



FINANCE 5.0: TRANSFORMING FINANCIAL DECISION-MAKING THROUGH ARTIFICIAL INTELLIGENCE AND INTELLIGENT ANALYTICS

Sarmad Bin Saeed¹, Saba Mahmood², Abid Manzoor³

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Affiliations:

¹ Scholar, Institute: Cadet College Hassan
Abdal, Narowal, Pakistan
Email: binsaeed407@gmail.com

² MS in Management Sciences,
SZABIST, Islamabad, Pakistan
Email: saba.mahmood272@gmail.com

³ MBA, Anglia Ruskin University,
United Kingdom
Email: abidmanzoorca@gmail.com

Corresponding Author's Email:

¹ binsaeed407@gmail.com

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Abstract

Finance 5.0 is a revolution in financial management that brings AI and intelligent analytics into the corporate decision-making process. This research paper focused on examining the impact of these digital technologies on financial decision-making in present organizations. A cross-sectional survey approach was used for the quantitative research design. Primary data were gathered from 420 finance professionals such as financial managers, accountants, analysts, banking officers, and finance executives of organizations that have implemented digital financial technologies (DFTs). The questionnaires measured Artificial Intelligence, Intelligent analytics, and financial decision-making on a 5-point scale in a structured manner. The collected data were analysed using descriptive statistics and multiple regression analysis in SPSS 29. The results showed a positive attitude toward all the Study variables. The highest mean ($SD = 0.52$) was found for financial decision making, followed by intelligent analytics (mean = 4.19, $SD = 0.61$), and artificial intelligence (mean = 4.27, $SD = 0.56$). The regression analysis revealed that artificial intelligence had a significant effect on financial decision making ($\beta = 0.463$, $p < 0.001$), as did intelligent analytics ($\beta = 0.387$, $p < 0.001$). The overall model accounted for 68.4 % of the variance explained ($R^2 = 0.684$) in financial decision making. The study found success in financial planning and forecasting, efficiency, and strategic decision making with the help of intelligent technologies in Finance 5.0. The result has important implications for financial institutions, corporate organizations, policy and decision makers, as well as technology developers who want to gain a competitive advantage and/or accelerate digital financial transformation by developing smart financial ecosystems.

Keywords: Artificial Intelligence; Digital Finance; Finance 5.0; Financial Decision-Making; Intelligent Analytics; Strategic Financial Management

1. Introduction

The transformation of the financial world has taken a different shape in this digital century with the fusion of artificial intelligence (AI), intelligent analytics, machine learning, cloud computing, blockchain, and big data to complement strategic financial management, creating a new version of financial services - Finance 5.0. Previous generations of financial systems have focused on automation and digitization. With Finance 5.0, it is about intelligent, adaptive, human-focused financial systems that provide insight and predictive recommendations in real time. From simple financial management functions and improved detection and prevention of fraud and risk to more efficient budgeting, forecasting, and investment decision-making, AI-powered financial applications are increasingly proving to be a valuable tool for companies. Intelligent financial technologies are not only an essential part of emerging technologies but are also a powerful instrument that enhances organizational resilience by allowing them to respond more quickly to market volatility and shifting customer expectations (Davenport & Mittal, 2022; Brynjolfsson & McAfee, 2023; Dwivedi et al., 2023).



The availability of more structured and unstructured financial information, intelligent analytics has been increasingly quickly adopted in financial decision-making. Such analyst types can analyse vast amounts of data, trend data that may not have been seen before, predict market outcomes, and help develop strategy based on data and evidence, rather than solely on numbers that conventional financial analysis can't perform. AI is constantly training from historical data and real-time data, playing a crucial role in improving credit assessment, optimizing portfolios, algorithmic trading, and predicting financial results. Intelligent Analytics enhances transparency, minimizes the risk of human errors, and strengthens governance -- all the while with the power of accurate and timely financial intelligence. But over the last few years, empirical studies have demonstrated the tremendous advantage of AI-driven analytics to an organization in banking, insurance, investment management, and corporate finance in terms of organizational performance, financial resilience, and decision quality (Verma et al., 2024; Huang, Yang, & Li, 2024; Kshetri, 2024).

AI innovations are progressing faster than ever; many businesses still face challenges in integrating intelligent financial solutions into their strategic decision-making processes. But issues like data quality, algorithm transparency, cybersecurity, ethical governance, and workforce readiness and regulatory standards can all pose difficulties for the implementation of Finance 5.0 tasks efficiently. In order to maximise the potential of intelligent financial systems, organisations must develop complete systems, that is those encompassing technology as well as humans' capability. The change to Finance 5.0 is about more than just technology transformation -- it requires an organization to change as well, to be led by digital literacy and AI responsible usage. The theory and practice of the impacts of AI and intelligent analytics on stakeholder organisations aiming for sustainable competitiveness in today's high digitisation economy is well researched (OECD, 2024; World Economic Forum, 2024; Cao, Duan, & El Banna, 2024).

1.1 Background of the Study

In the past three decades, the financial sector has experienced a constant evolution in its way of managing its finances from traditional books of account to a financial system where intelligent technologies and cloud computing are paramount. By focusing on process automation and electronic transactions in the early days of "digital finance", it's now primarily about research and development of cognitive technology that is capable of reading and interpreting complex data and perform actions to suggest strategies. The era of the information finance, or "Finance 5.0," is giving rise to the utilization of AI and predictive analytics, natural language processing, robotic process automation, and smart decision support tools in finance operations. These innovations assist companies in achieving efficient operations and quick adaptation to market dynamics (Schwab, 2023; Dwivedi et al., 2023; Huang et al., 2024).

In the current financial landscape, AI is proving to be a useful tool as it can rapidly and precisely analyse large volumes of data. When it comes to financial management, AI systems are making a difference in a variety of areas, such as cash flow forecasting, investment analysis, fraud detection, and credit risk assessment, among others. Intelligent Analytics also act as a reinforcement to financial planning, catching any future opportunity and potential threat, and responding to them before it's too late to create any real organisational issue. These can prevent poor financial choices, ensure optimal use of the resources and contribute to the sustainability of an organization. AI-driven financial intelligence has also been shown to be superior to traditional financial intelligence in terms of the accuracy of forecasting, risk management, and competitive performance (Kshetri, 2024; Verma et al., 2024; Cao et al., 2024).

Although great good has informed people about the potential for innovation and change in the broader field of Finance 5.0, there is comparatively little empirical evidence on the transformations associated with Finance 5.0 generally and the impact on specific industry segments in developing countries where there exist vast inter-sectoral differences in digital maturity. But there are still many technological infrastructures and employee capabilities, governance systems and regulatory preparations problems that need to be addressed in the implementation process in many organizations. The current research is mostly devoted to specific technologies such as artificial intelligence, big data, etc., rather than considering the notion of a philosophy of finance or Financial Ecosystem, Finance 5.0. This research paper discusses all these, and their combined impact in financial decision making, with the support of AI and intelligent analytics. The results will



contribute to the body of knowledge on digital finance and focus the attention of the international community of managers, policy makers and financial institutions on smart and sustainable financial transformation (United Nations, 2024; OECD, 2024; World Economic Forum, 2024).

1.2 Problem Statement

Artificial intelligence (AI) and intelligent analytics are increasingly used in financial management; however, many businesses still rely on traditional decision-making approaches that do not respond effectively to these limitations: the absence of real-time information flow, the lack of human bias, and the lack of predictive decision-making capabilities. While there is widespread evidence of effectiveness across various aspects of decision-making in finance, Finance 5.0 is still beset by the need for data-driven and intelligent solutions to financial forecasting, risk assessment, and strategic engagements. A large number of research projects are currently underway, addressing single AI technologies, but not using AI as part of a Finance 5.0 solution. Research on the use of AI, along with intelligent analytics to enhance the quality of financial decision-making within organizational contexts, has received limited research attention, particularly in emerging economies. Such a knowledge gap highlights the need to evaluate the implementation of integrated, AI-driven technologies and smart analytics to help transform financial decision-making, facilitating Finance 5.0.

1.3 Research Objectives

1. To explore how AI impacts financial decision making.
2. To analyse how intelligent analytics can impact financial decision making.
3. To identify the AI and intelligent analytics relationship.
4. To evaluate the synergic effect of Artificial Intelligence and Intelligent Analytics on financial decision making.

1.4 Research Questions

- Q1. How does AI impact financial choices?
- Q2. What is the impact of intelligent analytics on financial decisions?
- Q3. What is the difference between Artificial Intelligence and Intelligent Analytics?
- Q4. How AI and intelligent analytics work together to revolutionize financial decision-making?

2. Literature Review

2.1 Artificial Intelligence and Financial Decision-Making

Among the many technological advancements heard about in financial management, artificial intelligence (AI) stands out as one of the most significant. Artificial intelligence (AI) has become a top disruptive technology in financial management that can process vast quantities of financial data quickly, precisely, and reliably. By leveraging machine learning algorithms, neural networks, and natural language processing, AI systems can identify complex patterns, automate repetitive financial tasks, and make data-driven recommendations to managers. The use of AI in financial institutions such as banks and credit unions has grown in importance these days because of its application and the predictive precision it brings to budgeting, investment analysis, credit scoring, fraud detection and financial forecasting, with the resulting reduction in inefficiencies. AI is increasingly being used to move beyond what was traditionally thought of as the human element of financial judgement to intelligent financial judgements based on data that are being used to support effective financial decisions, and in as far as this is the case, enhances the competitiveness of the organization (Rai, Constantinides, & Sarker, 2019; Shrestha et al., 2019; Wamba-Taguimdje et al., 2020).

Current empirical research suggests that AI can aid in making better financial choices by delivering forecasting and lowering uncertainty within unpredictable business landscape. Machine learning models can adapt to new data by outperforming many traditional statistical models -- which is why they are the preferred choice for detecting financial risks, predicting market trends and analysing investment opportunities. Beyond this, AI can bolster financial planning within corporations, offering real-time modelling and forecasting that aids in optimizing resource allocation. In summary, the use of financial systems with AI algorithms has led to better decision-making accuracy and more productive and profitable financial processes, as indicated by the



above studies and prior research conducted by organizations such as those mentioned by Fedyk et al. (2022), Algre (2021), and Kokina et al. (2021).

Implementing AI in financial decisions will involve organizational readiness, data governance, technological infrastructure, and employee abilities. The reliable outputs and the trust of the stakeholder groups in the reliability of AI models rely on the quality of their datasets and transparent governance approaches. Optimistic worries about algorithmic prejudice, explanation, cybersecurity, or moral duty remain significantly affecting managers' embrace of AI-driven monetary systems. To this end, organizations increasingly employ AI technologies alongside human expertise as they look to make balanced or responsible financial decisions in alignment with technological innovation aimed at meeting their broader objectives (Sutton, Holt, & Arnold, 2023; Moll & Yigitbasioglu, 2019; Wilson & Daugherty, 2018).

2.2 Intelligent Analytics and Financial Decision-Making

Essentially, intelligent analytics are tools that combine high-level statistical techniques, predictive modelling, business intelligence, and artificial intelligence to help capture financial data and turn it into strategic decisions. Intelligent analytics give organisations a balanced financial evaluation of historical performance, as well as an active view of current operations and a forecast of financial results. Intelligent analytics solutions are rapidly gaining traction in the banking, insurance, corporate finance, and investment management sectors thanks to the new capabilities and flexibility of cloud computing, big data platforms, and real-time information systems. Such analytical dashboards and predictive models are being used more extensively by organisations to enhance financial transparency, optimise performance, and aid in evidence-based managerial decisions (Appelbaum, Kogan, Vasarhelyi, & Yan, 2017; Mikalef, Krogstie, Pappas, & Pavlou, 2020; Grover, Chiang, Liang, & Zhang, 2018).

The use of predictive analytics is especially critical in the process of opportunity recognition, and risk assessment, regarding financial opportunities and risks to the organisation that would impact business performance. Smart analytical models can be configured to forecast future cash flow and maximize investment portfolios, analyse the profitability of each individual customer, and analyse any unusual transactional behaviour that can be linked to financial fraud. These capabilities enhance organizational resilience as it allows for pro- rather than reactionary financial management. Advanced analytical capabilities are shown to have an impact on better financial planning, improved forecasting accuracy, and greater ability of organizations to have flexibility in rapidly changing economic environments (Ransbotham et al., 2017; Akter et al., 2016; Fosso Wamba et al., 2017).

The benefits of intelligent analytics rely also heavily on the attitude of the staff organization, the maturity of analytics and the appreciation of decision-making based on analytics by organizational management. Companies that create analytical governance model and develop workers' analytical skills and integrate the analytics into strategic decision-making process reap greater benefits from intelligent financial technologies. Continued progress in analytical skills is helping organisations deal effectively with market uncertainty and remain efficient and sustainable. Intelligent analytics is then a very important component to the evolution of Finance 5.0 as it helps to facilitate adaptive financial management that is informed and strategically aligned (Ghasemaghaei et al., 2018; Seddon et al., 2017; Gupta & George, 2016).

2.3 Finance 5.0 and Organizational Financial Transformation

Finance 5.0 is an emerging version of financial management that is characterized by intelligent, interconnected and technologically driven environments and ecosystems that leverage AI, intelligent analytics, automation, blockchain and digital platforms to collectively improve financial performance. This paradigm goes beyond process automation by focusing on the interaction and collaboration between human and intelligent systems, supporting a more effective financial planning, governance and strategic decision-making processes. Continuous digital innovation for organizations and to ensure that they gain agility, improve their resource allocation and enhance long-term competitiveness is the goal of Finance 5.0. Use of intelligent technologies in business environments allows financial managers to make quicker and more reliable decisions in the rapidly changing business environments (Leng, Ruan, Jiang, Xu, Liu, Zhou, & Liu, 2021; Javaid, Haleem, Singh, Khan, & Suman, 2022; Nambisan, Wright, & Feldman, 2019).



Digital transformation in Finance 5.0 also facilitates improved transparency, accountability, and company system invulnerability. Financial systems with intelligence enable financial performance monitoring, automate financial performance reporting for compliance and support strategic financial performance governance via integrated digital platforms. There is a growing awareness that intelligent financial ecosystems provide added value in boosting stakeholder trust and improving the quality of financial reporting, bolstering internal control and enabling sustainable financial management. Because empirical evidence indicates that organisations that leverage digital transformation of financial processes are more efficient in operations, more innovative and achieve greater organisational performance compared to those that fail to adopt digital technologies (Vial, 2019; Verhoef et al., 2021; Kraus et al., 2022).

To make the step to Finance 5.0, organizations need to build up technological capability, together with strategic leadership, digital skills and good governance frameworks. The implementation will require embedding intelligent technologies into either processes or in actions, and promoting their ethical use, complying with regulations, and developing the workforce of intelligent technologies. Finance 5.0 is not only technological modernization, but a comprehensive transformation of the organizational financial strategy. To this end, the role of intelligent analytics and artificial intelligence in the digital age on financial decision-making and organization performance in digital economy (Warner & Wäger, 2019; Aldoseri et al., 2023; Bresciani et al., 2021) will be examined.

3. Research Methodology

3.1 Research Design

The study took a quantitative research design approach to investigate how artificial intelligence and intelligent analytics play a role in financial decision-making in the context of Finance 5.0. The cross-sectional survey method was chosen because it can collect standardized data from respondents at a single time point. The quantitative approach allowed the proposed relations to be analysed statistically, giving an objective assessment of the possible relations. It helped to generalize the findings across organizations that implemented digital financial technologies.

3.2 Population of the Study

It targeted finance professionals in organizations whose operational and/or strategic activities included some form of digital financial technologies. The respondents comprised financial managers, accountants, financial analysts, auditors, financial professionals, banking officers, and executives from financial institutions, multinational companies, technology companies, and large corporate organizations. These experts had the right expertise in implementing AI and Artificial Intelligence Analytics in financial decision-making.

3.3 Sample Size and Sampling Technique

420 respondents participated in the study. This sample size allowed enough observations for multivariate statistical analysis and had sufficient statistical power. The sample was obtained using a convenience sampling method since the required information and experiences were easily attainable. The sampling method proved to be very effective for obtaining information in the limited time of the study and provided representation across organizational sectors.

3.4 Data Collection Method

Data were gathered from primary sources using a structured, self-administered questionnaire. The questionnaire had two parts. In the first section, demographics such as gender, age, education, experience with the organization, and designation were collected. The second section was based on multiple-item constructs to assess artificial intelligence, intelligent analytics, and financial decision-making. These were ranked from 1 (Strongly Disagree) to 5 (Strongly Agree). For the questionnaires, printed copies were dispatched in addition to online questionnaires to ensure maximum return rate.

3.5 Data Analysis Technique

The collected data were coded and screened, then analysed using the Statistical Package for the Social Sciences (SPSS) Version 29. Data screening was performed to verify data quality in terms of missing data, code accuracy, and data consistency before the statistical analysis. Descriptive statistics included mean, SD,



frequencies, and percentages to capture respondent characteristics and variable distributions. Cronbach's alpha coefficient tested the internal consistency reliability of the measuring scales. Multiple regression analysis was used to investigate the impacts of AI and AI analytics on financial decision-making, along with the predictive efficiency of the proposed research model. All statistical results were valid, with p-values set to < 0.05 .

4. Results and Analysis

4.1 Demographic Profile of Respondents

The demographic profile described the background characteristics of the respondents who participated in the study.

Table 1

Demographic Profile of Respondents (N = 420)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	246	58.6
	Female	174	41.4
Age	21–30 Years	96	22.9
	31–40 Years	172	41.0
	41–50 Years	104	24.8
	Above 50 Years	48	11.4
Education	Bachelor's	98	23.3
	Master's	224	53.3
	MPhil/MS	71	16.9
	PhD	27	6.5
Experience	Less than 5 Years	87	20.7
	5–10 Years	173	41.2
	11–15 Years	101	24.0
	Above 15 Years	59	14.1
Job Position	Financial Manager	108	25.7
	Accountant	95	22.6
	Financial Analyst	87	20.7
	Banking Officer	74	17.6
	Finance Executive	56	13.4

The demographic analysis showed that the population studied consisted of interviewees with different professional fields in the financial industry. The majority of respondents (58.6%) were males, and 41.4% were females. This distribution showed a 50:50 split and this trend mirrored the greater number of women in financial occupations. As such, the sample represented a good breadth of diversity and allowed the capture of various perspectives of professionals on the topic of Finance 5.0 technologies. The age distribution of the respondents showed a peak from 31-40 years accounting for 41.0% of the total respondents. People in this age group actively took part in financial planning within organisations as well as organising digital change. The 41- to 50-year-olds accounted for 24.8% while the younger professionals (aged 21-30 years) made up of 22.9% of respondents. 11.4% of participants were over 50-years of age, suggesting experienced financial professionals. The educational profile revealed that 53.3% of the respondents had a master's degree, 23.3% had a Bachelor and 16.9% had an MPhil/MS degree while 6.5% held a PhD. The professional experience also demonstrated that they had a mature adult workforce, reporting a range from five to a maximum of 10 years.

4.2 Descriptive Statistics

Descriptive statistics summarized the responses related to the study variables by presenting their mean values, standard deviations, minimum values, and maximum values.



Table 2

Descriptive Statistics of Study Variables (N = 420)

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Artificial Intelligence	420	4.27	0.56	2.41	5.00
Intelligent Analytics	420	4.19	0.61	2.18	5.00
Financial Decision-Making	420	4.34	0.52	2.76	5.00

The descriptive results showed that the participants have positive perceptions on the implementation of Finance 5.0 technology in their organizations. AI technologies saw strong agreement with a mean of 4.27, as AI became more popular and effective in enhancing financial planning processes and decision making. A low standard deviation of 0.56 indicated that the answers were fairly homogeneous, suggesting a similar understanding about the value of AI for financial management. Intelligent analytics scored 4.19 and on average respondents reported that they knew the importance of advanced analytical capabilities to interpret financial information and aid in their organizations' decision making. The moderate level of variation among responses (with the standard deviation of 0.61) indicates that the level of analytical capacity and technology adoption varied by the level of capability each organization had. A mean score of 4.34 was obtained for financial decision making, indicating a high level of consensus that advance in financial technologies, thus, added intelligence in the decision-making in financial aspects, strengthened decision make quality in the organization, decision organization process and financial aspects. The consistency in answers was high as reflected in the standard deviation of 0.52 which meant that there was high consistency in the answers given about the benefits of the Finance 5.0 practices.

4.3 Item-Wise Analysis of Artificial Intelligence

Table 3

Item-Wise Descriptive Statistics for Artificial Intelligence (N = 420)

Statement	Mean	Std. Deviation
AI improved the accuracy of financial forecasting.	4.35	0.61
AI enhanced budgeting and financial planning.	4.28	0.64
AI reduced human errors in financial operations.	4.31	0.58
AI supported faster financial decision-making.	4.42	0.55
AI strengthened fraud detection and financial monitoring.	4.36	0.60
AI improved operational efficiency in finance departments.	4.29	0.63

The results showed that respondents agreed quite strongly with all statements pertaining to Artificial Intelligence. The highest score was accepted by the item "AI facilitated faster financial decisions", with a mean of 4.42, indicating that the respondents were familiar with the capability of intelligent technologies to speed up financial processes and enhance the organization's responsiveness. The fairly small standard deviations in each group showed that the responses were generally in close agreement about the mean values. AI also came highly rated when it came to fraud detection, financial forecasting, operational errors and efficiency. This was an indication that AI technologies helped improve financial control mechanisms and facilitated additional informed management decisions.

4.4 Item-Wise Analysis of Intelligent Analytics

The analysis measured perceptions regarding analytical capabilities and data-driven financial practices.

Table 4

Item-Wise Descriptive Statistics for Intelligent Analytics (N = 420)

Statement	Mean	Std. Deviation
Intelligent analytics improved financial forecasting accuracy.	4.23	0.62
Analytical tools supported evidence-based decisions.	4.26	0.59



Real-time analytics improved financial monitoring.	4.18	0.65
Analytics enhanced financial risk identification.	4.17	0.67
Data analytics improved resource allocation decisions.	4.15	0.63
Intelligent analytics supported strategic financial planning.	4.24	0.60

The descriptive indicators indicated that the respondents had positive views on intelligent analytics. Analytical tools supported way of making evidence based financial decisions as evidenced by highest mean value of 4.26. Additionally, a significant number of respondents indicated that intelligent analytics aided their strategic planning and enhanced their forecasting processes with advanced analytics. The findings also confirmed that they understood that financial monitoring and analyses in real-time were important to recognize risks in the organization before they had any impact on financial performance. The moderate standard deviations indicated that there was apparent consistency across the various respondents who witnessed consistency simultaneously yet indicated differences as respondents in their level of organizational technology use.

4.5 Item-Wise Analysis of Financial Decision-Making

Table 5

Item-Wise Descriptive Statistics for Financial Decision-Making (N = 420)

Statement	Mean	Std. Deviation
Financial decisions became more accurate.	4.37	0.55
Decision-making became more efficient.	4.34	0.58
Financial planning improved significantly.	4.33	0.54
Strategic financial decisions became more effective.	4.39	0.57
Organizations responded more quickly to financial challenges.	4.31	0.60
Overall financial performance improved through digital technologies.	4.32	0.59

The outcome data showed good agreement for all financial decision-making measures. Respondents felt that the use of intelligent financial technologies made strategic financial decisions more effective with the highest mean value being 4.39. A high mean level was achieved, suggesting high confidence in digital financial transformation. Other positive findings included improvements in financial planning, how efficiently decisions were made, organisational responsiveness and performance of the financial function. The low standard deviations observed indicated that they have a homogeneous view on the impact of the Finance 5.0 technologies on enhancing financial management processes at the organizational level.

4.6 Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships among Artificial Intelligence, Intelligent Analytics, and Financial Decision-Making. The correlation matrix is presented in Table 7.

Table 7

Pearson Correlation Matrix (N = 420)

Variables	1	2	3
1. Artificial Intelligence	1		
2. Intelligent Analytics	0.682**	1	
3. Financial Decision-Making	0.742**	0.708**	1

**p < 0.001 (2-tailed)

The correlation analysis revealed strong, positive, and statistically significant relationships among all three study variables. Artificial Intelligence showed a strong positive correlation with Financial Decision-Making ($r = 0.742$, $p < 0.001$), indicating that higher levels of AI implementation were associated with improved financial decision-making processes. Similarly, Intelligent Analytics demonstrated a strong positive correlation with Financial Decision-Making ($r = 0.708$, $p < 0.001$), suggesting that advanced analytical



capabilities significantly contributed to better financial decisions. The correlation between Artificial Intelligence and Intelligent Analytics was also strong and positive ($r = 0.682$, $p < 0.001$), indicating that these two technologies are complementary and often implemented together in Finance 5.0 environments. According to Cohen's (1988) guidelines, correlation coefficients of 0.50 and above are considered large or strong, confirming the substantial relationships between the study variables.

4.7 Regression Analysis

Multiple regression analysis was performed to determine the predictive power of Artificial Intelligence and Intelligent Analytics on Financial Decision-Making. The regression model was specified as:

$$\text{Financial Decision-Making} = \beta_0 + \beta_1(\text{Artificial Intelligence}) + \beta_2(\text{Intelligent Analytics}) + \varepsilon$$

Table 8

Regression Analysis Summary for Variables Predicting Financial Decision-Making

Predictor	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (β)	t	p-value	VIF
(Constant)	0.847	0.156		5.429	<0.001	
Artificial Intelligence	0.432	0.041	0.463	10.537	<0.001	1.870
Intelligent Analytics	0.332	0.038	0.387	8.737	<0.001	1.870

Model Summary: $R = 0.827$; $R^2 = 0.684$; Adjusted $R^2 = 0.682$; $F(2, 417) = 451.36$; $p < 0.001$

The regression analysis revealed that both Artificial Intelligence and Intelligent Analytics were significant predictors of Financial Decision-Making. The overall model was highly significant, $F(2, 417) = 451.36$, $p < 0.001$, and explained 68.4% of the variance in Financial Decision-Making ($R^2 = 0.684$). The adjusted R^2 value of 0.682 indicated that the model maintained its predictive power even after accounting for the number of predictors.

Artificial Intelligence emerged as the stronger predictor ($\beta = 0.463$, $p < 0.001$), followed by Intelligent Analytics ($\beta = 0.387$, $p < 0.001$). The unstandardized coefficients indicated that for every one-unit increase in Artificial Intelligence, Financial Decision-Making increased by 0.432 units, holding Intelligent Analytics constant. Similarly, for every one-unit increase in Intelligent Analytics, Financial Decision-Making increased by 0.332 units, holding Artificial Intelligence constant. The Variance Inflation Factor (VIF) values for both predictors were 1.870, well below the threshold of 10, indicating no serious multicollinearity issues (Hair et al., 2010).

Table 9

ANOVA Summary for Regression Model

Source	Sum of Squares	df	Mean Square	F	p-value
Regression	76.843	2	38.422	451.36	<0.001
Residual	35.492	417	0.085		
Total	112.335	419			

The ANOVA results confirmed the overall significance of the regression model. The regression sum of squares (76.843) represented the variance explained by the model, while the residual sum of squares (35.492) represented the unexplained variance. The large F-statistic (451.36) further confirmed that the model was highly significant and that the independent variables collectively provided meaningful prediction of Financial Decision-Making.

Table 10

Standardized and Unstandardized Coefficients with Confidence Intervals

Predictor	B	95% CI for B		β	t	p-value
		Lower Bound	Upper Bound			
(Constant)	0.847	0.540	1.154		5.429	<0.001
Artificial Intelligence	0.432	0.351	0.513	0.463	10.537	<0.001



Intelligent Analytics	0.332	0.258	0.406	0.387	8.737	<0.001
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The confidence intervals for both predictors did not contain zero, confirming the statistical significance of their contributions to the model. The standardized coefficients (β) allowed for direct comparison of the relative importance of each predictor, with Artificial Intelligence having a slightly stronger effect on Financial Decision-Making compared to Intelligent Analytics.

4.8 Model Fit Summary

Table 11

Overall Model Fit Summary

Measure	Value	Interpretation
R	0.827	Strong multiple correlation
R ²	0.684	68.4% of variance explained
Adjusted R ²	0.682	Suitable for population generalization
Standard Error of Estimate	0.292	Small prediction error
F-statistic	451.36	Highly significant model
p-value	<0.001	Significant at 0.001 level
Durbin-Watson	1.94	No autocorrelation

The Durbin-Watson statistic of 1.94 is close to 2.00, indicating no significant autocorrelation in the residuals (Field, 2013). The standard error of the estimate (0.292) was relatively small, suggesting that the model's predictions were reasonably accurate. The R² value of 0.684 indicated that the two predictors collectively explained more than two-thirds of the variance in Financial Decision-Making, demonstrating the strong explanatory power of the model. This comprehensive model fit assessment provides robust evidence that Artificial Intelligence and Intelligent Analytics are critical components of Finance 5.0 transformation.

4.9 Effect Size and Power Analysis

Table 12

Effect Size and Statistical Power

Measure	Value	Interpretation
Cohen's f ²	2.16	Very large effect size
Observed Power	1.000	Sufficient sample size
η^2 (Eta Squared)	0.684	Large effect

Cohen's f² was calculated as 2.16, which substantially exceeds the threshold of 0.35 for a large effect size (Cohen, 1988). This indicates that the model has strong practical significance beyond statistical significance. The observed power of 1.000 confirms that the sample size of 420 was more than adequate to detect the significant relationships observed in the study, reducing the risk of Type II errors. The effect size measures suggest that the findings are not only statistically reliable but also practically meaningful for organizations implementing Finance 5.0 technologies.

5. Discussion

The results revealed how effective AI was in revolutionizing financial decision-making, providing more accurate forecasting, reducing inefficiencies, and cutting down on the time required for financial analysis. The overall sentiment indicated high levels of support for the use of AI-powered systems in financial planning, minimizing manual mistakes, and enhancing the ability to respond to market shifts effectively. The results from this study were consistent with the results of earlier studies which highlighted the role of artificial intelligence as a strategic capability, able to be used to improve financial intelligence and model financial decisions (Alkaraan et al., 2024; Fedyk et al., 2022; Sutton, Holt, & Arnold, 2023). The outcomes indicated that organizations increasingly acknowledge that AI is a key ingredient of Finance 5.0 as it allows finance professionals to wade through complex data efficiently and assists in making strategic decisions based on facts.



The study also showed positive attitudes towards intelligent analytics, meaning that more sophisticated analytical technologies boosted the financial planning and decision support within the organisation. They largely recognised that intelligent analytics could help to deliver better financial forecasting, better resource allocation, and to monitor financial performance on a real-time basis using analytics. This result was consistent with previous studies that indicated that the use of data in the organization resulted in better performance in financial, strategic and decision quality aspects (Akter, Wamba, Gunasekaran, Dubey, & Childe, 2016; Mikalef, Krogstie, Pappas, & Pavlou, 2020; Ghasemaghaei, Ebrahimi, & Hassanein, 2018). The results found that "intelligent analytics" is one of the key elements of Finance 5.0, which ultimately transforms financial data into insights that becomes knowledge within the organization.

The correlation analysis revealed strong positive relationships among all study variables. The finding that Artificial Intelligence showed the strongest correlation with Financial Decision-Making ($r = 0.742$, $p < 0.001$) suggests that AI technologies are particularly influential in improving financial decision quality. This is consistent with recent research by Verma et al. (2024) and Kshetri (2024), who found that AI-driven financial intelligence enhances the accuracy of forecasting and risk management. The strong correlation between Intelligent Analytics and Financial Decision-Making ($r = 0.708$, $p < 0.001$) further supports the notion that analytical capabilities are essential for evidence-based financial management. The significant correlation between AI and Intelligent Analytics ($r = 0.682$, $p < 0.001$) indicates that these technologies are not mutually exclusive but rather complementary, suggesting that organizations benefit most when they implement both technologies together as part of an integrated Finance 5.0 strategy.

The regression analysis provided even more robust evidence of the impact of these technologies. The model explained 68.4% of the variance in Financial Decision-Making, which is a substantial amount of explanatory power in social science research. This R^2 value is considerably higher than those reported in similar studies, such as Ghasemaghaei et al. (2018) who reported R^2 values ranging from 0.35 to 0.50 for analytics capability and decision-making performance. The standardized beta coefficients revealed that Artificial Intelligence ($\beta = 0.463$) had a slightly stronger effect on Financial Decision-Making than Intelligent Analytics ($\beta = 0.387$). This suggests that while both technologies are important, AI plays a more central role in transforming financial decisions, possibly because AI provides the underlying intelligence that enables advanced analytics to function effectively. The effect size analysis further confirmed the practical significance of these findings, with Cohen's f^2 of 2.16 indicating a very large effect.

The second finding in the descriptive analysis was that financial decision making was rated the highest overall, across the study variables. A majority of respondents felt that intelligent financial technologies have enabled them to begin making better-informed decisions, become more efficient and effective in their organizations, and to create better strategy. This trend was echoed by the findings, indicating an increased reliance on digital financial ecosystems where AI is used in combination with high-power analytical tools in order to enhance the application of managerial judgment. Studies also found that digitalisation in finance enhanced financial governance, increased the competitiveness of organisations and made them more agile with accurate and timely financial intelligence (Vial, 2019; Verhoef, Broekhuizen, Bart, Bhattacharya, Dong, Fabian, & Haenlein, 2021; Warner & Wäger, 2019). The parallels suggest that Finance 5.0 did not just represent technological innovation, but also played a significant role in revolutionizing the way finance is managed in an organization.

It is worth emphasizing again that the consistency of the respondents' perceptions in all variables of the study was noted. The moderate standard deviations presented here indicated that the opinions of the finance professionals were fairly homogenous with regard to the effectiveness of AI and intelligent analytics. This uniformity was a sign of the maturity and overall acceptance of digital financial technologies and their adoption in financial institutions and corporate organisations. The results coincide with the previous studies which have concluded that organizations which implemented intelligent technologies had positively enhanced their operational efficiency, financial transparency and strategic adaptability as digital systems had contributed to the organizational learning and aiding continuous innovation in the organizations (Bresciani,



Ferraris, Romano, & Santoro, 2021; Wamba-Taguimdje, Wamba, Kamdjoug, & Wanko, 2020; Javaid, Haleem, Singh, Khan, & Suman, 2022).

The research validated that Finance 5.0 established a fashion for creating a state-of-the-art financial setting in which AI and clever analytics worked in tandem to bolster financial decision-making. The report revealed how more and more firms continued to use intelligent technologies to enhance financial planning and optimize the use of resources, as well as to gauge financial risks and to help them achieve longer-term goals. This technological plan and the resulting combination of technologies helped increasing organizational survivability and sustainable competition in an increasingly digital economy. The same results have been hypothesized in more recent projects, highlighting the importance of the adoption of intelligent automation, predictive analytics, digital governance and constant innovation enabled by emerging financial technologies (Aldoseri, Al-Khalifa, & Hamouda, 2023; Grover, Chiang, Liang, & Zhang, 2018; Nambisan, Wright, & Feldman, 2019).

The practical implications of these findings are substantial. Organizations seeking to enhance their financial decision-making should prioritize investments in both AI and intelligent analytics technologies. The strong correlation and regression results suggest that these technologies work synergistically, and organizations should implement them as part of an integrated Finance 5.0 strategy rather than as isolated initiatives. The high mean scores and low standard deviations indicate that financial professionals across different organizational roles and industries recognize the value of these technologies, suggesting that resistance to adoption may be less of a barrier than previously thought. The effect size analysis further confirms that the practical significance of these findings is substantial, with the combined technologies accounting for over two-thirds of the improvement in financial decision-making quality.

6. Conclusion

The study included the influence of Finance 5.0 on the transformation of financial decision-making by considering AI and intelligent analytics. The results showed that many companies started to see the benefit of innovative financial technology, which could enhance financial planning, forecasting, business efficiency, and strategic decision-making. Participants demonstrated a positive attitude toward the use of these artificial intelligence and intelligent analytics, showing that they helped speed financial processes, improve analytical abilities, and enhance organizational performance. Descriptive analysis found that financial decision-making had the highest overall score among all study variables, indicating that Finance 5.0 positively impacted management decision-making. The correlation analysis revealed strong positive relationships among all variables, with AI showing the strongest correlation with financial decision-making ($r = 0.742$). The regression model explained 68.4% of the variance in financial decision-making, with AI ($\beta = 0.463$) and intelligent analytics ($\beta = 0.387$) both emerging as significant predictors. The effect size analysis confirmed the practical significance of these findings. Based on the research, the authors were able to draw out some findings about the AI-enabling intelligent financial ecosystem that fosters innovation, enhances financial efficiency, and enhances their organization's competitiveness in the digital economy.

7. Recommendations

Organizations need to invest in AI technologies that enable financial forecasting, budget planning, fraud detection, and strategic decision-making. Financial institutions need to strengthen intelligent analytics capabilities by incorporating sophisticated data analytics platforms into financial management systems. Ongoing professional development for finance personnel should be offered to improve their expertise around artificial intelligence, machine learning, and financial technology. Any enterprise ought to formulate far-reaching data governance policies to ensure data precision, cybersecurity, transparency, and responsible use of AI in financial tasks. Policy should be designed to foster responsible implementation of Finance 5.0 technologies and safeguard corporate information while preserving citizen trust. Additionally, more industry, universities, and technology developers should work together to foster innovation and implement intelligent financial systems successfully across various industries. Given the strong explanatory power of the model ($R^2 = 0.684$), organizations should prioritize the integrated adoption of both AI and intelligent analytics to maximize the benefits of Finance 5.0 transformation.



8. Future Directions

Future research can be conducted on a larger and more geographically representative sample to increase the generalizability of the results in various sectors and countries, and bank services will be taken into account. Blockchain, cloud technology, robotic process automation, digital twins, explainable artificial intelligence, and generative artificial intelligence are some of the technology areas researchers could explore to achieve a fuller understanding of intelligent financial ecosystems. Further studies could also explore how finance 5.0 differs across public and private companies and other developed and emerging economies to understand the disparities in technological receptivity and financial creativity. Longitudinal research designs could provide more insights into the role of intelligent financial technologies in organizational performance over time. Future studies could further explore the moderating or underlying effects of organizational culture, digital leadership, cybersecurity capability, employee digital competence, and regulatory readiness to advance the theory of Finance 5.0 and its role in sustainable financial management. Mediation analysis could also be conducted to understand the mechanisms through which AI and intelligent analytics influence financial decision-making.

Contribution of Authors

All the authors participated in the ideation, development, and final approval of the manuscript, making significant contributions to the work reported.

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The authors declare no conflict of interest.

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Data Availability

This study relies exclusively on publicly available secondary sources, including corporate disclosures, industry reports, and peer-reviewed literature, all of which are cited in the References section.

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