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Digital Transformation in Higher Education: An Empirical Study of AI-Integrated ERP Systems in Enhancing Decision-Making and Institutional Efficiency

Krupa TN[1], Dr. Nasa Dhanraj[2]

1. Research Scholar, Presidency School of Commerce, Presidency University, Bengaluru, India.
2. Assistant Professor, Selection Grade, Presidency School of Commerce, Presidency University, Bengaluru, India.

Abstract

The high adoption of digital technologies has greatly influenced the higher education environment and the integration and smart systems are essential in improving the institutional performances. One of them, the use of AI integrated ERP systems has become an essential instrument that enhances the efficiency of administration, the efficiency of making decisions based on data, and overall institutional success. The current research will focus on assessing the effectiveness of AI-based ERP systems in boosting institutional efficiency and decision-making processes in institutions of higher learning. Research methodology is empirical in which it gathers primary data comprising of academic administrators, faculty members and IT personnel related to institutions of higher education. Perceptions related to such critical dimensions as AI capability, system integration, data analytics functionality, and user adoption were captured with the help of structured questionnaires. The analysis used statistical methods, i.e., descriptive analysis and inferential methods, to investigate the association between the AI-supported ERP functionality and institutional outcomes. The results of the findings suggest that AI-based ERP systems can play a major role in enhancing decision-making with real-time access to data, predictive analytics, and administrative process automation. Moreover, the findings also emphasise the positive effect on the institutional efficiency regarding optimization of resources, speed of work, and precision of information management. The obstacles to user preparedness, data security, and system flexibility are also found in the study. The analysis is informative to policy makers, institutional leaders and technology suppliers in developing and deploying effective AI used ERP solutions in institutions of higher education. The study will add to the overall amount of research on the topic of digital transformation by providing empirical data regarding the strategic importance of AI-integrated ERP systems in improving institutional performance.

Keywords: Artificial Intelligence, ERP Systems, Digital Transformation, Higher Education, Decision-Making, Institutional Efficiency, Data Analytics

1. Introduction:

The sphere of higher education is undergoing a tremendous change as the lightning-fast development of digital technologies and the increase in the importance of the data-based decision-maker occur. To be more efficient in their operations, better manage the institution and stay competitive in the ever-changing education ecosystem, institutions are shifting to digital platforms and smart systems. Transformation of Digital Resources in higher education is a concept that gets associated with the implementation of the emerging technologies like AI and big data analytics, as well as cloud-based enterprise systems to facilitate academic and administrative operations and enhance the work of the institution (Dwivedi et al., 2021; Bond et al., 2020).

ERP systems can be considered as a core element of this change because of allowing the integration of different functions of an institution, such as finance, human resource, student and information system and academic management in an integrated platform. Such systems permit centralized data management and coordinate between departments. Nevertheless, older ERP systems are not always effective in dynamic institutional settings because they do not have sophisticated analytical features and real-time decision support (Hassanien and Elragal, 2021; Davenport and Glaser, 2022)).

The ERP systems have been transformed by the implementation of Artificial Intelligence and expanded their functionalities with predictive analytics, machine learning, and intelligent automation. The applications of AI in ERP can handle vast amounts of both structured and unstructured data to produce insightful information, which can be acted upon to enhance forecasting, resource distribution, and strategic planning. The transformation helps institutions shift towards proactive decision-making strategies instead of their reactive strategies, and eventually, the end outcome is an increase in institutional efficiency and performance (Mhaskey, 2024; Rahman, 2025) .

Regarding higher education, AI-powered systems have become a vital part of aiding academic decisions, streamlining the administrative processes, and enhancing student achievements due to learning analytics and personalized interventions. Through these systems, institutional leaders can receive timely information, which will help them make sound judgments on how they use resources, curriculum development, and performance measurements (Morales Tirado et al., 2024; Soori et al., 2024) .

These benefits notwithstanding, the introduction of AI-infused ERP systems is faced with a number of challenges, which are, technological complexity, high implementation costs, data quality concerns, transparency, and trust concerns with AI-centered decision-making processes. Moreover, resistance of users and the institutional stakeholders that are not digitally prepared can be the impediment to successful implementation of these systems (Simovic et al., 2020; Quinn, 2023) .

Despite the potential of AI-driven ERP systems as noted by existing literature, there is very little empirical studies that have considered them in terms of improving decision-making and institutional efficiency in higher education, especially in emerging economies. Hence, the proposed study will attempt to assess how AI-based ERP systems influence decision making processes and efficiency in the institutions, thus adding to the existing body of knowledge in the field of digital transformation in higher education.

2. Background:

The field of higher education is undergoing a tremendous change due to the extensive development of digital technologies and increased focus on the use of data in making decisions. Colleges are becoming more digital and smarter in their systems to ensure that they are efficient in operations, to improve governance and to stay competitive in a dynamic education ecosystem. Digital higher education transformation consists of adopting new technological solutions including Artificial Intelligence (AI) and analytics of big data and cloud-based enterprise to automate academic and administrative operations and enhance the performance of institutions (Dwivedi et al., 2021; Bond et al., 2020).

ERP systems have been made part and parcel of such transformation by bringing together most functions of the institution, finance, human resource, student information systems and academic management, together on one platform. With these systems, it is easy to have centralized data control and coordination across departments. Nevertheless, conventional ERP tools are not particularly effective in the unstable institutional setting because they usually do not have sophisticated analytical tools and real-time decision support (Hassanien and Elragal, 2021; Davenport and Glaser, 2022)).

The introduction of AI in ERP systems has created a new paradigm, where their potential is boosted with predictions, machine learning, and automation with intelligence. The ERP systems enhanced by AI are able to handle large amounts of structured and unstructured data to produce actionable insights, and thus, enhance forecasting, resource distribution and strategic planning. This change will allow institutions to go beyond reactive mode of decision making to proactive mode and eventually improve institutional efficiency and performance (Mhaskey, 2024; Rahman, 2025).

The fields of higher education are no exception, as AI-based systems can be beneficial in aiding academic decision-making, streamlining administrative processes, and enhancing student performance by applying learning analytics and individual interventions. Such systems capture real-time data which can be used by institutional leaders to make effective decisions about the use of resources, curriculum development, and monitoring performance (Morales Tirado et al., 2024; Soori et al., 2024).

Regardless of these benefits, the application of AI-based ERP systems has a number of challenges, such as a complex of technologies, high costs of implementation, data quality, and transparency / trust in the process of AI-based decision-making. Also, the institutional stakeholders might not embrace the usage of such systems due to user resistance and the absence of digital readiness (Simovic et al., 2020; Quinn, 2023).

Despite the above-mentioned existing studies that emphasize the potential of AI-driven ERP systems, the available empirical research on the effectiveness of these systems in improving decision-making and institutional efficiency in higher education is not empirical enough with specific reference to emerging economies. Hence, by the means of this study, the researcher will analyze the influence of AI-integrated ERP systems on decision-making skills and efficiency of the institution thus adding to the increasing body of knowledge concerning the digital transformation in higher education.

3. Literature Review:

The increased pace of digitalization of higher education has resulted in the emergence of a significant number of works of literature investigating this issue of advanced technologies enhancing the effectiveness of the institution and decision-making. The most recent trend in digital transformation of education is the adoption of Artificial Intelligence (AI), big data analytics, and enterprise systems, which combined can help institutions become more efficient in their operations and strategic (Bond et al., 2020; Dwivedi et al., 2021). According to the findings of recent researchers, digital transformation is not simply about technological implementation but is a systematic change that includes organizational procedures, culture, and governmental organization models.

Enterprise Resource Planning (ERP) systems have become generally accepted as the basic means of uniting the processes in institutions and controlling complicated data in the company. ERP systems in the higher education promote centralized control of academic, administrative and financial processes thus enhancing coordination and transparency. According to Hassanien and Elragal (2021), ERP systems can play a major role in process standardization and data accessibility, and Davenport and Glaser (2022) claim that the adoption of ERP can make any institution agile because of the rapid flow of information and decision support. The traditional ERP systems are however blamed to have low analytical features and real time intelligence that limits their performance in dynamic environments.

Artificial Intelligence integration into the ERP systems has proved to be a revolution as it has overcome most of the shortcomings of the traditional ERP solutions. ERP systems that are integrated with AI make use of ML, predictive analytics, and automation to create actionable insights and facilitate data-driven decision-making. Wamba et al. (2021) prove that AI-based systems contribute to the performance of organizations by increasing the accuracy of the forecast and the allocation of resources. Equally Morales Tirado et al. (2024) note that AI is critical in enabling real-time analytics and smart decision support in the schools. These innovations enable institutions to move away with reactive decision-making processes to proactive and predictive decision-making.

One of the major current strands of research is dedicated towards the effects of AI-based systems on the decision-making processes. Research suggests that AI technologies enhance quality, speed, and accuracy of decisions through timely and pertinent information. According to Soori et al. (2024), AI-based analytics is a better way to promote managerial decision-making because the patterns and trends observed are also difficult to detect using the conventional tools. Moreover, the AI-powered decision support systems help minimize human biases and enhance the consistency of the decision-making process, thus promoting the enhancement of the institutional governance.

Another important area that has been discussed in the literature is institutional efficiency. In most cases, efficiency in institutions of higher learning may be gauged regarding use of resources, performance of the institution, and delivery of services. The AI-based ERP systems help enhance efficiency by automating routine tasks, lowering operational expenses, and enhancing accuracy of processes. Zawacki-Richter et al. (2021) note that the use of AI in education simplifies the administration processes and improves productivity in institutions. Also, Rahman (2025) adds that AI-based systems will help optimize the allocation of resources and enhance the performance of an organization by providing data-driven data.

In addition to the possible advantages, a number of studies also demonstrate problems related to the introduction of AI-based ERP systems. According to Quinn (2023), the challenges related to the adoption of technology include its complexity, high costs, and the inability of users to adopt the technology. The issues of data privacy, security, ethical application of AI are also popularly covered in the literature. Besides, change resistance of stakeholders and the necessity of the ongoing training and skill improvement is another challenge to successful implementation.

Despite the literature giving profound information on the digital transformation, adoption of AI, and ERP systems, there is still not enough empirical research that studies the overall effect of the AI-integrated ERP systems on decision-making and institutional efficiency in higher education. In the case of emerging economies, especially due to the fact that the digital transformation is still in its early stages, context-specific studies that research the effectiveness of such systems are necessary. Thus, the current research will fill this gap by assessing empirically the impact of AI-based ERP systems on decision-making and institutional efficiency of higher education institutions.

4. Research Gap and Problem Statement:

Available literature emphasizes digital transformation, AI and ERP systems as some of the primary sources of organizational performance. Analytics and automation are used to improve data-driven decision-making with the aid of AI, whereas ERP systems enhance process integration and coordination (Dwivedi et al., 2021; Wamba et al., 2021). Digital transformation in the higher education setting has been associated with the enhancement of governance and institutional effectiveness (Bond et al., 2020; Zawacki-Richter et al., 2021). Nevertheless, there are few studies that look into how AI may be incorporated into ERP systems, and its overall effect on decision-making and efficiency in the institution. Additionally, the existing research concentrates on the developed economies, which provides no insight into whether they work in the emerging setting like India (Quinn, 2023; Rahman, 2025).

In this regard, colleges and universities are more embracing ERP systems to oversee complicated business processes, however, the conventional systems do not have sophisticated analytical tools. The introduction of AI to the ERP systems has a potential to improve the decision making process by providing predictive insights and automation. Nevertheless, little empirical information is available on their effectiveness particularly in the emerging economies. Moreover, their success might be affected by such issues as system complexity, user adoption, and data quality. Thus, this research paper will seek to analyze the effects of AI-based ERP systems on the decision-making and efficiency of institutions of higher learning.

5. Objectives of the Study:

1. To analyze how AI-based ERP systems affect the process of decision-making in higher educational establishments.
2. To examine how the use of AI-based ERP systems has impacted institutional efficiency.
3. To determine how AI capabilities can help improve the usefulness of ERP systems in higher education institutions.

6. Hypotheses:

H_1: *The decision-making process in higher institutions of learning is positively influenced greatly by AI-integrated ERP systems.*

H_2: *AI-based ERP systems play an important positive role in institutional efficiency within higher educational institutions.*

H_3: *The impact of decision-making on efficiency of institutions in higher education is significant in a positive way.*

7. Research Methodology:

The current study will have a quantitative and empirical research design that seeks to test the hypothesis of determining the effectiveness of the AI-integrated Enterprise Resource Planning (ERP) systems in improving decision-making and institutional efficiency in higher education institutions. The quantitative method is suitable because the research does test hypothesized relationships among latent constructs based on structured data and

statistical tests. The study is explanatory and aims at examining the causal interdependence between AI-infused ERP systems, decision-making and institutional efficiency in relation to the hypothesized conceptual scheme.

The age of the population is adult; it includes stakeholders of the usage of ERP in the institutions of higher learning, such as the faculty, administrative employees, academic coordinators, and IT support. The analysis will be based on a sample of four private universities in Bengaluru that actively embrace the use of AI-based ERP systems. The sample size of 150 respondents was chosen through purposive sampling because these respondents must have a pertinent experience with the ERP systems. It is a sufficient sample size to use PLS-SEM, which is ideal in predictive and exploratory model making.

The primary data was shaped by means of a structured questionnaire that was carried out online and offline. The instrument will assess perceptions of AI-integrated ERP systems, effectiveness of decision-making and effectiveness of the institution on a five-point Likert scale between strongly disagree and strongly agree.

The conceptual framework suggests that the AI-based ERP systems have a direct impact on institutions of decision-making and organizational efficiency, and decision-making moderates the impact of institutions on efficiency and is a mediating variable. Based on that, AI-based ERP systems can be considered the independent variable, decision-making the mediating variable, and institutional efficiency as the dependent variable, therefore, the study can identify both the direct and indirect impact on institutional performance.

Table 1: Variables of the Study

Variables	Name of the Variable	Description
Independent	AI-Integrated ERP Systems	Represents AI capabilities, data analytics, system integration, and automation features of ERP systems
Mediating	Decision-Making	Reflects decision quality, speed, accuracy, and data-driven support
Dependent	Institutional Efficiency	Represents operational efficiency, resource utilization, process optimization, and productivity

The hypotheses that guide the study are as follows: the positive influence of AI-integrated ERP systems on decision-making is significant; the positive influence of AI-integrated ERP systems on institutional efficiency is significant; the positive influence of decision-making on institutional efficiency is significant.

To analyze data, the research uses the PLS-SEM with the help of such software as ADANCO. The selection of PLS-SEM is explained by the fact that it is appropriate to conduct predictive and exploratory research, it can be used to deal with complex models that have latent constructs and rather small sample size can be used. The analysis is done in two phases in assessment of both the structural model and the measurement model. The alpha of Cronbach, composite reliability, average variance extracted (AVE), and discriminant validity using the Fornell-Larcker criterion and heterotrait-monotrait ratio (HTMT) are the metrics used to assess validity and reliability. The structural model is assessed using path coefficients, t-values, bootstrapped p-values, coefficient of determination (R2), effect size (f 2), and predictive relevance (Q2). The mediation analysis is also conducted to determine the indirect impact of AI-integrated ERP systems on the institutional efficiency via decision-making.

The issue of ethics was adhered to throughout the study. They were volunteered as respondents and were guaranteed of anonymity and confidentiality. The received data were applied only to academical and research purposes.

8. Results:

The results of the empirical investigation that examined the connections between AI-integrated ERP systems and institutional efficiency and decision-making using PLS-SEM. Two steps were used to conduct the analysis, and these are measurement model evaluation and structural model evaluation. Measurement model was investigated

to assure the reliability and validity of the constructs and structural model was investigated to test the hypotheses proposed and determine the predictive ability of the model. The findings give the insight into the strengths and the importance of the correlations between the constructs, and the mediating role of decision-making in increasing the institutional efficiency.

Table 1: Outer Loadings

Construct	Item Description	Loading
AI-Integrated ERP Systems	The ERP system provides intelligent and data-driven support for institutional activities	0.866
	The ERP system enables effective data analysis through advanced analytics features	0.896
	The ERP system improves the speed of information processing	0.896
	The ERP system integrates information across departments efficiently	0.866
	The ERP system automates routine administrative and academic tasks	0.888
	The ERP system provides timely insights for planning and management	0.906
	The AI-enabled ERP system enhances overall institutional effectiveness	0.906
Decision-Making	The ERP system helps management make decisions more quickly	0.909
	The ERP system improves the quality of decisions taken in the institution	0.826
	The ERP system provides accurate information for decision-making	0.880
	The ERP system supports data-driven and evidence-based decision-making	0.841
	The ERP system helps in identifying problems and taking corrective actions	0.852
	The ERP system improves strategic and operational decision-making	0.840
Institutional Efficiency	The ERP system improves overall operational efficiency	0.898
	The ERP system reduces delays in administrative and academic processes	0.916
	The ERP system improves coordination among departments	0.928
	The ERP system enhances process optimization within the institution	0.841
	The ERP system improves utilization of institutional resources	0.894
	The ERP system enhances productivity in institutional functions	0.869
	The ERP system improves accuracy and consistency of records	0.860

The loaded measure values in the table reveal that the relationships between all the measurement items and their respective construct are strong, and the values are more than the recommended measure of 0.70. This implies that there is a strong degree of indicator reliability, which is that the observed variables are suitable to reflect the latent constructs of the AI-integrated ERP systems, decision-making, and institutional efficiency. The high loadings recorded in all items are indicative of the fact that it is a well-constructed questionnaire that successfully represents the dimensions of every construct. Specifically, the high scores of indicators of the AI-based ERP systems demonstrate the necessity of analytics, automation, and system integration in improving institutional processes.

Likewise, the decision-making construct has strong loadings, which shows that the ERP systems have a significant role in enhancing the quality, speed, and information-driven decision-making. The institutional efficiency construct also shows high loadings, which illustrate the contribution of ERP systems to the operational efficiency, coordination, and resource utilization. On the whole, the findings assure that the measurement model has a good reliability of indicators, and no changes are made to the items that are to be analyzed further.

Table 2: Construct Reliability

Const.	Dijkstra-Henseler's rho (ρ_A)	Jöreskog's rho (ρ_c)	Cronbach's alpha(α)
AIERP	0.9638	0.9636	0.9636
DM	0.9445	0.9438	0.9438
IE	0.9633	0.9627	0.9627

The construct reliability scores are high showing that the internal consistency of all the constructs employed in the study is high. The rho (rA), rho (rc) and alpha (a) of Dijkstra-Henseler, Joreskog, and Cronbach of the AI-integrated ERP systems, decision-making, and institutional efficiency are greater than the recommended value of 0.70. Particularly, the values all above 0.94 of all constructs show high levels of reliability that, in turn, imply that the measurement items used in the constructs are quite consistent and reliable when reflecting the underlying concept. The similarity of the values of the three measures of reliability also enhances the strength of the constructs. This great reliability demonstrates that the scale employed in the research is consistent and does not include measurement errors, which proves the appropriateness of the constructs to the subsequent analyses in the structural model.

Table 3: Discriminant Validity: Heterotrait-Monotrait Ratio of Correlations (HTMT)

Construct	AIERP	DM	IE
AIERP_			
DM_	0.7527		
IE_	0.8052	0.8128	

The values of Heterotrait-Monotrait Ratio (HTMT) in the table show that discriminant validity is appropriately determined between the constructs that are measured in the study. The highest value of all values of HTMT are lower than the generally accepted level of 0.85 with the maximum of the decision making and the institutional efficiency of 0.8128. This implies that the constructs are empirically differentiated and assess different underlying concepts. The comparatively moderate relations between AI-integrated ERP systems, decision-making, and institutional efficiency suggest that the constructs are not redundant, but relate to each other. Thus, the findings indicate that the problem of multicollinearity or overlapping of the constructs does not exist, and the discriminant validity is received, which justifies the suitability of the used measurement model to conduct any further structural analysis.

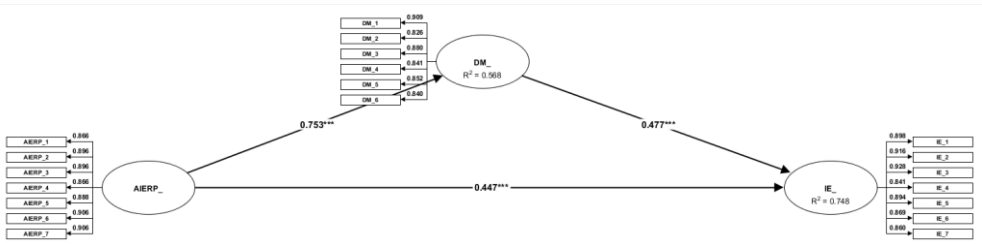

Figure 1: Conceptual Model Results

Table 4: Hypothesis Testing (Path Coefficients)

Hypothesis	Effect	Coef.	β	SE	t	p
H_1	AIERP → Decision-Making	0.7534	0.7539	0.0404	18.6329	0.0000
H_2	AIERP → Institutional Efficiency	0.8059	0.8071	0.0310	25.9658	0.0000
H_3	Decision-Making → Institutional Efficiency	0.4769	0.4785	0.0649	7.3530	0.0000

All the proposed hypotheses are well supported by the results of the structural model, which is supported by the t-values, path coefficient and p-values.

Hypothesis H_1 is a test of the effects of AI-integrated ERP systems on the decision-making process. The statistically significant relationships have the results to show a strong positive relationship ($b = 0.7539$) with t-value (18.6329) and p-value ($p < 0.001$). This ensures that ERP systems that involve AI are very instrumental in improving decision-making within institutions of higher learning. The large value of the coefficient indicates that the combination of AI-based analytics, automation and real-time data processing can significantly enhance the quality, speed, and effectiveness of decisions. Therefore, H_1 is supported.

Hypothesis H_2 will measure how AI-integrated ERP systems affect institutional efficiency. The results indicate the very strong positive effect ($b = 0.8071$), a t-value (25.9658) is significant, and a p-value ($p = 0.001$) is significant. This implies that AI-based ERP systems are very significant towards enhancing institutional efficiency. The size of the coefficient indicates that the ERP systems with AI functions play a significant role in improving operations, managing the resources, and efficiency of the processes. Therefore, there is strong support of H_2.

Hypothesis H_3 examines the connection amid decision-making and institutional efficiency. The findings indicate a positive and statistically significant effect ($b = 0.4785$), a t-value of 7.3530 and a p-value ($p < 0.001$). This proves that sound decision making has a positive impact on the efficiency of an institution. Despite the moderate level of effect size as compared to H_1 and H_2, it is still clear that the improved decision-making processes do have a significant effect on the improvement of institutional performance. Therefore, H_3 is supported.

In general, the findings indicate that the proposed conceptual framework is valid as AI-based ERP systems also help to increase the efficiency of institutions indirectly by improving decision-making.

Table 5: Coefficient of Determination (R^2)

Construct	R^2 Value	Adjusted R^2
Decision-Making	0.5677	0.5648
Institutional Efficiency	0.7478	0.7443

The values of coefficient of determination (R2) reflects the prediction power of the structural model. The decision-making R2 is 0.5677 indicating that about 56.77 per cent of the variance in decision-making is explained by the AI-combined ERP systems. The latter represents an average to high explanatory strength, which means that AI-powered ERP systems contribute immensely to the level of improving decision-making in institutions of higher education.

Equally, the R2 of the institutional efficiency is 0.7478 meaning that, 74.78 percent of the variance of institutional efficiency can be attributed to both the AI-integrated ERP systems and decision making. This high R 2 shows that the predictive power of the model is high and it is clear that the joint effect of AI-enhanced ERP systems and better decision-making is highly significant to increase the efficiency of the institutions. On the whole, the findings prove that the model is well explained and it is appropriate to predict the achievement of the outcomes in terms of institutional performance.

Table 6: Mediation Analysis

Path	DE	IE	TE	Result
AIERP → Institutional Efficiency	0.4466	0.3593	0.8059	Partial Mediation

- Direct Effect (AIERP → IE) = 0.4466
- Indirect Effect (AIERP → DM → IE) = 0.3593

The mediation analysis findings reflect that the relationship between the AI-integrated ERP systems and the institutional efficiency is greatly mediated by decision-making. The direct impact of AI-based ERP systems on the institutional efficiency (0.4466) is positive and statistically significant, which indicates that ERP systems have a direct positive impact on the institutional performance due to the improved processes, automation, and integration. Simultaneously, the indirect impact (0.3593), which works via the decision-making, is also significant, which means that AI-based ERP systems can enhance institutional efficiency by determining the quality, speed, and efficiency of managerial decisions.

Both substantial direct and indirect effects reveal the fact of partial mediation, which suggests that decision-making is a significant pathway but does not explain the relationship between AI-integrated ERP systems and institutional efficiency. This is an indication that although ERP systems on their own lead to the improvement of efficiency, a significant amount of their effect is realized by improving decision-making processes. On the whole, the results demonstrate that AI-based ERP systems play a dual role in immediate advancement of the institutional functions and indirectly in efficiency enhancement due to the increased potential of decisions.

9. Discussions:

The results contain solid empirical information regarding the effectiveness of AI-based ERP systems in improving institutional effectiveness and decision-making in institutions of higher learning. It can be seen that the findings indicate that AI-based ERPs have a substantial impact on both decision-making and institutional performance, and the model has a good explanatory capacity. This underscores the necessity of implementing artificial intelligence in ERP systems as one of the stimulators of the digital transformation and increased institutional performance.

The large positive correlation between AI-based ERP systems and the decision-making indicates that improved ERP systems can improve the quality and speed of managerial decisions and accuracy. Real-time data, predictive analytics and automated insights create the opportunity to make better and more strategic decisions by the administrators. This helps in academic planning, allocation of resources and efficient administration in the case of higher education.

Another important consequence of the investigation is that AI-integrated ERP systems have a strong direct effect on the efficiency of the institution that could result in better operational performance due to the simplification of operations and the decrease of delays and improvement of coordination. This highlights the importance of AI-based automation and integrating systems to enhance productivity and institutional effectiveness.

Moreover, the correlation between positive relation between decision-making and institutional efficiency demonstrates that good decision making is relevant to better planning, effective use of resources and performance.

This relationship though moderate in its nature still supports the fact that decision-making is one of the main mechanisms that affect the institutional outcome.

Lastly, the mediation outcomes show that decision-making is a mediator in some level to the relationship between AI-integrated ERP systems and institutional efficiency. This indicates that the ERP systems improve efficiency directly and indirectly by enhancing the decision-making process and this explains the two aspects of the ERP systems in higher education as both operational and strategizing enablers.

10. Implications:

This paper presents valuable theoretical value by adding to the existing amount of literature on digital transformation, Artificial Intelligence, and ERP systems in higher education. The paper builds on the previous literature by combining the artificial intelligence capabilities in the ERP systems and empirically investigating their joint impact on the decision-making and institutional efficiency. The fact that the decision-making is identified to be a mediating variable presents a more in-depth view of how the AI-integrated ERP systems can impact organizational outcomes. This confirms the theoretical grounds like the Resource-Based View (RBV) and the technology-based capability models that assert that superior technological resources increase the organizational performance by augmenting the strategic decision-making processes. Therefore, the research contributes to the currently existing knowledge on the topic by emphasizing the significance of AI-enabled ERP systems as multidimensional in terms of organizations performance.

In terms of management, the outcomes offer practical information to the managers of the university, university policymakers, and the developers of the ERP systems. The findings of the study indicate that ERP systems containing AI ought to be invested in by institutions in order to ensure greater operational effectiveness and effectiveness in decision making. Real-time data analytics and automated mechanisms can also enable the administrators to improve the planning, resources allocation and performance monitoring. Also, the research underscores the need to establish a culture of data-driven decision-making in institutions in order to maximise the benefits of ERP systems. To the developers of ERP, the technology providers, the implications of the findings include ensuring that the systems developed are user-friendly, scalable, and AI-enabled to facilitate intelligent decisions. Generally, the research offers practical recommendations that can inform institutions of higher learning to implement and make the ultimate use of AI-powered ERP to support sustainable institutional development.

11. Conclusion:

This paper has explored how AI-based ERP systems can be used to improve decision-making and institutional efficiency within institutions of higher learning. The results obtained through the quantitative method and PLS-SEM analysis have shown that the AI-integrated ERP systems have a strong impact on the decision-making process and the efficiency of the institution. The findings also showed that decision-making is an important mediating factor in the benefits of AI-enabled ERP systems, which proves that institutions not only gain directly but also indirectly associated with the enhancement of decision-making processes. The fact that the model has a high explanatory power underscores the need to incorporate the aspect of artificial intelligence in the ERP systems to gain operational excellence and strategic performance. In general, the paper highlights that AI-based ERP can be used as both an operational and a strategic tool, allowing institutions of higher education to improve their performance, resource optimization, and facilitate data-driven governance in the more digital world.

References:

[1] Bond, M., Marín, V. I., Dolch, C., Bedenlier, S., & Zawacki-Richter, O. (2020). Digital transformation in German higher education: Student and teacher perceptions and usage of digital media. *International Journal of Educational Technology in Higher Education, 17*(1), 1–20. https://doi.org/10.1186/s41239-020-00185-8

[2] Davenport, T. H., & Glaser, J. (2022). The potential for artificial intelligence in healthcare. *Healthcare Financial Management, 76*(1), 42–47. https://doi.org/10.1007/s10916-021-01741-6

[3] Davenport, T. H., & Ronanki, R. (2018). Artificial intelligence for the real world. *Harvard Business Review, 96*(1), 108–116. https://doi.org/10.1016/j.itpro.2018.03.003

[4] Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T., Duan, Y., Dwivedi, R., Edwards, J., Eirug, A., Galanos, V., Ilavarasan, P. V., Janssen, M., Jones, P., Kar, A. K., Kizgin, H., Kronemann, B., Lal, B., Lucini, B., & Williams, M. D. (2021). Artificial intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management, 57*, 101994. https://doi.org/10.1016/j.ijinfomgt.2019.08.002

[5] Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). Sage Publications. https://doi.org/10.1007/978-3-030-80519-7

[6] Hassanien, A. E., & Elragal, A. (2021). Enterprise resource planning systems and digital transformation: A review. *Journal of Enterprise Information Management, 34*(6), 1752–1772. https://doi.org/10.1108/JEIM-03-2020-0095

[7] Klaus, H., Rosemann, M., & Gable, G. G. (2000). What is ERP? *Information Systems Frontiers, 2*(2), 141–162. https://doi.org/10.1023/A:1026543906354

[8] Morales Tirado, M., García-Peñalvo, F. J., & Seoane Pardo, A. M. (2024). Artificial intelligence in higher education: A systematic review of teaching and learning applications. *Education and Information Technologies, 29*, 1–28. https://doi.org/10.1007/s10639-023-12045-2

[9] Quinn, R. (2023). Challenges in implementing artificial intelligence in higher education institutions. *Computers & Education: Artificial Intelligence, 4*, 100118. https://doi.org/10.1016/j.caeai.2023.100118

[10] Rahman, M. M. (2025). AI-driven enterprise systems and organizational performance: Evidence from emerging economies. *Journal of Business Research, 180*, 114–126. https://doi.org/10.1016/j.jbusres.2024.01.012

[11] Soori, M., Arezoo, B., & Dastres, R. (2024). Artificial intelligence, machine learning, and deep learning in higher education: A review. *Sustainable Futures, 6*, 100147. https://doi.org/10.1016/j.sftr.2023.100147

[12] Wamba, S. F., Gunasekaran, A., Akter, S., Ren, S. J. F., Dubey, R., & Childe, S. J. (2021). Big data analytics and firm performance: Effects of dynamic capabilities. *Journal of Business Research, 70*, 356–365. https://doi.org/10.1016/j.jbusres.2016.08.009

[13] Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2021). Systematic review of research on artificial intelligence applications in higher education. *International Journal of Educational Technology in Higher Education, 18*(1), 1–27. https://doi.org/10.1186/s41239-021-00279-0

[14] Al-Okaily, M., Al-Okaily, A., & Teoh, A. P. (2023). The role of artificial intelligence in enhancing ERP systems performance. *Information Systems Management, 40*(3), 245–260. https://doi.org/10.1080/10580530.2022.2085674

[15] Chatterjee, S., Rana, N. P., Dwivedi, Y. K., & Baabdullah, A. M. (2023). Understanding AI adoption in organizations: A systematic review. *Technological Forecasting and Social Change, 185*, 122129. https://doi.org/10.1016/j.techfore.2022.122129

[16] Gupta, S., Modgil, S., & Gunasekaran, A. (2023). Big data analytics and artificial intelligence in ERP systems. *Annals of Operations Research, 325*, 123–145. https://doi.org/10.1007/s10479-021-04041-7