Financial Synergy for Sustainable Success: Optimizing Management, Investment, AI, and Risk SMEs in Bali

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Info Article

Abstract

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In the context of globalized and environmentally conscious business landscapes, this study investigates the intricate relationships between investment decisions, risk perception, artificial intelligence (AI), and sustainable success in small and medium enterprises (SMEs) in Bali. Employing a quantitative approach, the research explores the mediating role of investment decisions using theoretical frameworks such as the Triple Bottom Line, Pecking Order Theory, Trade-Off Theory, and Prospect Theory. Results from a sample of 150 SMEs reveal significant direct effects and correlations, with investment decisions mediating between AI, risk perception, and sustainability. Managerial implications emphasize strategic AI integration, robust risk management, and a balanced approach to investment decisions for sustainable success. While limitations include sample size constraints, future research directions suggest longitudinal and qualitative studies, exploration of sectoral variations, and assessing the impact of emerging technologies on sustainability decisions. This study provides actionable insights for companies navigating the complexities of sustainable decision-making and underscores the imperative for businesses to foster a culture of adaptability and innovation. By embracing these insights and cultivating a forward-thinking approach, companies can not only optimize their current sustainability strategies but also position themselves strategically to thrive in an ever-evolving business landscape.

Introduction

Globalization and climate change have dramatically reshaped the business landscape, thrusting sustainability challenges to companies' agendas worldwide. As companies strive to maintain relevance and sustainability, every investment decision carries significant weight. Based on the Triple Bottom Line (TBL), companies do not just invest with profit in mind; they also prioritize environmental and social factors, ensuring the longevity of their business while making a positive impact (Cubas-Díaz & Martínez Sedano, 2018). Variations in investment decision-making between large and small enterprises arise from two distinct operational traits: firstly, the ability to furnish the necessary financial resources for project implementation, and secondly, the methodologies employed in managerial functions across these organizations (Gveroski & Jankuloska, 2017). The significance of financial decisions lies in their necessity to optimize returns for diverse organizational constituents and their consequential influence on the company's capacity to confront its competitive environment (Peprah & Ayaa, 2022). Naturally, companies aim for profitability and sustainability. Enterprises that leverage competitive advantages frequently incorporate local wisdom into their operations (Rahyuda et al., 2019).

Investment decisions constitute one of the three critical decisions in financial management as they entail allocating resources to various project proposals that will generate future economic benefits (Shahwan, 2018). Investment decisions are foundational and vital for businesses worldwide (Rashid & Saeed, 2017). The concept of investment plays a crucial role in maximizing wealth. Investment decisions typically involve financial choices related to long-term assets and from the company; thus, scarce resources must be distributed among competing opportunities through capital budgeting (Waheed & Malik, 2019).

Investment decisions necessitate a company's commitment to allocating a significant portion of its liquid assets into long-term assets to anticipate anticipated benefits. He and Kyaw (2018) argue that investment decisions entail tying organizational funds to long-term assets. These decisions are pivotal for companies as they determine their value by influencing profitability and risk (Menicucci et al., 2016). Companies must accurately ascertain the extent of funds tied up in investments to ensure the company's sustainability. Incorrect decisions can jeopardize a company's survival, underscoring the critical importance of careful investment decisions for corporate managers (Shahid & Abbas, 2019). While intelligent and sustainable investment strategies are essential for ensuring companies' longevity and prosperity, ill-advised decisions can result in substantial financial setbacks and damage a company's reputation.

Sustainable development aims for social satisfaction and economic growth while prioritizing environmental conservation and responsible resource use. It seeks to redefine economic progress beyond mere growth, integrating social well-being (Zhao & Xing, 2024). By responsibly using natural resources and preserving the planet's ecosystem, sustainable development underpins current and future economic and social well-being. It is crucial for reducing poverty, ending global hunger, utilizing technology, and promoting intelligent urban planning (Wu, 2024). Many factors are related to risk perception; as expressed by Xu & Zhang (2024), environmental issues pose a challenge when investing in sustainable businesses. Sustainable development is crucial for environmental protection and efficient resource utilization. Recognizing the need for global and local change is the initial step toward achieving it (Eleftheriou et al., 2024).

In the ongoing credit and financial crises, it is crucial to manage risk by employing suitable measurement tools (J. Wang et al., 2024). In this modern era, artificial intelligence (AI) technology has become a potent tool for enhancing investment decision-making processes, including environmental and business sustainability. With its ability to swiftly and accurately analyze vast datasets, identify market trends, and

offer informed recommendations, AI presents unparalleled opportunities. However, adopting AI also presents challenges and risks, ranging from data security concerns to ethical considerations and the reliability of AI algorithms. Artificial intelligence (AI) was once reserved for information technology (IT) specialists. On the other hand, the majority of consumers are now familiar with and utilize the term AI (Jo & Baek, 2023).

As artificial intelligence systems take on more high-stakes decisions across various aspects of our lives, there is growing interest in explainable artificial intelligence. This approach aims to inform stakeholders about the reasons behind the decisions made by such systems, gaining traction across a wide range of fields (Ogata et al., 2024). Numerous models utilize AI techniques, encompassing knowledge-based systems, neural networks, evolutionary systems, fuzzy logic, genetic algorithms, adaptive agents, and expert systems (Batisha, 2023). Artificial intelligence (AI) can recognize patterns and predict future actions based on past experiences, thus aiding in the prevention or detection of potentially malicious activity Sarker (2023), which constitutes the primary focus of this study.

Furthermore, integrating AI technologies necessitates organizational changes, impacting workflows, necessitating workforce adjustments, and requiring additional investments in training and development. Concurrently, individual and group risk perceptions significantly influence investment decision-making. Economic theory posits humans as risk-averse, preferring investments with certain returns over uncertain ones. This risk aversion dictates investors' willingness to embrace higher-risk opportunities only if commensurate returns are expected. Because investors are risk-averse, they are only willing to take on more risky investment opportunities if they can obtain higher returns (Rashid et al., 2022). Consequently, different risk perceptions shape companies' investment preferences and strategies, with low-risk perceptions prompting bold investment moves and high-risk perceptions fostering conservative approaches.

People typically create a portfolio to diversify the risk associated with individual investments. This allows them to spread their investments across various assets or securities, thereby reducing the impact of any single investment's performance on their overall portfolio (A. Wang et al., 2024). Understanding the dynamics of risk perception is paramount for companies seeking to optimize their investment strategies for sustainability. Varying risk perceptions prompt differing investment inclinations, with lower risk perceptions driving pursuits of high-risk, high-return investments. Higher risk perceptions prompt a cautious approach, prioritizing lower-risk investments. These perceptions profoundly influence resource allocation and a company's portfolio risk profile. Incorporating insights into individual and group risk perceptions into investment decision-making processes can enhance alignment with companies' risk tolerance levels and sustainability objectives.

Financial markets now wield such significance in a country's development that market booms directly impact national progress. Those contemplating entry into financial markets are wary of capital loss and asset devaluation. Consequently, mitigating financial risks and threats to capital has perennially concerned traders and investors (Terraza et al., 2024). Recognizing the interconnectedness of investment decisions, business sustainability, AI technology, and risk perception underscores the importance of bridging existing knowledge gaps. This study explores the mediating role of AI technology and risk perception in shaping the relationship between investment decisions and business sustainability. Drawing on theoretical frameworks such as the TBL, Trade-Off Theory, and Prospect Theory, this research provides a robust foundation for understanding how companies formulate investment strategies.

The high tendency of globalization and rapid technological changes in Bali offers SMEs several concurrent opportunities and challenges. While the prospects of sustainable business practice and financial resilience are becoming increasingly significant in recent times, the integration of sustainable investment strategies is complex for SMEs due to financial constraints, limited technological infrastructure, and varying levels of risk perception. While large companies can invest in sophisticated AI tools and develop advanced risk management techniques, SMEs often face severe barriers to adopting such novelties, making them much more vulnerable to market fluctuation, environmental risks, and competitive pressures. This is a significant gap in investment decision-making and sustainability practices since many of these SMEs drive the economy in Bali but are still at risk of lagging in the global march toward sustainable business models.

Most research has focused on large companies with the wherewithal to institute sustainable practices and AI technologies. For instance, studies by Cubas-Díaz and Martínez Sedano (2018) and Rahyuda et al. (2019) have focused on the TBL approach, while Jo and Baek (2023) and Batisha (2023) have discussed AI applications in financial management. These studies rarely discuss the challenges facing SMEs in general and, in particular, how they could address the adoption of sustainability and AI technologies in an emerging market like Bali. This study differs because it focuses on explaining how SMEs can use AI to achieve better sustainability and risk management, focusing mainly on the role of risk perception as a mediating variable. The present research will address this deficit in available literature by studying how SMEs in Bali, given the resource limitation, can optimize sustainability investment strategies through AI and knowledge-based risk management.

First, the objectives include an analysis of investment decisions by SMEs in Bali that are compatible with sustainability and parallel management of financial risks. Second, the research involves investigating the role of AI in shaping and optimizing such investment strategies. Furthermore, the research investigates the mediating role of risk perception in the relationship between investment decisions and business sustainability. Finally, it provides practical ways in which SMEs can overcome the adoption barriers to AI and sustainable business models.

Theoretically, these contributions add to an increase in the literature on sustainable development and financial management by giving insight into how risk perception and AI technology shape investment decisions in SMEs. This study will crystallize existing theories on the TBL and management of investment risk, with particular attention to small enterprises in emerging economies like Bali. On a practical level, this research will also give SMEs actual inputs regarding integrating AI in the investment decision-making process to create sustainability practices. To that effect, it will be going on to make some recommendations to policymakers and business leaders on how SMEs manage their financial risks and adapt to sustainable business models that can contribute to the broader goal of sustainable economic growth.

Literature Review

The Concept of TBL

The concept of TBL comprises People, Planet, and Profit, which have now become the backbone of competitive positioning in the market. In integrating sustainability into operations and marketing, companies improve their market position and fulfil societal and environmental goals of the society and environment (Gimenez et al., 2012; Foerstl et al., 2015). It is critical to note that stakeholders are vital in advancing CSR activities, especially in reaching more accountability and transparency in companies (Paz et al., 2021). Due to the rising interest in concerns about sustainability globally, there has been increased pressure on companies to go green, which will lead to the realization of goals such as reducing carbon footprint and social equity (Khan et al., 2021).

However, the balance between investment and market influence is fragile. Sheikh et al. (2012) even propose that with greater investments, market influence may actually decrease, which again points toward the requirement for strategic financial management. Operating under the TBL framework enables companies to contribute to their competitive positioning by contributing to societal and environmental well-being. Companies would be able to involve stakeholders and find strategic balances in investment for long-term success.

The Trade-off Theory
Achieving financial synergy for sustainable success in small and medium enterprises (SMEs) in Bali requires a balanced approach to financial management, investment strategies, AI application, and risk management. The trade-off theory highlights that while taking on debt can provide tax savings, it also increases the risk of default. Briozzo et al. (2016) Emphasize the need for SMEs to find an optimal balance between leveraging debt for growth and maintaining financial stability. Additionally, financial behaviour is influenced by cognitive biases and emotions, which can lead to irrational decision-making. Sabri et al. (2023) suggest that training and awareness programs can help mitigate these biases, leading to better financial decisions.

Effective investment strategies, particularly those integrating AI, are crucial for the growth and sustainability of SMEs. In Bali, where tourism and local industries are key, AI can optimize operations, predict market trends, and personalize customer experiences. Risk management is also essential, involving identifying and mitigating financial, operational, and market risks. For SMEs in Bali, risks include economic fluctuations and natural disasters. Implementing robust risk management frameworks, including scenario planning and diversification, can help navigate uncertainties. By optimizing financial management, addressing behavioural biases, leveraging AI, and implementing comprehensive risk management, SMEs in Bali can enhance their resilience and contribute to the region's economic development.

Prospect Theory
Prospect theory links the probability of an occurrence or incidence with the ease of occurrence or probability of that incidence, as suggested by (Yang et al., 2020). Against the backdrop of the above discussion, this theory is essential for analyzing the association between aspects of sustainability and financial decision-making related to behavioural biases. It also identifies that analyzing investment strategy and sustainability practices is very complex, and one should consider diverse perspectives.

Focusing on these dynamics, the research provides insight into how companies might optimize an investment strategy in pursuit of sustainability, not necessarily in terms of short-term gains but rather long-term growth. Relevant aspects include energy efficiency, responsible resource usage, and social involvement. AI technology is promising regarding the measurement of sustainability impacts; at the same time, it poses risks regarding data security, the reliability of algorithms, and organizational challenges that should be considered for proactive risk management in case of integration.

In addition, understanding how risk perceptions affect investment decisions is crucial for developing strategies in line with the level of risk tolerance and for sustaining growth. The following study aims to explain better how investment choices, AI, and risk perception shape business sustainability through strategies for companies in pursuit of achieving their goals of long-term sustainability.

Investment Decisions Affect Sustainability

Investors are increasingly making investment decisions based on a firm's ESG performance, and there is a decided preference for firms committed to sustainable business practices. It follows from here that after a decline in interest in environmental information, equity investment shrinkage follows, documented research by Dung et al. (2024), thus supporting that sustainability factors partly influence investment decisions. In light of this, investment decisions based on the availability and relevance of ESG information directly affect an organization's sustainability performance.

H1 : *Investment decisions affect sustainability*

Risk Perception Affects Sustainability

Cuadrado et al. (2024) Shows that perceived risk significantly affects the orientation of sustainable behaviour: the higher the perceived risk regarding environmental impacts, the greater the likelihood of engaging in sustainability actions due to the perceived urgency and impact of the environmental issue. This suggests that perceived risk and sustainable behaviour are directly related. On the other hand, the research from Su et al. (2021) indicates that environmental risk perception influences environmental protection behaviour by improving environmental awareness. Environmental awareness increases one's probability of adopting protection behaviours. The findings suggest that risk perception affects sustainability directly through encouraging sustainable actions and indirectly through promoting environmental awareness and protection behaviour. The role of risk perception seems very multidimensional in the promotion of sustainability.

H2 : *Risk perception affects sustainability*

AI Affects Sustainability

It has its growing application in monitoring environmental conditions, optimally using available resources, and predicting climate-related changes. According to Chaudhary (2023), AI studies the data from remote sensing and uses those to improve wildlife protection and natural resource management. This results in the precision monitoring of ecosystems and proactive management. On the other hand, Y. Wang (2024) states that AI improves energy efficiency through innovative grid technologies that work in a way of optimizing energy distribution and consumption. This, in turn, not only reduces greenhouse gas emissions but also supports integration with renewable energy sources, ultimately contributing to the development of a more sustainable energy infrastructure.

H3 : *AI affects sustainability*

AI Affects Investment Decisions

Henry & Krishna (n.d.) AI technologies like NLP summarize and normalize data from multiple sources, allowing analysts to assess investment ideas quickly. NLP streamlines data analysis and, hence, helps make better decisions on investment. Huang and You (2023) adds that AI can process a sea of financial data to identify patterns and trends that cannot be perceived by using traditional methods. This will enable the forecasting models to improve their market performance and investment value capabilities by capitalizing on historical data and other variables.

H4 : *AI affects investment decisions*

Risk Perception Influences Investment Decisions

In this regard, a study by P, Dr Sindhu K., Kumar & Rajitha (2014) claims that risk perception and other factors such as loss aversion, regret aversion, and prevailing market conditions are the most vital factors influencing investment decisions. In support of these findings, research conducted by Kurniawati et al. (2022) postulates that the intensity of an investor's risk perception determines his or her investment

decisions. More precisely, the person with higher risk aversion will show circumspection, whereas those with low-risk perception would undertake higher risks.

H5 : *Risk perception influences investment decisions*

Investment Decisions Mediate The Relationship between AI and Sustainability

Research by Ravan Ramzani et al. (2024) emphasizes increased incorporation of AI technologies into green finance strategies to enhance decision-making processes for the facilitation of investments in renewable energy. This is important in pursuing sustainable development goals, given that AI optimizes resource allocation and improves risk management in investments touching on environmental sustainability. This would mean that AI directly influences how investments are carried out concerning sustainability. AI would provide insight into optimization, impacting investment choices and driving sustainable development outcomes. Hence, the relationship between AI and sustainability was mediated by investment decisions, as these AI-driven strategies were applied to practical investments focused on environmental goals.

H6 : *Investment decisions mediate the relationship between AI and sustainability*

Investment Decisions Mediate The Relationship between Risk Perception and Sustainability

The data obtained from research Mulyadi et al. (2023) showed a significant positive relationship between risk perception and investment decisions; this indicates that a favourable view of risk perception is one of the leading predictors of making informed investment choices by recognizing potential risks and opportunities. Hence, the relation of risk perception to how people approach their investments can be obtained. Thus, investment decisions mediate the relationship between risk perception and sustainability. As these perceptions of risk eventually equate to the kind of investments that are decided upon, then investment decisions would impact the outcomes in terms of sustainability. Thus, the investment decisions mediate between the perception of risk and sustainability, as the perception of risk is translated into an active investment strategy that could be used in favour or against sustainable practices.

H7 : *Investment decisions mediate the relationship between risk perception and sustainability*
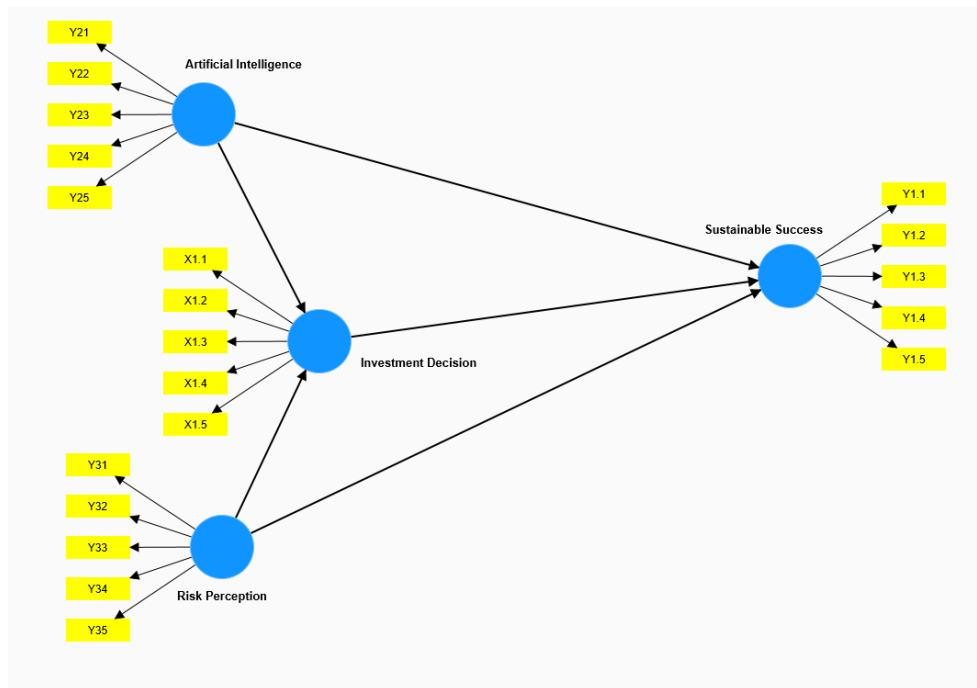

Fig 1. The Framework and Hypotheses Underpinning The Research Study

Research Methods

This research was conducted in the Province of Bali, focusing on small and medium enterprises (SMEs) that have obtained business legality through the decentralization fund of the Directorate General of SMEs. Data was collected quantitatively, utilizing questionnaires distributed to SME owners as respondents. The data source employed was primary data. The sample selection process utilized a purposive sampling method with the criteria of SMEs that have obtained business legality through the decentralization fund of the Directorate General of SMEs. As a result, 150 SMEs were sampled.

Complementing the questionnaire data, interviews with SME owners were conducted to gather additional information. The questionnaire, designed with a comprehensive set of questions to measure relevant variables, assessed respondents' levels of agreement on each variable. This approach, ranging from 'Strongly Agree' to 'Strongly Disagree', aimed to provide a thorough understanding of respondents' perceptions and attitudes towards the variables under study.

The questions for each variable were designed to measure the perceptions and attitudes of SME owners in Bali towards aspects relevant to the sustainability of their businesses. Questions regarding legal compliance highlighted the importance of legality for SME sustainability. Environmental awareness was explored to understand the extent to which SMEs are aware of the environmental impacts of their operations. AI readiness was queried to gauge how SMEs are prepared to adopt artificial intelligence in their operations. Finally, questions about sustainability performance evaluated respondents' understanding of the importance of sustainable performance in ensuring long-term success for SMEs. Thus, these questions provide comprehensive insights into the perceptions and attitudes of SME owners towards variables relevant to the sustainability of their businesses.

Result and Discussion

Descriptive Analysis
Table 1. Descriptive Profile of the Respondents

Characteristic	Number	Percentage (%)
Gender		
Male	79	52.70%
Female	71	47.30%
Age		
Under 30	19	12.70%
30 - 40	44	29.30%
Over 40	87	58.00%
Company Age		
Less than 5 years	11	7.30%
5 - 10 years	39	26.00%
More than 10 years	100	66.70%

150 SME respondents in Bali participated in the study; the gender distribution was almost equal, with 52.7% male and 47.3% female. The majority of the respondents are over 40 years old, comprising 58.0%, indicating that they have managed the SMEs for quite a considerable number of years. Besides that, 29.3% of them fall within an age bracket of 30-40 years, while 12.7% of them are below 30 years of age. The companies' age is mostly over 10 years, at 66.7%, followed by those between 5 to 10 years at 26.0%, while

7.3% have less than 5 years. This data reflects a significant variation in the range of company ages and experiences for the study.

Table 2. Evaluation of Research Variables

Variable	Aspect Measured	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total Responses
Legal Compliance	Compliance with legal requirements	45%	35%	10%	5%	5%	150
	Importance of business legality	50%	30%	10%	7%	3%	150
Environmental Awareness	Awareness of environmental impact	30%	40%	15%	10%	5%	150
	Environmental sustainability practices	25%	35%	20%	15%	5%	150
AI Readiness	Preparedness to adopt AI	20%	30%	25%	15%	10%	150
	Investment in AI technology	15%	25%	30%	20%	10%	150
Sustainability Performance	Understanding the importance of sustainability	55%	30%	10%	3%	2%	150
	Implementation of sustainability practices	35%	30%	20%	10%	5%	150

The survey analysis also says that the majority of SMEs in Bali consider compliance with the law as integral to the sustainability of business; 80% of the respondents reportedly did so. Environmental awareness is varied, while 70% are aware of the environmental impacts of their operations, only 25% are highly proactive about sustainability practices. Similarly, readiness to adopt AI varies; 50% of the respondents feel prepared or have invested in AI technology. The level of awareness of the significance of sustainability is general and high, even though the values are at 85% of the total respondents. At the same time, its implementation varies from one SME to another.

Reliability and Validity Test
Table 3. Cosntruct Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Artificial Intelligence	0.924	0.966	0.934	0.744
Investment Decision	0.960	0.963	0.970	0.865
Risk Perception	0.877	0.883	0.911	0.671
Sustainable Success	0.937	0.956	0.953	0.806

The AVE values for each variable in the output above are more significant than 0.5, meaning that all indicators legitimately converge to form their corresponding variables. Furthermore, Cronbach's Alpha and CR values were more significant than 0.6 for every variable. The study's variables and items all satisfy the validity and reliability requirements for measuring the variables; it can be said.

Direct Effects Analysis

Table 4. Path Coeffisients

	Artificial Intelligence	Investment Decision	Risk Perception	Sustainable Success
Artificial Intelligence		-0.353		-0.337
Investment Decision				-0.712
Risk Perception		0.855		1.044

The following analysis shows some critical effects of AI, investment decisions, and risk perception contributing to sustainable success. The direct effect of AI on investment decisions is -0.353, which indicates that for each unit increase in AI, the financial decisions decrease by 35.3%. Again, AI has a negative direct effect on sustainable success, -0.337, showing that with each unit increase in AI, the sustainability outcomes will reduce by 33.7%. On the contrary, investment decisions negatively affect sustainable success, with a coefficient of -0.712. Thus, there would be a 71.2% decline in sustainable success for every one-unit increase in investment decisions. Perceived risk positively influences the two constructs: investment decisions and sustainable success. For every one-unit increase in perceived risk, investment decisions surge by 85.5%, while sustainable success improves by 104.4%. These findings underline the interactive complex relationship of those factors influencing sustainability outcomes.
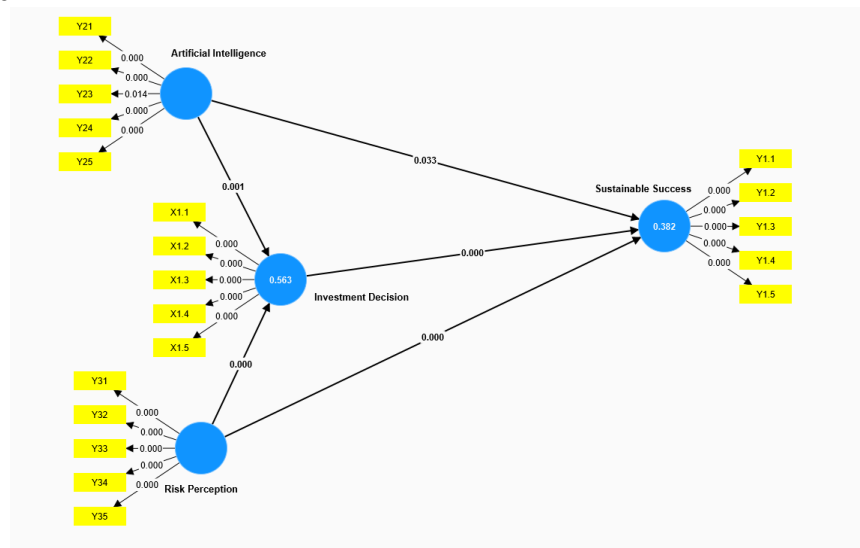
Hypothesis Test

Fig 2. Structural Equation Model Testing

Table 5. Regression Weight Structural Equational Model

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Investment Decision -> Sustainable Success	-0.712	-0.707	0.129	5.542	0.000
Risk Perception -> Sustainable Success	1.044	1.045	0.172	6.055	0.000
Artificial Intelligence -> Sustainable Success	-0.337	-0.341	0.158	2.136	0.033
Artificial Intelligence -> Investment Decision	-0.353	-0.323	0.111	3.187	0.001
Risk Perception -> Investment Decision	0.855	0.839	0.084	10.151	0.000

From the figure, associations of investment decisions with sustainable success are at 0.000, and a coefficient of -0.712 shows a statistically significant negative association between investment decisions and sustainable success. Thus, it can be said that an increased number of investment decisions negatively influences sustainable success. Association of Risk Perception with Sustainable Success: 0.000: From above, it is observed that Risk Perception and sustainability are positively related with a coefficient of 1.044. The higher quantity of risk perception may provide the facility for achieving sustainable success. Correlation of Artificial Intelligence with Sustainable Success (0.033): These results show a significant negative correlation between artificial intelligence and sustainable success, with a coefficient of -0.337. This implies that as artificial intelligence increases, sustainable success decreases. Association of Artificial Intelligence and Investment Decisions (0.001): The association between artificial intelligence and investment decisions is statistically significant at a coefficient of -0.353, indicating that the changes in artificial intelligence negatively influence investment decisions. Correlation of Risk Perception with Investment Decision (0.000): The correlation between risk perception and investment decision is negative, having a coefficient of 0.855, which is statistically significant. That implies that the higher the risk perception, the better the investment decisions.

Table 6. Total Indirect Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Artificial Intelligence -> Investment Decision -> Sustainable Success	0.251	0.233	0.096	2.609	0.009
Risk Perception -> Investment Decision -> Sustainable Success	-0.609	-0.597	0.141	4.304	0.000

Investment Decision Control Mediates the Relationship Between Artificial Intelligence and Sustainable Success (0.009): It could be identified from the results that investment decision mediates the relationship between artificial intelligence and sustainable success, which also goes in line with various theories on how appropriate management of investment decisions can moderate the effect of new technologies on sustainability outcomes. Investment Decision Control Mediates the Relationship between Risk Perception and Sustainable Success (0.000): Indeed, the study confirms that investment decisions mediate the relationship between risk perception and sustainable success, therefore giving credibility to the theory that sound investment decisions can enable companies to navigate the relationship between risk perception and sustainability outcomes.

Discussion

The results point to a significant negative correlation between investment decisions and sustainable success, which means sustainability success decreases while investment decisions increase. The findings are supported by et al. (2024), who, through their study, concluded that reduced interest in environmental information leads to a decline in equity investment decisions. This again supports the hypothesis that decisions to invest because of the availability and relevance of information on ESG directly impact an organization's sustainability performance.

The data suggests a positive relation between risk perception and sustainable success, where higher risk perception indicates better sustainability results. It also supports the findings of Cuadrado et al. (2024), who showed that higher perceived risk related to environmental impacts is associated with a greater possibility of engagement in sustainability actions because of perceived urgency and impact. In addition, Su et al. (2021) found that perceived environmental risk influences environmental protection behaviour by improving environmental awareness. Hence, PR influences sustainability directly by promoting sustainable behaviour and indirectly by facilitating environmental awareness and protection behaviour.

The correlation between artificial intelligence and sustainable success is unfavourable, meaning that if artificial intelligence increases, sustainable success decreases. Potential According to Chaudhary (2023) and Y. Wang (2024), AI can be used to develop sustainability through environmental monitoring and energy efficiency. According to Chaudhary (2023), AI supports protection against natural resources and wildlife through accurate ecosystem monitoring. AI can improve energy efficiency with the help of innovative grid technologies, which in turn can facilitate integration with renewable energy sources (Y. Wang, 2024). However, in this present study, a negative relation between AI and sustainable success has been derived. One possible reason could be that in the context the AI has been implemented, it is not up to the mark or full-fledged to help in supporting sustainability. There are integration issues of AI into current sustainability practice, or there may be issues in applying technology, leading to unintended outcomes. More investigation is required to see just how AI can be applied better to support sustainability.

The coefficient of association between artificial intelligence and investment decisions is negative; therefore, the change in AI negatively impacts investment decisions. Henry and Krishna (n.d.) supported by Huang and You (2023), demonstrates that AI is instrumental in accelerating the refinement process of investment decision-making through the analysis of financial data and identification of patterns not achievable through traditional methods. Henry and Krishna (n.d.) have identified that AI technologies like NLP can summarize and normalize data from multiple sources, thereby enabling quicker and more relevant investment decisions. Huang and You (2023) have further elaborated that AI improves forecasting models by applying historical data with other variables. Still, the results indicate that alterations in AI have a negative impact on investment decisions. This can be because, among other factors, the quality of data-feeding AI systems or how AI analytic results are translated into applications in investment decisions play a core role. A deep analysis of how AI engages in investment decision-making and its possible issues may help explain these results.

The positive relationship between risk perception and investment decisions indicates that a higher level of risk perception is associated with making better investment decisions. P, Dr. Sindhu K., Kumar and Rajitha (2014) postulates and Kurniawati et al. (2022) say that risk perception significantly plays a vital role in making decisions on investments. P, Dr. Sindhu K., Kumar and Rajitha (2014) conclude that risk perception, among other factors like loss aversion and market conditions, is essential in investment decisions. Kurniawati et al. (2022) Additionally, the intensity of an investor's risk perception determines

the investor's resolution when making investment decisions, with every investor having a higher aversion to risk and treading carefully in their investment choices.

The mediation indicates that an investment strategy using AI will drive the outcomes in terms of sustainability. While the correlations are negative and significant in both instances, namely AI and investment decisions, as well as AI and sustainable success, the mediating role suggests that the impact of AI on investments affects the outcomes of sustainability. This is because, according to Ravan Ramzani et al. (2024) research, AI plays a significant role in optimizing resources and improving risk management of green finance strategies; hence, this potentially changes the course of investment decisions. However, it is all about the present context that decides how far AI effectively will help reach sustainable development goals.

The results reveal that investment decisions mediate the relationship between risk perception and sustainability. The higher the perceived risk level, the better the decisions regarding investment and, thus, the outcomes on sustainability. This presents evidence that while risk perception helps make better decisions, such decisions should be transformed into real investments aiming at sustainability. The findings point in the same direction as Mulyadi et al. (2023), where positive risk perception indeed emerged as a strong predictor in facilitating informed investment decisions by identifying risks and opportunities.

Conclusion

The analysis brings out essential insights into the association of investment decisions with the perception of risk, AI, and sustainable success. It leads to a robust positive association of investment decisions with sustainability, which, in simple terms, means prudent investments will guarantee the same for longevity in operation. However, the negative correlation between AI and sustainable success shows that while AI can upgrade decision-making, its overuse or inadequate implementation might impede further efforts toward sustainability. Conversely, regarding a positive relation of risk perception to sustainable success, heightened risk awareness means a better contribution to sustainability and places even more emphasis on risk management.

It also shows how AI negatively influences investment decisions; therefore, fluctuations in this technology significantly dent investment decisions. Increased risk perception normally creates a tendency towards making more conservative investment decisions. Besides, control over investment decisions also serves as a mediating role among the chosen variables of AI, risk perception, and sustainability; hence, having strong mechanisms to help people stand with their investment strategies for as long as sustainability is concerned. Managers should integrate AI into decision-making with a focus on sustainability and implement controls to mitigate negative impacts. Investing in sustainable technologies and maintaining strong governance will help balance financial returns with sustainability goals. Future Research: The need for longitudinal and qualitative studies to explore changes over time and sectoral variations, and intervention studies to provide practical guidelines for enhancing sustainable decision-making practices, is crucial for staying informed about the ongoing developments in sustainable investment strategies.

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