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An Enhanced Organizational Performance System For Knowledge Sharing Using Aritificil Intelligence

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Abstract—*In order to improve organizational performance, this study offers a distinct framework that combines knowledge sharing (KS) and artificial intelligence (AI), with a focus on knowledge management features. The impact of the framework is completely analyzed, proving remarkable impacts on the production, dissemination, and use of knowledge. The findings show that AI-driven KS can successfully promote creativity, teamwork, and well-informed decision-making, all of which produce better organizational results. The framework has the ability to advance organizational performance, as evidenced by the notable enhancements in knowledge production, exchange, and application. A negligible influence on information acquisition is also revealed by the results, indicating that the framework might not be as useful for supporting the early stages of knowledge management. This shows that more study is necessary to solve the limitation on knowledge acquisition and guarantee comprehensive knowledge management*.

Keywords— Artificial Intelligence, Knowledge Sharing, Knowledge Management, Organizational Performance, Innovation.

1. INTRODUCTION

The quick advancement of artificial intelligence and knowledge management has resulted in components that assist with organizational performance efforts. Both artificial intelligence (AI) and knowledge management (KM) are intimately tied to the foundations of learning and knowledge. Recent developments in artificial intelligence have the potential to transform organizational knowledge management (Neștian and Guță, 2020). Two complementary techno-organizational orientations are found in this field. The first is knowledge management, which focuses specifically on managing knowledge within companies. As a subfield of computer, artificial intelligence is largely concerned with creating systems that can replicate human knowledge and learning processes (Jarrahi et al., (2022).

The field of knowledge management (KM) has obtained significant attention in both academia and industry for many years. The issue of how to successfully apply knowledge management (KM) in corporate contexts has drawn the attention of researchers and practitioners by Pai et al., (2022). The underlying KM strategy and its application to attain organizational benefits and competitive advantages are crucial success factors in this setting. Because our economy depends on the interchange of specialized knowledge and information, knowledge management (KM) will remain a crucial component of companies in the future (Brynjolfsson et el.,(2021).

In order for businesses to maximize their intellectual capital, encourage collaboration, and facilitate well-informed decision-making, efficient knowledge management has grown in importance. Knowledge management systems (KMS) offer an organized framework for gathering, classifying, and sharing knowledge assets inside a company. By facilitating learning, cutting down on redundancy, and facilitating effective knowledge sharing, KMS improves organizational capabilities and competitiveness (Wojcak and Lukáš, 2022).

The only way to fully utilize and fulfill the special potential of AI in knowledge management is through an effective symbiotic partnership between intelligent systems and knowledge workers, which businesses can facilitate. AI and KM together have the potential to improve wireless networks, enterprises, organizations, education, healthcare, and inventions. In terms of information acquisition, problem-solving techniques, knowledgeable tutors, optimal solution systems, organizing, modeling, and other areas, the outcomes of multiple researches show that AI has already significantly enhanced the quality and efficacy of knowledge management. More sophisticated uses of AI in the context of knowledge management, however, have the potential to be very beneficial to organizations and businesses (Taherdoost and Madanchian, 2023).

The last ten years have seen a significant change in organizational performance and operations, made possible in large part by advanced technology like data analytics artificial intelligence (AI), and business intelligence applications. The increasing use of innovative technologies has boosted effectiveness, efficiency and productivity, as existing and new knowledge within an organization continues to improve AI abilities. For this reason, AI can identify duplicate within business processes and offer optimal resource utilization for improved performance. However, the lack of combining of existing and new knowledge makes it problematic to determine the required nature of knowledge needed for AI's ability to optimally improve organizational performance, (Olan et al., 2022).

The aim of this work is to explores the knowledge management dimension. And identify the dimensions of knowledge management. Then enhance the knowledge management dimension framework and evaluate the enhanced framework by validation. Although the use of AI technologies and information exchange has become more widely accepted as ways to improve organizational performance, scholars have creatively proposed the idea of how AI and effective Knowledge Management lead to organization performance. Neștian and Guță (2020), in their study, by including an artificial intelligence and knowledge creation processes in an organization, they point out that, before artificial intelligence emerged, the ability to create knowledge was still unique to humans.

Also, while focusing primarily on examining to what degree Artificial Intelligence can help companies in their efforts to handle information and manage knowledge effectively. Pai et al. (2022), analyze Artificial Intelligence (AI) and Knowledge Management (KM), findings further point out that communication, trust, information systems, rewards, and the structure of an organization; are related to knowledge sharing in organizations.

However, none of these literatures were able to state how the integration of AI and dimensions of Knowledge management leads to organization performance. In order to study the effect of how the integration of existing and new knowledge makes it difficult to determine the required nature of knowledge needed for AI's ability to optimally improve organizational performance, Olan et al. (2022), designed a conceptual framework that integrates Artificial intelligence and knowledge sharing system for organization performance, result from their study indicates that the execution of AI technologies alone is not enough in improving organizational performance, rather a supplementary system that combines AI and KSs provides a more sustainable organizational performance strategy for business operations in a constantly changing digitized society.

Therefore, it is necessary to enhance this framework, with the addition of knowledge management dimensions, specifically knowledge creation, acquisition, sharing and application this factors collectively contributes to organizational performance.

The work is based on Resources base theory, the study covers an advancement of Artificial Intelligence -enabled cutting-edge technologies has helped to improve business operations and performance i.e., improved decision making, enhanced innovation, better customer services and improved knowledge sharing. Many organizations continue to face reoccurring challenges in their business processes. The main reason for these challenges hinges on the point that organizations often find it difficult to integrate existing and new knowledge into the learning process of Artificial intelligence. This creates a lack of an enabling environment and causes organizations to struggle with the development and implementation of intelligent systems, the process of distribution, retention, and knowledge re-use. As such, the benefits of Artificial intelligence to organizational performance become limited.

2. THE CONCEPTUAL FRAMEWORK OF AN INTEGRATED ARTIFICIAL INTELLIGENCE-KNOWLEDGE SHARING SYSTEM FOR ORGANIZATIONAL PERFORMANCE

Figure 1 shows the Conceptual Framework of an Integrated AI knowledge sharing proposed by (Olan et al., 2022). Factors of the Conceptual Framework include Artificial Intelligence, Intelligence Agent, Intelligence System, Socialization, Tacit knowledge sharing, Externalization, Tacit to Explicit and Organizational Performance.

Organizations rely on outcomes from financial, product market and shareholders return to make strategic decisions (Ho, 2020). The identification of knowledge as a resource-based entity in the organization has propelled a shift in defining organizational assets. The necessity to invest in systems that foster intellectual capital or knowledge-related activities within an organization highlights the crucial role employee's play in enhancing organizational performance. The goal of implementing an AI-KS system is to prioritize knowledge in relation to business processes, thereby promoting greater efficiency and productivity. While integrating the AI-KS system is vital for leveraging existing knowledge, it is also key to facilitating the development of new knowledge. Moreover, the AI-KS system has a positive effect on the three performance dimensions—financial performance, product market success, and shareholder returns—by empowering employees. efficiency (Olan et al., 2022).

Knowledge management has a similar aim to that of the Artificial Intelligence sector—leveraging computational technologies to enhance the capabilities of individuals and groups. Knowledge management relies on Artificial Intelligence; the innovations and tools developed by the AI sector are essential for effective knowledge management. For instance, the concept of a knowledge base can be referred to using various terms such as corporate memory, knowledge repository, or best-practices database, but it's evident that a robust knowledge base is crucial for effective knowledge management. Insights gained from the AI sector regarding knowledge acquisition, representation, and inference can all be applied to knowledge management. In fact, this expertise must be utilized to realize the successful outcomes highlighted so far. Search functionality is vital as community members need to locate and utilize pertinent information from the repository. In current knowledge management systems, the search engine acts as the primary tool. Search engines employ basic natural language understanding methods., (Perspective et al., 2020).

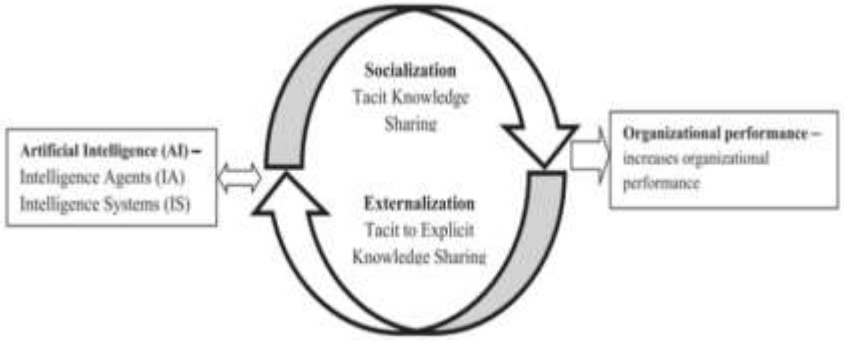

Figure 1: Conceptual Framework of an Integrated AI knowledge sharing

2.1 Factors of an Enhanced KM Framework

The Table 1 shows knowledge management dimensions. The process of knowledge creation may occasionally involve developing ideas and solutions from scratch, but it more frequently amounts to a reconfiguration and recombination of already existing background knowledge. This enables organizations to adapt to new (Neștian & Guță, 2020). Additionally, firms may acquire knowledge from external sources. As a result, knowledge creation may take the form of knowledge acquisition through searching for or sourcing information, (Jarrahi et al., 2022).

Table 1: Knowledge Management Dimensions.

I.	Knowledge Creation
II.	Knowledge acquisition
III.	Knowledge sharing
IV.	Knowledge application

However, Knowledge creation is the result of interaction between knowledge and the act of knowing, which is done through action, practice, and interacting with people Bilad et al., (2023). It is crucial for firms to allocate adequate resources for creating new knowledge as it will enhance their innovation capabilities and development of new technologies (Habib et al., 2020), which ultimately will facilitate firms to achieve sustainability. Dynamic firms facilitate knowledge creation environment by encouraging their employees to share their knowledge that provide a system, such as an infrastructure and information, which enables them to practice the creation of new knowledge, and offer financial and non-financial rewards to employees who introduce new ideas or solutions, (Herschel & Jones, 2020). In conclusion knowledge creation and Artificial intelligence has a positive impact organizational performance, it led to the accumulation of intellectual capital, which in turn affects various dimension of organizational performance, (Castagna et al., 2020).

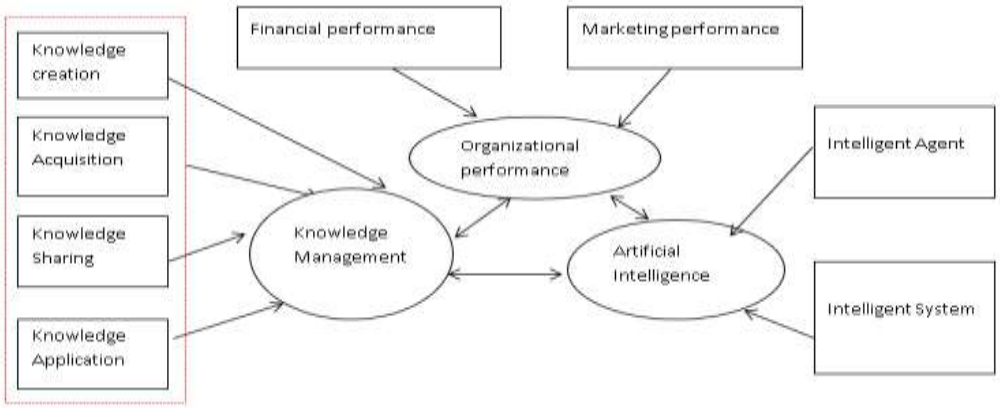

Figure 3: The Enhanced integrated Artificial Intelligence and knowledge management dimension framework.

Knowledge acquisition involves the processes within an organization to obtain, extract, and arrange knowledge from various sources. (Sahrawi et al. 2020), the majority of employees acquire knowledge from internal sources, such as team members and other colleagues. This indicates that the more employees are familiar with each other, the greater the probability that their productivity will be enhanced. The acquisition of knowledge from external sources refers to knowledge acquired from customers, competitors, suppliers, partners, and experts (Mothe et al., 2022). The aim of knowledge acquisition is to understand customers' needs and their experience with organizational products and services. By doing so, organizations make relevant changes so that customers' satisfaction can be achieved, leading to enhanced economic sustainability Mansoori et al., (2020.). In conclusion, knowledge acquisition and Artificial intelligence has a positive impact on organizational performance; it enhances organizational performance by improving organization learning, knowledge initiation and knowledge transformation.

The exchange of knowledge is among the key facilitators of effective knowledge management strategies. Mansoori et al., (2020). Knowledge sharing is defined as a continuous practice of exchanging knowledge through knowledge exchange mechanisms between individuals, groups and organizations, Schniederjans et al., (2020) Knowledge sharing is the process through which explicit or tacit knowledge is communicated to an individual or group of people Oliva et al., (2020). It is a popular mean of social interaction in organizations, which enables workers to solve problems in a creative manner and provides excellent support for designing strategies, making decisions and building a learning environment (Bolisani & Bratianu, 2018). Knowledge sharing significantly enhances workers' explicit and tacit knowledge, resulting in reduced errors and mistakes, and improved operational and economic sustainability.in conclusion, knowledge sharing has positive impact on organizational performance (Oliva et al., (2020)

Knowledge application involves utilizing knowledge once it has been accessed or communicated. It frequently entails transforming existing knowledge resources (such as a collection of best practices) into usable solutions or creating new products and services tailored for a different context. (Neștian & Guță, 2020) Knowledge application in many cases hinges upon a reinvention process, which "is not merely about tweaking the ideas of others. Knowledge application is the use or integration of acquired Knowledge in designing or delivering organizational products and services (Castagna et al., 2020). It is also considered as firms' timely response to operational changes through technology and strategy and the ability to benefit from them to design new products and services (Neștian & Guță, 2020) Knowledge application and AI has a positive impact on organizational performance.

3. RESEARCH DESIGN

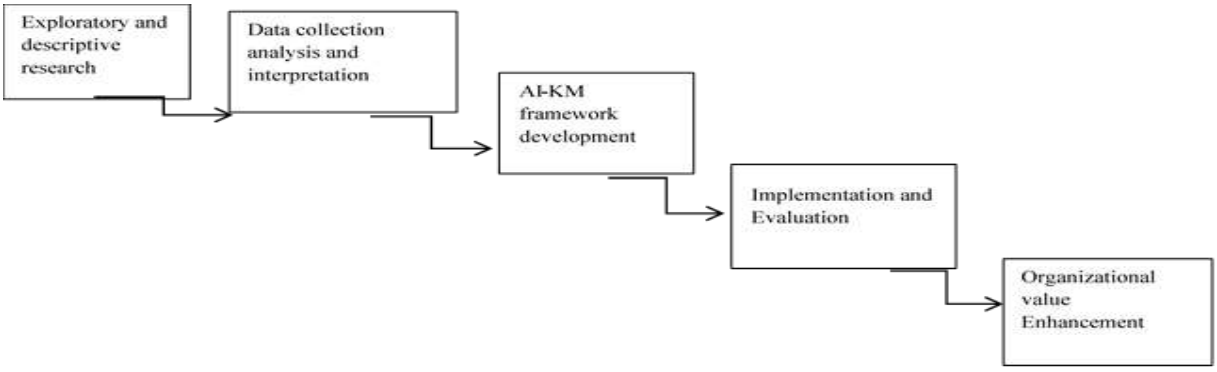

Figure 2: Research Design Process

The primary goal of the research identifies key knowledge management dimension factors that influence organizational performance concerning Artificial Intelligence. Figure 2 shows the stages of the research design. Stage 1 shows how the research explores the intricate interplay between KM and AI by examining current frameworks. This step seeks to achieve a more profound comprehension of the obstacles, prospects, and possible solutions related to the union of KM and AI. These insights will aid in revealing crucial integration challenges and collecting expert insights regarding the practicality of the knowledge management dimension framework. This will address the study's first goal.

This second and the third stage delivers a detailed summary of the components, features, and expected effects of the developed AI-KM framework on transparency, interpretability, and the performance activities of organizations. This allows is structured description of the framework's characteristics, processes, and possible impacts. While the final stages collect information, a questionnaire method is used to obtain perspectives from a sample of organizations, ensuring a comprehensive understanding of their views on the proposed framework.

4. RESULT AND DISCUSSION

4.1 Data Presentation and Analysis

Table 2: Descriptive Statistics

	Mean	Std. Deviation	N
AI	36.3421	6.42749	152
KC	24.3816	4.53527	152
KAC	16.2303	3.33051	152
KS	16.6842	3.21507	152
KAP	24.8487	4.47178	152

Table2 show descriptive statistics of the estimate values. It shows the mean, standard deviation, and sample size (N) for five variables: AI, KC, KAC, KS, and KAP. On average, the value of the AI variables is 36.3421. indicating that, on average, the AI variable tends to be around this value. The standard deviation of 6.42749 suggests that there is a moderate amount of variation in the AI values. The average value for KC, KAC, KS, and KAP are followed respectively (24.3816, 16.2303, 16.6842 and 24.8487) and standard deviation (4.535, 3.331, 3.215, and 4.471) indicating that, on average, there is a relatively small amount of variation in all the independent variables.

Therefore, suggesting that on average, AI scores higher than the independent variables i.e., KC, KAC, KS, and KAP. This indicates more positive responses or higher values on the scale for AI. KAC and KS has the lowest deviation, indicating that responses are more consistent and closer to the mean compared to the others. Suggesting a wider range of responses

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.850[a]	.722	.715	3.43177	1.921

a. Predictors: (Constant), KAP, KC, KS, KAC
b. Dependent Variable: AI

Table 3 shows model summary, the value of R = 0.850 represents the Pearson correlation. This value is positive and indicates very strong positive linear relationship between the dependent variable, AI and the independent variable KAP, KC, KS, and KAC. The value of Durbin Watson was 1.921 which is greater than 1 and less than 3. This shows that there is an independence of observation (no auto correlation) and therefore it is statistically significant. And the independent variables used are truly independent. The R^2 value was 0.722 which showed that 72.2%, variations in AI are explained by KAP, KC, KS, and KAC and the remaining 27.8% of the variation in AI are accounted for by other factors not captured in this model.

Table 4. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4506.985	4	1126.746	95.673	.000[b]
	Residual	1731.226	147	11.777		
	Total	6238.211	151			

a. Dependent Variable: AI
b. Predictors: (Constant), KAP, KC, KS, KAC

Statistical significance of the model

Table 4 shows the F-ratio in the ANOVA table, The table Shows that the independent variables statistically significantly predict the dependent variable, F (4,147) = 95.673, p (0.000) <0.05. That is, the regression model is a good fit of the data. It further explains that the variation that occurs in AI is due to the use or introduction l the independent variables KAP, KC, KS, and KAC. In other words, there is a significant relationship between AI and KAP, KC, KS, KAC Also, there is an improvement in the prediction of the variables. This is because the F ratio is greater than 1

Table 5: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.582	1.655		2.769	.006		
	KC	.582	.126	.411	4.605	.000	.237	4.211
	KAC	-.124	.180	-.064	-.690	.491	.218	4.592
	KS	.476	.166	.238	2.870	.005	.274	3.653
	KAP	.468	.122	.326	3.833	.000	.261	3.826

Table 5 shows coefficient of the Dependent Variable, the constant 4.582, is the predicted value for the dependent variable when all of the independent variables are held constant or assumed to be 0. This means that we will expect an average increase of 4.582 in AI. The unstandardized coefficient indicated how much the dependent variable (AI) varies with the independent variables when all other independent variables are held constant. The regression coefficient provides the expected change in the dependent variable (AI) for a unit increase in the independent variable referring to the coefficients (table3) above the unstandardized coefficients for KC is 0.582. This means that for every unit increase in KC there is 0.582 increase in AI. Which is statistically significant as p (0.000) < (0.05) which proves that there are substantial contributions from KC to AI. Also, the unstandardized coefficients for variables KS AND KSP are; 0.476 and 0.468 respectively. Which also shows that a unit increase in any of these independent variables holding others constant will bring about an increase in the dependent variable AI by 0.467 for KS, and 0.468 for KSP with their p values (0.005, and 0.000) < 0.05 which shows that each of these independent variables when used independently contributes substantially to AI as they are all statistically significant.
The value for the unstandardized coefficients of the independent variable KAC was -0. 124.with its p value (.491) > 0.05 This shows a negative relationship between the dependent variable (AI) and the independent variable (KAC). this further reveals that a unit increase in AI will bring about an impact in AI. hence does not substantially contribute to AI. We can further say that since it is not statistically significant, with the use of other variables, it is no longer needed in the model.

Collinearity statistics
Multicollinearity problem does not exist in the model as the VIF for all variables < 10 and Tolerance is > 0.1).
Therefore, in this case all variables have <10 and tolerance > 0.1, it suggests that:

- The predictors are not highly correlated with each other.
- The regression coefficient is not heavily influenced by the other predictors.
- The model is not suffering from the multicollinearity issues.

5. CONCLUSION AND RECOMMENDATIONS

This research presents a novel framework integrating Artificial Intelligence (AI) and Knowledge Sharing (KS) to enhance organizational performance, with a focus on knowledge management dimensions. The framework's impact is examined through a comprehensive analysis, revealing significant effects on knowledge creation, sharing, and application. The results indicate that AI-driven KS can effectively foster innovation, collaboration, and informed decision-making, leading to improved organizational outcomes. Notably, knowledge creation, sharing, and application are significantly enhanced, demonstrating the framework's potential to drive organizational success by optimizing knowledge storage and retrieval, automate knowledge update, improved knowledge discovery and enhanced knowledge protection. However, the findings also reveal an insignificant impact on knowledge acquisition, suggesting that the framework may not be as effective in facilitating the initial stages of knowledge management. This highlights the need for further research to address knowledge acquisition limitations and ensure a comprehensive knowledge management approach. The proposed framework contributes to the development of intelligent systems that support knowledge management and organizational effectiveness. By integrating AI and KS, organizations can leverage collective intelligence, foster a culture of collaboration, and drive informed decision-making. This research provides valuable insights for practitioners and researchers seeking to enhance knowledge management practices and organizational performance.

Therefore, the integrated AI-KSS framework has shown promising result in enhancing organizational performance, improving knowledge management capabilities, and fostering a culture of innovation and collaboration. The findings of this dissertation offer valuable insight for both AI and organizational performance, paving the way for further exploration of integrated artificial intelligence to enhance knowledge acquisition. Future research could focus on reassess the integration of AI and knowledge acquisition: Despite the expected positive relationship, the result showed a negative impact on the relationship between AI and knowledge acquisition. Organizations should reassess their approach to integrating AI and knowledge acquisition, also identifying areas for improvement and optimizing their strategies

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