ROLE OF ARTIFICIAL INTELLIGENCE IN FINANCIAL DECISION MAKING

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CERTIFICATION OF AUTHORSHIP

I hereby corroborate that I have researched and submitted the final draft of dissertation entitled "**Role of Artificial Intelligence in Financial Decision Making**". The work of this dissertation has not been submitted previously for the purpose of conferral of any degrees nor it has been proposed and presented as part of requirements for any other academic purposes. The assistance and cooperation that I have received during this research work has been acknowledged. In addition, I declare that all information sources and literature used are cited in the reference section of this dissertation.

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ABBREVIATIONS

AI	:	Artificial Intelligence
ANN	:	Artificial Neural Networks
ANOVA	:	Analysis of Variances
DTF	:	Exchange Traded Fund
EI	:	Emotional Intelligence
EMP	:	Empathy
IND	:	Investment Decision
ML	:	Machine Learning
MOT	:	Motivation
N	:	Number of Observation
NRB	:	Nepal Rastra Bank
S.D.	:	Standard Deviation
SAW	:	Self-Awareness
SER	:	Self -Regulation
SOS	:	Social Skills
SPSS	:	Statistical Package for Social Sciences
US	:	United States
VC	:	Venture Capital

ABSTRACT

This study has explored the role of artificial intelligence (AI) in financial decision-making within the Kathmandu Valley, focusing on how AI's social and emotional capabilities, such as self-awareness, empathy, motivation, self-regulation, and social skills, affect investment decisions. The primary problem has been the challenges related to the reliability, ethical implications, and systemic risks of AI in finance. The main objective has been to examine the current status of AI use, analyze its relationship with investment decisions, and evaluate its overall impact on financial decision-making.

The study has utilized both descriptive and causal-comparative research designs to assess AI's role in financial decision-making. The population has included investors and AI users in Kathmandu Valley, with a sample size of 400 selected through convenience sampling. Data collection has been based on quantitative methods, using a structured questionnaire survey designed according to the green investment decision-making model and employing a five-point Likert scale.

Statistical analysis has been conducted using Microsoft Excel and SPSS, employing descriptive statistics, correlation, and multivariate regression models. The research framework has delineated the relationships between independent variables (self-awareness, empathy, motivation, self-regulation, and social skills) and the dependent variable (investment decisions), guiding the analytical process.

The results have shown that all AI variables positively influence investment decisions, with motivation and social skills demonstrating the strongest impacts. The study has confirmed significant positive relationships and impacts of AI's emotional and social attributes on financial outcomes, with no multicollinearity concerns affecting the results.
Practically, the study highlights the importance of integrating AI's emotional and social capabilities into financial decision-making processes to enhance investment strategies. Theoretically, it contributes to understanding the influence of AI attributes on financial decisions and recommends further exploration of these AI characteristics in varied financial contexts to validate and extend these findings.

Keywords: Artificial Intelligence, Financial Decision-Making, Social Skills, Investment Decisions, AI Attributes

CHAPTER I
INTRODUCTION

1.1 Background of the Study

The swift and significant advancements in technology have revolutionized various industries, and the financial sector is no exception. As highlighted by Gupta (2021), one of the most impactful technological breakthroughs in finance is the emergence and integration of Artificial Intelligence (AI). AI involves the simulation of human intelligence within machines, which are meticulously programmed to analyze and interpret intricate patterns in complex data, make autonomous decisions, and learn from past experiences. The incorporation of AI in financial decision-making has initiated a paradigm shift, leading to improvements in efficiency, accuracy, and profitability. This paper aims to explore the profound impact of AI on financial decision-making, highlighting the opportunities it presents and the challenges it poses (Kokina & Davenport, 2017).

In contrast, traditional investment strategies have heavily relied on human intuition, often resulting in biased judgments and missed opportunities. According to Gupta (2021), AI algorithms have the capability to process massive volumes of historical market data, identify subtle patterns, and predict future trends with a high degree of accuracy. As a result, AI-powered investment platforms and robo-advisors have gained widespread popularity, enabling investors to make well-informed decisions based on objective data analysis, rather than falling prey to subjective emotions.

According to Dirican (2015), AI has exerted a substantial influence on risk management and the detection of fraudulent activities within the financial sphere. Financial institutions constantly face various risks, including credit defaults, market fluctuations, and fraudulent activities. With the help of powerful algorithms, AI systems can quickly identify potential risks by continuously monitoring and analyzing vast quantities of data. By detecting anomalies and patterns associated with illicit transactions, AI effectively prevents and mitigates financial fraud, protecting institutions from significant losses (Riikkinen et al., 2018). Additionally, AI-powered credit risk assessment models can evaluate creditworthiness with greater accuracy, reducing the likelihood of defaults and improving lending decisions.

Tambe et al. (2019) stated that the integration of AI into financial decision-making has led to the development of sophisticated trading systems. AI algorithms equip high-frequency trading (HFT) systems with the ability to execute trades at unprecedented speeds, capitalizing on fleeting market opportunities. These systems can rapidly analyze market conditions, identify price discrepancies, and execute trades autonomously, ensuring maximum profitability (Gupta, 2021). While HFT has raised concerns about market stability and fairness, it has undoubtedly contributed to increased liquidity and efficiency in financial markets.

In addition, AI has facilitated the emergence of alternative lending platforms and innovative financial services. This development allows fintech companies to extend loans and financial services to individuals who might otherwise be excluded from traditional banking systems. The accessibility and convenience provided by these AI-powered platforms have the potential to promote financial inclusion, offering more people access to the financial tools they need to succeed (Popenici & Kerr, 2017).

The influence of artificial intelligence (AI) on financial decision-making has profoundly transformed finance and banking operations. One key area where AI plays a critical role is risk management, evaluation, and analysis. According to Bahrammirzaee (2010), AI leverages data science to empower financial institutions to model and anticipate various risk factors, significantly enhancing their ability to make well-informed decisions. AI-driven risk analytics helps mitigate uncertainties related to cash flow and provides more accurate forecasts of future economic stability.

The integration of AI technologies has revolutionized various facets of finance, particularly in fraud detection, financial analysis, and risk management. As noted by Riikkinen et al. (2018), AI systems excel at scrutinizing vast amounts of data to identify complex patterns that might escape human detection. The use of AI algorithms is crucial in constructing robust models that aid in detecting fraudulent behavior, ensuring greater accuracy and effectiveness in combating financial crimes. This enhanced precision in fraud detection is just one example of how AI is transforming financial decision-making by providing deeper insights and more reliable outcomes.

Moreover, the advancements in AI have led to a significant transformation in financial analysis. Traditional methods, which were often limited by human capacity and subjectivity, have been surpassed by the extraordinary capabilities of AI. As Guresen,

Kayakutlu, and Daim (2011) highlight, AI's impact on risk management has been profound. AI algorithms can analyze extensive volumes of data, allowing for the identification of hidden risks and the implementation of proactive measures. However, the reliance on AI systems also necessitates a thorough understanding of their limitations and potential biases. To ensure the responsible use of AI in finance, transparency, accountability, and ethical considerations must be upheld in its application.

This study focuses on the role of Artificial Intelligence (AI) in financial decision-making within the Kathmandu Valley, emphasizing the impact of AI's social and emotional capabilities on investment decisions. Specifically, it investigates how AI's self-awareness, empathy, motivation, self-regulation, and social skills influence financial decision-making processes. These variables are critical in understanding how AI systems can enhance investment strategies by providing more nuanced and human-like interactions and responses. The study aims to explore how these AI characteristics contribute to more informed and effective investment decisions, considering the unique economic and social context of the Kathmandu Valley. By analyzing the interplay between AI's emotional and social competencies and investment decisions, this research seeks to shed light on the potential benefits and limitations of AI in this specific regional setting.

1.2 Problem Statement

The integration of artificial intelligence (AI) in financial decision-making presents numerous challenges, despite its potential to revolutionize the industry. One significant problem is the reliability and accuracy of AI algorithms in complex financial environments. While AI systems can analyze vast amounts of data to identify patterns and predict outcomes, they are still prone to errors due to data quality issues, algorithmic biases, and the inherent unpredictability of financial markets (Davenport & Ronanki, 2018). The over-reliance on AI for critical decisions could lead to severe consequences if the systems fail to accurately model market dynamics or overlook crucial factors (Dirican, 2015).

Another critical issue is the ethical implications of AI-driven financial decisions. As AI systems increasingly influence lending practices, trading, and risk management, concerns about fairness, transparency, and accountability become more pronounced. AI algorithms may unintentionally perpetuate biases, leading to discriminatory outcomes in credit assessments or investment decisions (Jarrahi, 2018). Furthermore, the lack of transparency in AI decision-making processes makes it difficult for stakeholders to

understand how conclusions are reached, raising questions about accountability in cases of financial mishaps (Guresen, Kayakutlu, & Daim, 2011).

The potential for AI to exacerbate systemic risks in financial markets is another pressing concern. Automated trading systems driven by AI can execute transactions at speeds and volumes beyond human capabilities, which may amplify market volatility during periods of instability (Dirican, 2015). Additionally, the interconnectedness of AI-driven systems across various financial institutions could lead to cascading failures if one system's errors propagate through the network, potentially triggering broader financial crises (Tsai & Wu, 2008).

Data privacy and security are also major challenges in the use of AI for financial decision-making. AI systems require access to vast amounts of sensitive financial data to function effectively, which increases the risk of data breaches and cyberattacks (Riikkinen, Saarijärvi, Sarlin, & Lähteenmäki, 2018). Financial institutions must navigate the delicate balance between leveraging data for AI-driven insights and protecting the privacy and security of their clients (Belanche, Casaló, & Flavián, 2019). The consequences of inadequate data protection measures can be devastating, both in terms of financial loss and damage to institutional reputations.

Finally, the implementation of AI in financial decision-making poses challenges related to human oversight and the potential displacement of jobs. While AI can enhance efficiency and accuracy, it also raises concerns about the reduction of human roles in the decision-making process, potentially leading to job losses in the financial sector (Popenici & Kerr, 2017). Moreover, the complexity of AI systems may result in a scenario where human operators cannot fully understand or intervene in AI-driven processes, leading to a loss of control over critical financial decisions (Tambe, Cappelli, & Yakubovich, 2019). This situation underscores the need for a careful approach to integrating AI into financial decision-making, ensuring that human expertise remains central to the process to mitigate these risks. The research questions of this study are as follows:

- What is the status of the use of artificial intelligence in financial decision-making in Kathmandu Valley?
- Is there a relationship between artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) and investment decisions in Kathmandu Valley?

- What is the impact of artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) on investment decisions in Kathmandu Valley?

1.3 Objectives of the Study

The objectiveS of this study are as follows:

- To examine the status of the use of artificial intelligence in financial decision-making in Kathmandu Valley.
- To analyze the relationship between artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) and investment decisions in Kathmandu Valley.
- To evaluate the impact of artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) on investment decisions in Kathmandu Valley.

1.4 Rationale of the Study

The study on the role of artificial intelligence (AI) in financial decision-making holds significant importance for a diverse range of stakeholders, including government officials, policymakers, investors, financial officers, consultants, entrepreneurs, researchers, students, and academicians. Each of these groups stands to gain valuable insights from understanding how AI can transform financial practices, enhance decision-making processes, and address potential challenges. By examining AI's applications in various financial contexts, the study aims to provide a comprehensive overview that informs and benefits each of these groups in unique ways.

- **For governments and policymakers:** The exploration of AI in financial decision-making holds significant implications for governments and policymakers. As AI technologies become increasingly integral to financial systems, understanding their impact on market stability, regulation, and public policy is crucial. Governments must develop frameworks to ensure that AI applications in finance are transparent, equitable, and secure. This study provides policymakers with insights into how AI can be harnessed for improved financial oversight while addressing potential risks. By assessing AI's role in risk management, lending, and trading, the research aids in shaping policies that

balance innovation with regulatory safeguards, ensuring that the financial sector remains resilient and fair.

- **For investors:** For investors, the role of AI in financial decision-making offers opportunities to gain a competitive edge in market analysis and investment strategies. AI systems can analyze vast datasets, identify trends, and forecast market movements with high accuracy, which can enhance investment decisions and portfolio management. This study is relevant for investors looking to understand how AI tools can optimize their strategies and reduce risks. By exploring AI's capabilities in financial forecasting and analysis, the research provides valuable insights into leveraging these technologies for better investment outcomes and maximizing returns.
- **Financial officers:** Financial officers, who are responsible for overseeing financial operations and ensuring organizational profitability, stand to benefit significantly from AI advancements. AI can streamline financial processes, improve risk assessment, and enhance decision-making accuracy. This study highlights how AI can be utilized to optimize financial management practices, from budgeting and forecasting to fraud detection. By understanding AI's impact on financial operations, financial officers can implement these technologies effectively to improve efficiency, accuracy, and overall financial performance within their organizations.
- **Consultants:** Consultants advising financial institutions and businesses on strategy and technology adoption will find this study highly relevant. AI's transformative potential in financial decision-making presents new avenues for consultancy services. The research provides consultants with a comprehensive overview of how AI can be integrated into financial strategies, risk management, and operational improvements. This knowledge enables consultants to offer informed recommendations on AI adoption, ensuring that their clients can navigate the complexities of AI implementation while achieving strategic goals.
- **Entrepreneurs:** Entrepreneurs looking to innovate in the financial sector or start AI-driven financial services will find this study instrumental. Understanding AI's role in financial decision-making helps entrepreneurs identify opportunities for new products and services, particularly those that leverage AI for enhanced

financial analysis, customer engagement, and risk management. The research offers insights into market trends and technological advancements, aiding entrepreneurs in developing cutting-edge solutions that address emerging needs and capitalize on AI's capabilities.

- **For researchers:** For researchers, this study contributes to the growing body of knowledge on AI's applications in finance. It provides a detailed examination of how AI is reshaping financial decision-making processes and identifies gaps in existing literature. Researchers can build upon the findings to explore further areas of study, such as the ethical implications of AI in finance, its impact on financial stability, and the effectiveness of different AI techniques. This research supports ongoing academic inquiry and encourages the development of new methodologies and frameworks for studying AI in financial contexts.
- **Students:** Students pursuing studies in finance, computer science, or data analytics will benefit from this research by gaining a deeper understanding of how AI technologies are applied in the financial industry. The study offers practical insights into AI's impact on financial decision-making, which can be valuable for academic projects, internships, and future careers. By examining real-world applications and challenges of AI in finance, students can better prepare for careers in a rapidly evolving field where AI plays a central role.
- **Academicians:** Academicians involved in teaching and research will find this study useful for curriculum development and scholarly work. The research highlights current trends, challenges, and applications of AI in finance, offering a comprehensive resource for academic instruction and further study. It provides a foundation for discussions on the integration of AI technologies in financial education, helping academicians prepare students for the evolving landscape of financial decision-making and fostering a deeper understanding of AI's role in shaping future financial practices.

1.5 Limitations of the Study

The limitation of study are as follows:

- The study relies exclusively on primary data collected from AI users in the Kathmandu Valley. This approach may introduce biases inherent in self-reported data and limit the generalizability of findings to other regions or user groups.

- With a sample size of only 400 participants, the study's findings may not fully represent the broader population of AI users. This limited sample size could affect the reliability and validity of the results.
- The study focuses solely on AI users within the Kathmandu Valley, potentially overlooking variations in AI usage and its impacts in other regions of Nepal or different demographic groups.
- The use of convenience sampling may introduce selection bias, as the sample may not accurately reflect the diverse population of AI users. This method might lead to overrepresentation of certain groups and limit the study’s external validity.
- The use of descriptive and causal-comparative research designs may restrict the depth of causal inferences that can be drawn. While these designs provide valuable insights into relationships and trends, they may not fully account for underlying causal mechanisms or confounding variables.

CHAPTER II
LITERATURE REVIEW

The literature review of this study provides a comprehensive examination of related concepts, terms, previous research articles, and theoretical frameworks pertinent to the role of artificial intelligence (AI) in financial decision-making. It encompasses a thorough review of relevant theories, empirical studies, and key journals that contribute to the understanding of AI's impact on financial practices. Additionally, the literature review identifies research gaps by highlighting areas where existing studies may be lacking or where further investigation is needed. This approach ensures a well-rounded analysis of the subject matter and situates the current study within the broader context of existing knowledge.

2.1 Theoretical Review

2.1.1 Artificial Intelligence

Artificial Intelligence (AI), also known as Machine Intelligence, involves applying cognitive abilities by technology and machines to replicate human-like intelligence. Broadly, AI includes techniques such as machine learning, soft computing, deep learning, and computational intelligence (Hamza, 2022). The definition of AI has been a topic of extensive debate due to its diverse scope. According to Stuart Russell and Peter Norvig in Artificial Intelligence: A Modern Approach, AI can aim to create systems that think like humans, act like humans, think rationally, or act rationally. These definitions often revolve around two main dimensions: reasoning or rationality and behavior or humanism (Hastie, Tibshirani, Friedman, & Friedman, 2009).

The concept of AI began to take shape in the 1950s, with British mathematician Alan Turing envisioning "thinking machines" that could perform at human levels (Jordan & Mitchell, 2015). Turing's idea was that, just as humans use information and reasoning to solve problems, machines could be designed to do the same (Jobin, Ienca, & Vayena, 2019). This early concept led to the development of the first AI program in the late 1950s, which aimed to mimic human problem-solving abilities, funded by The Research and Development Corporation (Koskivaara, 2004). Since then, AI technology has rapidly advanced, with notable progress in the 1970s, 1980s, and 1990s, and major technology firms like Apple have increasingly invested in AI for various business applications (Leonardi, 2021).

As technology rapidly advances, artificial intelligence (AI) has become increasingly influential in the finance sector, reshaping traditional decision-making processes. AI, which refers to machines and computer programs that emulate human intelligence, is broadly categorized into narrow AI, designed for specific tasks like image recognition, and general AI, which aims to replicate human cognitive abilities. Historically, AI has been applied in various domains such as chatbots for customer service, fraud detection, and autonomous vehicles (Betz, 2024; Chen & Du, 2009).

In finance, AI's potential to revolutionize decision-making is significant. AI algorithms, particularly those leveraging machine learning, can analyze extensive datasets to uncover patterns and trends, enhancing investment strategies and risk management (Asere & Nuga, 2024). AI's continuous operation without fatigue allows financial institutions to process transactions more efficiently and monitor real-time market conditions, which aids in quick risk management and reduces errors related to manual processing (Davenport & Ronanki, 2018). The technology also supports automated trading systems that execute trades based on predefined criteria, improving investment accuracy and efficiency (Chen & Chen, 2016).

Despite its advantages, AI in finance presents risks. One major concern is the potential for AI systems to develop and perpetuate biases present in their training data, which can impact decision-making processes (Floridi et al., 2018). Additionally, errors may arise from unforeseen circumstances, and there is a need for greater transparency in AI decision-making to build trust among stakeholders (Gorowara et al., 2024). Cybersecurity also poses a threat as financial institutions increasingly rely on AI systems, necessitating robust security measures to protect against cyberattacks (Daube, 2024).

Looking forward, AI is expected to further transform financial decision-making by integrating more deeply into financial systems, leading to increased automation in wealth management, trading, and lending (Gounopoulos et al., 2023). Blockchain technology may also enhance transparency and security, potentially reshaping investment strategies. However, concerns such as job displacement, bias, and cybersecurity will need to be addressed to fully realize AI's benefits (Autor & Salomons, 2018). As AI continues to evolve, its role in finance will likely expand, offering new opportunities for those who adeptly balance the benefits with the associated risks (Bates, Du, & Wang, 2020).

2.1.2 The Theory of Neural Network

Artificial neural networks (ANNs) have emerged as a fundamental element in contemporary research models, particularly due to their adeptness at managing multiple variables and intricate interactions. As an integral aspect of artificial intelligence, ANNs have gained significant traction in sectors like finance and economics (Chen & Du, 2009). These networks mimic biological neural networks, where nodes act as neurons and links serve as synapses. By assigning weights to these connections, ANNs replicate learning processes, thereby facilitating functions such as learning, association, memory, and pattern recognition. This capacity allows ANNs to acquire knowledge from their environment and evolve into systems with learning capabilities that surpass the initial design knowledge (Koskivaara, 2004; Tsai & Wu, 2008; Wong et al., 2000).

Additionally, ANNs exhibit self-adaptation and self-organization properties. During training, the adjustment of synaptic weights enables the network to adapt to its environment, resulting in diverse network functions based on different learning methods and content (Koskivaara, 2004; Tsai & Wu, 2008; Wong et al., 2000). Learning methods for ANNs are generally classified into supervised and unsupervised learning. In supervised learning, predefined sample standards guide classification or imitation, whereas unsupervised learning allows the network to uncover environmental features and patterns autonomously without predefined classifications (Koskivaara, 2004; Tsai & Wu, 2008; Wong et al., 2000).

An ANN's structure typically includes three primary layers: the input layer, hidden layer, and output layer. The input layer introduces external data, representing independent variables, while the output layer conveys the data as dependent variables (Koskivaara, 2004). The hidden layer, which does not have direct environmental connections, processes signals from the input layer and passes them to the output layer, thereby facilitating effective data analysis (Chen & Du, 2009).

Data used in ANN applications are usually divided into training, validation, and test sets. The training set is employed to train the network, with the effectiveness set and classifier weight determining the number of hidden units. The test set is then used to assess the training process's performance. Typically, 80% of the data is allocated to training, 10% to validation, and 10% to testing, ensuring thorough evaluation and robust training of the ANN (Chen & Du, 2009).

Compared to logistic regression, ANNs offer several advantages, such as requiring less formal statistical training and the ability to identify complex nonlinear relationships between variables. They can detect all potential interactions among predictive variables and employ various training algorithms to enhance performance. Additionally, the development and implementation of ANNs are often simpler and more rapid than traditional accounting expert systems (Tsai & Wu, 2008). These features highlight the versatility and efficacy of ANNs in diverse research and practical applications, reinforcing their value in decision-making processes across various fields.

2.1.3 Artificial Intelligence in Financial Services and Markets

As we live in a technology-driven, financially complex society, financial markets are increasingly integrating Artificial Intelligence (AI) across various domains, including underwriting, risk management, quantitative trading, personalized banking, cybersecurity, and fraud protection (Hunt, 2020). Underwriting, which involves assuming financial risk for a fee, traditionally handled investments, loans, and insurance. AI transforms underwriting by shifting from a detect-and-repair approach to a predict-and-prevent philosophy, enabling more accurate and rapid risk assessments (Miziołek, 2021). In risk management, AI enhances compliance and analytical capabilities by managing and evaluating both structured and unstructured data, improving the timeliness of risk identification (Prasad & Seetharaman, 2021).

Quantitative trading leverages AI to apply mathematical and statistical models for identifying and executing trading opportunities, aiding traders with more accurate risk predictions and decision-making processes (Qian, Fan, Li, Zhou, & Ding, 2024). The impact of AI extends to banking interactions, as financial institutions adapt to digital transformations and mobile banking to meet the tech-savvy demands of millennials. Social media analytics has become a crucial tool for banks to refine product development, marketing strategies, and competitive analysis by analyzing extensive data sets (Palmer, 2020). AI also plays a vital role in cybersecurity, detecting and responding to potential threats more efficiently, thus safeguarding businesses against cybercrime and system disruptions (O'neil, 2017; Pramod & Raman, 2022).

2.1.4 Pros and Cons of Artificial Intelligence

Artificial Intelligence (AI) offers numerous advantages, fundamentally altering how we work and live. One significant benefit of AI is its ability to enhance efficiency and time

management. By automating routine tasks, AI allows employees and customers to operate in a more fast-paced and productive environment, reducing both time and financial costs (Wall, 2017). AI systems can process vast amounts of data without fatigue, leading to fewer errors and higher accuracy in operations and decision-making. This increased efficiency is complemented by advancements in analytics, which provide deeper insights and better data access than ever before (Hunt, 2020). Additionally, the expansion of AI has created numerous job opportunities globally, fostering economic growth and innovation.

However, the integration of AI also presents several challenges. The initial cost of implementing AI systems is high, encompassing not only the purchase and installation but also ongoing maintenance and upgrades to keep pace with technological advancements (Hunt, 2020). Despite their capabilities, AI systems lack human-like qualities such as emotions, moral values, and judgment skills. This limitation means that while AI can replicate certain human functions, it cannot truly understand or adapt in the same way humans can. Over time, repetitive tasks performed by AI may lead to decreased performance efficiency due to wear and tear without intervention (Wall, 2017).

Moreover, AI's impact on creativity and employment must be considered. Although AI assists in various tasks, it does not possess the creativity or problem-solving abilities inherent to the human mind. In industries where innovation and creative thinking are crucial, AI's limitations become apparent (Colagrossi, 2019). Additionally, the rise of AI has led to job displacement in some sectors, as automated systems replace human labor. For example, a report by Wells Fargo & Co. predicts significant job losses due to the shift from labor to capital in the coming decade (Colagrossi, 2019).

Overall, while AI offers transformative benefits, it also presents challenges that must be managed. As AI continues to evolve, balancing its advantages with its limitations and societal impacts will be crucial for ensuring that technological progress aligns with human values and needs (Hunt, 2020).

2.1.5 Type of Artificial Intelligence

Artificial Intelligence (AI) exhibits various types of intelligence that are increasingly relevant in the business domain. Cognitive intelligence is a fundamental aspect of AI, enabling it to perform tasks such as pattern recognition and systematic thinking (Kaplan & Haenlein, 2019). This form of intelligence mirrors human cognitive abilities,

encompassing a range of functions including perception, reasoning, learning, interaction with the environment, problem-solving, decision-making, and even creativity (Rai, Constantinides, & Sarker, 2019). Essentially, cognitive intelligence in AI allows machines to carry out complex tasks that typically require human intelligence. Following are the type of Artificial Intelligence.

2.1.5.1 Emotional Intelligence

Emotional intelligence, while not indicative of actual emotional experiences in machines, involves the capability of AI to detect and interpret human emotions. AI systems can be trained to recognize emotions through facial expressions and adapt their responses accordingly. This form of intelligence necessitates that AI not only identify emotions but also exhibit adaptability and self-awareness, adjusting interactions based on the detected emotional states (Kaplan & Haenlein, 2019). Emotional intelligence in AI enhances its ability to engage more effectively with users by mimicking emotional responses.

2.1.5.2 Social Intelligence

Social intelligence represents a more advanced level of AI capability, involving the understanding of social dynamics and interactions. This type of intelligence extends beyond emotional recognition to include skills like empathy, teamwork, and leadership. AI with social intelligence can interpret and respond to the mental states of individuals and navigate complex social environments (Schröder & Mckeown, 2010). It requires AI to simulate human-like social behaviors, making it more adept at interacting within diverse and intricate social contexts (Kaplan & Haenlein, 2019).

The distinction between AI and expert systems is crucial. Expert systems operate based on predefined rules coded by humans. For example, an expert system designed to identify human faces would rely on specific criteria such as nose shape and eye presence. In contrast, AI systems learn to perform tasks through exposure to large datasets, akin to how a child learns to recognize faces by seeing numerous examples. This learning-based approach allows AI to handle more complex tasks compared to rule-based expert systems (Kaplan & Haenlein, 2019).

Historically, early AI systems emulated human behavior through rule-based logic, where outcomes were dictated by set algorithms. Modern AI, however, uses a data-driven approach that enables it to learn from data patterns and make decisions without explicit

programming of each decision point (Bauguess, 2017). AI can be categorized into three types based on its intelligence competencies:

- **Analytical AI:** This type focuses solely on cognitive intelligence, utilizing past experiences to inform future decisions. It is prevalent in business applications like fraud detection in finance (Kaplan & Haenlein, 2019).
- **Human-inspired AI:** Capable of both cognitive and emotional intelligence, this AI can consider emotional factors in decision-making. For instance, Affectiva's technology uses vision techniques to detect emotions, enhancing interactions in areas such as recruitment and customer service (Kaplan & Haenlein, 2019).
- **Humanized AI:** The most advanced form, integrating cognitive, emotional, and social intelligence. This AI is envisioned to be self-aware and capable of complex social interactions but remains a future development project (Kaplan & Haenlein, 2019).

2.1.6 Financial Decision Making

Financial decision-making has been significantly influenced by artificial intelligence (AI) in recent years, transforming how individuals and organizations approach investment, risk assessment, and management. The integration of AI into financial systems allows for more precise predictions, improved risk management, and streamlined operations. As AI technologies evolve, they have become integral in predicting stock market trends, detecting financial fraud, and optimizing investment portfolios (Daube, 2024). By leveraging vast datasets, AI models enable investors to make data-driven decisions that minimize risks and enhance profitability.

One of the key applications of AI in financial decision-making is fraud detection. Financial institutions rely on neural networks and machine learning algorithms to detect irregularities in financial reports and transactions. Cerullo and Cerullo (1999) have demonstrated that neural networks can predict financial fraud with greater accuracy than traditional methods. These systems analyze vast amounts of historical data to identify patterns that might indicate fraudulent activities, providing financial institutions with an early warning system. This application not only reduces financial losses but also builds trust among consumers by ensuring the integrity of financial transactions.

AI has also revolutionized investment strategies. Traditional investment decisions were often based on market sentiment and historical data analysis by human experts. However, with AI, investment decisions are now informed by sophisticated pattern recognition models that analyze large volumes of data to predict future stock market trends (Chen & Chen, 2016). These AI-driven models consider numerous factors, such as market volatility, economic indicators, and corporate performance, providing investors with a more comprehensive view of potential investment opportunities. As a result, AI-enhanced decision-making leads to better-informed investment strategies, reducing the risk of financial loss.

Furthermore, AI's role in portfolio optimization has led to more personalized financial planning. AI algorithms can evaluate individual risk tolerance, financial goals, and market conditions to develop tailored investment strategies. This level of personalization was previously unattainable through traditional methods. Betz (2024) emphasizes that AI's ability to manage large datasets and provide real-time insights enables financial advisors to offer clients customized investment solutions that adapt to changing market dynamics. This has improved investor confidence and satisfaction, as decisions are made based on real-time data rather than historical performance alone.

However, the increasing reliance on AI in financial decision-making comes with challenges. One major concern is the potential for AI to replace human roles in the financial industry. Colagrossi (2019) highlights that AI-driven automation could lead to significant job losses in banking, as many tasks traditionally performed by humans, such as data analysis and risk assessment, can now be automated. This raises ethical considerations around the displacement of workers and the need for reskilling in the financial sector. While AI offers undeniable advantages in decision-making, its impact on employment remains a topic of concern.

2.1.7 Challenges in Financial Decision Making

Financial decision-making, especially in the context of utilizing advanced technologies like artificial intelligence (AI), faces several challenges that influence the effectiveness and efficiency of such processes. One of the significant challenges is the complexity of integrating AI systems into existing financial frameworks. Financial institutions are often reluctant to replace legacy systems that have been in place for decades, making it difficult to fully capitalize on the benefits of AI (Davenport & Ronanki, 2018). This challenge is

compounded by the significant cost of implementation and the required technical expertise, which many institutions may lack. As AI continues to evolve, financial organizations face the risk of falling behind in technological advancements, leading to missed opportunities for improved decision-making and operational efficiencies (Daube, 2024).

Another pressing issue is the inherent limitations of AI models when applied to financial decision-making. While AI excels at analyzing historical data and identifying trends, it struggles with predicting market anomalies and unprecedented events such as financial crises or pandemics. According to Coskun (2022), AI systems may fail to provide accurate predictions during market turbulence, as these systems are often reliant on historical data patterns. This limitation highlights the need for human intervention and expertise in financial decision-making, as AI alone cannot account for all variables that influence market behavior. The challenge, therefore, lies in striking the right balance between AI-driven insights and human judgment in complex financial scenarios.

Data privacy and security present another challenge for financial decision-making in the age of AI. Financial institutions must process massive amounts of sensitive data to train AI algorithms. However, as Kunwar (2019) points out, the risk of data breaches and cyberattacks increases with the growing reliance on AI, posing significant security concerns. Additionally, the ethical use of customer data in AI systems remains a critical issue. Financial organizations are tasked with ensuring that AI systems are designed and implemented in a way that respects customer privacy and complies with regulatory requirements, which adds another layer of complexity to decision-making processes.

The challenge of AI explainability is also crucial in financial decision-making. AI models, particularly neural networks, often operate as "black boxes," where the decision-making process is not easily understandable or transparent (Chen & Du, 2009). This lack of transparency poses significant problems in financial sectors, where decisions need to be clearly justified to stakeholders, regulators, and customers. The inability to fully explain how AI arrives at specific decisions can undermine trust in these systems, making it difficult for financial professionals to rely solely on AI for critical decisions. To address this issue, organizations must invest in improving AI explainability and creating systems that can provide clear and interpretable outputs.

Finally, the potential for AI to displace human workers in the financial sector remains a substantial challenge. Colagrossi (2019) notes that AI-driven automation could lead to significant job losses in the banking industry, especially in roles related to data processing, analysis, and routine decision-making tasks. While AI offers cost savings and efficiency gains, the human cost in terms of job displacement cannot be ignored. This challenge calls for a balanced approach where AI complements human expertise rather than replaces it, and for financial institutions to invest in reskilling their workforce to thrive in an AI-driven environment.

2.1.8 The Future of Artificial Intelligence

Artificial Intelligence (AI) has already made significant strides in various industries and continues to reshape the future of technology and human interaction. AI is gradually infiltrating sectors like transportation, healthcare, manufacturing, education, media, and customer service, becoming an integral part of these industries' operations. Despite its growing influence, concerns have arisen regarding AI's impact on humanity. As noted by Pew Research Center, experts predict that AI will amplify human effectiveness while simultaneously threatening human autonomy, agency, and capabilities (Anderson & Rainie, 2018). By 2030, it is anticipated that individuals will be even more reliant on AI within complex digital systems, making adaptation to this technology increasingly critical.

AI possesses immense potential to either revolutionize or disrupt various industries. The technological advancements it brings are boundless, offering opportunities for innovation but also raising concerns about the future of work and human agency. AI-driven systems, such as Siri and self-driving cars, are rapidly advancing and transforming the way society operates. In finance and other sectors, the power of AI is both exhilarating and daunting, particularly as it shapes financial markets and services. Dr. Kai-Fu Lee, a leading AI expert, emphasized the profound impact AI will have on society, claiming, “Artificial Intelligence is going to change the world more than anything in the history of mankind. More than electricity” (Thomas, 2020).

As AI continues to progress, it is crucial for both workers and consumers to adapt to this "new normal" of heightened technological integration. The future workforce must be equipped with the skills necessary to operate alongside AI, as the technology is expected to drive significant changes in business models and industry practices. Similarly,

consumers must become more comfortable with AI-enhanced services, as they will increasingly encounter AI in daily life. AI's role as a key driver of emerging technologies will further shape business operations, creating both challenges and opportunities for industries to harness its capabilities.

Looking forward, AI is set to remain at the forefront of technological innovation, influencing not only business and markets but also human interactions. While AI brings forth a new era of possibilities, it also requires society to be prepared for the ethical, social, and economic implications that come with it. As AI continues to evolve, it will be vital for individuals, businesses, and governments to stay informed and proactive, ensuring that the benefits of AI are maximized while addressing the challenges it poses.

2.1.9 Benefits of Optimum Financial Decision Making

Optimum financial decision-making is crucial in ensuring long-term success and sustainability for organizations and individuals alike. By utilizing cutting-edge technologies such as artificial intelligence (AI), decision-making in finance has evolved significantly. One of the key benefits is the ability to enhance the return on investment (ROI). Fraisse and Laporte (2022) highlight how the adoption of AI in banking has transformed financial decision-making, specifically in bank capital requirements. Their research demonstrates that AI-powered systems can effectively evaluate risks and potential outcomes, leading to more informed decisions and greater returns on investments. This capability ensures that organizations allocate resources efficiently and make decisions that positively impact profitability.

Another benefit is the increased accuracy in predicting financial trends and market behaviors. Gorowara, Singla, Chaudhry, Malik, and Mittal (2024) emphasize that AI-based forecasting tools have revolutionized the ability to analyze vast amounts of financial data. These systems can predict market trends with a high degree of precision, enabling investors to make informed decisions and reduce risks. This predictive capability enhances investment strategies, as stakeholders can anticipate market shifts and adjust their portfolios accordingly. By leveraging AI's analytical power, companies can make better decisions, minimize losses, and capitalize on profitable opportunities in volatile markets.

Furthermore, AI-driven financial decision-making contributes to ethical and sustainable investments. Gazali et al. (2020) explored the application of AI in Islamic investments,

emphasizing its role in ensuring compliance with ethical standards. Through AI, financial institutions can identify investment opportunities that align with specific ethical or religious principles, fostering trust and attracting a wider range of investors. This adherence to ethical guidelines not only helps maintain organizational integrity but also enhances investor confidence, which can lead to a more stable financial environment. Ethical investing is becoming increasingly important, and AI provides a mechanism for ensuring investments align with these values.

Lastly, AI enhances decision-making by reducing cognitive biases that often affect human judgment. Gounopoulos, Huang, Wood, and Zhang (2023) discuss how AI minimizes emotional and cognitive biases that typically influence financial decisions. Human decision-makers are often swayed by emotions, overconfidence, or short-term thinking, which can lead to suboptimal outcomes. AI systems, on the other hand, rely on data-driven insights and statistical analyses, offering more objective and unbiased recommendations. This reduction in bias allows for more rational and consistent decision-making, leading to better financial performance over time.

Overall, optimum financial decision-making powered by AI offers numerous benefits, including enhanced ROI, improved accuracy in forecasting market trends, ethical and sustainable investment opportunities, and the reduction of cognitive biases. As financial technologies continue to evolve, the role of AI in decision-making will become even more integral, shaping the future of finance and ensuring more informed, data-driven decisions for businesses and individuals alike.

2.1.10 Financial Decision Making and Artificial Intelligence

Artificial Intelligence (AI) has increasingly influenced financial decision-making processes, offering both opportunities and challenges for investors and financial institutions. One key advantage is AI's ability to enhance forecasting and analysis, leading to more informed investment decisions. AI-driven models and algorithms can analyze vast amounts of data quickly and accurately, identifying trends and patterns that might be missed by human analysts. For instance, AI can process market data to predict price movements and economic shifts, enabling more strategic investment planning (Gorowara et al., 2024). This capability not only improves the precision of financial forecasts but also allows for real-time adjustments based on emerging market conditions.

However, the integration of AI into financial decision-making is not without its drawbacks. The complexity of AI systems and the reliance on historical data for predictions can introduce risks. As highlighted by Fraisse and Laporte (2022), while AI can offer insights into capital requirements and investment returns, its recommendations are heavily dependent on the quality and scope of the data used. Inaccurate or incomplete data can lead to flawed predictions, which might adversely impact investment strategies and financial stability. Additionally, the opacity of some AI algorithms makes it challenging for decision-makers to understand and trust the rationale behind AI-generated recommendations (Floridi et al., 2018).

Moreover, the ethical implications of AI in finance are significant. As AI systems become more sophisticated, they raise questions about fairness, accountability, and transparency in financial decision-making. Jobin, Ienca, and Vayena (2019) emphasize the importance of developing ethical guidelines to ensure that AI applications in finance uphold standards of equity and integrity. The use of AI must be carefully managed to prevent biases and ensure that financial decisions are made with consideration for all stakeholders involved. Balancing the benefits of AI with its potential risks and ethical considerations is crucial for harnessing its full potential in financial decision-making while safeguarding against unintended consequences.

2.2 Empirical Review

Akour et al. (2024) examined the impact of artificial intelligence (AI) dimensions, including natural language processing, machine learning, expert systems, and computer vision, on the financial decisions of pharmaceutical companies in Jordan. The study aimed to assess how these AI components influence financial decision-making processes within this sector. Utilizing a cross-sectional approach, the researchers conducted a comprehensive survey with 148 accountants and financial managers from companies listed on the Amman Stock Exchange, achieving a response rate of 81.3%. The research employed structural equation modeling to analyze the collected quantitative data. The findings revealed that the various dimensions of AI positively impacted financial decisions, underscoring the necessity for companies to invest in robust AI infrastructure and skills. The study highlighted the importance of access to advanced AI technology, data analysis tools, and cloud computing resources in enhancing financial decision-making. Furthermore, it suggested that addressing data privacy concerns, promoting

ethical AI research, and fostering collaboration could help Jordan's pharmaceutical sector fully leverage AI's potential in financial decision-making.

Gorowara et al. (2024) examined investors in predicting market trends and making informed investment decisions using an AI-based approach. Their research employed a two-stage method, starting with normalizing financial data through an Improved Hierarchical Clustering algorithm that incorporates contextual and temporal aspects. This was followed by using the Bi-LSTM model for prediction and classification to identify sequential patterns and forecast financial data. Training the Bi-LSTM model with historical and prospective data proved effective in providing valuable insights for investment decisions. Validation with historical data showed that this approach outperformed other methods in accuracy. The study proposed a detailed plan for integrating clustering and deep learning techniques to advance AI-based financial forecasting.

Sedky (2024) examined how artificial intelligence (AI) can enhance decision-making capabilities for business leaders, guided by Herbert Simon's decision-making theory. Using a multiple case study approach, the research involved semi-structured interviews with three business leaders from the real estate industry in the United States and the UAE. The study aimed to understand the role of AI in improving decision-making, especially in high-risk scenarios. Findings indicated that AI offers significant advantages, such as better decision-making capabilities, reduced risk of business failure, increased business opportunities, and positive effects on community stability and growth. The study recommended that companies invest in AI technologies to support business leaders in making more informed and strategic decisions, thereby ensuring business sustainability and growth.

Qian et al. (2024) explored the use of artificial intelligence (AI) in enhancing investment decision-making within the Chinese A-share Market. Their research aimed to assess AI's potential in increasing efficiency, lowering costs, and mitigating investment risks. They started by reviewing existing securities investment theories and comparing them based on analysis methods and trading strategies. The study then examined various machine learning technologies in AI, particularly their applications in the investment sector. By applying established machine learning techniques to trading data and financial information of listed companies, the researchers developed and tested experimental models. The results demonstrated the feasibility of using AI for predicting and analyzing

stock markets. The study concluded with recommendations tailored to the A-share market, based on the findings.

Asere and Nuga (2024) examined of the potential of Artificial Intelligence (AI) and Machine Learning (ML) in trend prediction and investment decision-making. Their research addressed the challenges of the complex and dynamic financial market by leveraging AI and ML techniques for data-driven approaches. The study assessed not only the predictive abilities of AI and ML but also their use in risk assessment and portfolio optimization. The findings are significant for stakeholders in the financial sector, including individual investors, fund managers, and financial institutions. The research highlighted the potential benefits of improved decision-making processes, better risk management strategies, and enhanced portfolio performance.

Rehman et al. (2024) examined the effect of Emotional Intelligence (EI) on investment decisions (ID) with a focus on the mediating role of Artificial Intelligence (AI). Their primary goal was to analyze the complex interactions among EI, AI, and ID within financial decision-making. Through empirical analysis, the researchers assessed how human emotional intelligence directly influences investment choices and explored AI's mediating role in this relationship. The study found that EI impacts ID both directly and indirectly through AI. Specifically, emotional awareness was shown to significantly affect investor decision-making, with AI playing a notable role in this process. However, AI only partially mediates the connection between emotional intelligence and investment decisions. These results highlight the significance of combining emotional insights with technological tools in financial strategies, offering valuable perspectives for financial practitioners, policymakers, and researchers on the interplay between human intuition and AI in investment decisions.

Aithal (2023) explored the applications of artificial intelligence in banking practices, with a focus on how AI enhances productivity and competitiveness within Indian public sector banks. The study employed both descriptive and analytical research designs, utilizing a standardized questionnaire administered to 150 bank employees. To ensure the validity and reliability of the study, Aithal conducted a pilot survey and Cronbach's Alpha test, and analyzed the collected data using correlation analysis, multiple regression analysis, and Multicollinearity. The findings revealed that AI significantly impacts various banking practices, with Chatbots, Robo Advice, Predictive Analytics, Cyber Security, and Credit Scoring emerging as key predictors of banking practices, accounting for 64% of the

variance. This research highlighted that AI applications are crucial in driving digital transformation and modernizing banking operations, demonstrating their substantial role in enhancing the efficiency and effectiveness of banking services.

Maharani and Rahardiansyah (2023) explored how artificial intelligence (AI) integrates into investment decision-making, focusing on both its advantages and challenges. The study highlighted that AI enhances investment decisions through efficient data analysis, advanced algorithms, improved risk management, and unbiased decision-making processes. However, it also noted challenges such as data limitations, human interpretation issues, security and privacy concerns, and the risk of errors. The study emphasized the potential for AI to facilitate intelligent and informed investment decisions while addressing these challenges to optimize investment strategies and outcomes.

Manrai and Gupta (2023) examined investor perceptions of adopting artificial intelligence (AI) technology in investment services in India. Using the Technology Acceptance Model (TAM) as a framework, the research incorporated subjective norms and trust in both the service and service provider as critical factors influencing the intention to adopt AI-based investment services. Data was collected from 252 stock market investors in Delhi NCR. The study found that trust in the service and subjective norms, along with perceived usefulness, ease of use, and attitudes, were significant predictors of AI adoption. The findings highlighted the importance of trust and social influence in shaping investor behavior and provided insights for service providers to attract more clients and gain a competitive edge.

Yalamati (2023) examined the impact of artificial intelligence (AI) on individual investors' performance in achieving capital gains in the stock market. The study used a mixed-methods approach, integrating quantitative analysis of trading data with qualitative insights from investor experiences. The primary objective was to evaluate how AI-driven tools and algorithms affect investment strategies and outcomes for individual investors. The research aimed to identify patterns in AI usage, explore the correlation between AI-based decisions and investment performance, and analyze the psychological and behavioral aspects of how investors interact with AI tools.

Gounopoulos et al. (2023) analyzed the influence of artificial intelligence (AI) on corporate investment decisions, specifically focusing on mergers and acquisitions (M&As) in the US. The study aimed to determine whether firms that replace human

workers with AI are more inclined to pursue aggressive investment strategies, such as M&As. The empirical analysis revealed that firms more susceptible to AI automation tend to engage in more aggressive investment behaviors. Additionally, the study examined how internal and external corporate governance mechanisms moderate the relationship between AI automation and M&A activities. The findings, robust against selection bias and endogeneity issues, contribute to understanding the connection between AI and market concentration.

Adebiyi et al. (2022) analyzed the construction of an optimized investment portfolio using historical stock price data from firms listed on the Nigerian exchange market. Applying a genetic algorithmic approach, the researchers formulated the portfolio selection as a mathematical programming task aimed at maximizing returns, measured by the Sharpe ratio. The study demonstrated that genetic algorithms could effectively optimize portfolio allocations, helping investors achieve optimal risk-return profiles. The research provided a guide for assessing and implementing portfolios, enhancing investors' ability to make informed decisions and navigate investment complexities.

Al-Sartawi et al. (2022) examined the role of artificial intelligence (AI) in sustainable finance, aiming to show how AI can assist creditors, investors, and business managers in making decisions that promote long-term financial sustainability. By synthesizing findings from various articles, the study highlighted AI's importance in addressing sustainability challenges and opportunities. The researchers emphasized AI's broader implications for sustainable investments and financial decision-making, beyond merely solving problems. The study contributed to understanding AI's value in fostering sustainable finance practices and leveraging technological advancements to address sustainability concerns.

Fraisse and Laporte (2022) examined the return on investment (ROI) of artificial intelligence (AI) concerning bank capital requirements. The study aimed to evaluate the impact of various AI techniques, including random forest, gradient boosting, ridge regression, and neural networks, on changes in bank capital requirements for predicting corporate defaults. By comparing these AI methodologies with the traditional logistic regression models, the research highlighted significant differences in compliance test performance and capital requirement impacts. Although neural networks showed similar performance in compliance tests as traditional models, they offered the greatest potential

for reducing capital requirements, emphasizing AI's ability to enhance risk management and optimize capital allocation in banking.

Coşkun (2022) examined the role of artificial intelligence (AI) in investment decisions and its application within the Turkish finance industry. The study aimed to evaluate the effects of AI techniques on investors' decision-making processes in Turkey and compare them with EU practices. Through a comparative approach, the researcher reviewed existing AI policy frameworks and industry practices, finding that AI techniques outperformed traditional models in several aspects. The study provided insights into AI's potential to enhance decision-making efficiency and suggested areas for improvement in the Turkish finance sector. The findings contributed to understanding AI's evolving role in investment decisions and offered recommendations for policymakers and practitioners.

Alasmri and Basahel (2022) examined the effects of artificial intelligence (AI) on decision-making processes and its subsequent impact on Organizational Performance (OP), Individual Productivity (IP), and Organizational Culture (OC). Utilizing a quantitative approach and the Statistical Package for Social Sciences (SPSS) software, the study analyzed data from 133 management-level participants in Saudi organizations. The results showed that AI significantly enhances decision-making, positively affecting OP, IP, and OC. The study emphasized the benefits of AI in improving decision-making effectiveness and organizational outcomes and provided practical recommendations for leveraging AI to drive organizational change and performance improvements.

Röhm et al. (2022) explored the impact of artificial intelligence (AI) on the investment decision process within venture capital (VC) firms. The study aimed to identify the challenges, opportunities, current practices, and future potential of AI adoption in relation to the VC investment funnel. Using qualitative analysis, the researchers conducted 17 expert interviews with early-stage VC investors and academic researchers. They found that while many VC firms have not fully adopted AI, some use data-driven decision support. Challenges such as limited resources hinder broader AI adoption. Among the firms that do use AI, the focus is primarily on improving sourcing and screening processes and increasing portfolio diversity. The study also noted a growing trend of AI adoption in VC firms, driven by emerging affordable AI tools from third-party providers.

Hamza (2022) examined the impact of organizational and behavioral factors on CEOs' choices regarding investment horizons, using artificial intelligence methods. The study

examined 100 Saudi firms, focusing on organizational determinants (ownership concentration, board independence, CEO remuneration) and behavioral determinants (myopia, locus of control, commitment). The primary goal was to identify key factors influencing CEOs' investment horizon decisions. The findings revealed that commitment bias was the most significant factor affecting long-term investment choices. The study also found a positive relationship between myopia and long-term investment behavior, while the locus of control had minimal impact. The research provided insights into how cognitive and structural factors influence CEOs' investment decisions.

Pramod and Raman (2022) examined the intention of postgraduate students with fintech experience to use artificial intelligence (AI) tools for financial investment decisions. The study aimed to assess how technology readiness and awareness of AI in financial sectors influenced their intention to use AI tools. The researchers explored factors such as optimism towards technology, innovative approach, technological uneasiness, and trust in technology. The findings indicated that a positive attitude towards technology and awareness of AI positively affected students' intentions to use AI for investment. Conversely, uneasiness and lack of trust negatively impacted their intention. The study highlighted the importance of addressing trust and ease-of-use issues to promote AI adoption in financial decision-making.

Miziołek (2021) examined the use of artificial intelligence (AI) in investment management, particularly in the exchange-traded fund (ETF) market. The study aimed to provide a comprehensive understanding of AI's theoretical and practical applications in enhancing investment processes. By analyzing various AI techniques, including machine learning and natural language processing, the research highlighted how AI can improve investment research and management. The study found growing adoption of AI among ETF sponsors and asset managers, particularly in the US and Europe, emphasizing AI's potential to revolutionize investment strategies.

Rutkauskas et al. (2021) explored the efficiency of investment portfolios through artificial intelligence (AI). The study developed a stochastic investment system that combined AI with stochastic methodologies to address financial market investment challenges. Using historical data from the US stock market (2019-2020), the study proposed and assessed an investment portfolio based on return and reliability. The findings indicated that portfolios could be optimized to reflect varying risk levels according to investor risk tolerance. This

novel approach to portfolio management, integrating AI with stochastic expertise, offers valuable insights for enhancing investment portfolio efficiency.

Ren (2021) examined the application of artificial intelligence (AI) algorithms in financial investment decision-making. The study focused on how AI technology could improve the accuracy, automation, and timeliness of financial decisions. It highlighted the limitations of traditional decision support methods and demonstrated the transformative potential of AI in financial decision-making processes. By integrating AI into financial services, the research suggested enhanced reliability and competitiveness for the financial industry, advocating for the adoption of AI technology to address evolving challenges and opportunities.

Prasad and Seetharaman (2021) reviewed the impact of machine learning techniques on stock market investment decisions. The study analyzed over 50 research papers on various machine learning algorithms and their effectiveness in predicting stock price trends. The review showed that long short-term memory (LSTM) models had superior accuracy compared to other models, while reinforcement learning algorithms excelled in profitability and Sharpe ratio. The findings suggested that machine learning techniques could significantly enhance stock market investment decisions, offering a valuable alternative to traditional methods.

Shanmuganathan (2020) conducted a longitudinal case study to examine the implications of artificial intelligence (AI) in behavioral finance, specifically regarding robo-advisors. The study assessed the performance of AI-based algorithms in creating reliable investment portfolios based on investor behavior. It examined the shift from traditional financial services to robo-advisors and their disruptive impact on wealth management. The research underscored the importance of robo-advisors in financial decision-making and their role in transforming the landscape of AI-driven financial services.

Gazali et al. (2020) explored the role of artificial intelligence (AI) in Islamic investments, focusing on how AI contributes to analyzing stocks and ensuring compliance with Islamic principles. The study discussed various AI techniques, such as Text Mining and Robo Advisors, and their impact on Islamic finance. Through a literature review and conceptual analysis, the research highlighted how AI improves investment practices by providing advanced analytical tools and automated advisory services tailored to Islamic principles.

The study emphasized AI's role in enhancing decision-making and compliance in Islamic investments.

Ranjan et al. (2020) examined the role of artificial intelligence in enhancing financial acumen, focusing on both the challenges and opportunities presented by AI technologies. The study employed a comprehensive analysis to understand how advancements in data analysis and machine learning can support financial decision-making, despite the ultimate decisions being made by humans. The researchers explored the impact of financial market anomalies and individual personality traits on decision-making processes. They aimed to develop a training module based on AI to improve financial decision-making by reducing biases and enhancing rationality. The study highlighted that while AI can significantly aid in financial analytics, the final decision-making still relies on human judgment. The findings underscored the importance of creating effective AI-based training tools to better support financial decision-making and improve financial acumen among individuals, including investors, advisors, and managers.

Gupta (2021) examined the impact of artificial intelligence on financial decision-making through a qualitative study, focusing on both the advantages and challenges of AI technologies in finance. The research explored how AI algorithms and machine learning techniques enhance the speed and accuracy of financial analyses, enabling more informed decision-making by financial professionals. Gupta highlighted that AI systems can mitigate human biases, such as overconfidence and herd mentality, by relying on objective algorithms and data-driven models. This capability helps in fostering more rational and unbiased financial decisions. The study also emphasized the role of AI in improving customer experience through personalized recommendations, addressing queries, and aiding in portfolio management. However, Gupta noted that the integration of AI poses challenges related to algorithmic transparency, data privacy, and regulatory compliance. These issues require careful attention to ensure ethical and responsible use of AI in finance. The findings underscored the need for ethical considerations to ensure that AI is deployed transparently and responsibly in the financial sector.

Kunwar (2019) examined the influence of artificial intelligence on the financial industry, focusing on how automation and machine learning are transforming this sector. The study utilized qualitative document analysis to examine various applications, challenges, opportunities, and the impact of AI on jobs and functions within finance. By evaluating twenty electronic documents and publications, Kunwar explored the general concept of

AI, its historical evolution, and its future prospects, with a particular emphasis on the benefits and challenges faced by the financial industry. The findings revealed that AI has significantly benefitted the financial sector by automating routine tasks and enhancing efficiency. However, the study also identified a shortage of skilled talent in AI, despite the widespread adoption of AI technologies. Kunwar concluded that technological advancements will increasingly drive automation across the financial value chain, from processing and analytics to investing, underscoring the need for continued investment in AI expertise and infrastructure to fully leverage its potential in the financial services industry.

Nair and Mohandas (2015) examined the applications of artificial intelligence in financial forecasting through a comprehensive survey and empirical analysis. The study reviewed over 100 articles spanning from 1933 to 2013 to identify developments and trends in financial forecasting, particularly focusing on AI applications. They found that artificial intelligence and signal processing techniques outperformed traditional methods in efficiency and accuracy for financial forecasting tasks. The researchers highlighted that the inherent nonlinearities in financial data make accurate forecasting challenging, but AI techniques are better suited to handle these complexities. The study also addressed some of the issues related to financial forecasting and proposed a novel technique for selecting the optimal input dataset size to enhance forecast accuracy. The findings confirmed the effectiveness of this technique in improving prediction precision, indicating that AI-based methods offer significant advantages over conventional forecasting approaches.

Ling (2015) examined the development of an enterprise internal control financial assessment system based on artificial intelligence. The study employed a combination of theoretical analysis and practical implementation to assess how AI could enhance financial control systems within enterprises. Ling utilized various AI techniques, including machine learning algorithms and data mining, to develop and evaluate the financial assessment system. The research revealed that AI-based internal control systems significantly improve the accuracy and efficiency of financial assessments by automating data analysis and reducing human error. Ling's findings indicated that AI applications could effectively identify potential financial discrepancies and enhance the reliability of financial reports. The study also highlighted the system's ability to adapt to changing financial environments and regulatory requirements, making it a robust tool for modern enterprises. The results confirmed that AI technologies could greatly benefit internal

financial control mechanisms by providing more precise and timely financial assessments.

Miah et al. (2015) explored the use of a hybrid artificial intelligence model for stock market price prediction. The researchers analyzed the potential of combining neural networks and fuzzy inference systems to address the challenges of forecasting in nonlinear and chaotic financial environments. The study focused on the financial records of BEXIMCO Ltd., a member of the Chittagong Stock Exchange in Bangladesh. The research design employed a nonlinear fuzzy-neural network model to predict stock prices, incorporating various exogenous variables relevant to the stock market. The findings indicated that the hybrid model effectively captured complex patterns in stock market data, leading to more accurate predictions compared to traditional methods. The results demonstrated that integrating neural networks with fuzzy logic significantly enhanced the forecasting accuracy and provided valuable insights for investment decisions. The study concluded that the proposed model could offer substantial benefits in summarizing and visualizing stock market data, ultimately aiding investors and institutions in making informed decisions.

Table 1
Summary of Empirical Review

S.N.	Researcher	Title	Objective	Methodology	Findings
1	Akour et al. (2024)	Artificial intelligence and financial decisions: Empirical evidence from developing economies	To investigate the impact of AI dimensions on financial decisions of pharmaceutical companies in Jordan	Cross-sectional survey of 148 accountants and financial managers, analyzed using structural equation modeling	AI dimensions positively impact financial decisions. Companies should invest in AI infrastructure and skills; addressing data privacy, ethical AI research, and collaboration are essential for maximizing AI's potential.

S.N.	Researcher	Title	Objective	Methodology	Findings
2	Gorowara et al. (2024)	Artificial Intelligence-Based Forecasting Market Trends and Guiding Investment Decisions.	To assist investors in predicting market trends and making informed decisions using AI-based methods	Improved Hierarchical Clustering and Bi-LSTM Model	The proposed AI-based approach showed superior accuracy compared to other methods, aiding investors in making better decisions.
3	Sedky (2024)	Investing in Artificial Intelligence (AI) for Business Leaders to Enhance Decision-Making	To explore the benefits and methods of using AI to improve decision-making for business leaders	Descriptive Analysis	AI investment enhances decision-making, reduces business closure risk, and promotes community stability and growth.
4	Qian et al. (2024)	Implementation of Artificial Intelligence in Investment Decision-making in the Chinese A-share Market	To assess how AI technology can enhance efficiency, cut costs, and reduce risks in investment decisions in the Chinese A-share market	Advanced Machine Learning Techniques	AI technology proves effective in stock market prediction and analysis, benefiting investment decisions in the A-share market.
5	Asere and Nuga (2024)	Examining the Potential of Artificial Intelligence and Machine Learning in Predicting Trends and Enhancing Investment Decision-Making	To evaluate the potential of AI and ML in predicting market trends and improving investment decisions	Quantitative Research Design	AI and ML offer benefits such as better decision-making, improved risk management, and optimized portfolio performance.
6	Rehman et al. (2024)	Minds and Machines: Impact of Emotional Intelligence on Investment Decisions with Mediating the Role of Artificial Intelligence	To explore the effect of Emotional Intelligence (EI) on investment decisions, considering Artificial Intelligence (AI) as a mediator	Quantitative Research Design	EI impacts investment decisions both directly and indirectly through AI. AI partially mediates this relationship.

S.N.	Researcher	Title	Objective	Methodology	Findings
7	Aithal (2023)	An Analytical Study of Applications of Artificial Intelligence on Banking Practices	To examine the impact of artificial intelligence on banking practices, focusing on virtual assistants and modern banking trends in India	Descriptive and analytical research designs; standardized questionnaire administered to 150 bank employees; data analyzed using correlation analysis, multiple regression, and Multicollinearity	AI significantly impacts public-sector banking practices. Chatbot, Robo Advice, Predictive Analytics, Cyber Security, and Credit Scoring are significant predictors (64%) of banking practices.
8	Maharani and Rahardiansyah (2023)	How Does Artificial Intelligence Synergize to Make Investment Decisions? A Critical Analysis.	To analyze the advantages and challenges of integrating AI into investment decision-making	Descriptive Analysis	AI enhances investment decision-making through efficient data analysis and sophisticated algorithms, though challenges remain.
9	Manrai and Gupta (2023)	Investor's perceptions on artificial intelligence (AI) technology adoption in investment services in India	To explore investor perceptions regarding AI adoption in investment services	Technology Acceptance Model (TAM) Theory with Additional Factors	Trust in AI services and subjective norms are key factors influencing investor behavior and adoption of AI-based investment services.
10	Yalamati (2023)	Artificial Intelligence influence in individual investors performance for capital gains in the stock market	To investigate how AI affects individual investors' performance in achieving stock market capital gains	Mixed-Methods Approach	AI influences investment decisions both directly and through mediated pathways involving emotional intelligence.
11	Gounopoulos et al. (2023)	Artificial Intelligence and Corporate Investment Decision.	To determine if firms more likely to replace human workers with AI are also more inclined towards aggressive investment and M&A strategies	Empirical Analysis	Firms more susceptible to AI automation tend to engage in aggressive investment strategies and M&A activities, affecting market concentration.

S.N.	Researcher	Title	Objective	Methodology	Findings
12	Adebiyi et al. (2022)	Artificial intelligence model for building investment portfolio optimization mix using historical stock prices data.	To develop an optimized investment portfolio using historical stock prices from the Nigerian stock market	Genetic Algorithmic Approach	The model helps investors create portfolios that balance risk and return effectively, providing a guide for portfolio management.
13	Al-Sartawi et al. (2022)	The role of artificial intelligence in sustainable finance.	To explore how AI can assist in making decisions that promote long-term financial sustainability	Descriptive Analysis	AI is pivotal in sustainable finance, extending beyond problem-solving to influence investment and decision-making processes.
14	Fraisse and Laporte (2022)	Return on investment on artificial intelligence: The case of bank capital requirement	To measure changes in bank capital requirements due to AI techniques for predicting corporate defaults	Empirical Analysis	Variations in AI models affect compliance and capital requirements, with neural networks showing the greatest potential.
15	Coskun (2022)	The Role of Artificial Intelligence in Investment Decisions and Applications in The Turkish Finance Industry.	To examine the impact of AI on investment decision-making within Turkey's finance sector	Comparative Approach	AI techniques surpass traditional models in efficiency, offering valuable insights into the Turkish finance sector's AI adoption.
16	Alasmri and Basahel (2022)	Linking artificial intelligence use to improved decision-making, individual and organizational outcomes	To examine the impact of AI on decision-making processes and its effects on Organizational Performance (OP), Individual Productivity (IP), and Organizational Culture (OC)	Quantitative Approach with SPSS	AI improves decision-making processes and positively impacts OP, IP, and OC.
17	Röhm et al. (2022)	The impact of artificial intelligence on the investment decision process in venture capital firms	To assess how AI affects the investment decision-making process within venture capital firms	Qualitative Analysis	Venture capital firms use data-driven decision support, but resource constraints limit widespread AI adoption.

S.N.	Researcher	Title	Objective	Methodology	Findings
18	Hamza (2022)	Short and/or long-term investment choice: Artificial intelligence analysis of the role of both organizational and behavioral determinants.	To investigate how organizational and behavioral factors affect CEOs' investment horizon choices	AI Explanatory Methods	Commitment bias is a major factor in long-term investment choices. Myopia shows a positive relationship with long-term investments, while locus of control has less impact.
19	Pramod and Raman (2022)	Intention to use artificial intelligence services in financial investment decisions.	To explore how students' technology readiness and awareness of AI services affect their intention to use AI tools for investments	Quantitative Research Design	Positive attitudes towards technology and awareness increase the likelihood of using AI tools for investments, while unease and lack of trust negatively affect usage.
20	Miziolek (2021)	Employing artificial intelligence in investment management.	To examine AI's theoretical and practical applications in investment management, particularly in ETFs	Various AI Forms and Their Investment Impacts	AI enhances investment research, benefiting both actively managed funds and ETFs, though adoption challenges persist.
21	Rutkauskas et al. (2021)	Seeking the Investment Portfolio Efficiency Applying the Artificial Intelligence	To enhance investment portfolio efficiency using AI	Historical Data and Stochastic Expertise	AI-based portfolio optimization improves efficiency and accommodates varying risk levels based on investor tolerance.
22	Ren (2021)	Research on financial investment decision based on artificial intelligence algorithm	To explore the use of AI algorithms in financial investment decisions	Theoretical and Practical Analysis	AI algorithms lead to more accurate and reliable financial decision-making, boosting competitiveness.
23	Prasad and Seetharaman (2021)	Importance of machine learning in making investment decision in stock market.	To evaluate machine learning algorithms' effectiveness in stock price prediction	Quantitative Research Design	Long Short-Term Memory (LSTM) models outperform other algorithms in accuracy, while reinforcement learning shows superior profitability.
24	Shanmugana than (2020)	Behavioural finance in an era of artificial intelligence: Longitudinal case study of robo-advisors in investment decisions	To investigate AI's impact on behavioral finance through robo-advisors	Longitudinal Case Study	Robo-advisors driven by AI are reshaping asset and wealth management with automated platforms and quantitative algorithms.

S.N.	Researcher	Title	Objective	Methodology	Findings
25	Gazali et al. (2020)	Application of artificial intelligence (ai) in islamic investments	To explore how AI can be applied to Islamic investment practices	Descriptive Analysis	AI enhances Islamic investment decision-making through advanced analytical tools and automated advisory services.
26	Ranjan et al. (2020)	Artificial Intelligence in Financial Acumen: Challenges and Opportunities	To analyze how artificial intelligence can improve financial decision-making and develop training modules	Descriptive analysis and causal research design	AI can aid financial decision-making and reduce biases, but final decisions will still be made by humans.
27	Gupta (2021)	Impact of Artificial Intelligence on Financial Decision Making: A Qualitative Study	To examine the impact of artificial intelligence on financial decision-making, focusing on experience	Qualitative study analyzing AI algorithms and machine learning techniques in financial decision-making	AI enhances decision-making by increasing accuracy and mitigating biases but poses challenges related to algorithmic transparency, data privacy, and regulatory complianc
28	Kunwar (2019)	Artificial Intelligence in Finance: Understanding How Automation and Machine Learning is Transforming the Financial Industry	To examine the influence of artificial intelligence on the finance sector, including its applications, challenges, and impact on jobs and functions	Qualitative document analysis of twenty electronic documents and publications	Financial sectors are benefiting from AI applications. However, there is a lack of skilled talent in AI despite automation replacing routine tasks. More technology will continue to impact all aspects of financial services.
29	Nair & Mohandas (2015)	Artificial Intelligence Applications in Financial Forecasting – A Survey and Some Empirical Results	To survey developments and trends in financial forecasting with a focus on artificial intelligence applications.	Survey of over 100 articles published from 1933 to 2013; empirical analysis.	AI and signal processing techniques are more efficient than traditional methods for financial forecasting. The study also presents a novel technique for optimizing input dataset size to improve forecast accuracy.
30	Ling (2015)	Research on Enterprise Internal Control Financial Assessment System Based on Artificial Intelligence	To develop a financial assessment system for enterprise internal control utilizing artificial intelligence.	Conceptual analysis and system design.	The study presents an AI-based internal control financial assessment system, highlighting its potential to enhance financial oversight and control within enterprises.

S.N.	Researcher	Title	Objective	Methodology	Findings
31	Miah et al. (2015)	Price Prediction of Stock Market Using Hybrid Model of Artificial Intelligence	To develop an intelligent forecasting system for stock market price prediction using neural networks and fuzzy inference systems.	Nonlinear fuzzy-neural network model and financial data analysis	The study proposes a hybrid model combining neural networks and fuzzy inference systems to predict stock prices, demonstrating effectiveness with data from BEXIMCO Ltd., Bangladesh

2.3 Research Gap

In the evolving landscape of artificial intelligence (AI) and its impact on financial decision-making, various studies have explored different dimensions of AI applications. Akour et al. (2024) have examined the impact of AI dimensions on financial decisions in Jordan, while Gorowara et al. (2024) have focused on AI-based forecasting for investment decisions. Similarly, Sedky (2024) has investigated how AI enhances decision-making for business leaders, and Qian et al. (2024) have assessed AI's effectiveness in the Chinese A-share market. These studies offer insights into AI's role in financial and investment contexts, highlighting its benefits and challenges.

Despite the extensive research on AI's application in financial decision-making, a significant context gap exists. Specifically, the role of AI in financial decision-making within the context of Nepalese commercial banks has not been thoroughly explored. Most existing studies focus on developed economies or specific sectors like pharmaceuticals and venture capital (Akour et al., 2024; Röhm et al., 2022). This study aims to address this gap by examining how AI impacts investment decisions in the unique context of Nepalese financial institutions.

The majority of the reviewed research spans several years, with significant findings reported up to 2022. Notably, studies such as those by Nair and Mohandas (2015) and Miah et al. (2015) focus on earlier developments in AI applications. This study, using data from 2024, provides a more current perspective on AI's influence on financial decision-making, offering insights into recent advancements and trends that may not be covered in previous research.

A key variable gap identified is the lack of comprehensive exploration of certain factors affecting investment decisions. Previous research has not consistently addressed variables such as self-awareness, empathy, motivation, self-regulation, and social skills in the

context of AI's influence on investment decisions (Manrai & Gupta, 2023; Yalamati, 2023). This study aims to fill this gap by incorporating these psychological and emotional factors into the analysis of AI's impact on financial decision-making.

Previous research has predominantly employed methodologies such as qualitative analysis, empirical studies, and various machine learning techniques (Rehman et al., 2024; Liu et al., 2014). This study addresses the methodology gap by utilizing both descriptive statistics and causal-comparative research design, offering a dual approach to analyze AI's impact. This methodological approach provides a more nuanced understanding of how AI influences financial decision-making processes and outcomes.

Overall, this study aims to bridge the identified research gaps by investigating the role of AI in financial decision-making within the context of Nepalese commercial banks, incorporating contemporary data from 2024, and exploring under-researched variables. By addressing these gaps, this study contributes to a more comprehensive understanding of AI's impact on investment decisions and enhances the existing body of knowledge in this field. Previous research has laid the groundwork, but this study's attempt to address these gaps promises to provide valuable insights and update the current understanding of AI in financial contexts.

CHAPTER III
RESEARCH METHODOLOGY

This chapter outlines the research methodology encompassing the research design, population and sample, and sampling design. It details the nature and sources of data, along with the instruments used for data collection. The methodology also describes the method of analysis and the research framework, including the definition of variables.

3.1 Research Design

This study has used both descriptive research design and causal-comparative research design. Descriptive statistics have been employed to assess the status of artificial intelligence in financial decision-making in Kathmandu Valley. Additionally, causal-comparative research design has been used to analyze the impact of artificial intelligence, including self-awareness, empathy, motivation, self-regulation, and social skills, on investment decisions in Kathmandu Valley.

3.2 Population and Sample, and Sampling Design

Since this study is focused on Kathmandu Valley, the total population consists of all investors and users of AI residing in Kathmandu Valley, as opposed to all seven provinces of Nepal. Out of this population, the study has selected a sample size of 400. Convenience sampling has been used to ease data collection and meet the study's requirements

3.3 Nature and Sources of Data and the Instrument of Data Collection

This study is based on quantitative data. The data collected is primary, obtained through first-hand sources. A structured questionnaire survey method has been used for data collection. The questionnaire was designed with special attention to the model of green investment decision-making for societal well-being by Rehman et al. (2024). A five-point Likert scale was employed, with scores ranging from 1 (strongly disagree) to 5 (strongly agree).

3.4 Method of Analysis

After data collection, the data has been presented using statistical software such as Microsoft Excel and SPSS. The data has been analyzed with various statistical tools, including descriptive statistics, correlation, and multivariate regression models.

3.4.1 Descriptive Statistics

Descriptive statistics involve summarizing and describing the main features of a dataset through measures such as mean, median, mode, standard deviation, and range. These tools provide a clear and concise overview of the data's central tendency, dispersion, and distribution. In this study, descriptive statistics have been used, specifically mean and standard deviation, to examine the status of the use of artificial intelligence in financial decision-making in Kathmandu Valley. Mean provides an average value of responses, while standard deviation measures the variability or dispersion of the responses from the mean.

3.4.1.1 Mean

Mean is a measure of central tendency that represents the average value of a dataset. It is calculated by summing all the values and then dividing by the number of values. The mean provides a single value that summarizes the overall level of the data. In this study, the mean has been used to examine the status of the use of artificial intelligence in financial decision-making in Kathmandu Valley. By calculating the average responses from the collected data, the study aims to provide a clear understanding of the general perception and extent of AI utilization in financial decision-making within the region. It can be presented as:

$$\text{Mean} = \frac{\sum x}{n}$$

Where,

X = Value of responses of each independent or dependent variable

n = Number of responses

3.4.1.2 Standard Deviation

Standard Deviation (S.D.) is a statistical measure that quantifies the amount of variation or dispersion in a dataset. It indicates how much individual data points deviate from the mean of the dataset. A low standard deviation means the data points are close to the mean, while a high standard deviation indicates a wider spread of values. In this study, the standard deviation has been used to analyze the variability in the responses regarding the status of the use of artificial intelligence in financial decision-making in Kathmandu Valley. By calculating the standard deviation, the study assesses the extent to which

individual opinions differ from the average, providing insights into the consistency or diversity of perceptions about AI usage in the region. It can be presented as:

$$\text{Standard Deviation}(\sigma) = \sqrt{\frac{\sum(X - \overline{X})^2}{n}}$$

Where,

X = Value of responses of each dependent or independent variable

$\overline{X}$ = Mean value of responses of each dependent or independent variable

n= Number of responses

3.4.3 Correlation Analysis

Correlation Analysis is a statistical technique used to measure and describe the strength and direction of the relationship between two or more variables. It provides insights into whether and how strongly pairs of variables are related, without implying causation. The correlation coefficient ranges from -1 to +1, where +1 indicates a perfect positive correlation, -1 indicates a perfect negative correlation, and 0 indicates no correlation. In this study, correlation analysis has been used to analyze the relationship between artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) and investment decisions in Kathmandu Valley. This analysis helps to determine the strength and direction of the association between these AI factors and investment decisions, providing valuable insights into how AI-related attributes impact investment behaviors in the region. It can be presented as:

$$\text{Correlation Coefficient}(r) = \frac{n\sum XY - \sum X \sum Y}{\sqrt{n\sum X^2 - (\sum X)^2}\sqrt{n\sum Y^2 - (\sum Y)^2}}$$

Where,

n = Number of responses

X = Value of independent variable

Y= Value of dependent variable

3.4.4 Regression Analysis

Regression Analysis is a statistical method used to examine the relationship between a dependent variable and one or more independent variables. It helps in understanding how

changes in the independent variables are associated with changes in the dependent variable and quantifies the impact of each independent variable on the dependent variable. In this study, multivariate regression analysis has been used to evaluate the impact of artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) on investment decisions in Kathmandu Valley. This analysis assesses how these AI factors influence investment decisions and quantifies their relative importance in shaping investment behaviors. The regression model of this study is as follows.

$Y_{IND} = \alpha + \beta_1 SAW + \beta_2 EMP + \beta_3 MOT + \beta_4 SER + \beta_4 SOS + E$ …… Eq (1)

Where,

IND = Investment Decision

SAW = Self-Awareness

EMP = Empathy

MOT = Motivation

SER = Self -Regulation

SOS = Social Skills

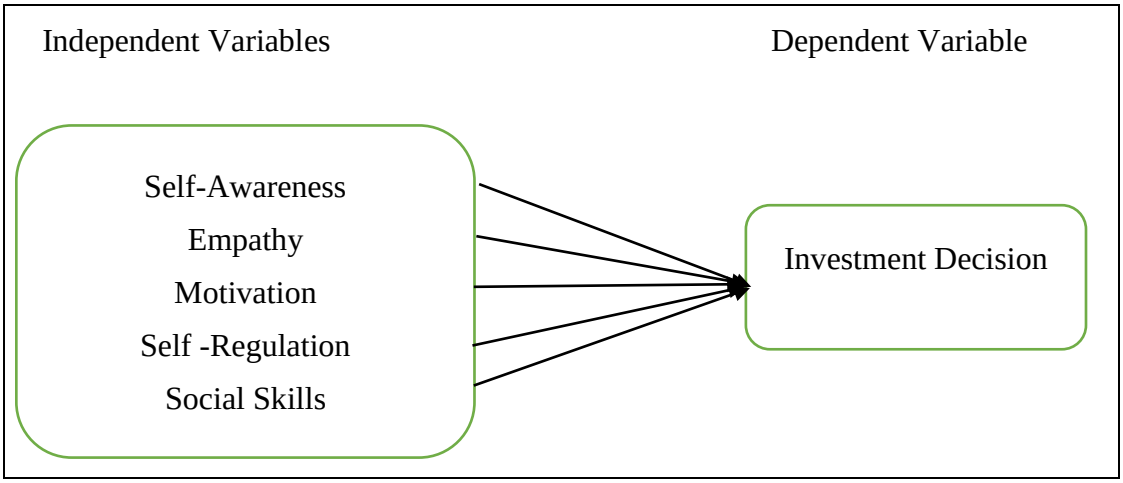
α = Intercept term

E = Error Term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$= Coefficients

3.5 Research Framework and Definition of Variables

Research Framework outlines the structure and key components of a study, including the relationships between independent and dependent variables, to guide the research process and analysis. This study has developed a research framework adopted from Rehman et al. (2024), incorporating self-awareness, empathy, motivation, self-regulation, and social skills as independent variables and investment decisions as the dependent variable.



Source: Rehman et al. (2024)

Figure 1. Research Framework of this Study

The operational definition of variables used in this study are as follows.

Independent Variables

Self-Awareness

Self-awareness refers to the ability to recognize and understand one's own emotions, strengths, weaknesses, values, and drivers (Hassan et al., 2015). It involves a clear perception of how one's emotions and actions align with personal values and goals. Self-awareness enables individuals to evaluate their behavior and reactions, fostering personal growth and improving decision-making processes. In the context of investment decisions, self-awareness helps investors understand their risk tolerance, investment goals, and emotional responses to market fluctuations, leading to more informed and reflective choices.

Empathy

Empathy is the capacity to understand and share the feelings and perspectives of others. It involves recognizing and responding to the emotions and experiences of others with compassion and sensitivity (Wondra & Ellsworth, 2015). In investment decision-making, empathy allows individuals to consider the impacts of their financial choices on other stakeholders, such as employees, clients, and communities. This awareness can guide more ethical and socially responsible investment decisions, balancing personal financial goals with broader social and ethical considerations.

Motivation

Motivation is the driving force that initiates, directs, and sustains goal-oriented behavior. It encompasses both intrinsic and extrinsic factors that propel individuals to take action and achieve their objectives (Tongo, 2015). In the realm of investment, motivation influences an individual's commitment to research, analysis, and strategic planning. Highly motivated investors are likely to persist in their efforts, stay informed about market trends, and make decisions that align with their long-term financial goals, leading to potentially more successful investment outcomes.

Self-Regulation

Self-regulation refers to the ability to manage one's emotions, impulses, and behaviors in a constructive manner (Von Laer et al., 2015). It involves controlling emotional responses and maintaining focus despite challenges or stressors. In investment decision-making, self-regulation is crucial for managing stress and avoiding impulsive reactions to market volatility. Investors who practice self-regulation are more likely to make rational decisions based on thorough analysis rather than emotional responses, thereby improving their investment performance and resilience in fluctuating markets.

Social Skills

Social skills encompass the ability to effectively interact and communicate with others, build relationships, and navigate social environments (Rehman et al., 2024). This includes skills such as negotiation, conflict resolution, and collaboration. In investment decisions, strong social skills facilitate networking, forming strategic partnerships, and leveraging insights from diverse sources.

Dependent Variable

Investment Decision

Investment decision refers to the process of evaluating and selecting investment opportunities that align with an individual's or organization's financial goals and risk tolerance (Akour et al., 2024). It involves analyzing various factors, including market conditions, asset performance, and potential returns, to determine where to allocate resources. Effective investment decisions are guided by thorough research, financial analysis, and strategic planning to optimize returns while managing risks.

CHAPTER IV
RESULTS AND DISCUSSION

This chapter includes both results and discussion. Initially, the results are presented and analyzed, providing a detailed examination of the data collected. Following this, the discussion section compares and contrasts these findings with conclusions from previous research. This comparison helps to contextualize the results within the broader field of study, highlighting similarities, differences, and any new insights that emerge. By juxtaposing the current findings with existing literature, the discussion aims to offer a comprehensive understanding of the research outcomes and their implications for the role of artificial intelligence in financial decision-making.

4.1 Results

In this section, the results of the demographic profile of respondents, along with the findings from descriptive studies, correlation, and regression analysis, are presented in tabular form and analyzed. The tables provide a clear and organized view of the demographic characteristics of the participants, which is crucial for understanding the sample composition. Descriptive statistics offer insights into the central tendencies and variability of the data for each variable. Correlation analysis reveals the strength and direction of relationships between variables, while regression analysis evaluates the impact of artificial intelligence components, such as self-awareness, empathy, motivation, self-regulation, and social skills, on investment decisions. The detailed tables facilitate a comprehensive analysis of these relationships and their significance, providing a solid foundation for interpreting the study's results.

4.1.1 Demographic Profile of Respondents

In this section, the demographic profile of respondents has been examined, covering aspects such as gender, age group, education level, province, occupation, monthly income level, experience with artificial intelligence (AI) in financial decision-making, and frequency of AI usage in financial decision-making. This detailed examination provides insights into the diverse backgrounds and characteristics of the participants, which are essential for contextualizing the study's findings and understanding how demographic factors may influence the use of AI in financial decision-making.

Table 2

Demographic Profile of Respondents

Variables		Frequency	Percent
Gender	Male	261	65.25
	Female	139	34.75
Age Group	18-25 years	82	20.50
	26-35 years	149	37.25
	36-45 years	94	23.50
	46-55 years	75	18.75
Education Level	High School or below	44	11.00
	Bachelor's Degree	235	58.75
	Master's Degree or higher	121	30.25
Province	Koshi	81	20.25
	Madhesh	33	8.25
	Bagmati	122	30.50
	Gandaki	80	20.00
	Lumbini	49	12.25
	Karnali	21	5.25
	Sudurpashchim	14	3.50
Occupation	Investor	38	9.50
	AI User (in any professional or business capacity)	71	17.75
	Financial Analyst	177	44.25
	Business Owner	71	17.75
	Others	43	10.75
Income Level (Monthly)	Below NPR 50,000	107	26.75
	NPR 50,000 – 100,000	215	53.75
	NPR 100,001 – 200,000	37	9.25
	Above NPR 200,000	41	10.25
Experience with AI in Financial Decision Making	Less than 1 year	60	15.00
	1-3 years	223	55.75
	3-5 years	77	19.25
	More than 5 years	40	10.00
Frequency of AI Usage in Financial Decision Making	Daily	127	31.75
	Weekly	172	43.00
	Monthly	66	16.50
	Rarely	35	8.75

Source: Field Survey, 2024

Table 2 presents the demographic profile of respondents, providing detailed information on various categories.

The gender distribution shows that 261 respondents (65.25%) are male, while 139 respondents (34.75%) are female. Regarding age, the largest group is 26-35 years old, comprising 149 respondents (37.25%), followed by the 36-45 years group with 94 respondents (23.50%). The 18-25 years and 46-55 years groups have 82 (20.50%) and 75 (18.75%) respondents, respectively.

In terms of education, most respondents hold a Bachelor's Degree (235 respondents, 58.75%), followed by those with a Master's Degree or higher (121 respondents, 30.25%). The remaining 44 respondents (11.00%) have a High School education or less.

The provincial distribution indicates that 122 respondents (30.50%) are from Bagmati, 81 (20.25%) from Koshi, and 80 (20.00%) from Gandaki. Lumbini has 49 respondents (12.25%), Madhesh has 33 (8.25%), Karnali has 21 (5.25%), and Sudurpashchim has 14 (3.50%).

Occupation-wise, the majority are Financial Analysts, with 177 respondents (44.25%), followed by AI Users (in any professional or business capacity) and Business Owners, each with 71 respondents (17.75%). Investors and those classified as Others account for 38 (9.50%) and 43 (10.75%) respondents, respectively.

For income levels, the largest group earns between NPR 50,000 and NPR 100,000 monthly (215 respondents, 53.75%). This is followed by those earning below NPR 50,000 (107 respondents, 26.75%). The groups earning NPR 100,001–200,000 and above NPR 200,000 consist of 37 (9.25%) and 41 (10.25%) respondents, respectively.

Regarding experience with AI in financial decision-making, 223 respondents (55.75%) have 1-3 years of experience, 77 (19.25%) have 3-5 years, and 40 (10.00%) have more than 5 years. Those with less than 1 year of experience number 60 (15.00%).

Finally, in terms of the frequency of AI usage in financial decision-making, 172 respondents (43.00%) use AI weekly, 127 (31.75%) daily, 66 (16.50%) monthly, and 35 (8.75%) rarely.

4.1.2 Reliability Test

To ensure the reliability of the data and findings, the study employed SPSS software. The consistency of the data was evaluated using the Cronbach's Alpha test of reliability, which assesses the repeatability of results and produces a value between 0 and 1. Values below 0.60 suggest low reliability, whereas values ranging from 0.90 to 0.99 indicate

excellent reliability. Typically, a Cronbach's Alpha value above 0.7 is deemed acceptable for good reliability (Nunnally, 1978).

Table 3
Reliability Test

Code	Variable	Cronbach's Alpha	N of Items
SAW	Self-Awareness	0.844	7
EMP	Empathy	0.757	7
MOT	Motivation	0.702	7
SER	Self -Regulation	0.827	7
SOS	Social Skills	0.840	7
IND	Investment Decision	0.848	7
Overall		0.950	42

Source: Field Survey, 2024

Table 3 presents the results of the reliability test conducted on the variables included in this study. The Cronbach's Alpha values for self-awareness, empathy, motivation, self-regulation, social skills, and investment decision are 0.844, 0.757, 0.702, 0.827, 0.840, and 0.848, respectively. Comparing these values to the threshold of 0.70, it is clear that all variables meet or exceed this criterion, indicating good reliability for each individual variable. Additionally, the overall Cronbach's Alpha for all variables combined is reported as 0.950, reflecting very high internal consistency within the dataset and further confirming the reliability of the data collected for this study.

4.1.3 Descriptive Statistics

In this study, descriptive statistics have been used to analyze the data and examine the status of the use of artificial intelligence in financial decision-making in Kathmandu Valley. This approach helps in summarizing the collected information to provide a clear understanding of how AI is being applied in financial sectors within the region. By employing descriptive statistics, the study highlights trends, patterns, and the current level of AI integration in investment decisions among organizations and individuals.

4.1.3.1 Summary of Descriptive Statistics

In this section, a summary of descriptive statistics has been conducted to analyze the overall summary of the factors, self-awareness, empathy, motivation, self-regulation, and social skills. The analysis utilizes mean scores and standard deviations (S.D.) to provide insights into the respondents' perceptions of these variables in relation to investment decision-making. This summary helps to gauge the central tendency and variability of

responses, offering a clear picture of how each factor is perceived in the context of artificial intelligence and its role in financial decisions.

Table 4

Summary of Descriptive Statistics

Code	Variable	Mean	S.D.
SAW	Self-Awareness	3.625	0.676
EMP	Empathy	3.547	0.593
MOT	Motivation	3.567	0.549
SER	Self -Regulation	3.606	0.630
SOS	Social Skills	3.653	0.665
IND	Investment Decision	3.711	0.666

Source: Field Survey, 2024

Table 4 presents the summary of descriptive statistics for the variables under study, capturing the mean scores and standard deviations for each variable related to artificial intelligence and investment decision-making among investors and AI users in Kathmandu Valley.

For self-awareness, the mean score is 3.625 with a standard deviation of 0.676. This indicates a generally positive perception of self-awareness in AI, as the mean score is above the neutral midpoint of the scale. The standard deviation suggests a moderate level of agreement among respondents regarding AI's role in self-awareness.

Empathy has a mean score of 3.547 and a standard deviation of 0.593. This score reflects a slightly positive perception of empathy in AI, suggesting that respondents view AI's empathetic capabilities favorably, though the agreement is slightly less pronounced compared to self-awareness.

With motivation, the mean score is 3.567 and the standard deviation is 0.549. This result shows that respondents have a positive perception of AI's ability to influence motivation. The relatively low standard deviation indicates that there is a consensus among respondents about the motivational impact of AI.

Self-regulation scores a mean of 3.606 with a standard deviation of 0.630. This suggests that respondents perceive AI as having a favorable impact on self-regulation, with the variation in responses being moderate. The positive mean score implies a general agreement on the effectiveness of AI in aiding self-regulation.

For social skills, the mean score is 3.653 and the standard deviation is 0.665. This score indicates a positive perception of AI's social skills, with respondents generally agreeing that AI can effectively exhibit social skills. The standard deviation shows some variability in responses but still reflects a consensus on the effectiveness of AI in social interactions.

Finally, the investment decision variable has a mean score of 3.711 and a standard deviation of 0.666. This high mean score suggests that respondents have a positive perception of how AI influences investment decisions. The standard deviation indicates a moderate agreement among respondents regarding AI's impact on their investment choices.

4.1.3.2 Descriptive Study of Self-Awareness on Investment Decision

This section presents the descriptive study of self-awareness on investment decision in the context of the role of artificial intelligence in financial decision making. The analysis focuses on how AI systems enhance users' self-awareness, particularly in identifying financial strengths and weaknesses, and recognizing biases that may affect investment choices. It highlights how AI tools help investors monitor external factors and make more informed decisions. This relationship is crucial as increased self-awareness, facilitated by AI, leads to more strategic investment decisions, contributing positively to financial outcomes in the Kathmandu Valley.

Table 5
Descriptive Study of Self-Awareness on Investment Decision

Statements	Mean	S.D.
AI tools improve my understanding of financial market trends.	3.695	0.951
AI systems help me recognize mistakes in financial decisions.	3.650	0.927
AI enhances my ability to assess my financial strengths and weaknesses.	3.485	0.986
AI systems increase awareness of external factors influencing investment.	3.668	0.951
AI aids in understanding how my biases affect financial choices.	3.618	0.945
AI systems provide accurate feedback about financial market changes.	3.663	0.909
AI helps identify potential risks in my investment strategies.	3.595	0.918

Source: Field Survey, 2024

Table 5 presents the descriptive study of self-awareness in relation to investment decisions, based on the perceptions of 400 respondents.

The statement "AI tools improve my understanding of financial market trends" has the highest mean score of 3.695 with a standard deviation of 0.951. This high mean indicates that respondents strongly agree that AI tools significantly enhance their understanding of financial market trends. The relatively high standard deviation suggests a notable degree of variation in individual responses, but overall, the sentiment is positive regarding AI's impact on market trend comprehension.

Conversely, the statement "AI enhances my ability to assess my financial strengths and weaknesses" has the lowest mean score of 3.485 with a standard deviation of 0.986. This lower mean indicates that respondents perceive AI's ability to assess financial strengths and weaknesses less positively compared to other aspects of self-awareness. The higher standard deviation here shows greater variation in responses, suggesting that while some users find AI helpful in this area, others do not.

Overall, the descriptive study reveals that respondents generally view AI as beneficial for improving their understanding of financial market trends and recognizing external factors influencing investments. While there is positive feedback on AI's role in aiding self-awareness, the variation in responses highlights that perceptions of AI's effectiveness in assessing personal financial strengths and weaknesses are less uniform.

4.1.3.3 Descriptive Study of Empathy on Investment Decision

This section provides the descriptive study of empathy on investment decision in the context of the role of artificial intelligence in financial decision making. Empathy, as facilitated by AI, allows investors to better understand and respond to the emotional aspects of financial markets, considering not only data but also the sentiments and behaviors of other market participants. By incorporating empathy, AI can help predict market reactions to economic changes, enhancing the quality of investment decisions. This emotional awareness plays a critical role in improving investment strategies and outcomes within the Kathmandu Valley.

Table 6
Descriptive Study of Empathy on Investment Decision

Statements	Mean	S.D.
AI systems understand my financial goals and priorities.	3.578	0.917
AI tools are capable of aligning with my financial preferences.	3.580	0.967
AI-based systems consider my emotional responses to financial changes.	3.673	0.893
AI helps tailor financial decisions based on my individual needs.	3.568	0.934
AI tools adapt to my personal financial situations over time.	3.598	0.929
AI tools factor in my risk tolerance during investment decisions.	3.380	0.921
AI enhances my emotional understanding of financial risks.	3.458	0.944

Source: Field Survey, 2024

Table 6 presents the descriptive study of empathy in relation to investment decisions, based on the perceptions of 400 respondents.

The statement "AI-based systems consider my emotional responses to financial changes" has the highest mean score of 3.673 with a standard deviation of 0.893. This indicates that respondents generally agree that AI systems are effective in considering their emotional responses to changes in their financial situation. The standard deviation is relatively low, suggesting a consensus among respondents regarding the emotional sensitivity of AI tools in financial decision-making.

In contrast, the statement "AI tools factor in my risk tolerance during investment decisions" has the lowest mean score of 3.380 with a standard deviation of 0.921. This lower mean reflects that respondents are less confident in AI's ability to consider their individual risk tolerance during investment decisions. The standard deviation indicates a moderate level of variation in responses, suggesting that there is less agreement among users about AI's effectiveness in incorporating risk tolerance into financial decision-making.

Overall, the descriptive study shows that while respondents generally perceive AI as capable of considering their emotional responses to financial changes and aligning with their financial preferences, there is less confidence in AI's ability to enhance their emotional understanding of financial risks. The variation in responses highlights that while AI is seen as somewhat empathetic in tailoring financial decisions, its effectiveness in deeply understanding emotional aspects of financial risks is less consistent.

4.1.3.4 Descriptive Study of Motivation on Investment Decision

This section describes the descriptive study of motivation on investment decision in the context of the role of artificial intelligence in financial decision making. Motivation, driven by AI, helps identify the underlying goals and aspirations of investors, ensuring that decisions align with long-term financial objectives. AI tools can analyze market trends and personal financial data, helping to motivate informed and strategic investments. By enhancing decision-making processes, motivation plays a vital role in improving investment outcomes, particularly within the Kathmandu Valley.

Table 7
Descriptive Study of Motivation on Investment Decision

Statements	Mean	S.D.
AI tools increase my motivation to make informed financial decisions.	3.428	0.918
AI systems provide timely updates that encourage proactive financial decisions.	3.363	0.950
AI-driven recommendations encourage me to explore new investment opportunities.	3.603	0.909
AI tools help set clear financial goals for future investments.	3.628	0.889
AI platforms enhance my motivation to track financial market trends.	3.625	0.934
AI systems maintain my focus on long-term financial planning.	3.685	0.926
AI assists in setting realistic expectations for financial growth.	3.638	0.891

Source: Field Survey, 2024

Table 7 presents the descriptive study of motivation in relation to investment decisions, based on the perceptions of 400 respondents.

The statement "AI systems maintain my focus on long-term financial planning" has the highest mean score of 3.685 with a standard deviation of 0.926. This suggests that respondents generally find AI systems effective in helping them stay focused on long-term financial planning. The relatively low standard deviation indicates a consensus among respondents regarding the AI's ability to support long-term financial goals.

Conversely, the statement "AI systems provide timely updates that encourage proactive financial decisions" has the lowest mean score of 3.363 with a standard deviation of 0.950. This lower mean indicates that respondents feel less motivated by AI systems' updates to make proactive financial decisions. The higher standard deviation suggests that

there is significant variation in how different respondents perceive the timeliness and motivational impact of AI updates.

Overall, the descriptive study reveals that while AI tools are perceived as effective in maintaining focus on long-term financial planning and assisting in setting realistic expectations, there is less agreement on their effectiveness in encouraging proactive decisions through timely updates. The variation in responses highlights a mixed perception of AI's role in enhancing motivation for informed financial decision-making.

4.1.3.5 Descriptive Study of Self -Regulation on Investment Decision

This section describes the descriptive study of self-regulation on investment decision in the context of the role of artificial intelligence in financial decision making. Self-regulation, facilitated by AI, aids investors in controlling emotional responses and maintaining a disciplined approach to investment decisions. By analyzing market fluctuations and providing data-driven insights, AI helps investors stay focused on their long-term financial goals, reducing impulsive decisions.

Table 8
Descriptive Study of Self -Regulation on Investment Decision

Statements	Mean	S.D.
AI tools help manage impulsive financial decisions.	3.633	0.877
AI assists in maintaining control over my investment strategies.	3.593	0.927
AI provides guidance that encourages disciplined financial behavior.	3.568	0.907
AI-based platforms help regulate emotions during market fluctuations.	3.593	0.899
AI tools support my ability to stay on track with financial objectives.	3.690	0.819
AI promotes consistency in financial decision-making processes.	3.535	0.965
AI systems reduce overreaction to financial losses or gains.	3.630	0.900

Source: Field Survey, 2024

Table 8 presents the descriptive study of self-regulation in relation to investment decisions, based on the perceptions of 400 respondents.

The statement "AI tools support my ability to stay on track with financial objectives" has the highest mean score of 3.690 with a standard deviation of 0.819. This indicates that respondents find AI tools particularly effective in helping them stay focused on their

financial goals. The lower standard deviation suggests that there is a general agreement among respondents about the effectiveness of AI in maintaining financial discipline.

On the other hand, the statement "AI promotes consistency in financial decision-making processes" has the lowest mean score of 3.535 with a standard deviation of 0.965. This lower mean implies that respondents perceive AI tools as less effective in promoting consistent financial decision-making. The higher standard deviation indicates a greater variation in perceptions, suggesting that some respondents may not find AI tools as helpful in ensuring consistent financial behavior.

Overall, the descriptive study highlights that while AI tools are perceived as helpful in managing impulsive decisions and staying on track with financial objectives, there is less agreement on their effectiveness in promoting consistent decision-making processes. The variation in responses points to a mixed perception of AI's role in supporting disciplined financial behavior.

4.1.3.6 Descriptive Study of Social Skills on Investment Decision

This section describes the descriptive study of social skills on investment decision in the context of the role of artificial intelligence in financial decision making. AI-enhanced social skills, such as communication and collaboration, play a key role in shaping investment decisions by improving interactions between investors, advisors, and other stakeholders. Through AI-driven tools, investors can better understand market sentiment and engage more effectively with financial professionals. This fosters informed decision making and contributes to the overall success of investment strategies in the Kathmandu Valley.

Table 9
Descriptive Study of Social Skills on Investment Decision

Statements	Mean	S.D.
AI platforms facilitate collaboration with financial experts.	3.645	0.917
AI systems enhance my communication with financial advisors.	3.715	0.931
AI tools help in understanding the financial behaviors of others.	3.693	0.875
AI enhances teamwork during collaborative investment decisions.	3.645	0.909
AI assists in building better financial networks and relationships.	3.610	0.959
AI-based systems improve interaction with other investors.	3.735	0.923
AI platforms aid in creating a community around financial investments.	3.528	1.001

Source: Field Survey, 2024

Table 9 presents the descriptive study of social skills in relation to investment decisions, based on the perceptions of 400 respondents.

The statement "AI-based systems improve interaction with other investors" has the highest mean score of 3.735 with a standard deviation of 0.923. This indicates that respondents perceive AI systems as particularly effective in enhancing their interactions with other investors. The high mean score reflects strong agreement among respondents regarding the positive impact of AI on fostering better engagement and collaboration within the investment community. The standard deviation suggests a moderate level of agreement about this benefit.

Conversely, the statement "AI platforms aid in creating a community around financial investments" has the lowest mean score of 3.528 with a standard deviation of 1.001. This suggests that respondents view AI tools as less effective in fostering a community or network related to financial investments. The higher standard deviation indicates greater variability in responses, meaning that perceptions of AI's role in community building are more diverse among respondents.

Overall, the descriptive study reveals that AI tools are generally perceived as beneficial for enhancing communication with financial advisors and improving interactions with

other investors. However, there is less consensus on AI's effectiveness in creating a community around financial investments, with notable variation in respondent opinions.

4.1.3.7 Descriptive Study of Investment Decision by Using AI

This section describes the descriptive study of investment decision in the context of the role of artificial intelligence in financial decision making. Investment decision involves evaluating options and selecting the best course of action based on available data. AI assists in this process by analyzing vast amounts of financial information, identifying patterns, and providing insights that help investors make more informed and timely decisions. In the Kathmandu Valley, AI's impact on investment decision making is seen in its ability to reduce uncertainty and enhance the accuracy of financial forecasts.

Table 10
Descriptive Study of Investment Decision by Using AI

Statements	Mean	S.D.
AI systems enhance my confidence in making investment decisions.	3.600	0.986
AI tools provide accurate predictions for my investment choices.	3.693	0.925
AI helps improve the success rate of my investment decisions.	3.678	0.928
AI-driven insights lead to more profitable financial decisions.	3.753	0.916
AI assists in minimizing risks during investment decision-making.	3.738	0.872
AI platforms offer valuable recommendations for diversified investments.	3.758	0.909
AI tools provide real-time data to make timely investment decisions.	3.758	0.917

Source: Field Survey, 2024

Table 10 presents the descriptive study of investment decisions by using AI, based on the perceptions of 400 respondents.

The statement "AI platforms offer valuable recommendations for diversified investments" and "AI tools provide real-time data to make timely investment decisions" both have the highest mean score of 3.758 with standard deviations of 0.909 and 0.917, respectively. These high scores indicate that respondents perceive AI tools as particularly effective in providing valuable recommendations for diverse investments and real-time data, which aids in making timely investment decisions. The relatively high means reflect a strong

positive perception of AI's role in enhancing investment decision-making through diversified recommendations and timely data provision.

On the other hand, the statement "AI systems enhance my confidence in making investment decisions" has the lowest mean score of 3.600 with a standard deviation of 0.986. This lower mean suggests that while AI tools are viewed as beneficial, they are not seen as significantly enhancing confidence in investment decisions.

Overall, the descriptive study indicates that AI tools are highly regarded for their ability to provide valuable investment recommendations and real-time data, which contribute to more timely and diversified investment decisions.

4.1.4 Correlation Analysis

In this section, correlation analysis has been used to analyze the relationship between artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) and investment decisions in Kathmandu Valley. This analysis helps to understand the strength and direction of the association between AI-related variables and how they impact investment decision-making in the region. By evaluating these relationships, the study provides insights into how different aspects of AI influence financial decisions in Kathmandu Valley.

Table 11

Correlation Matrix

Variables		SAW	EMP	MOT	SER	SOS	IND
SAW	Pearson Correlation	1					
	Sig. (2-tailed)						
EMP	Pearson Correlation	.642**	1				
	Sig. (2-tailed)	0.000					
MOT	Pearson Correlation	.554**	.850**	1			
	Sig. (2-tailed)	0.000	0.000				
SER	Pearson Correlation	.612**	.600**	.623**	1		
	Sig. (2-tailed)	0.000	0.000	0.000			
SOS	Pearson Correlation	.578**	.630**	.620**	.673**	1	
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		
IND	Pearson Correlation	.594**	.682**	.683**	.657**	.767**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	

Source: Field Survey, 2024

Table 11 presents the correlation between the independent variables (self-awareness, empathy, motivation, self-regulation, social skills) and the dependent variable (investment decision).

The correlation between self-awareness and investment decision is 0.594, indicating a moderate positive relationship. This value suggests that as self-awareness increases, there is a tendency for investment decisions to improve. The correlation is statistically significant at the 5 percent level, showing that the relationship is not due to random chance.

The correlation between empathy and investment decision is 0.682, which represents a strong positive relationship. This implies that higher levels of empathy are associated with better investment decisions. This correlation is significant at the 5 percent level, confirming that the relationship is meaningful and not a result of random variation.

The correlation between motivation and investment decision is 0.683, reflecting a strong positive relationship. As motivation increases, so does the quality of investment decisions. This relationship is statistically significant at the 5 percent level, indicating that the association is reliable and not by chance.

The correlation between self-regulation and investment decision is 0.657, indicating a strong positive association. This suggests that better self-regulation is linked to improved investment decisions. The correlation is significant at the 5 percent level, confirming the strength and reliability of this relationship.

The correlation between social skills and investment decision is 0.767, showing a very strong positive relationship. This high correlation indicates that increased social skills are strongly associated with better investment decisions. The relationship is statistically significant at the 5 percent level, emphasizing the importance and robustness of this correlation.

4.1.5 Regression Analysis

In this section, multivariate regression analysis has been used to evaluate the impact of artificial intelligence (self-awareness, empathy, motivation, self-regulation, social skills) on investment decisions in Kathmandu Valley. This method allows for assessing the combined effect of multiple AI-related factors on the decision-making process, providing a comprehensive understanding of how each variable contributes to shaping financial investment choices in the region.

Table 12

Model Summary of Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.824	0.679	0.675	0.38017

Source: Field Survey, 2024

Table 12 presents the model summary of the regression analysis. The model shows an R value of 0.824, indicating a strong correlation between the predictors (self-awareness, empathy, motivation, self-regulation, social skills) and the dependent variable (investment decision). The R Square value is 0.679, meaning that approximately 67.9% of the variance in investment decisions can be explained by the independent variables in the model. The Adjusted R Square value of 0.675 accounts for the number of predictors in the model, ensuring a reliable fit. The Standard Error of the Estimate is 0.38017, reflecting the average distance of the observed values from the predicted values.

Table 13

ANOVA Table of Regression Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	120.295	5	24.059	166.464	0.00
	Residual	56.944	394	0.145		
	Total	177.239	399			

Source: Field Survey, 2024

Table 13 presents the ANOVA results of the regression model. The F-statistic is 166.464 with a significance value of 0.00. Since the significance value is less than 0.05, it indicates that the regression model is statistically significant and fits the data well. This suggests that the independent variables (self-awareness, empathy, motivation, self-regulation, social skills) collectively have a significant impact on the dependent variable (investment decision).

Table 14

Beta Coefficient of Regression Model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.048	0.135		0.359	0.720		
	SAW	0.084	0.040	0.085	2.089	0.037	0.491	2.036
	EMP	0.132	0.067	0.118	1.986	0.048	0.231	4.320
	MOT	0.223	0.069	0.183	3.230	0.001	0.253	3.953
	SER	0.123	0.046	0.116	2.681	0.008	0.436	2.293
	SOS	0.452	0.043	0.452	10.634	0.000	0.452	2.211

Source: Field Survey, 2024

Table 14 presents the beta coefficients of the regression model, including unstandardized and standardized coefficients, significance levels, and variance inflation factors (VIF) for each independent variable.

For self-awareness (SAW), the unstandardized beta coefficient is 0.084, with a standardized beta of 0.085, and a significance level of 0.037. This indicates a positive but relatively modest impact on investment decisions, as the coefficient is significant at the 5 percent level. The VIF is 2.036, suggesting no multicollinearity issues with self-awareness.

Empathy (EMP) has an unstandardized beta of 0.132 and a standardized beta of 0.118, with a significance value of 0.048. This suggests a moderate positive effect on investment decisions and is significant at the 5 percent level. The VIF for empathy is 4.320, which is well below the threshold of 10, indicating no multicollinearity concerns.

Motivation (MOT) shows an unstandardized beta of 0.223 and a standardized beta of 0.183, with a significance value of 0.001. This indicates a strong positive impact on investment decisions, with significance well below the 5 percent threshold. The VIF for motivation is 3.953, suggesting that multicollinearity is not an issue.

Self-regulation (SER) has an unstandardized beta of 0.123 and a standardized beta of 0.116, with a significance level of 0.008. This represents a positive impact on investment decisions and is statistically significant at the 5 percent level. The VIF for self-regulation is 2.293, indicating no multicollinearity problems.

Social skills (SOS) exhibits the highest unstandardized beta of 0.452 and a standardized beta of 0.452, with a significance value of 0.000. This suggests a strong and highly significant positive impact on investment decisions. The VIF for social skills is 2.211, confirming that there are no multicollinearity issues.

Overall, the regression model shows that all independent variables, self-awareness, empathy, motivation, self-regulation, and social skills, significantly impact investment decisions, with no evidence of problematic multicollinearity among the predictors.

4.1.6 Major Findings

- The majority of respondents are male, with 261 individuals (65.25%), compared to 139 females (34.75%).
- The largest age group is 26-35 years, with 149 respondents (37.25%), followed by the 36-45 years group with 94 respondents (23.50%). The 18-25 years and 46-55 years age groups have 82 respondents (20.50%) and 75 respondents (18.75%), respectively.
- Most respondents have a Bachelor's Degree, totaling 235 individuals (58.75%), while 121 respondents (30.25%) hold a Master's Degree or higher. There are 44 respondents (11.00%) with a High School education or less.
- The provincial distribution shows that 122 respondents (30.50%) are from Bagmati, 81 (20.25%) from Koshi, and 80 (20.00%) from Gandaki. Respondents from Lumbini number 49 (12.25%), Madhesh 33 (8.25%), Karnali 21 (5.25%), and Sudurpashchim 14 (3.50%).
- The majority of respondents are Financial Analysts, with 177 individuals (44.25%). This is followed by AI Users (in any professional or business capacity) and Business Owners, each with 71 respondents (17.75%). There are 38 respondents (9.50%) classified as Investors and 43 (10.75%) as Others.
- Regarding income levels, the largest group earns between NPR 50,000 and NPR 100,000 monthly, totaling 215 respondents (53.75%). This is followed by those earning below NPR 50,000, with 107 respondents (26.75%). Respondents earning NPR 100,001–200,000 and above NPR 200,000 number 37 (9.25%) and 41 (10.25%), respectively.

- In terms of experience with AI in financial decision-making, 223 respondents (55.75%) have 1-3 years of experience, 77 (19.25%) have 3-5 years, and 40 (10.00%) have more than 5 years. There are 60 respondents (15.00%) with less than 1 year of experience.
- For the frequency of AI usage in financial decision-making, 172 respondents (43.00%) use AI weekly, 127 (31.75%) use it daily, 66 (16.50%) use it monthly, and 35 (8.75%) use it rarely.
- For self-awareness, the mean score is 3.625 with a standard deviation of 0.676. This indicates a generally positive perception of self-awareness in AI, as the mean is above the neutral midpoint, and there is moderate agreement among respondents on AI's role in enhancing self-awareness.
- Empathy has a mean score of 3.547 and a standard deviation of 0.593. This score reflects a slightly positive view of AI's empathetic capabilities. Although respondents find AI's empathetic features favorable, the level of agreement is less pronounced compared to self-awareness.
- With motivation, the mean score is 3.567 and the standard deviation is 0.549. This result shows that respondents perceive AI as positively influencing motivation. The relatively low standard deviation indicates a strong consensus among respondents regarding AI’s motivational impact.
- Self-regulation scores a mean of 3.606 with a standard deviation of 0.630. This suggests a favorable perception of AI's impact on self-regulation. The mean score implies general agreement on AI's effectiveness in aiding self-regulation, with moderate variability in responses.
- For social skills, the mean score is 3.653 and the standard deviation is 0.665. This indicates a positive perception of AI’s social skills. Respondents generally agree that AI effectively exhibits social skills, although there is some variability in responses.
- The investment decision variable has a mean score of 3.711 and a standard deviation of 0.666. This high mean score suggests that respondents view AI positively in terms of influencing investment decisions. The standard deviation

indicates moderate agreement among respondents about AI's impact on their investment choices.

- The correlation between self-awareness and investment decision is 0.594, indicating a moderate positive relationship. This suggests that increased self-awareness is generally associated with improved investment decisions. The relationship is statistically significant at the 5 percent level, confirming that it is not due to random chance.
- The correlation between empathy and investment decision is 0.682, representing a strong positive relationship. This implies that higher levels of empathy are closely linked with better investment decisions. The correlation is significant at the 5 percent level, indicating that the association is meaningful and not a result of random variation.
- The correlation between motivation and investment decision is 0.683, reflecting a strong positive relationship. As motivation increases, the quality of investment decisions tends to improve. This relationship is statistically significant at the 5 percent level, suggesting that the association is reliable and not by chance.
- The correlation between self-regulation and investment decision is 0.657, indicating a strong positive association. This suggests that better self-regulation is associated with improved investment decisions. The correlation is significant at the 5 percent level, confirming the strength and reliability of this relationship.
- The correlation between social skills and investment decision is 0.767, showing a very strong positive relationship. This high correlation indicates that enhanced social skills are strongly associated with better investment decisions. The relationship is statistically significant at the 5 percent level, emphasizing the importance and robustness of this correlation.
- The R value of 0.824 indicates a strong correlation between the predictors and the dependent variable, suggesting a robust relationship.
- The R Square value of 0.679 means that approximately 67.9 percent of the variance in investment decisions can be explained by the predictors in the model.
- The Adjusted R Square value of 0.675 takes into account the number of predictors and confirms a reliable fit of the model.

- The Standard Error of the Estimate is 0.38017, reflecting the average distance between the observed values and the predicted values.
- For self-awareness (SAW), the unstandardized beta coefficient is 0.084 and the standardized beta is 0.085, with a significance level of 0.037. This indicates a positive but modest impact on investment decisions, with significance at the 5 percent level. The variance inflation factor (VIF) is 2.036, showing no multicollinearity issues.
- Empathy (EMP) has an unstandardized beta of 0.132 and a standardized beta of 0.118, with a significance value of 0.048. This demonstrates a moderate positive effect on investment decisions, significant at the 5 percent level. The VIF for empathy is 4.320, indicating no concerns about multicollinearity.
- Motivation (MOT) shows an unstandardized beta of 0.223 and a standardized beta of 0.183, with a significance value of 0.001. This reflects a strong positive impact on investment decisions, with high significance. The VIF for motivation is 3.953, suggesting no multicollinearity problems.
- Self-regulation (SER) has an unstandardized beta of 0.123 and a standardized beta of 0.116, with a significance level of 0.008. This indicates a positive impact on investment decisions, statistically significant at the 5 percent level. The VIF for self-regulation is 2.293, showing no multicollinearity issues.
- Social skills (SOS) exhibits the highest unstandardized beta of 0.452 and a standardized beta of 0.452, with a significance value of 0.000. This suggests a strong and highly significant positive impact on investment decisions. The VIF for social skills is 2.211, confirming no multicollinearity concerns.
- Overall, the regression analysis reveals that all independent variables, self-awareness, empathy, motivation, self-regulation, and social skills, have a significant positive impact on investment decisions, with no evidence of multicollinearity issues among the predictors.

4.2 Discussion

The first objective of this study was to examine the status of the use of artificial intelligence (AI) in financial decision-making in Kathmandu Valley. The findings have shown a generally positive perception of AI's role, with respondents viewing AI as

beneficial in enhancing investment decisions. Specifically, self-awareness, empathy, and motivation have been perceived positively, while social skills and self-regulation also received favorable but somewhat variable responses. Overall, AI is seen as a valuable tool in financial decision-making, with respondents displaying consistent, though slightly fluctuating, confidence in its effectiveness. Akour et al. (2024) found that various AI dimensions positively impacted financial decisions in Jordan, which aligns with the positive perceptions observed in this study. Gorowara et al. (2024) demonstrated that AI techniques, including clustering and deep learning, improved investment predictions, echoing the positive impacts of AI noted in this study. Sedky (2024) highlighted AI's role in enhancing decision-making capabilities, reinforcing the beneficial view of AI observed here. Conversely, Qian et al. (2024) and Asere and Nuga (2024) reported broader applications of AI in financial decision-making, with a focus on efficiency and risk mitigation, which complements the general positive perception but emphasizes different aspects of AI's impact. In contrast, Rehman et al. (2024) found that emotional intelligence (EI) affects investment decisions both directly and indirectly through AI, suggesting a more nuanced interaction between AI and other factors compared to the broader positive view presented in this study.

The second objective of this study was to analyze the relationship between AI variables, self-awareness, empathy, motivation, self-regulation, and social skills, and investment decisions in Kathmandu Valley. The analysis has revealed that self-awareness has a moderate positive relationship with investment decisions, indicating that increased self-awareness enhances investment outcomes. Empathy and motivation both show strong positive relationships, suggesting that higher levels of these attributes are strongly associated with improved investment choices. Self-regulation also has a strong positive relationship, contributing significantly to better investment decisions, while social skills exhibit the strongest positive relationship, highlighting their crucial role in effective investment decisions. All relationships are statistically significant. This aligns with the findings of Rehman et al. (2024), who noted that emotional intelligence and AI together significantly affect investment decisions, with AI mediating these relationships. However, Sedky (2024) emphasized AI's role in improving decision-making capabilities generally, not focusing specifically on emotional or social aspects, thus showing a broader view compared to this study's focus on individual AI attributes. Similarly, Gorowara et al. (2024) and Asere and Nuga (2024) highlighted the importance of AI in enhancing

prediction accuracy and risk assessment but did not specifically address the social and emotional dimensions that this study emphasizes. Furthermore, Akour et al. (2024) explored AI's impact on financial decisions in a different sector and context, focusing on technological dimensions rather than personal attributes.

The third objective of this study was to evaluate the impact of AI variables, self-awareness, empathy, motivation, self-regulation, and social skills, on investment decisions in Kathmandu Valley. The findings have indicated that self-awareness has a positive but modest impact on investment decisions. Empathy has a moderate positive effect, contributing meaningfully to investment outcomes. Motivation has a strong positive impact, playing a crucial role in enhancing investment decisions. Self-regulation also shows a positive and significant impact, and social skills exhibit the strongest and most significant positive impact, emphasizing their critical role in shaping effective investment strategies. All AI variables positively and significantly impact investment decisions, with no multicollinearity issues. This aligns with the findings of Akour et al. (2024), who reported that various AI dimensions positively influence financial decisions, highlighting the importance of advanced AI infrastructure. However, unlike Akour et al. (2024), who focused on different AI dimensions like natural language processing and computer vision, this study emphasizes AI variables directly related to personal and social competencies. Similarly, Gorowara et al. (2024) demonstrated the effectiveness of AI in forecasting and market prediction but did not address personal AI dimensions impacting investment decisions. Sedky (2024) highlighted AI's role in enhancing decision-making for business leaders, which supports the current study's findings on the impact of motivation and self-regulation. Contrarily, Rehman et al. (2024) showed that emotional intelligence impacts investment decisions both directly and through AI mediation, suggesting that while emotional insights are crucial, the direct effects of social skills noted in the current study might offer a more nuanced perspective. Additionally, Asere and Nuga (2024) focused on AI and ML for risk assessment and portfolio optimization, presenting a broader application of AI compared to the current study's focus on personal attributes.

CHAPTER V
SUMMARY AND CONCLUSION

This chapter provides a comprehensive summary of the study, highlighting the key findings and insights. It concludes that self-awareness, empathy, motivation, self-regulation, and social skills all positively influence investment decisions, with significant impacts observed across these variables. The study underscores the importance of integrating these psychological factors into financial decision-making processes and the role of AI in enhancing these dimensions. The implications suggest that financial institutions and AI developers should focus on these factors to improve investment strategies and outcomes, ultimately leading to more informed and effective financial decisions.

5.1 Summary

This study has focused on the role of artificial intelligence (AI) in financial decision-making within the Kathmandu Valley, specifically examining how AI's social and emotional capabilities, such as self-awareness, empathy, motivation, self-regulation, and social skills, affect investment decisions. The integration of AI in finance has introduced challenges related to the reliability and accuracy of AI algorithms, ethical concerns about fairness and transparency, potential systemic risks, data privacy and security issues, and the impact on human oversight and employment. This research has aimed to explore the current status of AI usage in financial decision-making in Kathmandu Valley, analyze the relationship between AI’s emotional and social attributes and investment decisions, and evaluate the overall impact of these AI characteristics on financial decision-making.

The literature review of this study has been comprehensively categorized into conceptual, theoretical, and empirical reviews, along with an identification of research gaps. The theoretical review has covered the theory of neural networks and the broader concept of artificial intelligence, including its application in financial services and markets, the pros and cons, and different types such as emotional and social intelligence. The empirical review has examined previous research findings related to the impact of AI on financial decision-making. Finally, the research gap has been identified, highlighting areas where further investigation is needed to understand the role of AI in financial decision-making more thoroughly.

This study has utilized both descriptive and causal-comparative research designs to explore the role of artificial intelligence in financial decision-making within the Kathmandu Valley. Descriptive research design has been employed to evaluate the current status of artificial intelligence, while causal-comparative research design has been used to examine the impact of AI characteristics such as self-awareness, empathy, motivation, self-regulation, and social skills on investment decisions. The study has focused on a population of investors and AI users residing specifically in Kathmandu Valley, selecting a sample size of 400 through convenience sampling to facilitate data collection. The research has relied on quantitative data gathered from primary sources, using a structured questionnaire survey designed based on the green investment decision-making model by Rehman et al. (2024). A five-point Likert scale has been applied to measure responses, ranging from 1 (strongly disagree) to 5 (strongly agree).

The study has employed statistical software, including Microsoft Excel and SPSS, for data presentation and analysis, utilizing tools such as descriptive statistics, correlation, and multivariate regression models. The research framework has outlined the structure and relationships between variables, with self-awareness, empathy, motivation, self-regulation, and social skills serving as independent variables and investment decisions as the dependent variable. This framework has guided the analysis process by delineating the interactions between the key components of the study.

Overall, this study has demonstrated that the independent variables of artificial intelligence, self-awareness, empathy, motivation, self-regulation, and social skills, have emerged as significant determinants of investment decisions in Kathmandu Valley. The findings have revealed that each of these AI variables has shown a positive relationship with investment decisions. Specifically, self-awareness, empathy, motivation, self-regulation, and social skills have all been found to positively influence investment outcomes. Motivation and social skills have exhibited the strongest relationships and impacts, indicating their crucial roles in enhancing investment decisions. The study has confirmed that these AI variables not only relate positively but also have significant impacts on investment choices, with no issues of multicollinearity affecting the results. Overall, the research has established that the AI variables are key determinants in shaping effective investment strategies.

This study has offered both practical and theoretical implications. Practically, it has highlighted the significant role of AI's emotional and social capabilities in enhancing

investment decisions, suggesting that financial institutions should integrate these AI features to improve decision-making processes. Theoretically, it has contributed to the understanding of how AI's self-awareness, empathy, motivation, self-regulation, and social skills influence financial outcomes. It recommends that future research explore these AI attributes further and consider their integration in diverse financial contexts to validate and expand on these findings.

5.2 Conclusion

The first objective of this study was to examine the status of the use of artificial intelligence in financial decision-making in Kathmandu Valley. The findings revealed a generally positive perception of AI's role across various aspects, including self-awareness, empathy, motivation, self-regulation, and social skills. Respondents have viewed AI as beneficial in enhancing their investment decisions, with a satisfactory level of agreement on its effectiveness. Specifically, self-awareness, empathy, and motivation have been perceived favorably, while social skills and self-regulation also receive positive but slightly more variable responses. Overall, the study indicates that AI is seen as a valuable tool in financial decision-making, with respondents expressing a consistent, though slightly fluctuating, and confidence in its capabilities.

The second objective of this study was to analyze the relationship between artificial intelligence variables, self-awareness, empathy, motivation, self-regulation, and social skills, and investment decisions in Kathmandu Valley. The analysis revealed that self-awareness has a moderate positive relationship with investment decisions, suggesting that increased self-awareness tends to enhance investment outcomes. Empathy and motivation both show strong positive relationships with investment decisions, indicating that higher levels of these attributes are strongly associated with improved investment choices. Self-regulation also demonstrates a strong positive relationship, implying that better self-regulation contributes significantly to better investment decisions. Social skills exhibit the strongest positive relationship, emphasizing that enhanced social skills are crucial for making effective investment decisions. All these relationships are statistically significant, confirming their reliability and ruling out the possibility of random variation.

The third objective of this study was to evaluate the impact of artificial intelligence variables, self-awareness, empathy, motivation, self-regulation, and social skills, on investment decisions in Kathmandu Valley. The findings indicated that self-awareness

has a positive but modest impact on investment decisions, showing a statistically significant relationship. Empathy demonstrates a moderate positive effect, also significant, suggesting it contributes meaningfully to investment decisions. Motivation has a strong positive impact, with a highly significant effect, implying that it plays a crucial role in enhancing investment outcomes. Similarly, self-regulation shows a positive and statistically significant impact, indicating its importance in influencing investment decisions. Social skills exhibit the strongest and most significant positive impact, underscoring their critical role in shaping effective investment strategies. Overall, all AI variables positively and significantly impact investment decisions, with no multicollinearity concerns affecting the results.

5.3 Implications

5.3.1 Theoretical Implications

This study enhances the theoretical understanding of how artificial intelligence (AI) influences investment decision-making by exploring personal AI dimensions such as self-awareness, empathy, motivation, self-regulation, and social skills. Traditional theories in the field have focused primarily on AI's technical aspects like data analysis and algorithmic performance, often overlooking the human emotional and psychological elements involved in decision-making. By integrating these personal AI attributes, the study challenges existing models that view investment decisions as purely rational processes, highlighting the importance of emotional intelligence in financial contexts. This contributes to a more comprehensive theoretical framework that acknowledges both the technological capabilities of AI and its role in enhancing human factors. The study broadens the scope of AI research in finance, suggesting that emotional and social competencies should be considered alongside technical skills for a more complete understanding of AI's impact on investment behaviors.

5.3.2 Practical Implications

The practical insights from this study emphasize the importance of incorporating personal AI dimensions into financial decision-making processes. Financial institutions and investors can benefit from AI tools that not only process large amounts of data but also enhance personal attributes like empathy, self-awareness, and social skills. For example, training programs for investment professionals could include AI-driven tools that help individuals develop their emotional intelligence, improving client interactions and

decision-making under pressure. Additionally, financial institutions could design AI systems that provide real-time emotional feedback, helping investors manage stress and make more balanced decisions. By integrating AI tools that support both data analysis and emotional intelligence, financial institutions can improve decision-making, build stronger client relationships, and enhance overall satisfaction. This approach encourages a more holistic use of AI in finance, leading to better investment outcomes and fostering trust between investors and financial professionals.

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APPENDICES

Appendix I

Questionnaire

I am Chanda Jaiswal, a master's degree student at Shanker Dev Campus, currently working on my dissertation titled "**The Role of Artificial Intelligence in Financial Decision Making**. I would be grateful for your participation in my study by completing the attached questionnaire. Your responses will provide crucial insights into the role of artificial intelligence in financial decision-making processes, specifically in the context of Kathmandu Valley. All information provided will remain confidential and will be used solely for academic purposes.

Thank you for taking the time to assist me with this research. Your contribution is highly valued.

Best regards,

Chanda Jaiswal

Part I: Demographic Profile of Respondents

Please put a tick mark (✓) in the box in an appropriate option for each of the following.

Gender

- ☐ Male
- ☐ Female
- Other

Age Group

- ☐ 18-25 years
- ☐ 26-35 years
- ☐ 36-45 years
- ☐ 46-55 years
- ☐ 56 years and above

Education Level

- ☐ High School or below
- ☐ Bachelor’s Degree
- ☐ Master’s Degree or higher

Province you from ?

- ☐ Koshi
- ☐ Madhesh
- ☐ Bagmati

- ☐ Gandaki
- ☐ Lumbini
- ☐ Karnali
- ☐ Sudurpashchim

Occupation

- ☐ Investor
- ☐ AI User (in any professional or business capacity)
- ☐ Financial Analyst
- ☐ Business Owner
- ☐ Others

Income Level (Monthly)

- ☐ Below NPR 50,000
- ☐ NPR 50,000 – 100,000
- ☐ NPR 100,001 – 200,000
- ☐ Above NPR 200,000

Experience with AI in Financial Decision Making

- ☐ Less than 1 year
- ☐ 1-3 years
- ☐ 3-5 years
- ☐ More than 5 years

Frequency of AI Usage in Financial Decision Making

- ☐ Daily
- ☐ Weekly
- ☐ Monthly
- ☐ Rarely

Part II: Core Questions

Please put a tick mark (✓) in the box in an appropriate option for each of the following.

S.N.	Self-Awareness	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	AI tools improve my understanding of financial market trends.					
2	AI systems help me recognize mistakes in financial decisions.					
3	AI enhances my ability to assess my financial strengths and weaknesses.					
4	AI systems increase awareness of external factors influencing investment.					

5	AI aids in understanding how my biases affect financial choices.					
6	AI systems provide accurate feedback about financial market changes.					
7	AI helps identify potential risks in my investment strategies.					
S.N.	**Empathy**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	AI systems understand my financial goals and priorities.					
2	AI tools are capable of aligning with my financial preferences.					
3	AI-based systems consider my emotional responses to financial changes.					
4	AI helps tailor financial decisions based on my individual needs.					
5	AI tools adapt to my personal financial situations over time.					
6	AI tools factor in my risk tolerance during investment decisions.					
7	AI enhances my emotional understanding of financial risks.					
S.N.	**Motivation**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	AI tools increase my motivation to make informed financial decisions.					
2	AI systems provide timely updates that encourage proactive financial decisions.					
3	AI-driven recommendations encourage me to explore new investment opportunities.					
4	AI tools help set clear financial goals for future investments.					
5	AI platforms enhance my motivation to track financial market trends.					

6	AI systems maintain my focus on long-term financial planning.					
7	AI assists in setting realistic expectations for financial growth.					
S.N.	**Self-Regulation**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	AI tools help manage impulsive financial decisions.					
2	AI assists in maintaining control over my investment strategies.					
3	AI provides guidance that encourages disciplined financial behavior.					
4	AI-based platforms help regulate emotions during market fluctuations.					
5	AI tools support my ability to stay on track with financial objectives.					
6	AI promotes consistency in financial decision-making processes.					
7	AI systems reduce overreaction to financial losses or gains.					
S.N.	**Social Skills**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	AI platforms facilitate collaboration with financial experts.					
2	AI systems enhance my communication with financial advisors.					
3	AI tools help in understanding the financial behaviors of others.					
4	AI enhances teamwork during collaborative investment decisions.					
5	AI assists in building better financial networks and relationships.					
6	AI-based systems improve interaction with other investors.					

7	AI platforms aid in creating a community around financial investments.					
S.N.	**Investment Decision**	**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
1	AI systems enhance my confidence in making investment decisions.					
2	AI tools provide accurate predictions for my investment choices.					
3	AI helps improve the success rate of my investment decisions.					
4	AI-driven insights lead to more profitable financial decisions.					
5	AI assists in minimizing risks during investment decision-making.					
6	AI platforms offer valuable recommendations for diversified investments.					
7	AI tools provide real-time data to make timely investment decisions.					

Appendix II

Frequency Table

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	261	65.3	65.3	65.3
	Female	139	34.8	34.8	100.0
	Total	400	100.0	100.0	

Age Group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25 years	82	20.5	20.5	20.5
	26-35 years	149	37.3	37.3	57.8
	36-45 years	94	23.5	23.5	81.3
	46-55 years	75	18.8	18.8	100.0
	Total	400	100.0	100.0	

Education Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High School or below	44	11.0	11.0	11.0
	Bachelor's Degree	235	58.8	58.8	69.8
	Master's Degree or higher	121	30.3	30.3	100.0
	Total	400	100.0	100.0	

Province

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Koshi	81	20.3	20.3	20.3
	Madhesh	33	8.3	8.3	28.5
	Bagmati	122	30.5	30.5	59.0
	Gandaki	80	20.0	20.0	79.0
	Lumbini	49	12.3	12.3	91.3
	Karnali	21	5.3	5.3	96.5
	Sudurpashchim	14	3.5	3.5	100.0
	Total	400	100.0	100.0	

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Investor	38	9.5	9.5	9.5
	AI User (in any professional or business capacity)	71	17.8	17.8	27.3

	Financial Analyst	177	44.3	44.3	71.5
	Business Owner	71	17.8	17.8	89.3
	Others	43	10.8	10.8	100.0
	Total	400	100.0	100.0	

Income Level (Monthly)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below NPR 50,000	107	26.8	26.8	26.8
	NPR 50,000 – 100,000	215	53.8	53.8	80.5
	NPR 100,001 – 200,000	37	9.3	9.3	89.8
	Above NPR 200,000	41	10.3	10.3	100.0
	Total	400	100.0	100.0	

Experience with AI in Financial Decision Making

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 1 year	60	15.0	15.0	15.0
	1-3 years	223	55.8	55.8	70.8
	3-5 years	77	19.3	19.3	90.0
	More than 5 years	40	10.0	10.0	100.0
	Total	400	100.0	100.0	

Frequency of AI Usage in Financial Decision Making

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	127	31.8	31.8	31.8
	Weekly	172	43.0	43.0	74.8
	Monthly	66	16.5	16.5	91.3
	Rarely	35	8.8	8.8	100.0
	Total	400	100.0	100.0	

Appendix III

Reliability Test

Reliability Statistics of Self-Awareness

Cronbach's Alpha	N of Items
0.844	7

Reliability Statistics of Empathy

Cronbach's Alpha	N of Items
0.757	7

Reliability Statistics of Motivation

Cronbach's Alpha	N of Items
0.702	7

Reliability Statistics of Self -Regulation

Cronbach's Alpha	N of Items
0.827	7

Reliability Statistics of Social Skills

Cronbach's Alpha	N of Items
0.840	7

Reliability Statistics of Investment Decision

Cronbach's Alpha	N of Items
0.848	7

Overall Reliability Statistics

Cronbach's Alpha	N of Items
0.950	42

Appendix IV

Descriptive Statistics

	N	Mean	Std. Deviation
AI tools improve my understanding of financial market trends.	400	3.695	0.951
AI systems help me recognize mistakes in financial decisions.	400	3.650	0.927
AI enhances my ability to assess my financial strengths and weaknesses.	400	3.485	0.986
AI systems increase awareness of external factors influencing investment.	400	3.668	0.951
AI aids in understanding how my biases affect financial choices.	400	3.618	0.945
AI systems provide accurate feedback about financial market changes.	400	3.663	0.909
AI helps identify potential risks in my investment strategies.	400	3.595	0.918
AI systems understand my financial goals and priorities.	400	3.578	0.917
AI tools are capable of aligning with my financial preferences.	400	3.580	0.967
AI-based systems consider my emotional responses to financial changes.	400	3.673	0.893
AI helps tailor financial decisions based on my individual needs.	400	3.568	0.934
AI tools adapt to my personal financial situations over time.	400	3.598	0.929
AI tools factor in my risk tolerance during investment decisions.	400	3.380	0.921
AI enhances my emotional understanding of financial risks.	400	3.458	0.944
AI tools increase my motivation to make informed financial decisions.	400	3.428	0.918
AI systems provide timely updates that encourage proactive financial decisions.	400	3.363	0.950
AI-driven recommendations encourage me to explore new investment opportunities.	400	3.603	0.909
AI tools help set clear financial goals for future investments.	400	3.628	0.889
AI platforms enhance my motivation to track financial market trends.	400	3.625	0.934

AI systems maintain my focus on long-term financial planning.	400	3.685	0.926
AI assists in setting realistic expectations for financial growth.	400	3.638	0.891
AI tools help manage impulsive financial decisions.	400	3.633	0.877
AI assists in maintaining control over my investment strategies.	400	3.593	0.927
AI provides guidance that encourages disciplined financial behavior.	400	3.568	0.907
AI-based platforms help regulate emotions during market fluctuations.	400	3.593	0.899
AI tools support my ability to stay on track with financial objectives.	400	3.690	0.819
AI promotes consistency in financial decision-making processes.	400	3.535	0.965
AI systems reduce overreaction to financial losses or gains.	400	3.630	0.900
AI platforms facilitate collaboration with financial experts.	400	3.645	0.917
AI systems enhance my communication with financial advisors.	400	3.715	0.931
AI tools help in understanding the financial behaviors of others.	400	3.693	0.875
AI enhances teamwork during collaborative investment decisions.	400	3.645	0.909
AI assists in building better financial networks and relationships.	400	3.610	0.959
AI-based systems improve interaction with other investors.	400	3.735	0.923
AI platforms aid in creating a community around financial investments.	400	3.528	1.001
AI systems enhance my confidence in making investment decisions.	400	3.600	0.986
AI tools provide accurate predictions for my investment choices.	400	3.693	0.925
AI helps improve the success rate of my investment decisions.	400	3.678	0.928
AI-driven insights lead to more profitable financial decisions.	400	3.753	0.916
AI assists in minimizing risks during investment decision-making.	400	3.738	0.872
AI platforms offer valuable recommendations for diversified investments.	400	3.758	0.909

AI tools provide real-time data to make timely investment decisions.	400	3.758	0.917
SAW	400	3.625	0.676
EMP	400	3.547	0.593
MOT	400	3.567	0.549
SER	400	3.606	0.630
SOS	400	3.653	0.665
IND	400	3.711	0.666
Valid N (listwise)	400		

Appendix V

Correlation Analysis

Correlations[b]

		SAW	EMP	MOT	SER	SOS	IND
SAW	Pearson Correlation	1	.642**	.554**	.612**	.578**	.594**
	Sig. (2-tailed)		0.000	0.000	0.000	0.000	0.000
EMP	Pearson Correlation	.642**	1	.850**	.600**	.630**	.682**
	Sig. (2-tailed)	0.000		0.000	0.000	0.000	0.000
MOT	Pearson Correlation	.554**	.850**	1	.623**	.620**	.683**
	Sig. (2-tailed)	0.000	0.000		0.000	0.000	0.000
SER	Pearson Correlation	.612**	.600**	.623**	1	.673**	.657**
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000
SOS	Pearson Correlation	.578**	.630**	.620**	.673**	1	.767**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000		0.000
IND	Pearson Correlation	.594**	.682**	.683**	.657**	.767**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.000	

**. Correlation is significant at the 0.01 level (2-tailed).

b. Listwise N=400

Appendix VI

Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.824[a]	0.679	0.675	0.38017

a. Predictors: (Constant), SOS, SAW, MOT, SER, EMP

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	120.295	5	24.059	166.464	.000[b]
	Residual	56.944	394	0.145		
	Total	177.239	399			

a. Dependent Variable: IND

b. Predictors: (Constant), SOS, SAW, MOT, SER, EMP

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	0.048	0.135		0.359	0.720		
	SAW	0.084	0.040	0.085	2.089	0.037	0.491	2.036
	EMP	0.132	0.067	0.118	1.986	0.048	0.231	4.320
	MOT	0.223	0.069	0.183	3.230	0.001	0.253	3.953
	SER	0.123	0.046	0.116	2.681	0.008	0.436	2.293
	SOS	0.452	0.043	0.452	10.634	0.000	0.452	2.211

a. Dependent Variable: IND

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