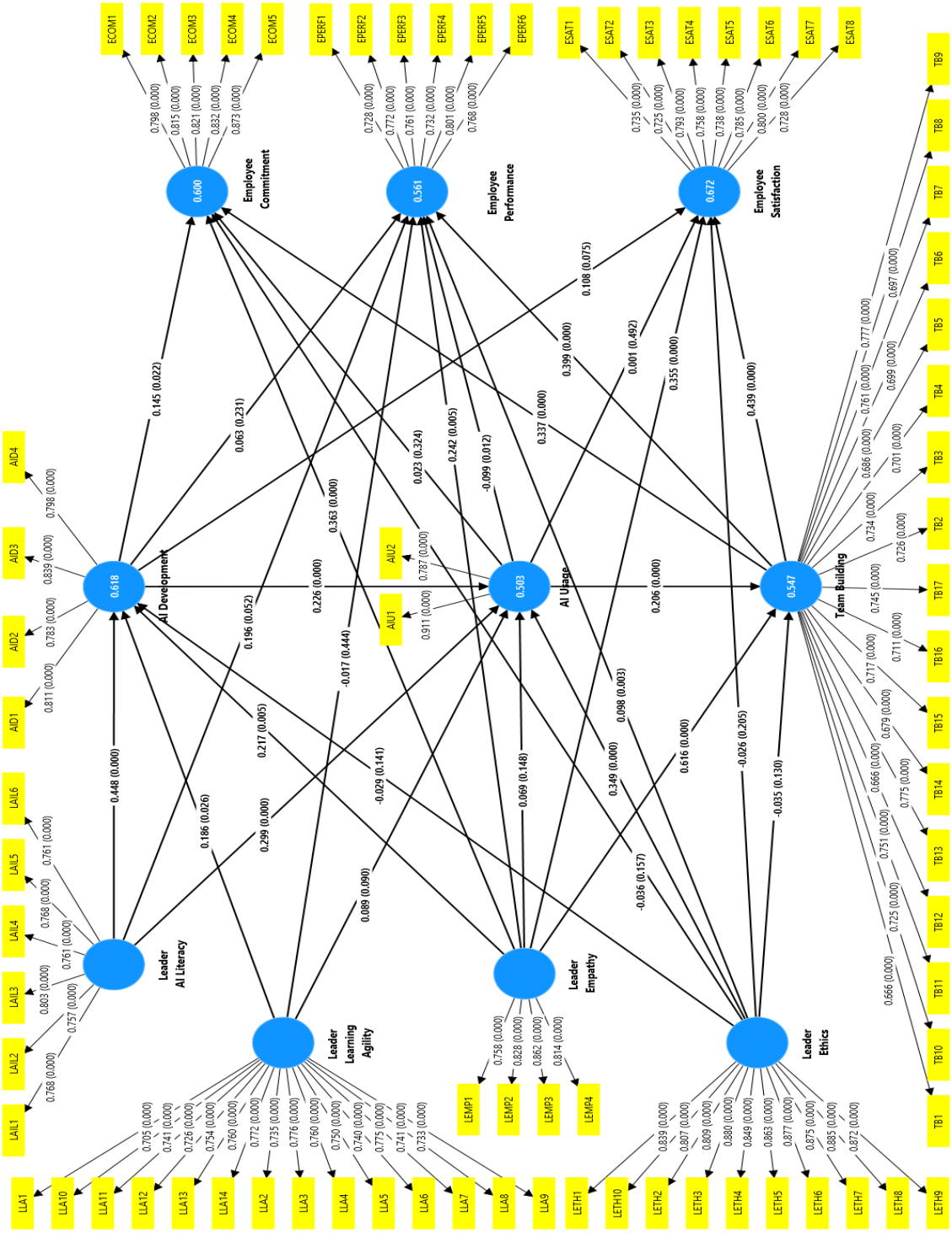

Figure 4.2

Bootstrapping Results

The path from AI Development to AI Usage demonstrates a positive and statistically significant relationship, indicating that effective AI development efforts contribute positively to AI usage within the organization. This implies that AI systems developed within the organization are more likely to be adopted at a larger scale within the organization. Hence, organizations focusing on improving their AI infrastructure are likely to see a higher uptake and application of AI technologies among employees, which could lead to better operational efficiencies and decision-making processes.

The direct effect of AI Development on Employee Commitment also yields a positive and significant result suggesting that enhanced AI development can increase employees' commitment to their organization. This outcome implies that as AI systems are enhanced and streamlined, employees may feel more supported in their roles, possibly leading to a stronger sense of loyalty and alignment with organizational goals (Bagram, Ali and Qureshi, 2022).

In contrast, the path from AI Development to Employee Performance does not show a significant effect. This suggests that AI development does not directly impact employee performance as without further training, skill adaptation, or support mechanisms for employees, AI developed within the organization may not lead to improved performance.

Similarly, the effect of AI Development to Employee Satisfaction is also only marginally significant. This finding suggests a weak or inconsistent influence of AI development on satisfaction levels. Organizations may need to integrate AI development

with other employee engagement strategies to achieve meaningful improvements in employee satisfaction.

The effect of AI Usage on Employee Commitment is also insignificant which implies that increased AI usage in itself does not necessarily enhance employees' commitment. Thus, the way AI is used may need to be closely aligned with employees' values and job roles to cultivate commitment, rather than relying on AI usage alone as a driver (Verhezen, 2020).

Interestingly, the direct effect of AI Usage on Employee Performance is negative and significant. This finding suggests that higher levels of AI usage may, under certain conditions, adversely affect employee performance. This could imply that employees may experience difficulties adapting to AI systems or feel that the technology disrupts their workflow, which could lead to a decrease in performance (Saviano *et al.*, 2023).

The path from AI Usage to Employee Satisfaction is also not significant indicating that simply increasing AI usage does not directly influence employees' satisfaction levels which may depend on factors beyond the quantum of AI integration, such as how well it complements job roles or alleviates work burdens.

The relationship between AI Usage and Team Building is positive and highly significant which suggests that effective use of AI may foster team collaboration and cohesion. As teams engage with AI tools, they may develop stronger collaborative ties, potentially as they adapt to new workflows and solve AI-related challenges together, leading to a strengthened team dynamics.

Leader AI Literacy is found to have a significant positive effect on AI Development as well as on AI Usage implying that leaders proficient in AI can substantially drive the development and implementation of AI in the organization. Leaders' AI literacy equips them to better advocate for, design, and oversee AI projects, highlighting its importance in advancing organizational AI capabilities and its crucial role in encouraging AI adoption among employees.

The effect of Leaders' AI Literacy on Employee Performance is only marginally significant ($p < 0.10$), suggesting that while AI-literate leaders may have some influence on employee performance, this effect may be contingent on other mediating factors as hypothesized in the study.

The results indicate a significant positive effect of leader learning agility on AI development within the organization. This suggests that leaders who exhibit high learning agility are instrumental in driving the development of AI technologies. Learning-agile leaders are likely to encourage innovation, foster experimentation with AI tools, and support the iterative processes required for effective AI development.

The relationship between leader learning agility and AI usage is positive but not statistically significant at 5% ($p < 0.10$). This indicates that while leaders who are adaptable and open to new ideas may influence AI adoption to some extent, their impact is not substantial enough to conclusively drive the widespread use of AI tools.

The results reveal no significant direct effect of leader learning agility on employee performance. This suggests that while learning agility is valuable for

navigating technological changes and driving AI innovations, it does not directly translate into measurable improvements in employee performance.

Leaders' Empathy shows a positive and significant effect on AI Development suggesting that empathetic leaders may enhance AI development within the organization, potentially by aligning AI projects with employees' needs and perspectives, thereby fostering a supportive environment for AI-related growth and experimentation (Avolio *et al.*, 2014).

However, the relationship of Leader Empathy with AI Usage is not significant indicating that empathy of leaders does not directly translate into higher AI usage. While empathy supports employee well-being, additional leadership traits or structural factors may be needed to drive AI adoption.

The relationship between Leader Empathy and Employee Commitment is highly significant establishing that empathetic leadership substantially enhances employee commitment. This finding highlights the importance of empathetic leaders in fostering loyalty, likely through a supportive and understanding leadership approach that aligns with employees' personal and professional goals (Tyagi, 2021).

Leader Empathy also influences Employee Performance positively with the effect being statistically significant. This suggests that empathy in leadership contributes to enhanced employee performance as empathetic leaders are more likely to play a motivating role for employees and create conditions that facilitate productivity and goal attainment (Kock *et al.*, 2019).

Leader Empathy and Employee Satisfaction also demonstrate a strong positive relationship emphasizing the vital role of empathy in generating satisfaction among employees. Empathetic leaders make employees feel valued and understood, contributing positively to their satisfaction levels (Mahsud, Prussia and Yukl, 2010).

Leader Empathy and Team Building demonstrate an extremely strong positive association indicating that empathy is highly conducive to team cohesion (Misra and Srivastava, 2018). Empathetic leaders create an inclusive and collaborative environment, essential for fostering a cohesive team structure.

For Leader Ethics to AI Development, the relationship is not significant suggesting that ethical orientation alone does not strongly influence AI development, implying that ethical considerations may not be a primary driver of AI progress within the organization despite its theoretical importance (Baker-Brunnbauer, 2021).

However, the path from Leader Ethics to AI Usage shows a positive and significant relationship implying that ethical leaders positively influence AI adoption. Employees may be more inclined to embrace AI when they see it being applied responsibly and ethically by leaders, enhancing trust in AI systems (Roe *et al.*, 2022).

For Team Building and Employee Commitment, the path is positive and significant as expected. This implies that strong team-building initiatives help foster employee commitment as established in literature (Klein *et al.*, 2009).

Lastly, the path from Team Building to Employee Performance also shows a positive and significant effect. This highlights the role of team cohesion in boosting performance, as

collaborative environments provide a supportive backdrop for productivity and individual goal achievement (D. A. A. Aga, Noorderhaven and Vallejo, 2016).

Table 4.8

Mediation Effects and their Significance

Specific Indirect Effects	Path Coefficient	p-value	Confidence Interval (Bias Corrected)	
			5%	95%
Leader AI Literacy -> AI Development -> AI Usage -> Team Building -> Employee Performance	0.008*	0.033	0.003	0.019
Leader Learning Agility -> AI Development -> AI Usage -> Team Building -> Employee Performance	0.003#	0.081	0.001	0.009
Leader Empathy -> AI Development -> AI Usage -> Team Building -> Employee Commitment	0.003*	0.038	0.001	0.008
Leader Empathy -> AI Development -> AI Usage -> Team Building -> Employee Performance	0.004*	0.045	0.001	0.010
Leader Empathy -> AI Development -> AI Usage -> Team Building -> Employee Satisfaction	0.004*	0.028	0.002	0.010

Leader Ethics -> AI Development -> AI Usage -> Team Building -> Employee Commitment	0.029*	0.002	0.014	0.039
Leader Ethics -> AI Development -> AI Usage -> Team Building -> Employee Performance	0.024*	0.001	0.015	0.048
Leader Ethics -> AI Development -> AI Usage -> Team Building -> Employee Satisfaction	0.032*	0.000	0.021	0.047
Total Indirect Effects				
Leader AI Literacy -> Employee Performance	0.102*	0.001	0.053	0.158
Leader Learning Agility -> Employee Performance	0.009	0.319	0.001	0.050
Leader Empathy -> Employee Commitment	0.250*	0.000	0.172	0.348
Leader Empathy -> Employee Performance	0.258*	0.000	0.156	0.363
Leader Empathy -> Employee Satisfaction	0.305*	0.000	0.232	0.392
Leader Ethics -> Employee Commitment	0.071*	0.000	0.049	0.098
Leader Ethics -> Employee Performance	0.042*	0.018	0.012	0.093
Leader Ethics -> Employee Satisfaction	0.024*	0.043	0.007	0.044

*Note: * and # shows significant at 5% and 10% respectively as per p-values*

Mediation Effects

The specific and total indirect effects for hypothesized serial mediation relationships are presented in Table 4.8.

The serial mediation effect of Leader AI Literacy on Employee Performance through AI Development, AI Usage, and Team Building is positive and significant. This finding suggests that when leaders possess a high degree of AI literacy, it indirectly enhances employee performance through a sequential path involving AI development, increased AI usage, and a strengthened team-building dynamic. Leaders who are proficient in AI may foster a supportive environment for AI development, which subsequently increases AI utilization within teams, leading to better collaboration and, ultimately, higher employee performance. This result underscores the value of AI literacy in leadership for promoting employee performance through indirect channels.

The indirect effect of Leader Learning Agility on Employee Performance through AI Development, AI Usage, and Team Building is marginally significant ($p < 0.10$, 95% CI [0.001, 0.009]). This suggests that leaders who exhibit learning agility may positively impact employee performance through similar pathways, though the effect is weaker than that of AI literacy. Leaders with high learning agility can promote an environment conducive to innovation and adaptability (De Meuse, 2017), which facilitates the development and usage of AI and team building, ultimately benefiting employee performance. This highlights that agile leaders may need further support or resources to maximize their impact on performance through these mediating factors.

The serial mediation effect of Leader Empathy on Employee Commitment through AI Development, AI Usage, and Team Building is positive and significant. This finding implies that empathetic leaders can indirectly foster higher employee commitment by promoting an environment conducive to AI development and usage and encouraging team cohesion. The results indicate that empathy in leadership can lay the groundwork for technological advancements and collaborative team environments that, in turn, increase employees' commitment to the organization. This suggests that empathetic leadership is vital for building committed teams in technology-driven settings (Luthans, Luthans and Avey, 2014) .

Similarly, the effect of Leader Empathy on Employee Performance via AI Development, AI Usage, and Team Building is significant. This pathway suggests that empathetic leadership indirectly enhances employee performance, as such leaders are likely to support AI development initiatives and foster a collaborative team environment (Bourton, Lavoie and Vogel, 2018). By setting a foundation of empathy, leaders can help bridge the gap between AI integration and tangible performance improvements, ensuring that employees feel supported and motivated to achieve high performance with AI tools being developed and implemented in line with employees' needs.

The indirect effect of Leader Empathy on Employee Satisfaction through AI Development, AI Usage, and Team Building is also significant. This pathway suggests that empathetic leaders foster employee satisfaction by encouraging a positive environment for AI development and team collaboration. Empathy may lead to a more supportive atmosphere, allowing AI systems to be more readily accepted and appreciated

by employees, which contributes to their overall satisfaction. This finding highlights the importance of empathetic leadership in not only promoting technological advancements but also ensuring they lead to employee contentment (Peifer, Jeske and Hille, 2022).

The specific indirect effect of Leader Ethics on Employee Commitment through AI Development, AI Usage, and Team Building is positive and significant. This implies that ethical leaders are likely to foster trust in the AI development and usage process, which, through enhanced team collaboration, indirectly strengthens employees' commitment. When employees perceive their leaders as ethical, they feel assured that AI systems are being used responsibly and thereby are more likely to commit to organizational objectives (Mahsud, Prussia and Yukl, 2010).

The serial mediation effect of Leader Ethics on Employee Performance via AI Development, AI Usage, and Team Building is also positive and significant. Ethical leaders contribute to employee performance indirectly by fostering a responsible approach to AI development and usage, which encourages team cohesion and leads to better achievement of goals. This finding indicates that ethical leaders are instrumental in creating an environment where employees feel comfortable using AI, leading to increased teamwork and improved performance outcomes (Alshammari, N. Almutairi and Fahad Thuwaini, 2015).

The indirect effect of Leader Ethics on Employee Satisfaction through AI Development, AI Usage, and Team Building is positive and significant which implies that ethical leadership indirectly enhances employee satisfaction by promoting a transparent and fair approach to AI integration, which strengthens team dynamics.

Employees may feel more satisfied knowing that their leaders value ethical considerations in technology usage, thereby fostering a trustworthy and supportive AI enabled work environment (Courtoy and Bastian, 2021).

After analysing the specific indirect effects, the next step in analysing serial mediation is to examine the total indirect effects for understanding the joint mediating effect of the mediators taken together. It can be seen that all the total indirect effects are significant except that of Leader Learning Agility to Employee Performance which is due to the weak effect of learning agility on AI usage as well as the contrasting negative effect of AI usage on employee performance.

iii) Explanatory Power and Model Fit

The analysis presented in Table 4.9 illustrates the explanatory power of each endogenous variable in the model, based on the R^2 and adjusted R^2 values. These values indicate the proportion of variance explained by the independent variables, while the SRMR value provides insight into the model's overall fit.

Table 4.9

Explanatory Power & Model Fit

Explanatory Power:		
Endogenous Variable	**R Square**	**R Square Adjusted**
AI Development	0.618	0.615
AI Usage	0.503	0.498
Employee Commitment	0.600	0.596
Employee Performance	0.561	0.555
Employee Satisfaction	0.672	0.669
Team Building	0.547	0.544
Model Fit		
SRMR	0.076	

AI Development: The R^2 for AI Development stands at 0.618, with an adjusted R^2 of 0.615. This suggests that approximately 62% of the variance in AI Development can be attributed to the model's independent variables, indicating a high level of explanatory power for this construct.

AI Usage: AI Usage has an R^2 of 0.503 and an adjusted R^2 of 0.498. These values indicate that the model accounts for about 50% of the variance in AI Usage, reflecting a moderate level of explanatory power.

Employee Commitment: With an R^2 of 0.600 and an adjusted R^2 of 0.596, the model explains approximately 60% of the variance in Employee Commitment, demonstrating a robust predictive strength for this variable.

Employee Performance: For Employee Performance, the R^2 value is 0.561, with an adjusted R^2 of 0.555. This means that 56% of the variance in Employee Performance is accounted for by the independent variables in the model, indicating satisfactory explanatory power.

Employee Satisfaction: Employee Satisfaction shows a high R^2 value of 0.672, with an adjusted R^2 of 0.669, suggesting that the model explains about 67% of the variance in Employee Satisfaction. This result highlights a strong level of explanatory power for this particular outcome.

Team Building: Team Building has an R^2 of 0.547 and an adjusted R^2 of 0.544, suggesting that around 54% of the variance in Team Building is explained by the model, indicating moderate explanatory power.

Regarding model fit, the “SRMR (Standardized Root Mean Square Residual)” value is 0.076, which is below the recommended threshold of 0.08 (Hu and Bentler, 1998). This confirms an acceptable level of fit for the model, indicating that the observed data aligns well with the model's predictions.

iv) Predictive Power Assessment

Using "PLSpredict" (Shmueli et al., 2016) implemented in SmartPLS 4, the predictive power of model was evaluated. The PLSpredict procedure operates on the "k-fold cross-validation" technique. For the analysis, the recommended k=10 was applied, which has 10 sub-folds and executes model ten times for checking results (Shmueli et al., 2019). It can be seen from the Table 4.10 that the Q^2 value for all the dependent latent variables as well as all their indicators or measured variables are higher than 0 which implies that the model has satisfactory predictive power in terms of out of sample prediction (Hair *et al.*, 2019b).

Table 4.10

PLSpredict Results

Latent Variable	**Q^2 predict**	**Measured Variable**	**Q^2predict**
AI Development	0.601	AID1	0.381
		AID2	0.358
		AID3	0.476
		AID4	0.346
AI Usage	0.471	AIU1	0.417
		AIU2	0.258
Team Building	0.561	TB1	0.331
		TB2	0.353

		TB3	0.301
		TB4	0.254
		TB5	0.222
		TB6	0.284
		TB7	0.324
		TB8	0.280
		TB9	0.369
		TB10	0.276
		TB11	0.298
		TB12	0.209
		TB13	0.311
		TB14	0.249
		TB15	0.250
		TB16	0.280
		TB17	0.289
Employee Commitment	0.549	ECOM1	0.342
		ECOM2	0.374
		ECOM3	0.371
		ECOM4	0.361
		ECOM5	0.425

Employee Performance	0.457	EPERF1	0.294
		EPERF2	0.282
		EPERF3	0.282
		EPERF4	0.188
		EPERF5	0.278
		EPERF6	0.244
Employee Satisfaction	0.590	ESAT1	0.371
		ESAT2	0.324
		ESAT3	0.345
		ESAT4	0.290
		ESAT5	0.294
		ESAT6	0.369
		ESAT7	0.399
		ESAT8	0.305

4.5 Hypotheses Testing Inference

The path model estimates provide inference for the hypotheses tested for the study in accordance with the research questions and objectives of the study. The inference for the hypotheses tests are presented in the Table 4.11 which shows that all the hypotheses

Table 4.11

Hypotheses Testing Inference

Hypothesis	**Inference**
H1: Leader AI Literacy has a positive effect on Employee Performance through serial mediation of AI Development, AI Usage, and team building.	Supported
H2: Leader learning agility has a positive influence on Employee Performance through serial mediation of AI Development, AI Usage, and team building.	Supported (95% confidence intervals do not contain zero but p value 0.08)
H3: Leader empathy has a positive effect on Employee Commitment serially mediated by AI Development, AI Usage and Team Building.	Supported
H4: Leader empathy has a positive effect on Employee Performance serially mediated by AI Development, AI Usage and Team Building.	Supported
H5: Leader empathy has a positive effect on Employee Satisfaction serially mediated by AI Development, AI Usage and Team Building.	Supported
H6: Leader ethics has a positive effect on Employee Commitment serially mediated by AI Development, AI Usage and Team Building.	Supported
H7: Leader ethics has a positive effect on Employee Performance serially mediated by AI Development, AI Usage and Team Building.	Supported
H8: Leader ethics has a positive effect on Employee Satisfaction serially mediated by AI Development, AI Usage and Team Building.	Supported

are supported at 5% significance except the one related to the effect of Leaders' Learning Agility on Employee Performance which is marginally significant as 95% C.I. do not consist of zero but the p-value being 0.08 which is higher than 0.05 but below 0.10.

4.6 Summary

The data analysis provided results for a comprehensive integrated model assessing the impact of leadership on employee outcomes in terms of commitment, performance, and satisfaction with AI development, AI usage, and teamwork as mediators in the process. PLS-SEM was applied to evaluate the effect of leadership traits on the employee outcomes in the context of Indian organizations which have implemented AI tools in their business processes.

Confirmatory Composite Analysis confirmed these constructs' reliability and validity with all recommended thresholds being met. Results demonstrated strong reliability and convergent validity, with composite reliability measures exceeding 0.7 and average variance extracted (AVE) above 0.50. Heterotrait-Monotrait (HTMT) analysis affirmed satisfactory discriminant validity, with all HTMT values below 0.85 for conceptually distinct constructs and below 0.9 for those conceptually similar (Henseler, Ringle and Sarstedt, 2015b).

Hypothesised relationships were found to be supported through analysis of relevance and significance of direct and indirect path coefficients. Results provide evidence of a significant positive effect of Leader AI Literacy on Employee Outcome Variables of Commitment, Performance, and Satisfaction with AI Development, AI Usage, and Team building as serial mediators. The positive effect of Leader Learning Agility on Employee Commitment, Performance, and Satisfaction with AI Development, AI Usage, and Team building as serial mediators was not as pronounced but was

marginally significant. Leader Empathy as well as Ethics showed a significant positive influence on Employee commitment, performance, and satisfaction, with AID, AIU, and TB as serial mediating variables.

Further, the model's explanatory power and model fit were found to be satisfactory with moderate to high R^2 values and SRMR below 0.08 as recommended (Hair *et al.*, 2022a). Out of sample predictive power was assessed through the PLS Predict procedure (Shmueli *et al.*, 2019b) revealing a high level of predictive prowess of the model.

The study's findings offer valuable insights for practice and theory. Results, aligned with prior research reveal insights as discussed at length in the next chapter which elaborates on the conclusions drawn from the analysis results and discusses their implications.

CHAPTER 5

DISCUSSION, CONCLUSION, AND IMPLICATIONS

5.1 Introduction

This chapter builds upon the findings of the study, which explored the impact of leadership on employee outcomes—commitment, performance, and satisfaction—in organizations adopting AI-driven processes. The research examined how leadership traits such as AI literacy, learning agility, empathy, and ethics influence these outcomes through the mediating roles of AI development, AI usage, and teamwork.

The study confirmed that leadership characteristics play a critical role in shaping employee experiences and outcomes in the context of technological advancements. Leaders with strong AI literacy demonstrated a particularly significant influence on enhancing employee commitment, performance, and satisfaction, with the mediating factors of AI-related processes and teamwork reinforcing these effects. While learning agility also contributed positively, its influence was less pronounced. Empathy and ethics emerged as key drivers of positive employee outcomes, highlighting the importance of humane and ethical leadership in technology-driven workplaces.

The model developed and tested in the study provides a comprehensive understanding of how leadership attributes interact with AI processes to foster positive workplace dynamics. The findings not only align with prior research but also expand the knowledge base by emphasizing the interplay between leadership, AI, and teamwork.

This chapter delves into the broader implications of these findings for organizational practices and leadership strategies, discussing how these insights can guide leaders and policymakers in enhancing employee well-being and organizational performance in an AI-enabled business landscape.

5.2 Discussion of Research Question One

The first question this research sought to answer was about what leadership traits are more important in the AI era to bring about the desired employee outcomes. The integration of AI into business processes has fundamentally transformed the workplace, requiring leaders to adopt specific traits that align with technological and human needs. The conceptual model developed for the study after a rigorous and detailed literature review highlighted four major leadership traits which are instrumental for successful and effective leadership in the AI era. The relative importance of these traits has been investigated through the PLS-SEM analysis and results are discussed in this section.

From the literature on AI and leadership, AI literacy emerged as one of the most critical competencies for leaders in the AI era. Research by Pinski, Hofmann, and Benlian (2023) underscores the increasing demand for AI literacy among executives, suggesting that a foundational understanding of AI is becoming essential across leadership roles. Leaders proficient in AI literacy are better equipped to make informed decisions, strategically implement AI technologies, and address the ethical challenges associated with AI usage. This capability fosters innovation, enhances data-driven decision-making, and helps organizations determine the optimal balance between human and AI-driven

tasks (Courtoy and Bastian, 2021). Results from the PLS-SEM model also confirm the significance of AI literacy in positively influencing employee outcomes in AI enabled work environment through its effect on AI development and AI usage in the organization leading to team building and enhanced employee performance.

Learning agility is another key leadership trait that emerges from the literature, particularly in the context of rapidly evolving AI-driven workplaces. Bettoni *et al.* (2021) highlight that leaders with high learning agility can adapt to changing conditions, overcome resistance to AI adoption, and nurture a culture of innovation. Such leaders play a crucial role in ensuring the smooth integration of AI tools, enabling organizations to remain competitive in dynamic environments. While the influence of learning agility on employee outcomes may not be as strong as AI literacy as found from the SEM results, it remains an essential trait for fostering an adaptive and resilient organizational culture (Hogan and Kaiser, 2005).

Empathy in leadership is equally important, particularly when managing the human impact of AI implementation. Srinivasan and González (2022) note that while AI enhances efficiency, it often lacks the human touch, potentially alienating employees. Empathetic leaders bridge this gap by fostering trust, understanding, and collaboration. They alleviate employee concerns about AI's impact on their roles and create an environment that values human contributions. Research by Mahsud, Prussia, and Yukl (2010) further underscores the role of empathy in facilitating transitions and promoting teamwork. Empathetic leaders not only enhance team cohesion but also inspire

innovative thinking, ensuring that technology complements rather than undermines the human aspect of work.

Ethics is another indispensable leadership trait in the AI era. As AI systems increasingly influence decision-making and organizational practices, ethical leadership ensures that these technologies align with principles of justice, accountability, and transparency (Baker-Brunnbauer, 2021). Ethical leaders address concerns related to biases, fairness, and privacy in AI applications, creating a culture of trust and integrity (Siau and Wang, 2018; Jobin, Ienca, and Vayena, 2019). Sharma, Agrawal, and Khandelwal (2019) highlight that ethical leadership enhances employee morale and commitment, fostering an organizational environment where accountability and fairness are prioritized. By guiding the responsible development and deployment of AI systems, ethical leaders mitigate potential risks and promote inclusive practices, aligning AI initiatives with societal values.

5.3 Discussion of Research Question Two

The second question which this research sought to answer was regarding the effect that leadership traits like Learning Agility, AI Literacy, Empathy and Ethics have on AI development and AI implementation in the organization. This objective was met by investigating the direct effects of these leadership traits on AI development and AI usage as observed from the PLS-SEM results.

It was observed that leaders' AI literacy, learning agility, empathy, and ethics, all influence the trajectory of AI development and implementation in organizations, however, the role of learning agility is not as pronounced as that of other traits. These leadership qualities shape how AI technologies are developed, adopted, optimized, and harmonized with organizational goals and employee needs. Each trait uniquely contributes to the process, with contextual factors in AI-driven environments offering deeper insights into these relationships.

AI literacy emerges as a foundational leadership trait in the AI era, as it has a significant positive effect on both the development and usage of AI technologies. This finding shows that role of AI literacy among leaders is particularly significant in advancing organizational AI capabilities. Leaders who possess a strong understanding of AI technologies are better equipped to assess their potential, align them with strategic goals, and advocate for their integration into business processes (Cardon *et al.*, 2023). AI-literate leaders possess a nuanced understanding of the capabilities, limitations, and ethical implications of AI systems and this expertise enables them to design and oversee AI projects that address organizational challenges while fostering trust in these systems among employees. AI literacy enables them to identify strategic opportunities for AI deployment and develop AI projects that align with organizational objectives. Furthermore, their ability to communicate the value of AI helps mitigate employee apprehensions and encourages investments in AI capabilities as well as broader adoption of AI technologies (Pinski, Hofmann, and Benlian, 2023).

In an AI-enabled workplace, leaders with AI literacy are more adept at bridging the gap between technical teams and business units, ensuring that AI initiatives are effective in achieving the desired outcomes. Courtoy and Bastian (2021) argue that such leaders drive AI development by making data-driven decisions and fostering a culture of technological curiosity.

Learning agility, the ability to adapt and thrive in changing environments, is a critical enabler in AI development, however it does not have a highly significant influence on AI usage. In AI-enabled workplaces, characterized by rapid technological advancements and evolving job roles, learning-agile leaders create a culture that embraces innovation and adaptability (De Meuse *et al*., 2010). Leaders with high learning agility are marked by their ability to adapt to change and embrace new ideas and therefore they play a crucial role in advancing AI development. The findings highlight a significant positive effect of learning agility on AI development, suggesting that such leaders are instrumental in fostering innovation, promoting experimentation with AI tools, and navigating the iterative processes that AI projects demand. By creating an adaptive and open culture, learning-agile leaders encourage teams to explore the potential of AI, enabling the organization to remain competitive in a rapidly evolving technological landscape. For organizations aiming to strengthen their AI capabilities, these results underscore the importance of identifying and cultivating leaders with strong learning agility, thereby fostering a workplace conducive to innovation and continuous improvement.

However, the relationship between leader learning agility and AI usage, while positive, is not statistically significant at conventional thresholds. This finding suggests that although adaptable and open-minded leaders may create a favourable attitude toward AI adoption, their influence alone may not be sufficient to drive widespread use of AI tools within the organization. It indicates that other factors, such as robust organizational infrastructure, effective employee training, or technological readiness, may play a more decisive role in facilitating AI usage (Bettoni *et al.*, 2021). While learning agility lays the foundation for AI adoption, its impact must be complemented by additional leadership qualities and contextual enablers to fully translate into practical and sustained AI integration. This underscores the multifaceted nature of AI implementation, which requires a holistic approach that balances leadership capabilities with structural and technological support.

Leaders' Empathy plays a nuanced role in AI development, particularly in aligning AI initiatives with employees' needs and perspectives. In an AI-enabled workplace, empathetic leaders understand the human implications of technological change, such as fears of job displacement or skill obsolescence. By addressing these concerns, empathetic leaders create a supportive environment for innovation and experimentation (Mahsud, Prussia, and Yukl, 2010). Empathy contributes to AI development by ensuring that projects are human-centered, prioritizing usability and ethical considerations (Srinivasan and González, 2022). Empathetic leaders might advocate for AI systems that enhance employee well-being, such as tools designed to reduce workload stress or provide personalized learning opportunities. However,

empathy does not directly drive AI usage as evident from the results. While it establishes trust and psychological safety, other factors such as technical proficiency and organizational infrastructure may be required to translate this trust into widespread AI adoption (Kock *et al.*, 2019).

Ethical leadership is increasingly critical in the AI era, where concerns about bias, transparency, and accountability in AI systems are prevalent (Bostrom and Yudkowsky, 2014). While the results suggest that ethics may not strongly influence AI development, ethical leadership plays a vital role in the implementation phase. Employees are more likely to trust and adopt AI systems when they see them being used responsibly and transparently by their leaders (Roe *et al.*, 2022).

In AI-enabled workplaces, ethical leaders ensure that AI initiatives adhere to principles of fairness, privacy, and inclusivity. This approach not only mitigates risks associated with biased algorithms but also builds employee confidence in AI technologies (Siau and Wang, 2018). Ethical leaders also establish governance frameworks that outline clear accountability for AI decisions, ensuring that the organization's AI strategy aligns with societal values and ethical standards.

The interplay of these traits gains heightened importance in AI-enabled workplaces, where the integration of technology and human dynamics is crucial. Leaders must balance the technical demands of AI with the psychological and ethical needs of employees. AI literacy and learning agility are indispensable for driving innovation and strategic implementation, while empathy and ethics ensure that these advancements are inclusive, trustworthy, and aligned with human values.

5.4 Discussion of Research Question Three

The third question that this research sought to answer was if the employee outcomes like performance, commitment, and satisfaction get better with the leadership playing their role in the presence of AI implemented in the various organizational processes. This objective was achieved by investigating the serial mediation effects hypothesized for the study. The results present meaningful insights on the role of leadership through AI in bringing about the desired employee outcomes.

The finding that leaders' AI literacy positively influences employee performance through a serial mediation pathway of AI development, AI usage, and team building contributes valuable insights to the evolving literature on digital leadership and workforce performance in AI-integrated workplaces. Leaders' understanding of AI may facilitate smoother implementation and acceptance of AI, illustrating that leader competency is key in guiding technological transitions. This result aligns with prior research underscoring the role of leader competencies in fostering organizational adaptability and performance, especially in technology-driven contexts (Huang and Rust, 2021). Leaders with a deep understanding of AI are more capable of recognizing the strategic potential of AI-driven solutions, effectively supervising their development, and guiding teams in incorporating AI into day-to-day tasks. As AI systems are developed and refined within the organization, their actual application and utilization by employees increase significantly. This finding implies that investments in AI development are likely to yield practical benefits in usage, potentially enhancing productivity and operational efficiency. In turn, this facilitation of AI development and usage appears to catalyse a

team-based culture conducive to innovation and high performance (Katzenbach and Smith, 2015). The sequential mediation through AI usage highlights that leaders' AI literacy indirectly boosts employee performance by increasing practical interactions with AI technology within the workforce. AI tools, when effectively deployed, can augment productivity and streamline workflows, thereby enhancing task efficiency and accuracy (Jarrahi, 2018). Finally, the team-building component within this pathway underscores that leader AI literacy indirectly strengthens employee performance by fostering AI development and usage which facilitate a collaborative team environment. AI usage tends to encourage cross-functional collaboration, where teams work cohesively toward shared objectives involving AI applications. Prior studies have shown that team cohesion enhances information sharing and mutual support, which are vital for maximizing the collective benefits of AI-enabled projects (Edmondson, 1999). In an environment where team building is prioritized, employees are likely to experience higher levels of trust and shared purpose, which enhances group dynamics and, in turn, individual and collective performance (Salas *et al.*, 1999).

The findings suggest that leader learning agility has a weakly significant indirect effect on employee performance through the serial pathway of AI development, AI usage, and team building, indicating a subtle yet meaningful role of learning agility in enhancing employee outcomes. Learning agility plays a role in fostering an organizational environment that supports innovation and technology adoption (De Meuse, Dai and Hallenbeck, 2010). Leaders who demonstrate learning agility are often open to experimentation, exploration, and quick adaptation to new information, which can create

a favourable setting for AI development and usage within teams. Through promoting a mindset open to learning and adaptation, these leaders enhance their teams' capacity to integrate AI effectively into work practices, thus the findings of this study align with research emphasizing the value of leader endorsement in technology adoption and team acceptance (Avolio *et al.*, 2014). Previous research has highlighted the importance of leader adaptability and openness in driving technology-related initiatives. Adaptable leaders are more likely to encourage an innovative culture, where employees feel supported in utilizing new tools and approaches (Koeslag-Kreunen *et al.*, 2018). By fostering an atmosphere that encourages learning and flexibility, leaders high in learning agility can facilitate the initial stages of AI development, making it more likely that employees engage with and adopt AI technology in their daily tasks. However, as seen in the results, the indirect impact on performance through these pathways is marginal, which suggests that learning agility alone may be insufficient for significantly influencing performance outcomes without additional support or resources directed toward AI initiatives. Additionally, team building as a part of this mediation pathway underscores that leaders with learning agility foster collaboration and shared learning among employees. Psychological safety within teams is often facilitated by leaders who embrace learning, enabling team members to openly discuss and experiment with AI technologies (Edmondson and Lei, 2014). This supportive team environment may promote shared understanding and skill development, enhancing both individual and collective efficacy in using AI.

The findings illustrate that leader empathy has a positive, significant serial mediation effect on employee commitment, performance, and satisfaction through the pathway of AI development, AI usage, and team building. This suggests that empathetic leadership is a critical factor for driving organizational outcomes in technology-focused workplaces. By fostering environments where AI development is encouraged, usage is normalized, and team cohesion is strengthened, empathetic leaders indirectly enhance employee commitment, performance, and satisfaction. These findings align with previous research on the influence of empathy in leadership, highlighting its ability to shape supportive, high-performing, and committed work environments (Gentry, Weber and Sadri, 2016).

The link between leader empathy and employee commitment is particularly significant, as it suggests that empathy enables leaders to create a sense of belonging and purpose for employees. Empathetic leaders are more attuned to their employees' needs and concerns, which helps cultivate trust and loyalty within the workforce (Humphrey, 2002). This helps in creating an environment where AI is developed and utilized not merely as a tool for efficiency but as a means to achieve meaningful, shared goals. Such a setting encourages employees to engage with AI systems positively, thus reinforcing their commitment to the organization.

The pathway from empathy to employee performance via AI development, usage, and team building indicates that empathetic leaders indirectly support performance improvements by establishing an environment where employees feel encouraged to utilize AI tools effectively. Empathetic leaders are thoughtful of the individual challenges

that employees may face in adapting to AI, and therefore better equipped to develop AI tools which take care of employee needs. In turn, this facilitates effective AI usage, which ultimately drives enhanced performance outcomes as employees feel both supported and motivated to apply AI to achieve their work goals.

Furthermore, the significant indirect effect of leader empathy on employee satisfaction suggests that empathetic leaders play an essential role in creating a positive, fulfilling work environment where employees feel appreciated and valued. Leaders who display empathy tend to prioritize employee well-being and foster positive interpersonal relationships, which contributes to higher satisfaction levels (Kellett, Humphrey and Sleeth, 2006). Empathy in leadership can help alleviate the stress and uncertainty often associated with new technology, such as AI, by ensuring that employees feel included in the development and integration process. This inclusive approach improves AI acceptance and enhances employee satisfaction.

The results reveal that leader ethics positively influence employee commitment, performance, and satisfaction through a sequential pathway involving AI development, AI usage, and team building. This indicates that when leaders prioritize ethical considerations, they foster trust in AI practices, enhance team collaboration, and ultimately contribute to a more engaged, high-performing, and satisfied workforce. Ethical leadership thus plays a vital role in shaping employees' perceptions of AI usage and team dynamics, which subsequently reinforces their commitment, performance, and satisfaction.

The indirect effect of leader ethics on employee commitment via AI development, usage, and team building aligns with previous research emphasizing the role of ethical leadership in establishing organizational trust. Employees who perceive their leaders as ethical are more likely to trust their intentions regarding AI implementation, perceiving it as beneficial rather than threatening (Brown and Treviño, 2006). Ethical leaders help bridge the gap between technology and employee values, creating an environment where employees are motivated to commit to organizational objectives, confident that their leaders will handle AI responsibly (Caldwell *et al.*, 2008).

In terms of employee performance, the study's results indicate that ethical leaders indirectly enhance performance through their influence on AI usage and team cohesion. By promoting fairness and transparency in AI usage, ethical leaders cultivate a culture of mutual respect and accountability within teams, allowing employees to feel secure in using AI to improve their work processes (Babalola *et al.*, 2019). This finding supports earlier studies highlighting that ethical leaders boost employee productivity by fostering inclusive and morally supportive environments that empower employees to use technology confidently and responsibly (Neubert *et al.*, 2009).

The significant indirect effect of leader ethics on employee satisfaction highlights the value of ethical leadership in fostering a fair and transparent AI development and usage environment. Employees often have concerns about fairness, privacy, and transparency when it comes to AI applications in the workplace. Ethical leaders, who prioritize these issues, play a critical role in addressing employees' ethical concerns, thereby enhancing their job satisfaction (Eisenbeiss, 2012). This dynamics supports the

idea that ethical leadership not only guides responsible AI implementation but also helps create a supportive and trusting atmosphere where employees are more content with their roles and the organization as a whole.

5.5 Conclusion

In conclusion, leadership traits such as learning agility, AI literacy, empathy, and ethics collectively shape the success of AI development and implementation. In AI-enabled workplaces, these traits not only facilitate the technical aspects of AI integration but also address the broader human and ethical implications, ensuring a balanced and sustainable approach to technological transformation. Organizations aiming to maximize the potential of AI must invest in leadership development programs that nurture these traits, creating a workforce that is both technically adept and human centric.

The findings advance the understanding that leaders' AI literacy can be a foundational driver of organizational success in AI-integrated workplaces. Through a stepwise pathway of promoting AI development, and enhancing AI usage, which in turn reinforces team-building efforts, leaders proficient in AI literacy indirectly promote employee performance. This finding builds on existing research by clarifying the complex, mediated relationship between leadership, AI-related capabilities, and employee outcomes, suggesting that investing in leaders' AI competencies can yield substantial benefits for organizations adapting to AI-driven transformation (Westerman *et al.*, 2014).

Findings also demonstrate how leaders' learning agility influences employee outcomes through complex pathways involving AI development, usage, and team cohesion (DeRue, Ashford and Myers, 2012). They suggest that while learning agility is valuable in promoting a culture of adaptability, it may need to be supplemented by technical expertise or structured support to fully realize performance improvements.

Further, the findings reveal empathy's role in modern, technology-driven workplaces, demonstrating that empathetic leadership can facilitate effective AI development and usage while nurturing employee commitment, performance, and satisfaction. This highlights the dual role of empathy in promoting both AI technology development and a positive work environment (Gentry, Weber and Sadri, 2016).

Findings also emphasize that leader ethics significantly impact employee outcomes by fostering a responsible, team-oriented, and transparent approach to AI usage. Ethical leadership creates a foundation of trust and fairness, which enables employees to embrace AI as a tool for improvement, not as a threat. This reinforces previous research on the benefits of ethical leadership, particularly its role in establishing organizational climates that enhance commitment, performance, and satisfaction (Kuenzi, Mayer and Greenbaum, 2020). As organizations continue to incorporate AI into their operations, investing in ethical leadership development can ensure that these technological advancements are implemented in a way that supports both employee well-being and organizational goals.

5.6 Implications

The findings on the serial mediation effects of AI Development, AI usage, and Team building on the relationship between leadership and employee commitment, performance, and satisfaction hold both theoretical and practical implications. These implications enrich our understanding of leadership in digital transformation and offer actionable insights for organizations aiming to enhance performance in AI-integrated work environments.

Theoretical Implications

Firstly, this study contributes to digital leadership literature by positioning AI literacy as a critical competency in modern leadership frameworks. Traditional leadership models focus primarily on relational or transformational aspects, but the current results suggest that knowledge of AI plays a significant role in leadership effectiveness in technology-intensive organizations. This finding aligns with and extends research on transformational and e-leadership theories by demonstrating that leaders' technological competencies can amplify their influence on organizational outcomes (Avolio *et al.*, 2014).

Secondly, this study supports the emerging view that learning agility is an essential component of effective leadership in dynamic, technology-rich environments. Traditionally, leadership theories have focused on qualities like transformational and transactional leadership, but these findings highlight that a leader's capacity for rapid

learning and adaptation plays a crucial role in AI-related processes (Turan and Cinnioğlu, 2022).

The study's lower significance result suggests that learning agility is influential but may lack the specific technical impact of AI literacy. This adds nuance to leadership theory, suggesting that learning agility might complement but not replace technical skills, particularly in AI contexts (DeRue, Ashford and Myers, 2012).

Finally, by revealing the indirect effect of leaders' empathy and ethics on employee commitment, performance, and satisfaction through AI pathways, the study expands our understanding of how technological change can influence the relationship between these constructs.

Practical Implications

For organizations aiming to enhance performance through AI, prioritizing AI literacy in leadership development programs is essential. Training programs that include AI literacy components equip leaders with the necessary knowledge to champion AI adoption, development, and integration effectively.

For organizations aiming to leverage learning agility in leaders to improve employee performance, development programs should incorporate both agility-focused training and AI-specific knowledge. While agile leaders adapt well, practical training in AI literacy or technical workshops on AI integration can enhance their ability to facilitate AI-related development and usage effectively. Combining training on adaptability with

AI skill-building will help leaders bridge the gap between promoting an adaptable environment and executing on specific AI goals.

Given the marginally significant effect of learning agility, organizations may need to provide learning-agile leaders with additional resources to maximize their impact on performance. This could include access to AI consultants, structured AI implementation roadmaps, or cross-functional teams skilled in AI.

Organizations should prioritize empathy as a key competency in leadership development programs, especially for leaders overseeing AI-driven teams. Empathy training can include modules on active listening, emotional intelligence, and conflict resolution, helping leaders build the interpersonal skills necessary to support team members during technological shifts.

Given the importance of ethical leadership in fostering employee commitment, performance, and satisfaction, through AI usage, organizations should emphasize ethical leadership training within their leadership development programs. Training programs could include components on transparency, integrity, and fairness, especially in the context of AI and emerging technologies. Ethical leaders can reinforce these policies by openly communicating AI goals, data privacy measures, and employee rights. This transparency encourages employee engagement with AI and reassures them of the organization's commitment to ethical technology use.

The results also highlight the importance of team-building activities focused on collaborative learning and mutual support around AI tools. Organizations could facilitate

workshops and team-based projects that allow employees to collectively engage with AI tools and develop shared competencies.

5.7 Limitations and Recommendations for Future Research

This study examines the relationship between leadership, and employee outcomes (performance, commitment, and satisfaction) in the context of Indian organizations which are functioning making use of artificial intelligence in their processes. Thus, the scope of this study is focused on Indian organizations and the results may not be generalizable to developed countries where use of AI is more prevalent than in the emerging economies like India. Further research can be taken up for performing a comparative analysis of different countries with varied AI usage levels.

Secondly, due to the fixed time frame of the doctoral dissertation, this study is cross sectional in nature which limits the findings to be regarding a specific time period and cannot delve into the inter-temporal changes that may arise with time. Further studies can be conducted to compare the effect of AI on the relationship between leadership and employee outcomes at different stages of AI usage level in the organizations with time.

Future research could explore how specific training in AI for learning-agile leaders might amplify these effects, thereby providing organizations with strategies to enhance both adaptive leadership qualities and technological competencies in pursuit of high-performance outcomes. Future research could also explore how empathy training for leaders might further strengthen the indirect effects through AI, enabling organizations to

foster committed, high-performing, and satisfied teams in an era of rapid technological change.

5.8 Summary

In sum, leadership traits such as AI literacy, learning agility, empathy, and ethics are critical in the AI-driven workplace for achieving positive employee outcomes. These traits enable leaders to balance the technical demands of AI with the human-centric needs of employees, ensuring that organizations not only adopt AI effectively but also maintain a focus on employee well-being and ethical standards. Together, these leadership qualities are essential for navigating the complexities of technological advancements and fostering sustainable growth in the AI era. While AI literacy provides the technical foundation, learning agility ensures adaptability, empathy fosters trust and collaboration, and ethics build accountability and trust. Organizations aiming to thrive in the AI-driven future must prioritize developing these leadership qualities to navigate the complexities of technological and human integration effectively.

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APPENDIX A

SURVEY COVER LETTER

Dear Sir/Ma'am

Greetings of the day

I am conducting a research study on "LEADERSHIP IN THE AGE OF ARTIFICIAL INTELLIGENCE: ASSESSING THE EFFECT ON EMPLOYEE PERFORMANCE" for which I seek your valuable responses to my questionnaire. I would be grateful if you could please spare few minutes to participate in this survey. The survey does not collect any personal identification information and your response will be completely anonymous. The data collected will be used solely for academc research purposes.

Thank You,

Shiveta Pandita

Email: shiveta.pandita@gmail.com

APPENDIX B

INFORMED CONSENT

Statement included at the beginning of online survey form:

Informed Consent:

I have gone through the information provided regarding the scope and objectives of this research and I am willing to participate in the survey. I understand that by completing this questionnaire I am consenting to be part of the research study.

I Agree ☐

APPENDIX C

QUESTIONNAIRE

Section I: Screening Questions

1. Is your organization using AI in any form for any of the processes?

i) Yes

ii) No

2. How many years have you been associated with your present organization:

i) Less than 2 years

ii) Between 2-5 years

iii) Between 5-10 years

iv) Above 10 years

3. For how long have you worked under the same leader in the present organization:

i) Less than 1 year

ii) Between 1-5 years

iii) Between 5-10 years

iv) Above 10 years

Section II: Demographic Information

1. To which age group do you belong (consider completed years of age):

i) 18-25 years
ii) 26-35 years
iii) 36-45 years
iv) 46-55 years
v) 56 years and above

2. Please mention your gender:

i) Male
ii) Female

3. What is your annual income (in INR):

i) Below 5 lacs
ii) 5-15 lacs
iii) 15-25 lacs
iv) 25-35 lacs
v) 35-45 lacs
vi) above 45 lacs

4. To which sector does your organization belong:

i) Automotive
ii) Healthcare
iii) Defense
iv) Information technology
v) Telecommunications
vi) Education
vi) Others (Please specify)

5. At what level are you working in your organization:

i) Entry level
ii) Middle level
iii) Senior level

Please rate your degree of agreement or disagreement with the following statements on a scale of 1 – 5

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

My leader can distinguish between smart devices and non-smart devices.

My leader does not know how AI technology can help us.*

My leader can identify the AI technology employed in the applications and products we use.

My leader can evaluate the capabilities and limitations of an AI application or product after using it for a while.

My leader can choose a proper solution from various solutions provided by a smart agent.

My leader can choose the most appropriate AI application or product from a variety for a particular task.

Please rate your degree of agreement or disagreement with the following statements on a scale of 1 – 5

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

At work, my leader participates in learning activities (e.g., trainings, workshops) to personally develop.

At work, my leader carefully evaluates the feedback he/she receives from others to learn from it.

At work, my leader puts effort in trying to develop contrasting influential styles (e.g., taking the lead and empowering others).

My leader takes part in developmental activities to improve task- and relational skills at work.

At work, my leader conceives feedback as a fundamental tool to performance improvement.

My leader puts effort in getting better in influencing others to reach our project goals.

My leader self-initiates learning activities to improve his/her and the team's job performance.

My leader acts upon the feedback he/she receives from peers to improve performance.

My leader participates in trainings to continue developing at work.

My leader examines patterns in his/her own behavior based on the feedback received from co-workers.

My leader takes part in educational programs besides the working activities.

My leader takes action when a colleague gives feedback to improve his/her performance.

My leader focuses on how to effectively lead towards our team goals at work.

My leader focuses on how to become an influencer in the organization to reach our targets.

Please rate your degree of agreement or disagreement with the following statements on a scale of 1 – 5

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

My leader always knows our emotions from our behavior.

My leader is a good observer of others' emotions.

My leader is sensitive to the feelings and emotions of others.

My leader has good understanding of the emotions of people around him/her.

To what extent is the following true regarding your leader

(1) = Exactly; (2) = Very much; (3) = Somewhat; (4) = Not at all

My leader deliberately fuels conflict among employees

My leader is evil

My leader would falsify records if it would help his/her work situation

My leader lacks high morals

My leader would treat me better if I belonged to a different ethnic group

My leader is a hypocrite

My leader would steal from the organization

My leader would engage in sabotage against the organization

My leader would fire people just because (s)he doesn't like them if (s)he could get away with it

My leader would do things which violate organizational policy and then expect his/her subordinates to cover for him/her

To what extent is the following true regarding teams in your organization:

(1) = Never; (2) = Rarely; (3) = Sometimes; (4) = Mostly; (5) = Always

Setting project goals on a participatory basis by the team.

Involving project team members in action planning to identify ways to achieve project goals.

Making the basic goals of the project clear to the project team.

Letting the project team receive timely feedback on performance in relation to goals of the project.

Encouraging team members to meet with each other during the project.

Discussing relationships among project members frankly.

Discussing conflicts among project team members frankly.

Conducting training programs on communication skills for the project team.

Creating opportunities for sharing of feelings among the project team.

Clarifying role expectations of each team member.

Giving information about the shared responsibilities of team members.

Making project norms familiar to each team member.

Involving the project team(s) in identifying task-related problems.

Involving the project team(s) in generating ideas concerning the causes of task-related problems.

Participation of the project team(s) in designing action plans to solve task-related problems of the project.

Engaging the project team(s) in the implementation of action plans to solve task-related problems.

Engaging the project team(s) in the evaluation of action plans to solve task-related problems.

Please rate your degree of agreement or disagreement with the following statements

on a scale of 1 – 5

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

AI tools for my organization were developed by own employees (including those employed in parent or affiliate enterprise)

Commercial software or systems were modified by own employees (including those employed in parent or affiliate enterprise)

Open-source software or systems were modified by own employees (including those employed in parent or affiliate enterprise)

Commercial software or systems ready to use were purchased (including examples where it was already incorporated in a purchased item or system)

Does your enterprise use any of the following Artificial Intelligence technologies? (Yes/No)

a) Technologies performing analysis of written language (text mining)

b) Technologies converting spoken language into machine-readable format (speech recognition)

c) Technologies generating written or spoken language (natural language generation)

d) Technologies identifying objects or persons based on images (image recognition, image processing)

e) Machine learning (e.g. deep learning) for data analysis

f) Technologies automating different workflows or assisting in decision making (Artificial Intelligence based software robotic process automation)

g) Technologies enabling physical movement of machines via autonomous decisions based on observation of surroundings (autonomous robots, self-driving vehicles, autonomous drones)

Does your enterprise use Artificial Intelligence software or systems for any of the following purposes? (Yes/No)

a) for marketing or sales

b) for production processes

c) for organisation of business administration processes

d) for management of enterprises

e) for logistics

f) for ICT security

g) for human resources management or recruiting

Please rate your degree of agreement or disagreement with the following statements on a scale of 1 – 5

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

I would love to spend the rest of my career with this organization.

I feel as if this organization's problems are my own.

I feel a strong sense of "belonging" to my organization.

I feel "emotionally attached" to this organization.

I feel like a "part of the family" at my organization.

I have a strong sense of personal connection with this organisation.

Please rate your degree of agreement or disagreement with the following statements on a scale of 1 – 5

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

I maintain high standard of work.

I am capable of handling my assignments without much supervision.

I am very passionate about my work.

I know I can handle multiple assignments for achieving organizational goals.

I complete my assignments on time.

My colleagues believe I am a high performer in my organization.

Please rate your degree of agreement or disagreement with the following statements on a scale of 1 – 5

1= Strongly Disagree, 2= Disagree, 3= Neutral, 4= Agree, 5= Strongly Agree

All my talents and skills are used

I feel good about my job

I receive recognition for a job well done

I feel good about working at this company

I feel close to the people at work

I feel secure about my job

I believe management is concerned about me

On the whole, I believe job is good for my physical health