Artificial Intelligence Adoption and Managerial Decision-Making Effectiveness: The Mediating Role of Information-Driven Decision in a Malaysian Private Healthcare Provider.

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ABSTRACT

This study investigates the impact of artificial intelligence (AI) adoption on managerial decision-making effectiveness, with Information-Driven Decision Capability (IDC) as a mediating variable, within the context of private healthcare providers in Malaysia. As AI technologies become increasingly integrated into healthcare operations, understanding how these systems influence managerial decision-making has become increasingly important. A quantitative, cross-sectional, and explanatory research design was adopted. Data were collected from managerial-level employees using a structured questionnaire through purposive sampling. A total of 153 valid responses were analysed using Statistical Package for the Social Sciences (SPSS) to examine the proposed relationships and mediation effects. The findings reveal that Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and AI Reliability (REL) have significant positive relationships with Information-Driven Decision Capability (IDC). In addition, IDC has a strong positive effect on Managerial Decision-Making Effectiveness (MDME). The results further show that PU and REL have direct significant effects on MDME, while PEOU does not directly influence MDME. Mediation analysis confirms that IDC partially mediates the relationships between PU and REL with MDME, while fully mediating the relationship between PEOU and MDME. These findings suggest that the effectiveness of AI in managerial decision-making is not solely dependent on technology adoption, but also on managers' capability to interpret and utilise AI-generated insights effectively. This study contributes to the literature by identifying IDC as a key mechanism linking AI adoption and decision-making effectiveness, particularly within private healthcare organisations.

Keywords: Artificial Intelligence Reliability, Information-Driven Decision Capability, Managerial Decision-Making Effectiveness, Perceived Ease of Use, Perceived Usefulness.

INTRODUCTION

Various sectors have been adopting artificial intelligence (AI) technology at an ever-faster pace to increase operational efficiencies, offer more precise technical solutions and even assist decision-making in the business process. AI applications entry into the healthcare sector has enhanced in recent years with progressive private healthcare organisations in Malaysia via predictive analytics, patient management systems and decision support tools. That is why many health providers are allowing tactical and strategic decision making through timely Data-Powered Insights. However, while AI systems continue to be implemented and even adopted across various levels, many organisations are struggling to use these technologies effectively in the managerial decision-making process. The use of AI in organisational processes is inconsistent, and a lot of valuable output from AI still gets wasted due to management capability and structural issues present in most organisations. While AI systems can generate complex and high-value information, it is primarily dependent on managers' ability to perceive and deploy such information effectively during decision-making. Previous studies have mainly examined the impact of AI adoption on organisational performance and clinical outcomes. Nevertheless, little has been written about the internal processes by which AI impacts managerial decision-making.

Specifically, the prominence of information-driven decision capability as a mediating mechanism is still under-researched particularly in developing economy private healthcare settings. The objective of this study is to analyse the effect of AI adoption on improved managerial decision-making, specifically given the Mediating role of Information-

Driven decision capability. Focusing on a private healthcare provider in Malaysia, this study examines how AI-driven systems can be effectively adopted to improve managerial decision-making in an organisational context**.**

The specific research objectives of this study are:

1. To examine the relationship between Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and AI Reliability (REL) with Information-Driven Decision Capability (IDC).
2. To determine the relationship between Information-Driven Decision Capability (IDC) and Managerial Decision-Making Effectiveness (MDME).
3. To assess the direct relationship between AI adoption factors (PU, PEOU, REL) and Managerial Decision-Making Effectiveness (MDME).
4. To examine the mediating role of Information-Driven Decision Capability (IDC) in the relationship between AI adoption factors and Managerial Decision-Making Effectiveness (MDME).
5. The research questions guiding this study and are aligned to the Research Objectives listed below:
6. Does Perceived Usefulness (PU) significantly influence Information-Driven Decision Capability (IDC)?
7. Does Perceived Ease of Use (PEOU) significantly influence Information-Driven Decision Capability (IDC)?
8. Does AI Reliability (REL) significantly influence Information-Driven Decision Capability (IDC)?
9. Does Information-Driven Decision Capability (IDC) significantly influence Managerial Decision-Making Effectiveness (MDME)?
10. Do AI adoption factors directly influence Managerial Decision-Making Effectiveness (MDME)?
11. Does Information-Driven Decision Capability (IDC) mediate the relationship between AI adoption factors and Managerial Decision-Making Effectiveness (MDME)?

LITERATURE REVIEW

Managerial Decision-Making Effectiveness (MDME) as the Research Outcome

The effectiveness of managerial decision-making (MDME) has been generally identified as a fundamental factor in the performance of an organisation, especially in challenging and risky areas like healthcare. Experimental studies indicate that good managerial decisions improve operations ability, allocation of resources and services quality as well as enhance the organisation stability (Nisar et al., 2023; Dodda et al., 2024). It has been demonstrated that managers are more likely to make accurate decisions, have confidence, and timeliness, when they use structured data, predictive analytics, and decision-support systems (WHO, 2021). Shafa (2025) also showed that the effect of analytics systems on organisational performance was moderated by the concept of IDC in which technological sophistication is not able to improve the decisions made unless users possess the mental capacity to process information in an adequate manner. All this evidence indicates MDME is not the direct result of the technology adoption but is the result of the fact that managers are able to properly process and utilise information in organisational settings.

Influence of AI Adoption Factors on Decision Outcomes

A large body of empirical literature has studied how the adoption variables, the perceived usefulness (PU), perceived ease of use (PEOU), and AI reliability (REL) are influenced by the managerial interaction with the digital systems. Research conducted based on Technology Acceptance Model reveals that both PU and PEOU tend to have a strong impact on the readiness of managers to use AI-based tools and analytics platforms (Dwivedi et al., 2023; Chen et al., 2022).

Also, according to studies on the Trust Theory, AI trustworthiness emerges as a decisive variable in the decision of managers to use AI-generated advice, especially in situational contexts involving high stakes (Li et al., 2025; Chowdhury et al., 2026). In case AI systems are viewed as inaccurate or unstable, the managers will not pay attention to the system outputs, which restricts the possible advantages of AI implementation.

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Although there is solid evidence that the factors of AI adoption have a relation to usage behaviour and engagement, there is little empirical evidence on the direct effects that the adoption factors have on the effectiveness of managerial decision making.

Most of the research investigates the adoption intention, frequency, or level of trust, but does not consider whether this kind of engagement results in a better quality of decisions. This weakness implies that factors of AI adoption are not enough to account for differences in MDME. Although some empirical studies suggest that perceived usefulness, perceived ease of use, and AI reliability may exert a direct influence on managerial outcomes, the findings remain inconsistent and context dependent.

Several studies report that adoption variables improve system engagement without necessarily translating into superior decision quality (Dwivedi et al., 2023; Chen et al., 2022). This inconsistency indicates that direct effects alone are insufficient to explain variations in managerial decision-making effectiveness.

Mediating Role of Information-Driven Decision Capability (IDC)

A new literature has indicated that the capacity to make decisions is the key driver in the transformation of technological inputs into efficient decision outputs. Information-driven decision capability (IDC) can be defined as the capacity of managers to analyse, process, and use data-based information in the process of making decisions. Research has shown that decision capability contributes to the managerial performance in analytic-driven settings at a considerable level (Nisar et al., 2023).

Shafa (2025) also indicated that the role of analytics systems on organisational performance was mediated by the concept of IDC, where technological sophistication cannot enhance the decisions made unless users have the cognitive ability to process information appropriately. These observations are consistent with the Bounded Rationality Theory that assumes that decision-makers are limited by the power of their minds despite the use of sophisticated technologies (Simon, 1979).

Nevertheless, current studies tend to discuss IDC without considering AI adoption variables, which leaves the unexplained gaps in the explanation of the effect of AI systems on the outcomes of managerial decision making. Not many researchers combine AI adoption variables and decision capability in one framework, especially in the framework of the private healthcare setting.

These findings suggest that information-driven decision capability functions as a full explanatory mechanism through which AI adoption factors influence managerial decision-making effectiveness, rather than merely acting as a complementary factor.

Figure 1: Conceptual Framework of the Study

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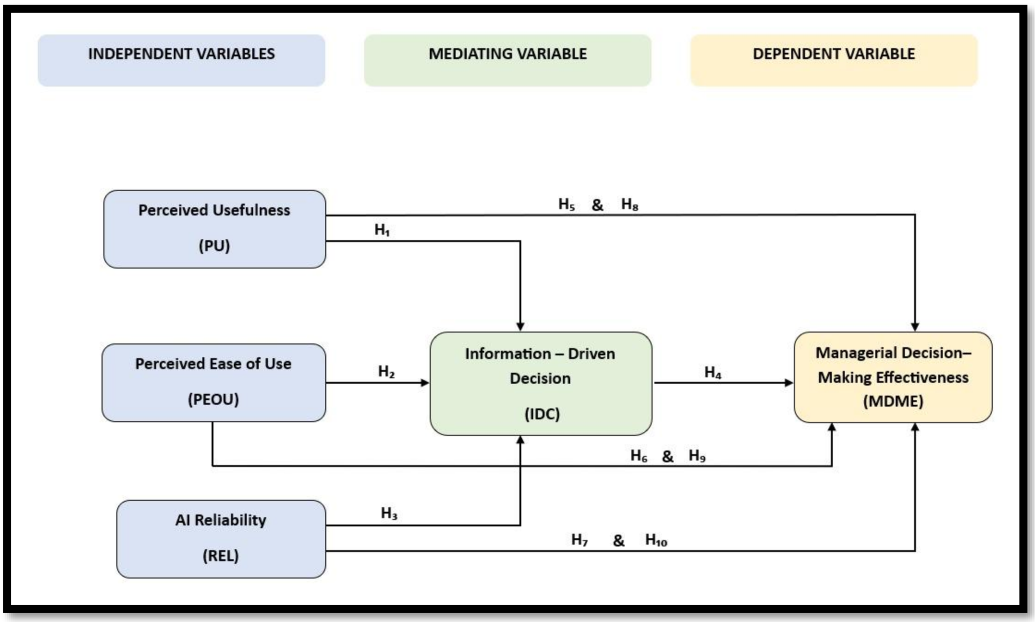

Note : Figure 1 illustrates the relationships between AI adoption factors (PU, PEOU, REL), Information-Driven Decision Capability (IDC) as a mediating variable, and Managerial Decision-Making Effectiveness (MDME).

METHODOLOGY

This is a quantitative study conducted among managerial-level employees of a private healthcare provider in Malaysia. A purposive sampling technique was used to recruit participants who had relevant experience and exposure to AI systems in the context of organisational decision-making. The data were collected through a structured questionnaire via online. A sample size of 153 valid responses was received and considered for analysis.

The Questionnaire have been constructed from existing measurement scales in previous studies. All items were scored on a 5-point Likert scale, from 1 (strongly disagree) to 5 (strongly agree). They include measures for Perceived Usefulness (PU), Perceived Ease of Use (PEOU), AI Reliability (REL), Information-Driven Decision Capability (IDC) and Managerial Decision-Making Effectiveness (MDME). Each of the variables were represented by multiple items that were adapted to describe the healthcare setting.

Data were analysed using Statistical Package for the Social Sciences (SPSS) software. Outlier detection and missing data screening were made at the preliminary stage of data. Use of descriptive statistics to summarise characteristics of respondents and variable distributions. Cronbach’s alpha was used to conduct reliability analysis for the internal consistency. For inferential analysis, correlation and multiple regressions for testing relationships are conducted.

RESULTS

A demographic analysis was conducted on the 153 valid responses obtained from Section A of the questionnaire. The demographic variables examined include gender, age, department, managerial level, and years of working experience. Just under half of respondents (47.7%, n = 73) are aged between 30 and 39 years, respondents from 20 to 29 (20.9%, n = 32), then people aged 40 to 49 (16.3%, n = 25) followed by persons between the ages of 50 and 59 (13.7%, n =21). More than 60 years old = 1.3% (n = 2).

Most respondents are female, accounting for 75.8% (n = 116), while male respondents represent 24.2% (n = 37) of the total sample.

Respondents are drawn from various departments within the organisation. Pharmacy Management has the highest participation at 32.03% (n = 49), followed closely by Nursing Management at 32.68% (n = 50). For Clinical Operations: 7.19% (n = 11); For Medical Administration and Operations: 12.42% (n = 19). Overall Responses from Data Governance (3.92%, n = 6) and Human Resource Management departments also brought in equal numbers of respondents. About 7.84% (n = 12) of respondents fall under the “Others” category, which includes departments such as Education, Environmental Health, Finance, Manufacturing, Marketing, Physiotherapy, Sales, and Support Services.

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The highest percentage of respondents are Managers, with 32.7 percent ($n = 50$), followed by Team Leaders at 28.8% ($n = 44$) and Assistant Managers at 21.6% ($n = 33$). Supervisors are 11.1% ($n = 17$) and a smaller percentage is under other roles (5.9% $n = 9$). The category of Others includes a set of specialised and non-standard jobs, such as administrative staff ($n = 4$), Director of Nursing ($n = 1$), engineer ($n = 1$), pharmacist ($n = 2$), pharmacy assistant ($n = 1$), person-in-charge (PIC) ($n = 1$), and technician ($n = 1$).

The largest proportion of respondents has more than 15 years of working experience, accounting for 30.7% ($n = 47$). This is followed by respondents with 11–15 years of experience (24.2%, $n = 37$), 6–10 years (21.6%, $n = 33$), and 3–5 years (16.3%, $n = 25$). A smaller proportion of respondents has less than 3 years of working experience (7.2%, $n = 11$).

The descriptive statistics show that all variables had higher mean values, suggesting positive perceptions of the respondents regarding AI adoption and its role in decision-making. The mean results are shown such that Managerial Decision-Making Effectiveness (MDME) had the highest mean, followed by Information-Driven Decision Capability (IDC), Perceived Ease of Use (PEOU), and Perceived Usefulness (PU), whilst AI Reliability (REL) ground a lower mean.

Although respondents tend to have a positive attitude towards AI systems in general, there are still concerns about issues of reliability. Overall, the results suggest respondents feel AI is a useful and timely supplement to decision-making processes, especially in the context of private healthcare. The mean for Managerial Decision-Making Effectiveness was at the highest, while AI Reliability with a slightly lower mean indicating lesser confidence in the system reliability as compared to other constructs.

Reliability Analysis

Reliability analysis shows that all constructs demonstrate excellent internal consistency, with Cronbach's alpha values ranging from 0.910 to 0.950, exceeding the recommended threshold of 0.70. The findings provide clear answers to all research questions. RQ1, RQ2, and RQ3 confirm that Perceived Usefulness, Perceived Ease of Use, and AI Reliability have significant positive relationships with Information-Driven Decision Capability. RQ4 confirms that Information-Driven Decision Capability significantly improves Managerial Decision-Making Effectiveness. RQ5 to RQ7 demonstrate that AI adoption factors also directly influence managerial decision-making, with AI Reliability showing the strongest relationship. Finally, RQ8 to RQ10 confirm that Information-Driven Decision Capability serves as a mediating mechanism, indicating that the value of AI in decision-making is largely dependent on managers' ability to interpret and utilise AI-generated insights effectively.

Correlation Analysis

The main variables Perceived Usefulness (PU), Perceived Ease of Use (PEOU), AI Reliability (REL), Information-Driven Decision Capability (IDC), and Managerial Decision-Making Effectiveness (MDME) were correlated to ascertain their strength and direction. Pearson correlation coefficients were used in this investigation. Strong positive links between the constructs are indicated by the significant and positive correlations between all variables at the 0.01 level of significance ($p < 0.001$), as Table 1 illustrates. Information-Driven Decision Capability (IDC) ($r = 0.772$, $p < 0.001$) and Managerial Decision-Making Effectiveness (MDME) ($r = 0.810$, $p < 0.001$) are positively correlated with perceived usefulness (PU), indicating that greater perceived usefulness of AI systems improves both decision-making capability and effectiveness. Similarly, there is a substantial correlation between Perceived Ease of Use (PEOU) and both IDC ($r = 0.799$, $p < 0.001$) and MDME ($r = 0.811$, $p < 0.001$), suggesting that ease of use enhances information processing and decision quality.

AI Reliability (REL) demonstrates the strongest correlations among the independent variables, particularly with MDME ($r = 0.860$, $p < 0.001$) and IDC ($r = 0.821$, $p < 0.001$), highlighting the critical role of trust and reliability in influencing both decision capability and outcomes. Furthermore, there is a high positive association ($r = 0.865$, $p < 0.001$) between Information-Driven Decision Capability (IDC) and Managerial Decision-Making Effectiveness (MDME), suggesting that improved ability to process AI-generated information greatly enhances decision effectiveness. Overall, the results validate the study's hypothesised correlations by indicating a substantial correlation between all variables. These findings support additional analysis utilising regression and mediation approaches and offer preliminary evidence for the study's hypotheses.

Table 1: Correlation Matrix of Study Variables

		PU_ Mean	PEOU_Mean	REL_ Mean	IDC_ Mean	MDME_ Mean
PU_Mean	Pearson Correlation	1	.803**	.826**	.772**	.810**
	Sig. (2-tailed)		<.001	<.001	<.001	<.001
	N	153	153	153	153	153
PEOU_Mean	Pearson Correlation	.803**	1	.854**	.799**	.811**
	Sig. (2-tailed)	<.001		<.001	<.001	<.001
	N	153	153	153	153	153
REL_Mean	Pearson Correlation	.826**	.854**	1	.821**	.860**
	Sig. (2-tailed)	<.001	<.001		<.001	<.001
	N	153	153	153	153	153
IDC_Mean	Pearson Correlation	.772**	.799**	.821**	1	.865**
	Sig. (2-tailed)	<.001	<.001	<.001		<.001
	N	153	153	153	153	153
MDME_Mean	Pearson Correlation	.810**	.811**	.860**	.865**	1
	Sig. (2-tailed)	<.001	<.001	<.001	<.001	
	N	153	153	153	153	153
. **Note: Correlation is significant at the 0.01 level (2-tailed).						

Regression Analysis (AI Adoption Factors → MDME)

Multiple regression analysis was conducted to examine the effect of artificial intelligence (AI) adoption factors, namely Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and AI Reliability (REL), on Managerial Decision-Making Effectiveness (MDME).

As presented in Table 2, the regression model is statistically significant, with a strong explanatory power ($R^2 = 0.779$), indicating that 77.9% of the variance in Managerial Decision-Making Effectiveness is explained by the independent variables PU, PEOU, and REL.

The results show that all three independent variables have a significant positive effect on MDME. AI Reliability (REL) has the strongest influence ($\beta = 0.485$, $p < 0.001$), followed by Perceived Usefulness (PU) ($\beta = 0.257$, $p < 0.001$) and Perceived Ease of Use (PEOU) ($\beta = 0.191$, $p = 0.016$).

These results confirmed that reliability is the most significant factor affecting how effective managerial decision making is and therefore trust in AI systems for the field of healthcare. Although usefulness and ease of use also play a significant role, its impact is relatively weak.

Further collinearity statistics indicated that multicollinearity is not a problem, with all Variance Inflation Factor (VIF) one less than 10 and tolerance values above 0.10. In summary, the findings provide compelling evidence that enhancing managerial decision-making effectiveness via factors of AI adoption.

Table 2 : Regression Results for the Effect of AI Adoption Factors (PU, PEOU, REL) on Managerial Decision-Making Effectiveness (MDME)

Model Summary

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Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.883[a]	.779	.775	1.56614
a. Predictors: (Constant), REL_Mean, PU_Mean, PEOU_Mean				

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.931	.787		4.992	<.001		
	PU_Mean	.233	.066	.257	3.546	<.001	.283	3.533
	PEOU_Mean	.184	.076	.191	2.428	.016	.240	4.160
	REL_Mean	.408	.070	.485	5.837	<.001	.215	4.660
a. Dependent Variable: MDME_Mean								

Regression Analysis (AI Adoption Factors → IDC)

Multiple regression analysis was conducted to examine the effect of artificial intelligence (AI) adoption factors, namely Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and AI Reliability (REL), on Information-Driven Decision Capability (IDC), which serves as the mediating variable in this study. As presented in Table 4.9.2, the regression model demonstrates strong explanatory power, with an R^2 value of 0.721, indicating that 72.1% of the variance in Information-Driven Decision Capability is explained by the independent variables. The results indicate that all three independent variables have a significant positive effect on IDC. AI Reliability (REL) shows the strongest influence ($\beta = 0.405$, $p < 0.001$), followed by Perceived Ease of Use (PEOU) ($\beta = 0.287$, $p = 0.001$) and Perceived Usefulness (PU) ($\beta = 0.207$, $p = 0.012$).

These findings in Table 3 suggest that reliability, ease of use, and usefulness of AI systems play a critical role in enhancing individuals' ability to interpret, analyse, and utilise AI-generated information for decision-making. Notably, AI Reliability remains the most influential factor, indicating that trust in AI systems is essential in strengthening decision-making capability.

In addition, the collinearity statistics indicate that multicollinearity is not a concern, as all Variance Inflation Factor (VIF) values are below the threshold of 10, and tolerance values exceed 0.10. Overall, the results provide strong evidence that AI adoption factors significantly enhance Information-Driven Decision Capability, supporting its role as a mediating variable in this study.

Table 3 : Regression Analysis of AI Adoption Factors on Information-Driven Decision Capability (IDC)

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume X Issue VIII August 2026

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.849[a]	.721	.716	1.87555

a. Predictors: (Constant), REL_Mean, PU_Mean, PEOU_Mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.140	.943		3.330	.001		
	PU_Mean	.200	.079	.207	2.545	.012	.283	3.533
	PEOU_Mean	.294	.091	.287	3.252	.001	.240	4.160
	REL_Mean	.364	.084	.405	4.342	<.001	.215	4.660

a. Mediating Variable: IDC_Mean

Regression Analysis (IDC → MDME)

Simple linear regression analysis was conducted to examine the effect of Information-Driven Decision Capability (IDC) on Managerial Decision-Making Effectiveness (MDME).

As presented in Table 4, the regression model demonstrates a strong explanatory power, with an R^2 value of 0.748, indicating that 74.8% of the variance in Managerial Decision-Making Effectiveness is explained by Information-Driven Decision Capability.

The results at Table 4 reveal that IDC has a very strong and statistically significant positive effect on MDME ($\beta = 0.865$, $p < 0.001$). This indicates that individuals with higher capability to interpret, analyse, and utilise AI-generated information are more likely to demonstrate effective managerial decision-making. The high beta coefficient suggests that Information-Driven Decision Capability is a critical determinant of decision-making effectiveness, highlighting its central role in transforming AI-generated information into meaningful and actionable outcomes. Overall, the findings provide strong support for the direct relationship between IDC and MDME, confirming that enhanced information-processing capability significantly contributes to improved managerial decision-making effectiveness.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS | Volume X Issue VIII August 2026

Table 4 : Regression Analysis of Information-Driven Decision Capability (IDC) on Managerial Decision-Making Effectiveness (MDME)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.865[a]	.748	.746	1.66357

a. Predictors: (Constant), IDC_Mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.913	.790		4.954	<.001		
	IDC_Mean	.811	.038	.865	21.149	<.001	1.000	1.000

a. Dependent Variable: MDME_Mean

Mediation Analysis of Information-Driven Decision Capability (IDC) between AI Adoption Factors and Managerial Decision-Making Effectiveness (MDME)

To test the mediating effect of the Information-Driven Decision Capability (IDC), the multiple regression analysis was used by incorporating the independent variables (Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and AI Reliability (REL)) and the mediator (IDC) to predict Managerial Decision-Making Effectiveness (MDME). This method adheres to the regression-based mediation analysis model by Baron and Kenny (1986). The overall model as stated in Table 5 shows that it has good explanatory power (R 2 =.828), that is, the independent variables along with the mediator explain 82.8 percent of the variance in MDME. This is a better improvement over the previous model and the need to include IDC in the analysis.

The findings indicate that Information-Driven Decision Capability (IDC) is a strong predictor of MDME (= 0.417, $p < 0.001$), which proves its ability to improve the effectiveness of decision-making. Two independent variables, AI Reliability (REL) (0.316, $p < 0.001$) and Perceived Usefulness (PU) (0.170, $p = 0.010$) are significant, whereas Perceived Ease of Use (PEOU) loses its significance (0.071, $p = 0.326$). These results suggest that IDC is the partial mediator between the factor of AI adoption and managerial decision-making effectiveness. In particular, the impact of PEOU on MDME is completely mediated by IDC because the direct effect of the former becomes non-significant in the presence of the latter. Conversely, PU and REL do not lose their direct effects and therefore they are partially mediated. In general, the findings indicate that the adoption of AI enhances the effectiveness of managerial decision-making both directly and

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indirectly by means of increasing the information-processing capacity of individuals. This underscores the importance of IDC as one of the most important mechanisms by which AI systems can be used to help managers make effective decisions.

Table 5 : Mediation Analysis of Information-Driven Decision Capability (IDC) between AI Adoption Factors and Managerial Decision-Making Effectiveness (MDME)

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.910[a]	.828	.823	1.38818

a. Predictors: (Constant), IDC_Mean, PU_Mean, PEOU_Mean, REL_Mean

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.702	.723		3.735	<.001		
	PU_Mean	.155	.059	.170	2.599	.010	.271	3.687
	PEOU_Mean	.068	.069	.071	.986	.326	.224	4.455
	REL_Mean	.266	.066	.316	4.041	<.001	.191	5.249
	IDC_Mean	.391	.061	.417	6.454	<.001	.279	3.590

a. Dependent Variable: MDME_Mean

Analysis of Hypotheses

Hypothesis analysis was conducted to examine the relationships between perceived usefulness (PU), perceived ease of use (PEOU), reliability (REL), information-driven capability (IDC), and managerial decision-making effectiveness (MDME).

H1: Perceived Usefulness (PU) has a significant influence on Information-Driven Decision Capability (IDC).

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Perceived Usefulness (PU) has a significant positive effect on Information-Driven Decision Capability (IDC) ($\beta = 0.207$, $p = 0.012$). This suggests that when AI systems are perceived as useful, they enhance managers' ability to make data-driven decisions. Therefore, H1 is supported.

H2: Perceived Ease of Use (PEOU) has a significant influence on Information-Driven Decision Capability (IDC).
Perceived Ease of Use (PEOU) significantly influences IDC ($\beta = 0.287$, $p = 0.001$). This implies that ease of use improves decision-making capability among managers. Hence, H2 is supported.

H3: AI Reliability (REL) has a significant influence on Information-Driven Decision Capability (IDC).
AI Reliability (REL) demonstrates a strong and significant effect on IDC ($\beta = 0.405$, $p < 0.001$). This indicates that reliable AI systems play a crucial role in enhancing decision capability. Therefore, H3 is supported.

H4: Information-Driven Decision Capability (IDC) has a significant influence on Managerial Decision-Making Effectiveness (MDME).
IDC has a strong and significant influence on Managerial Decision-Making Effectiveness (MDME) ($\beta = 0.865$, $p < 0.001$). This suggests that improved decision capability leads to more effective managerial decision-making outcomes. Thus, H4 is supported.

H5: Perceived Usefulness (PU) has a significant influence on Managerial Decision-Making Effectiveness (MDME).
Perceived Usefulness (PU) has a significant positive effect on MDME ($\beta = 0.257$, $p < 0.001$). This indicates that when AI is perceived as useful, it directly enhances managerial decision-making effectiveness. Therefore, H5 is supported.

H6: Perceived Ease of Use (PEOU) has a significant influence on Managerial Decision-Making Effectiveness (MDME).
Perceived Ease of Use (PEOU) significantly influences MDME ($\beta = 0.191$, $p = 0.016$). This implies that ease of using AI systems contributes to improved decision-making effectiveness. Hence, H6 is supported.

H7: AI Reliability (REL) has a significant influence on Managerial Decision-Making Effectiveness (MDME).
AI Reliability (REL) exhibits a strong and significant effect on MDME ($\beta = 0.485$, $p < 0.001$). This finding highlights that reliable AI systems significantly improve managerial decision outcomes. Therefore, H7 is supported.

H8: Information-Driven Decision Capability (IDC) mediates the relationship between Perceived Usefulness (PU) and Managerial Decision-Making Effectiveness (MDME).
The effect of PU on MDME decreases from ($\beta = 0.257$, $p < 0.001$) to ($\beta = 0.170$, $p = 0.010$), while IDC remains significant ($\beta = 0.417$, $p < 0.001$). This indicates that IDC partially mediates the relationship between PU and MDME. Therefore, H8 is partially supported.

H9: Information-Driven Decision Capability (IDC) mediates the relationship between Perceived Ease of Use (PEOU) and Managerial Decision-Making Effectiveness (MDME).
The effect of PEOU on MDME becomes insignificant after including IDC in the model ($\beta = 0.071$, $p = 0.326$), while IDC remains significant. This suggests that IDC fully mediates the relationship between PEOU and MDME. Therefore, H9 is supported (full mediation).

H10: Information-Driven Decision Capability (IDC) mediates the relationship between AI Reliability (REL) and Managerial Decision-Making Effectiveness (MDME).
The effect of REL on MDME decreases from ($\beta = 0.485$, $p < 0.001$) to ($\beta = 0.316$, $p < 0.001$) after including IDC, while IDC remains significant. This indicates that IDC partially mediates the relationship between REL and MDME.

DISCUSSION AND CONCLUSION

Relationship Between AI Adoption Factors and Decision Capability

The results of the regression also show that PU, PEOU, and REL are positively significant for IDC. Predictiveness of these indicators showed that among factors, AI Reliability was the most reliable predictor for usage indicating trust in AI system as being fundamental to enabling managers to interpret and use information generated via an AI system.

Hence, the finding is aligned with previous research namely Technology Acceptance Model (Davis, 1989), and Trust Theory (Mayer et al., 1995) which highlight that perceived usefulness and reliability of system are major factors impact the adoption and use of technology. This relationship exists because managers are more likely to rely on AI systems when they perceive them as useful, easy to operate, and reliable. In healthcare settings where decisions are time-sensitive and complex, trust and usability strengthen managers' confidence in utilising AI-generated information for decision support.

Effect of Decision Capability on Managerial Decision-Making Effectiveness

Results proved that Information-Driven Decision Capability is positive and significant predictor of Managerial Decision-Making Effectiveness. This means that managers who can better interpret and use insights generated by AI will decide more effectively. This finding provides support for Bounded Rationality Theory (Simon, 1972), which shows that the quality of decisions is highly contingent on individuals' capacity to access and utilize information especially in complicated organisational contexts.

Direct Effects of AI Adoption Factors on Decision-Making

The combination of relationships provides the following insight that the Perceived Usefulness and AI Reliability have a direct significant effect on Managerial Decision-Making Effectiveness, while Perceived Ease of Use shows no direct significant effect. Usability makes it easier to engage with AI but might not actually improve decision quality. Rather than efficacy in a decision, the decision-making systems are determined by the quality and reliability of information sourced from AI mechanism.

Mediating Role of Information-Driven Decision Capability

Thus, the mediation analysis indicates that Information-Driven Decision Capability is a central mechanism connecting AI adoption factors to managerial decision-making effectiveness. While the relationship between Perceived Usefulness and AI Reliability has a partially mediated effect with MDME, the same cannot be said for the other relationship with it Perceived Ease of Use which according to supported hypothesis IDC fully mediates this further. It means that AI does not necessarily boost the quality of decision-making; instead, improved management-aided interpretation and use of such insights provided by an AI system are what brings about its impact.

This finding contributes to the literature by revealing that internal organisational capabilities are an important mechanism to explain how AI adoption leads to better decision outcomes especially in healthcare where decisions can be complex and are often data driven. An imminent paradigm shift in both theory and practice where adoption of advanced technology such as AI could accelerate achieving equitable, efficient, and ethical service delivery in South Africa (Kajiita et al., 2025).

Based on this context, the present study investigates the relationship between AI adoption and managerial decision-making effectiveness through information-driven decision capability as a mediating variable within Malaysian private healthcare provider. This study reveals that AI adoption is positively correlated with decision-making effectiveness with perceived usefulness and reliable AI playing significant roles in this relationship. The findings indicate the importance of having information-driven decision capability in improving managerial decision-making effectiveness. AI Reliability was the most significant predictor of using information when generated by a large language model highlighting that trust and dependability in systems to encourage people to use information they generate. There is a perceived ease of use, which supports the interaction with AI systems, but this factor does not drive decision-making effectiveness directly; instead, it impacts indirectly through decision capability. This indicates that being data-driven does not mean the organization automatically perform well but rather how well the managers are using the technology, reading AI predictions correctly and acting upon actionable insight are far more critical. This underscores the need for analytical capabilities and a culture of data decision making organisations. Institutions need to focus on enhancing infrastructure, offering thorough training for educators, and setting clear policies for ethical and fair AI integration (Karim et al., 2024). In general, this study helps to understand how better decision making occurs from the adoption of AI, especially in a complex healthcare environment. It also gives organisations practical guidance on how to maximise the value from their AI investments through the development of managerial capabilities and the strengthening of AI system reliability.

Despite the significant findings of this study, several limitations should be acknowledged as they may affect the generalisability and interpretation of the results. study is self-reported data; structured questionnaire based online surveys have a response bias. Respondents may give socially desirable responses or overestimate their use and understanding of AI systems in workplace settings where technology adoption is well-regarded. Additionally, measures of perceived AI usefulness may or not correlate with actual use or performance of the system and ease-of-use & reliability are subjectively derived. Consequently, the findings are based on artificial indicators of AI application and effectiveness in making decisions rather than solid ones. Objective performance data or system utilization could be better integrated into future research.

The cross-sectional study design was employed, in which data were collected at only one point of time. Since the results capture respondents feel for AI adoption and decision-making effectiveness only in a particular duration of time. It limits you can see if at a given point in time there may be something different in behaviour or perceptions or organisational norms. In addition, the cross-sectional nature of the study means that it cannot provide causal relations between variables, and it is based on correlations not longitudinal data. A longitudinal design that tracks the evolution of AI use or decision-making capabilities over time would be valuable in future research. It has limited generalisability since the study was conducted within a particular organisational context comprising predominantly healthcare-related respondents. As such, the results cannot be extrapolated to all private healthcare organisations and other industries as AI adoption and use can vary based on organisational contexts, structural configurations, and degrees of technological maturity.

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REFERENCES

1. Bolin, J. (2014). Hayes, A.F. (2013). Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach. New York, NY: The Guilford Press. Journal of Educational Measurement. 51. 335-337. 10.1111/jedm.12050.
2. Chen, Y., Prentice, C., Weaven, S., & Hsiao, A. (2022). A systematic literature review of AI in the sharing economy. Journal of Global Scholars of Marketing Science, 32(3), 434-451.
3. Chowdhury, I. J., & Tanvir, M. A. Y. (2026). Trustworthy Machine Learning for Cybersecurity: A Decision-Centric Survey of Explainability, Uncertainty, and Human Factors.
4. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 13(3), 319–340.
5. Dodda, S, Narne, S, Adedoja, T., Mohan, M., & Mohan, T. (2024). AI-Driven Decision Support Systems in Management: Enhancing Strategic Planning and Execution. International Journal on Recent and Innovation Trends in Computing and Communication.
6. Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., ... & Wright, R. (2023). “So what if ChatGPT wrote it?” Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. International Journal of Information Management, 71, 102642.
7. Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis. Guilford Press.
8. Kajiita, R. M., & Simon Murote Kang'ethe. (2025). Social Work And Artificial Intelligence: Implications For South African Social Work Practice And Education. Asian Journal of Social Science Research, 7(1), 1–19. https://doi.org/10.5281/zenodo.15803208
9. Karim, H.H, Abd Hamid, N.B., and Che Rus, M.F. (2024). Exploring The Impact And Challenges Of Using Artificial Intelligence In An Open, Distance And Digital Education University: A Conceptual Paper. Asian Journal of Social Science Research, 6(2), 15–32.
10. Krejcie, R.V., & Morgan, D.W., (1970). Determining Sample Size for Research Activities. Educational and Psychological Measurement.
11. Li, A. J., Krishna, S., & Lakkaraju, H. (2025, May). More rlhf, more trust? on the impact of preference alignment on trustworthiness. In International Conference on Learning Representations (Vol. 2025, pp. 46561-46581).
12. Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. Academy of Management Review, 20(3), 709–734.
13. Nisar QA, Haider S, Ameer I, Hussain MS, Gill SS, Usama A (2023), "Sustainable supply chain management performance in post COVID-19 era in an emerging economy: a big data perspective". International Journal of Emerging Markets, Vol. 18 No. 12 pp. 5900–5920, doi: https://doi.org/10.1108/IJOEM-12-2021-1807
14. Shafa, H. (2025). Artificial intelligence-driven business intelligence models for enhancing decision-making in us enterprises. ASRC Procedia: Global Perspectives in Science and Scholarship, 1(01), 771-800.

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15. Simon, H. A. (1972). Theories of bounded rationality. In C. B. McGuire & R. Radner (Eds.), Decision and organization (pp. 161–176). North-Holland.
16. Simon, H. A. (1979). Rational decision making in business organizations. American Economic Review, 69 : 493 – 513.
17. W. H. O. (2021). Ethics and governance of artificial intelligence for health. World Health Organization,