



(RESEARCH ARTICLE)



ARTIFICIAL INTELLIGENCE ADOPTION AND STRATEGIC PLANNING EFFECTIVENESS: AN EMPIRICAL STUDY OF ORGANIZATIONAL DECISION-MAKING

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World Journal of Advanced Research and Reviews, 2026, 31(02), 944–953

Publication history: Received on 08 July 2026; revised on 17 August 2026; accepted on 19 August 2026

Article DOI: <https://doi.org/10.30574/wjarr.2026.31.2.2137>

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ABSTRACT

This study examined the influence of Artificial Intelligence (AI) adoption on strategic planning effectiveness among selected IT companies in the Philippines. As organizations increasingly operate in dynamic and data-intensive environments, AI technologies have emerged as critical tools for improving decision-making, forecasting, and strategic management. Despite the growing implementation of AI across industries, empirical evidence regarding its contribution to strategic planning effectiveness remains limited, particularly in developing economies. Using a quantitative descriptive-correlational research design, data were collected from 105 managers and executives employed in selected technology firms. A structured questionnaire measured AI adoption and strategic planning effectiveness using a seven-point Likert scale. Descriptive statistics, Pearson product-moment correlation, and linear regression analyses were employed to analyze the data.

The findings revealed that AI adoption was perceived to be at a very high level, while strategic planning effectiveness was assessed as high among participating organizations. Correlation analysis indicated a strong and statistically significant positive relationship between AI adoption and strategic planning effectiveness ($r = 0.78$, $p < 0.01$). Regression analysis further demonstrated that AI adoption significantly predicted strategic planning effectiveness ($\beta = 0.47$, $p < 0.001$), explaining a substantial proportion of the variance in strategic planning outcomes ($R^2 = 0.72$). These results suggest that organizations leveraging AI technologies are more likely to develop effective strategies, improve decision quality, enhance forecasting accuracy, and strengthen organizational adaptability.

The study concludes that AI adoption serves as a strategic organizational capability that significantly enhances strategic planning effectiveness. The findings contribute to the growing literature on AI-enabled management and provide practical implications for organizations seeking to improve strategic decision-making and achieve sustainable competitive advantage in the digital era.

Keywords: Artificial Intelligence Adoption; Strategic Planning Effectiveness; Strategic Decision-Making; Digital Transformation; Organizational Performance

1 INTRODUCTION

Artificial Intelligence (AI) has emerged as one of the most transformative technologies shaping contemporary organizations. Recent advancements in machine learning, predictive analytics, natural language processing, and intelligent automation have fundamentally altered how organizations collect information, process data, and formulate strategic decisions. AI technologies enable organizations to derive actionable insights from large and complex datasets, thereby improving decision quality, operational efficiency, and organizational responsiveness to environmental changes (Dwivedi et al., 2021; Davenport & Mittal, 2022).

The increasing complexity of business environments has heightened the need for effective strategic planning. Strategic planning serves as a critical management function that enables organizations to establish long-term objectives, allocate resources efficiently, assess risks, and maintain competitive advantage. However, strategic planning effectiveness is highly dependent on the quality, timeliness, and accuracy of information available to decision-makers (Bryson, 2018; Wolf & Floyd, 2017). Consequently, organizations are increasingly exploring AI technologies as strategic tools capable of enhancing planning processes and supporting evidence-based decision-making.

Existing literature suggests that AI contributes significantly to organizational decision-making by improving forecasting accuracy, identifying emerging market trends, and facilitating real-time analysis of business conditions. According to Davenport and Ronanki (2018), AI-driven systems enhance managerial decision-making through automated data processing and intelligent recommendations. Similarly, Jarrahi (2018) argued that AI complements rather than replaces human decision-makers by augmenting analytical capabilities and supporting complex strategic judgments. These findings suggest that AI has the potential to transform strategic management practices through improved access to high-quality information.

Several studies have demonstrated the strategic value of AI across different organizational contexts. Shrestha, Ben-Menahem, and Von Krogh (2019) found that AI-assisted decision systems improve decision speed and accuracy, particularly in complex and uncertain environments. Likewise, Ransbotham et al. (2020) reported that organizations with mature AI capabilities experience higher levels of innovation and business performance. Furthermore, Alsheibani, Cheung, and Messom (2020) found that AI adoption positively influences organizational agility, allowing firms to respond more effectively to market disruptions and competitive pressures.

The growing integration of AI into strategic decision-making has attracted increasing scholarly attention. Research by Csaszar, Ketkar, and Kim (2024) suggests that AI can enhance strategic analysis by improving organizational search processes, knowledge representation, and evaluation of strategic alternatives. Similarly, Vudugula et al. (2023) concluded that AI-driven predictive models significantly improve organizational forecasting, risk assessment, and long-term planning capabilities. These developments indicate that AI is evolving from an operational support technology into a strategic organizational resource.

From a theoretical perspective, the Resource-Based View (RBV) posits that organizations achieve sustainable competitive advantage through the development and deployment of valuable, rare, inimitable, and non-substitutable resources (Barney, 1991). AI capabilities may satisfy these criteria by enabling organizations to generate unique insights, optimize decision-making processes, and strengthen strategic adaptability. Complementing this perspective, Dynamic Capabilities Theory emphasizes the importance of sensing opportunities, seizing resources, and transforming organizational competencies in rapidly changing environments (Teece, 2018). AI technologies can support these capabilities through continuous data analysis and predictive intelligence.

Despite the recognized benefits of AI, organizations continue to encounter challenges in its implementation. Studies have identified data quality issues, cybersecurity concerns, employee resistance, inadequate technical expertise, and integration difficulties as major barriers to successful AI adoption (Dwivedi et al., 2021; Alsheibani et al., 2020). Moreover, Sambakui et al. (2025) emphasized that organizational readiness, governance mechanisms, and leadership support play crucial roles in ensuring successful AI integration and strategic value realization.

Although previous studies have investigated AI adoption, digital transformation, and organizational performance, limited empirical evidence exists regarding the direct relationship between AI adoption and strategic planning effectiveness. Most prior studies have focused on operational efficiency, business analytics, and innovation outcomes, leaving a significant gap in understanding how AI contributes to the effectiveness of organizational strategic planning. This gap is particularly evident in developing economies, where AI adoption is expanding rapidly but empirical research remains relatively limited.

Given these considerations, the present study examines the relationship between AI adoption and strategic planning effectiveness among selected IT companies in the Philippines. Specifically, the study seeks to determine the level of AI adoption and strategic planning effectiveness, assess the relationship between these constructs, and evaluate the extent to which AI adoption predicts strategic planning effectiveness. By providing empirical evidence on the strategic value of AI, the study contributes to the growing literature on digital transformation, strategic management, and organizational decision-making.

1.1 Statement of the Problem

The increasing adoption of Artificial Intelligence (AI) technologies has transformed organizational processes, enabling firms to enhance data analysis, automate routine tasks, and support managerial decision-making. As organizations operate in increasingly dynamic and competitive environments, strategic planning has become a critical function for achieving long-term organizational goals and sustaining competitive advantage. Despite the growing investment in AI technologies across various industries, there remains limited empirical evidence regarding the extent to which AI adoption contributes to the effectiveness of strategic planning. Existing studies have primarily focused on AI's operational and technological benefits, while its influence on strategic planning processes and outcomes remains insufficiently explored.

Furthermore, organizations continue to experience challenges in utilizing AI-generated insights for strategic decision-making. The effectiveness of strategic planning depends on the quality, timeliness, and relevance of information available to decision-makers. While AI technologies have the potential to improve these aspects, the actual relationship between AI adoption and strategic planning effectiveness has not been adequately established, particularly in organizational contexts where strategic decisions have significant implications for performance and sustainability.

Given these gaps in the literature, there is a need for empirical research that examines how the adoption of AI influences strategic planning effectiveness. This study seeks to contribute to the growing body of knowledge by investigating the relationship between Artificial Intelligence adoption and strategic planning effectiveness in organizational decision-making.

Specifically, this study aims to answer the following research questions:

What is the extent of Artificial Intelligence adoption among organizations in terms of:

- AI-driven data analytics;
- Decision support systems;
- Process automation; and
- Predictive intelligence capabilities?

What is the level of strategic planning effectiveness in organizations in terms of:

- Quality of strategic decisions;
- Planning accuracy;
- Adaptability to environmental changes; and
- Achievement of strategic objectives?

Is there a significant relationship between Artificial Intelligence adoption and strategic planning effectiveness?

To what extent does Artificial Intelligence adoption predict strategic planning effectiveness?

Based on the findings, what recommendations can be proposed to enhance strategic planning effectiveness through Artificial Intelligence adoption?

1.2 Conceptual Framework

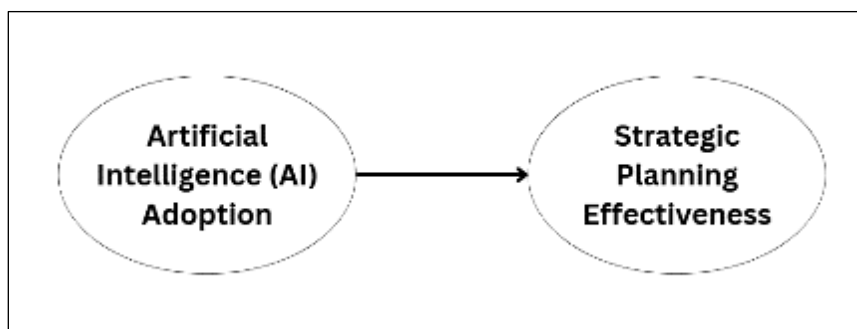


Figure 1. Conceptual Framework Showing the Relationship Between Artificial Intelligence (AI) Adoption and Strategic Planning Effectiveness.

Figure 1 presents the conceptual framework of the study, which examines the relationship between Artificial Intelligence (AI) Adoption and Strategic Planning Effectiveness. The framework identifies AI adoption as the independent variable and strategic planning effectiveness as the dependent variable. It proposes that the extent to which organizations adopt AI technologies influences the effectiveness of their strategic planning processes.

AI adoption encompasses the integration and utilization of technologies such as machine learning, predictive analytics, decision-support systems, and intelligent automation to support organizational activities. These technologies enable organizations to process large volumes of data, generate accurate forecasts, identify emerging trends, and provide timely insights for decision-making. As a result, AI adoption is expected to enhance the quality and efficiency of strategic planning by providing evidence-based information that supports the formulation and implementation of organizational strategies.

Strategic planning effectiveness refers to an organization's ability to develop, implement, and achieve strategic objectives successfully. Effective strategic planning is characterized by informed decision-making, adaptability to environmental changes, efficient resource allocation, and the attainment of long-term organizational goals. Organizations that effectively utilize AI technologies are expected to strengthen their strategic planning capabilities through improved analytical accuracy, better risk assessment, and enhanced decision support.

1.3 Research Hypothesis

The following null hypotheses were tested at the 0.05 level of significance:

- **H₀₁:** Artificial Intelligence adoption has no significant relationship with strategic planning effectiveness.

2 METHODOLOGY

2.1 Research Design

The study adopted a quantitative descriptive-correlational design to examine the effect of Artificial Intelligence (AI) adoption on strategic planning effectiveness. This research design was appropriate because it enabled the measurement and analysis of the relationship between the independent and dependent variables using statistical methods such as Pearson correlation and linear regression analysis. Through these techniques, the study assessed the magnitude and significance of the association between AI adoption and strategic planning effectiveness, thereby providing empirical evidence on how the use of AI technologies supports and enhances organizational strategic planning processes.

2.2 Participants

The study involved 105 employees from selected IT companies in the Philippines, chosen through a purposive sampling technique. The selection criteria focused on professionals directly engaged in strategic planning, leadership, and organizational decision-making functions. The sample consisted of 63 males (60%) and 42 females (40%). Age distribution revealed that 15.2% of respondents were between 20 and 29 years old, 44.8% were between 30 and 39 years old, 31.4% were between 40 and 50 years old, and 8.6% were over 50 years old. In terms of organizational position, managers represented 66.7% of the sample, while executives accounted for 33.3%. With respect to work experience, 16.2% had less than five years of experience, 31.4% had five to ten years, 29.5% had eleven to fifteen years, and 22.9% had more than sixteen years of professional experience. All respondents participated voluntarily and provided informed consent. Ethical considerations were observed by ensuring anonymity, confidentiality, and secure handling of all collected information.

2.3 Research Instrument

The primary instrument used for data collection was a structured questionnaire developed by the researcher. The questionnaire was designed to measure the key variables of the study and consisted of two main sections: (1) Artificial Intelligence (AI) Adoption and (2) Strategic Planning Effectiveness. Each section contained ten statements evaluated using a 7-point Likert scale, with response options ranging from 1 (Strongly Disagree) to 7 (Strongly Agree). The AI Adoption section assessed the extent to which organizations integrate, utilize, and embrace AI technologies as part of their digital transformation initiatives. Meanwhile, the Strategic Planning Effectiveness section measured the effectiveness of strategic planning processes in terms of goal clarity, stakeholder participation, decision quality, and successful strategy implementation.

To ensure the quality of the instrument, the questionnaire underwent expert validation to evaluate its content relevance, accuracy, and clarity. Reliability was subsequently assessed using Cronbach's alpha, yielding coefficients ranging from 0.71 to 0.91, which indicate acceptable to excellent levels of internal consistency. Specifically, the AI Adoption scale obtained Cronbach's alpha coefficient of 0.91, while the Strategic Planning Effectiveness scale also achieved a coefficient of 0.91. According to the reliability standards proposed by George and Mallery (2019), these values demonstrate a high degree of reliability, confirming that the instrument was both valid and dependable for measuring the constructs examined in the study.

2.4 Data Gathering Procedure

Before commencing the study, the researcher obtained the necessary ethical approval from the institutional ethics review committee and acquired permission from the selected technology firms to conduct the research. After receiving the required clearances, the survey questionnaire was distributed electronically through email using a secure online data collection platform. Respondents were informed about the objectives of the study, their right to voluntary participation, and the confidentiality safeguards established to protect their personal information.

The data collection process lasted Four (4) weeks, with responses being automatically recorded and organized in a digital database. The researcher subsequently reviewed the collected data to ensure accuracy, completeness, and suitability for statistical analysis. To uphold ethical research practices, respondents were assured that their identities would remain anonymous and that the information provided would be used solely for scholarly purposes. All collected data were stored securely and managed in accordance with institutional policies on data privacy, confidentiality, and research ethics.

2.5 Data Analysis

The data collected was analyzed using both descriptive and inferential statistical techniques. Descriptive statistics, specifically the weighted mean and standard deviation, were employed to assess the levels of Artificial Intelligence (AI) adoption and strategic planning effectiveness among the participating organizations. The mean scores were interpreted using the following scale: 1.00–1.85 (Very Low), 1.86–2.71 (Low), 2.72–3.57 (Somewhat Low), 3.58–4.43 (Moderate), 4.44–5.29 (Somewhat High), 5.30–6.15 (High), and 6.16–7.00 (Very High).

To examine the relationship between AI adoption and strategic planning effectiveness, Pearson's product-moment correlation coefficient (r) was utilized. Furthermore, simple linear regression analysis was conducted to determine the predictive effect of AI adoption on strategic planning effectiveness and to quantify the extent to which variations in strategic planning effectiveness could be explained by AI adoption.

All statistical procedures were performed using JASP Version 0.18, with the level of statistical significance set at $p < 0.05$. Prior to conducting regression analysis, the underlying assumptions of normality, linearity, homoscedasticity, independence of errors, and absence of multicollinearity were assessed and met. The satisfactory fulfillment of these assumptions confirmed the suitability of the dataset for inferential statistical analysis and ensured the validity of the study's findings.

3 RESULTS

3.1 Level of AI Adoption and Strategic Planning Effectiveness

The findings reveal that the level of Artificial Intelligence (AI) adoption among the participating organizations is very high. Respondents reported that AI technologies are extensively integrated into core business functions, routinely utilized in daily operations, and consistently supported through investments in technological upgrades and development initiatives. Furthermore, AI is widely perceived as a strategic resource that enhances organizational decision-making, improves operational efficiency, and strengthens the capability to anticipate and respond to changing market conditions.

Despite the strong adoption of AI, several challenges continue to affect its optimal implementation and utilization. Respondents identified high implementation costs, concerns regarding data privacy and cybersecurity, limited technical competencies among employees, and integration difficulties with legacy systems as significant barriers. These findings suggest that organizations should prioritize capacity-building initiatives, workforce development, and technological infrastructure improvements to fully realize the benefits of AI-driven transformation.

The results also indicate that strategic planning effectiveness is perceived to be at a high level across the participating organizations. Respondents agreed that strategic planning processes effectively establish organizational goals, encourage stakeholder participation, receive substantial support from senior management, and facilitate alignment between operational activities and long-term strategic objectives. Moreover, the outcomes of strategic planning were viewed as sustainable and beneficial to organizational performance over time.

However, relatively lower ratings were observed regarding the structure of planning procedures and the clarity of strategic priorities. While these aspects were still positively evaluated, the findings indicate opportunities for improvement in the design and execution of planning frameworks. Strengthening the consistency of planning processes and enhancing the communication of strategic priorities may further improve the effectiveness of strategic planning and support better organizational outcomes.

3.2 Relationship Between AI Adoption and Strategic Planning Effectiveness

Table 1: Correlation of AI Adoption with Strategic Planning

Variable	r-value	p-value	Interpretation
AI Adoption	0.78	< 0.01	Significant, Positive, and Very Strong Relationship

Note: strength which includes very weak (0.00–0.19), weak (0.20–0.39), moderate (0.40–0.59), strong (0.60–0.79), and very strong (0.80–1.00)

Table 1 presents the correlation analysis between Artificial Intelligence (AI) Adoption and Strategic Planning Effectiveness. The findings revealed a correlation coefficient ($r = 0.78$) with a p -value < 0.01 , indicating a statistically significant positive relationship between the two variables.

The obtained correlation coefficient of 0.78 suggests a strong positive association between AI adoption and strategic planning effectiveness. This implies that organizations with higher levels of AI adoption tend to exhibit greater effectiveness in their strategic planning processes. As the utilization of AI technologies increases, organizations are more likely to improve their ability to analyze data, forecast trends, support decision-making, and formulate strategies that align with organizational goals. Furthermore, the p -value of less than 0.01 indicates that the observed relationship is statistically significant at the 1% level of significance. Therefore, the null hypothesis stating that there is no significant relationship between AI adoption and strategic planning effectiveness is rejected. The findings provide empirical evidence that AI adoption plays a crucial role in enhancing strategic planning effectiveness within organizations.

The strong positive relationship observed in this study supports the view that AI technologies contribute to more informed, data-driven, and timely strategic decisions. Through advanced analytics, predictive modeling, and intelligent decision-support systems, organizations can improve strategic planning accuracy, adaptability to environmental changes, and overall strategic performance. Consequently, the results highlight the importance of investing in AI capabilities as a means of strengthening organizational strategic planning processes and achieving sustainable competitive advantage.

3.3 Impact of AI Adoption and Leadership Styles on Strategic Planning Effectiveness

Table 2 presents the regression model summary examining the combined influence of Artificial Intelligence (AI) Adoption and Leadership Styles on Strategic Planning Effectiveness. The results indicate a strong overall relationship between the predictor variables and the dependent variable, as evidenced by the multiple correlation coefficient ($R = 0.85$). This value suggests that AI adoption and leadership styles are strongly associated with strategic planning effectiveness. The magnitude of the correlation demonstrates that changes in AI adoption and leadership practices are closely linked to variations in organizations' strategic planning outcomes.

The coefficient of determination ($R^2 = 0.72$) shows that 72% of the variance in strategic planning effectiveness is explained by the combined effects of AI adoption and leadership styles. This finding indicates substantial explanatory power, suggesting that the model effectively captures key factors influencing strategic planning effectiveness. The remaining 28% of the variance may be attributed to other organizational, technological, or environmental factors not included in the present study. Similarly, the adjusted R^2 value of 0.72 is identical to the R^2 value, indicating that the model remains stable after adjusting for the number of predictors included in the analysis. This result suggests that the

explanatory power of the model is not artificially inflated and that both AI adoption and leadership styles contribute meaningfully to predicting strategic planning effectiveness.

Table 2: Model Summary of the Regression on Strategic Planning Effectiveness

R	0.85
R ²	0.72
Adjusted R ²	0.72
Std. Error of the Estimate	0.42
Durbin-Watson	1.61

Note: Variance Inflation Factors (VIFs) below 5, the highest being 1.85, multicollinearity was not a concern

The standard error of the estimate (0.42) indicates a relatively low level of prediction error, suggesting that the observed values of strategic planning effectiveness are generally close to the values predicted by the regression model. This reflects a satisfactory level of model accuracy and reliability. Furthermore, the Durbin-Watson statistic of 1.61 falls within the generally acceptable range of 1.5 to 2.5, indicating that there is no serious evidence of autocorrelation among the residuals. Consequently, the independence assumption of the regression analysis is reasonably satisfied. The diagnostic results further revealed that all Variance Inflation Factor (VIF) values were below 5, with the highest VIF being 1.85. This finding indicates that multicollinearity is not a concern, suggesting that AI adoption and leadership styles represent distinct constructs and provide unique contributions to the prediction of strategic planning effectiveness.

Table 3: Analysis of Variance (ANOVA) for the Regression Model

Source	Sum of Squares	df	Mean Square	F	P
Regression	46.97	2	23.49	131.68	< 0.001
Residual	18.19	102	0.18		
Total	65.17	104			

Table 3 presents the Analysis of Variance (ANOVA) results for the multiple regression model examining the influence of Artificial Intelligence (AI) on Strategic Planning Effectiveness. The findings reveal that the regression model is statistically significant, as indicated by the F-value of 131.68 with a corresponding p-value of less than 0.001. This result demonstrates that the model provides a significantly better prediction of strategic planning effectiveness than a model with no predictor variables. The very small p-value indicates strong statistical evidence that AI adoption and leadership styles collectively contribute to explaining variations in strategic planning effectiveness.

The regression model accounted for a sum of squares of 46.97, while the residual sum of squares was 18.19, resulting in a total sum of squares of 65.17. These values indicate that a substantial proportion of the variability in strategic planning effectiveness is explained by the predictor variables included in the model. Specifically, approximately 72% of the variance in strategic planning effectiveness is explained by AI adoption and leadership styles, consistent with the coefficient of determination reported in the model summary ($R^2 = 0.72$). Furthermore, the model utilized 2 degrees of freedom for regression and 102 degrees of freedom for residuals, indicating that two independent variables were assessed in predicting strategic planning effectiveness. The mean square regression value of 23.49 was considerably higher than the mean square residual value of 0.18, resulting in the large F-ratio obtained. This suggests that the variation explained by the model is substantially greater than the unexplained variation, confirming the model's predictive strength. Based on these findings, the null hypothesis stating that AI adoption do not significantly influence strategic planning effectiveness is rejected. The alternative hypothesis is therefore accepted, indicating that the predictor variables have a statistically significant effect on strategic planning effectiveness.

Table 4: Coefficients of the Predictors on Strategic Planning Effectiveness

Predictor	B	SE B	β	t	p	95% CI [LL, UL]	VIF
(Constant)	-0.06	0.4	—	-0.15	0.88	[-0.85, 0.73]	—
AI Adoption	0.47	0.07	0.47	6.57	< .001	[0.33, 0.61]	1.85

Table 4 presents the regression coefficients examining the effect of Artificial Intelligence (AI) Adoption on Strategic Planning Effectiveness. The results indicate that AI Adoption is a significant positive predictor of Strategic Planning Effectiveness ($B = 0.47$, $SE = 0.07$, $\beta = 0.47$, $t = 6.57$, $p < 0.001$). The positive unstandardized coefficient ($B = 0.47$) suggests that for every one-unit increase in AI adoption, strategic planning effectiveness is expected to increase by 0.47 units, holding other factors constant. This finding demonstrates that organizations with higher levels of AI adoption tend to exhibit greater effectiveness in their strategic planning processes.

The standardized coefficient ($\beta = 0.47$) indicates a moderate to strong positive effect size, signifying that AI adoption makes a substantial contribution to explaining variations in strategic planning effectiveness. This result highlights the importance of AI technologies in supporting strategic activities through enhanced data analytics, predictive capabilities, real-time information processing, and evidence-based decision-making. Furthermore, the t -value of 6.57 and the corresponding p -value of less than 0.001 indicate that the effect of AI adoption is statistically significant. Therefore, the null hypothesis stating that AI adoption has no significant effect on strategic planning effectiveness is rejected. The findings provide strong empirical evidence that AI adoption contributes positively to strategic planning effectiveness within organizations.

The 95% confidence interval [0.33, 0.61] does not include zero, further confirming the statistical significance and reliability of the estimated coefficient. This interval suggests that the true effect of AI adoption on strategic planning effectiveness is highly likely to be positive across the target population.

Regarding model diagnostics, the Variance Inflation Factor (VIF) of 1.85 is well below the commonly accepted threshold of 5.0, indicating that multicollinearity is not a concern. This finding suggests that the predictive effect of AI adoption is stable and not distorted by excessive correlation with other variables in the model. In contrast, the constant term ($B = -0.06$, $p = 0.88$) was not statistically significant, indicating that the intercept does not meaningfully contribute to the prediction of strategic planning effectiveness. However, this does not affect the interpretation of the predictor variable, as the primary focus of the analysis is the impact of AI adoption.

4 DISCUSSIONS

The primary objective of this study was to examine the relationship between Artificial Intelligence (AI) adoption and strategic planning effectiveness among selected technology companies in the Philippines. The findings revealed that AI adoption was perceived to be at a very high level, while strategic planning effectiveness was assessed as high. These results suggest that organizations increasingly recognize AI as a strategic resource capable of enhancing organizational performance, decision-making quality, and long-term competitiveness. The widespread integration of AI technologies into organizational processes indicates that digital transformation initiatives have become an important component of contemporary strategic management practices.

The correlation analysis demonstrated a strong and statistically significant positive relationship between AI adoption and strategic planning effectiveness ($r = 0.78$, $p < 0.01$). This finding implies that organizations with greater levels of AI adoption tend to experience higher levels of effectiveness in strategic planning. The result supports the argument that AI technologies contribute to strategic decision-making by providing timely, accurate, and data-driven insights that improve planning quality and organizational responsiveness. The ability of AI systems to analyze large volumes of information, identify patterns, and generate predictive forecasts may enable organizations to make more informed strategic choices and adapt more effectively to changing business environments.

The regression results further strengthen these findings. The model summary revealed that AI adoption explained a substantial proportion of the variance in strategic planning effectiveness ($R^2 = 0.72$), indicating that 72% of the observed variation in strategic planning effectiveness could be attributed to the predictor variables included in the model. This level of explanatory power suggests that AI adoption is a critical factor influencing organizational planning outcomes. The strong multiple correlation coefficient ($R = 0.85$) further highlights the close association between AI-related capabilities and effective strategic planning practices.

The ANOVA results confirmed the overall significance of the regression model ($F = 131.68$, $p < 0.001$). This finding indicates that AI adoption significantly contributes to predicting strategic planning effectiveness and that the model provides a substantially better explanation of organizational planning outcomes than would be expected by chance. The statistical significance of the model provides empirical support for theoretical perspectives that view technological innovation as a key driver of strategic effectiveness and organizational performance.

Moreover, the regression coefficient analysis identified AI adoption as a significant positive predictor of strategic planning effectiveness ($B = 0.47$, $\beta = 0.47$, $t = 6.57$, $p < 0.001$). The positive coefficient indicates that increases in AI adoption are associated with corresponding improvements in strategic planning effectiveness. This finding

demonstrates that organizations can strengthen their strategic planning capabilities by investing in AI technologies, particularly those related to predictive analytics, intelligent decision-support systems, process automation, and data-driven forecasting. The results also suggest that AI serves not only as an operational tool but as a strategic asset that supports organizational adaptability, innovation, and sustainable competitiveness.

5 CONCLUSION

This study examined the influence of Artificial Intelligence (AI) adoption on strategic planning effectiveness among selected technology companies in the Philippines. The findings revealed that both AI adoption and strategic planning effectiveness were perceived to be at high levels, indicating that organizations are increasingly utilizing AI technologies to support decision-making and strategic management processes.

The results demonstrated a strong and significant positive relationship between AI adoption and strategic planning effectiveness. Furthermore, AI adoption was found to be a significant predictor of strategic planning effectiveness, suggesting that organizations with higher levels of AI integration are more likely to achieve superior strategic planning outcomes. The regression analysis further showed that AI adoption accounts for a substantial proportion of the variance in strategic planning effectiveness, emphasizing its critical role in organizational success.

Based on the findings, the null hypothesis stating that AI adoption has no significant relationship with strategic planning effectiveness was rejected. The study concludes that AI adoption contributes significantly to improving strategic planning effectiveness by enhancing analytical capabilities, supporting evidence-based decision-making, increasing forecasting accuracy, and improving organizational adaptability.

Consequently, AI should be regarded as a strategic organizational resource rather than merely a technological innovation. Organizations that effectively leverage AI technologies are better positioned to strengthen strategic planning processes, improve decision quality, and maintain a sustainable competitive advantage in increasingly complex business environments.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are proposed:

- Organizations should continue investing in AI technologies to strengthen strategic planning processes, improve forecasting capabilities, and support evidence-based decision-making.
- Management should enhance employee competencies in AI applications through regular training, workshops, and professional development programs to ensure effective utilization of AI-generated insights.
- Organizations should develop comprehensive AI implementation strategies that align technological initiatives with long-term organizational goals and strategic priorities.
- Greater attention should be given to data governance, cybersecurity, and privacy protection, as these factors were identified as important challenges affecting AI implementation.
- Organizations should integrate AI-driven decision-support systems into strategic planning frameworks to improve planning accuracy, resource allocation, and organizational responsiveness to environmental changes.
- Policymakers and industry leaders should support the adoption of AI technologies by promoting digital transformation initiatives, establishing ethical guidelines, and creating supportive innovation ecosystems.
- Future researchers may explore additional variables, such as organizational culture, leadership effectiveness, digital readiness, innovation capability, and employee acceptance, to further explain variations in strategic planning effectiveness.
- Future studies may utilize larger and more diverse samples across different industries and geographical locations to enhance the generalizability of findings and provide broader insights into the strategic implications of AI adoption.

These recommendations are intended to assist organizations, practitioners, and researchers in maximizing the strategic benefits of AI and promoting more effective strategic planning practices in the digital era.

STATEMENTS ON COMPLIANCE WITH ETHICAL STANDARDS

Disclosure of conflict of interest

The authors declare that they have no known financial interests, personal relationships, or competing interests that could have appeared to influence the work reported in this manuscript, ***Artificial Intelligence Adoption and Strategic Planning Effectiveness: An Empirical Study of Organizational Decision-Making***. The research was conducted independently, and the authors have no conflicts of interest to disclose.

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