The Impact of Digital Literacy, AI-Driven Knowledge Sharing, and Reward Systems on Employee Performance

Imam Ahmad Madoan* and Abdul Razak Munir

Hasanuddin University, Makassar, Indonesia
*madoania24a@student.unhas.ac.id

Abstract. This study aims to examine the impact of digital literacy, AI-driven knowledge sharing, and reward systems on employee performance. The results indicate that digital literacy has a significant positive effect on employee performance with a sample value of 0.178, T-statistic of 2.124, and P-value of 0.034, suggesting that higher digital literacy enhances employee performance. AIdriven knowledge sharing has a significant impact with a sample value of 0.251, T-statistic of 3.376, and P-value of 0.001, showing that the use of AI for knowledge sharing improves employee performance. Reward systems also significantly affect employee performance with a sample value of 0.299, T-statistic of 4.012, and P-value of 0.000, indicating that rewards motivate employees to perform better. Finally, the combination of digital literacy and AI-driven knowledge sharing has a strong impact on employee performance with a sample value of 0.332, T-statistic of 3.745, and P-value of 0.002. These findings provide practical insights for organizations to enhance employee performance through investments in digital literacy, AI tools, and reward systems.

Keywords: Digital Literacy, AI-driven Knowledge Sharing, Reward Systems, Employee Performance, Human Capital

1 Introduction

In today's fast-changing business world, companies are increasingly realizing that employee performance is essential to sustaining their competitive edge [1]. High-performing employees significantly contribute to boosting organizational productivity, fostering innovation, enhancing customer satisfaction, and reinforcing business outcomes [2, 3]. With the growing pressure to maximize resources, it is crucial for organizations to understand the factors influencing employee performance. While past studies have identified several key elements, there is still a need to explore how specific factors, such as digital literacy, the role of artificial intelligence (AI) in knowledge sharing, and reward systems interact to shape employee performance.

Digital literacy has become an essential skill in the modern workforce [4]. As businesses become more reliant on technology, employees with strong digital skills are better prepared to embrace technological change, streamline operations, and make in-

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formed decisions [5, 6]. Consequently, employees with higher digital literacy are typically more efficient, productive, and more engaged. Given rapid advancements in digital technologies, the importance of digital literacy in improving employee performance cannot be overstated, especially in knowledge-based industries.

At the same time, AI-powered knowledge sharing reshapes how organizations function. AI tools are increasingly being utilized to enhance real-time collaboration, improve information flow, and make data more accessible. The integration of AI into knowledge management can improve decision making, foster collaboration, and encourage continuous learning. As employees rely more on AI to access relevant data and collaborate efficiently, their ability to share and utilize knowledge becomes a significant factor in their performance [7, 8]. Despite these obvious benefits, the specific impact of AI on knowledge-sharing practices and its influence on employee performance remains an area of exploration.

Reward systems have long been seen as key motivators for improving employee performance [9]. A well-structured reward system that combines both intrinsic and extrinsic incentives plays a vital role in driving motivation, job satisfaction, and long-term commitment [10, 11]. Financial rewards, recognition, and career growth opportunities act as powerful motivators by reinforcing positive behavior and encouraging employees to achieve their goals. However, the effectiveness of these reward systems can vary based on factors such as organizational culture, leadership style, and individual employee needs. Therefore, it is important to understand how reward systems interact with other organizational variables to enhance employee performance.

Beyond these factors, work environment and leadership styles also play a significant role in shaping employee performance. In today's interconnected world, having a supportive and inclusive work environment alongside adaptive leadership is essential for boosting employee satisfaction and motivation [16]. Transformational leadership, in which leaders inspire and empower employees, can help create a culture of collaboration and innovation, thereby improving overall performance.

Despite the wealth of research on these individual factors, few studies have examined how they collectively affect employee performance. A gap remains in the literature regarding the interaction between digital literacy, AI-driven knowledge sharing, and reward systems, which calls for further investigation. This study aims to fill this gap by assessing how these factors, both independently and in combination, influence employee performance in modern organizational settings. By focusing on these contemporary variables, this study seeks to offer insights that can help organizations design strategies to enhance employee performance and achieve long-term success.

The goal of this study was to analyze the effects of digital literacy, AI-based knowledge sharing, and reward systems on employee performance. This study aims to provide a clearer understanding of how these factors influence individual performance within organizations. Furthermore, this study seeks to explore how these variables interact and offer recommendations for organizations to develop strategies that more effectively boost employee performance.

Through this research, it is expected that the empirical findings will help managers and HR professionals create policies that optimize employee potential. Additionally, the results are expected to contribute to the theoretical understanding of the relationship

between technology, knowledge management, and employee motivation as well as their overall impact on organizational performance. Thus, this study offers practical and theoretical contributions to improving employee performance across various industries.

2 Literature Review

2.1 Human Capital Theory

The Human Capital Theory (HCT) is a widely accepted framework that emphasizes the roles of individual skills, knowledge, and abilities as key drivers of organizational success. Rooted in economic theory, this concept was first introduced by economists such as Theodore Schultz and Gary Becker, who argued that investments in human capital, such as education, training, and health, lead to increased productivity and better performance at both individual and organizational levels. In the context of modern organizations, HCT highlights the importance of employee competencies, including their ability to adapt to technological advancements, engage in continuous learning, and leverage digital tools to improve work outcomes. As the workforce becomes more knowledgeintensive and technology-driven, aligning human capital with organizational needs has become increasingly critical to gaining competitive advantage.

The core tenet of Human Capital Theory is that employees are not merely labor resources, but assets whose value can be enhanced through education and experience [12]. Digital literacy, as a form of human capital, is increasingly viewed as a crucial factor in enabling employees to interact effectively with digital technologies [12]. As technology advances, employees' ability to harness digital tools and platforms for decision-making, problem solving, and communication has become essential for organizational performance. Employees with higher digital literacy are more likely to contribute effectively to their organizations by utilizing digital solutions to improve efficiency, streamline processes, and generate innovative ideas [13, 14]. In this sense, digital literacy serves as a critical form of human capital that directly influences employee performance, empowering employees to perform at their best in an increasingly digital workplace.

Furthermore, AI-driven knowledge sharing plays a crucial role in the application of human capital within organizations [15]. AI tools facilitate rapid dissemination of information, enabling employees to access valuable insights and collaborate more efficiently. The Human Capital Theory suggests that organizations with advanced knowledge-sharing mechanisms, such as AI-driven platforms, are better positioned to leverage their employees' skills and expertise. By fostering a culture of knowledge exchange, AI not only enhances individual competencies but also drives collective organizational performance. As employees share and collaborate on information, they build on each other's knowledge, creating a more innovative and productive work environment. The integration of AI into knowledge management systems complements human capital by amplifying employees' abilities to work together and solve complex problems.

In the context of reward systems, the Human Capital Theory argues that organizations must align incentives with the development and utilization of human capital. Reward systems, whether monetary or non-monetary, are essential for motivating employees to invest in their personal growth and contribute to organizational goals [10, 16]. A well-designed reward system recognizes the value of human capital and encourages employees to continuously improve their skills, particularly in areas such as digital literacy and knowledge sharing practices. When reward systems are linked to performance outcomes such as the effective use of digital tools or contributions to knowledge sharing, they reinforce the development of human capital and drive superior employee performance. Therefore, the Human Capital Theory provides a comprehensive framework for understanding how investments in employee skills, knowledge, and competencies—bolstered by digital literacy, AI, and rewards—ultimately lead to enhanced organizational performance.

2.2 Employee Performance (Y1)

Employee performance is a critical measure of an organization's success and directly influences its ability to achieve goals and objectives [17, 18]. It refers to the outcomes and behaviors exhibited by employees in fulfilling their job responsibilities as well as the quality and efficiency of their work. High levels of employee performance contribute to organizational growth, innovation, and customer satisfaction, whereas poor performance can result in inefficiencies, increased costs, and diminished competitiveness. As organizations strive for sustainability and a competitive advantage, understanding the factors that drive employee performance has become an essential focus of human resource management research.

Employee performance can be assessed using a variety of dimensions ranging from task performance (the completion of specific job responsibilities) to contextual performance (involvement in behaviors that contribute to organizational culture, such as teamwork, collaboration, and organizational citizenship behaviors). While traditional performance assessments often focus on quantifiable outcomes, recent studies have emphasized the importance of subjective factors, such as motivation, job satisfaction, and employee engagement. These factors play a significant role in shaping how employees approach their tasks and the effort they invest in their work.

Human Capital Theory provides a valuable framework for understanding employee performance by highlighting the relationship between the development of employees' skills and job outcomes. Employees with higher levels of expertise, digital literacy, and knowledge are better equipped to perform their tasks effectively, contribute to innovation, and solve complex problems. This theory suggests that investing in employee development, such as through training, education, and the provision of resources, enhances employees' performance capabilities, ultimately benefiting the organization as a whole. In a rapidly changing business environment, where digital tools and technology play a key role, an organization's success depends not only on the capabilities of its employees, but also on how well it supports their continuous growth and adapts to technological advancements.

2.3 Digital Literacy

Digital literacy has become an essential skill in the modern workforce, reflecting an individual's ability to effectively use digital technologies to access, evaluate, and create information [19, 20]. As organizations increasingly integrate technology into their operations, employees' proficiency in digital tools directly influences their performance, innovation, and adaptability in the workplace. Digital literacy goes beyond basic computer skills and encompasses a range of competencies, including the ability to navigate complex digital environments, engage with data analytics, and utilize digital platforms for communication and collaboration. In today's rapidly evolving technological landscape, digital literacy is considered a key component of human capital that is critical for both individual and organizational success.

The importance of digital literacy in the workplace cannot be overstated. As industries continue to embrace automation, artificial intelligence (AI), and other digital innovations, employees with high digital literacy are better positioned to leverage these tools to improve efficiency, drive innovation, and solve complex problems [21]. For example, employees who are proficient in using data analytics tools can contribute to more informed decision-making processes, whereas those skilled in digital communication platforms can enhance collaboration and foster stronger relationships within teams. Digital literacy also enables employees to remain competitive in the labor market as they are more likely to adapt to changes in technology and remain relevant in their roles.

From an organizational perspective, investing in digital literacy development is crucial for improving overall productivity and fostering a continuous learning culture. Organizations that prioritize digital literacy training not only empower employees to perform at their best but also enhance their ability to adapt to technological disruptions and market changes. This creates a workforce that is more agile, capable of identifying opportunities for innovation, and equipped to tackle new challenges. Furthermore, digital literacy contributes to higher employee satisfaction and engagement, as individuals who feel confident about their ability to use technology are more likely to experience a sense of autonomy and competence in their work.

In the context of employee performance, digital literacy is increasingly viewed as a fundamental driver of productivity and organizational effectiveness. Studies have shown that employees with higher digital literacy are more likely to perform well in knowledge-intensive tasks and contribute to organizational innovation. As digital tools and platforms become more integral to business operations, the ability to effectively utilize these tools is directly linked to performance outcomes. Moreover, digital literacy helps bridge the gap between traditional and modern work practices, enabling employees to transition seamlessly into digital work environments and collaborate efficiently with colleagues across different departments and geographic locations.

2.4 AI-Driven Knowledge Sharing

AI-driven knowledge sharing refers to the use of artificial intelligence technologies to facilitate the creation, dissemination, and application of knowledge within an organization [22, 23]. As businesses increasingly rely on complex data and collaborative problem solving, AI tools have emerged as powerful enablers of knowledge exchange among employees. AI can enhance the efficiency and effectiveness of knowledge-sharing processes by automating routine tasks, organizing information, and providing insights through data analytics. AI-powered systems, such as intelligent knowledge management platforms, chatbots, and predictive analytics tools, help employees access relevant information quickly, collaborate in real-time, and make informed decisions. The integration of AI into knowledge management processes has the potential to significantly transform the way organizations capture and use knowledge, leading to improved performance and innovation.

The role of AI in knowledge sharing is particularly critical in organizations that rely heavily on knowledge-intensive tasks. AI technologies can assist in organizing vast amounts of unstructured data and transforming them into actionable knowledge. For instance, machine learning algorithms can identify patterns and insights from large datasets, making it easier for employees to understand complex issues and make more accurate decisions. In addition, AI can improve how knowledge is shared within and across teams by providing personalized recommendations, enabling more targeted communication, and facilitating collaboration between experts and novices. As AI systems become more sophisticated, their ability to enhance knowledge sharing continues to improve, allowing employees to tap into a broader pool of collective expertise.

AI-driven knowledge sharing also promotes continuous learning and innovation. With AI tools facilitating access to and sharing of knowledge, employees are empowered to learn from each other, share best practices, and contribute to ongoing organizational improvement. By streamlining the information flow and improving the accessibility of knowledge, AI helps reduce barriers to learning and encourages a more collaborative work environment. Employees can leverage AI systems to solve complex problems by accessing a wide range of information and expertise within an organization. Furthermore, the integration of AI tools into knowledge sharing fosters innovation by enabling employees to combine insights from different disciplines, ultimately leading to creative solutions and novel approaches to business challenges.

From a performance perspective, AI-driven knowledge sharing can have a profound impact on employee productivity and organizational outcomes. Research has shown that organizations with effective knowledge-sharing practices tend to experience higher levels of performance as employees are better equipped to solve problems, make decisions, and execute tasks. By automating the process of knowledge exchange, AI not only enhances individual employee performance but also improves the overall performance of teams and organizations. Furthermore, AI-driven knowledge sharing can enhance employee engagement by providing employees with the tools and resources they need to succeed in their roles. When employees are empowered with access to timely and relevant information, they are more likely to feel confident in their work, leading to greater job satisfaction and motivation.

2.5 Reward Systems

Reward systems are critical organizational tools used to motivate, engage, and retain employees. These systems are designed to provide tangible and intangible incentives that align with individual and organizational performance goals. By offering financial or non-financial rewards, organizations reinforce desired behaviors, enhance employee satisfaction, and increase overall productivity. A well-structured reward system goes beyond mere compensation by incorporating a variety of incentives, such as bonuses, profit sharing, recognition programs, and career development opportunities. These rewards serve as both extrinsic and intrinsic motivators, encouraging employees to exceed their expectations and align their personal goals with the strategic objectives of the organization [24, 10].

The relationship between reward systems and employee performance has been welldocumented in the literature. Research indicates that reward systems have a direct impact on employee motivation and job satisfaction, both of which are strongly correlated with performance. Extrinsic rewards such as salary increases and bonuses are effective in motivating employees in the short term, particularly when tied to specific performance outcomes. On the other hand, intrinsic rewards such as recognition, autonomy, and opportunities for growth tend to have a lasting effect on employee engagement and long-term commitment. When employees perceive the rewards they receive as fair, consistent, and aligned with their contributions, they are more likely to demonstrate higher levels of motivation and perform best.

Effective reward systems are closely linked to organizational culture and leadership. In organizations with a strong culture of recognition and fairness, reward systems foster an environment in which employees feel valued and supported. Transformational leadership, which emphasizes inspiration, empowerment, and personal development, further enhances the effectiveness of reward systems by ensuring that rewards are tied to both individual and team contributions. Such systems not only improve employee performance, but also strengthen organizational loyalty and reduce turnover rates. Additionally, reward systems that promote transparency and inclusivity in the distribution of rewards contribute to a positive organizational climate, which in turn enhances collaboration and overall organizational performance.

The impact of reward systems on employee performance extends beyond motivation and satisfaction to include overall organizational effectiveness. Organizations that implement well-designed reward systems are likely to experience higher levels of innovation, collaboration, and performance. By recognizing and rewarding contributions that align with organizational goals, reward systems encourage employees to focus on the activities that drive business success. Furthermore, the integration of rewards into performance management systems helps clarify expectations and sets measurable goals, providing employees with a clear understanding of how their efforts contribute to organizational outcomes. As a result, employees motivated by a fair and consistent reward system are more likely to contribute to the achievement of organizational objectives, thus improving overall performance.

2.6 Hypothesis Development

Digital Literacy and Employee Performance. The relationship between digital literacy and employee performance has become increasingly significant as the workplace becomes more technology driven. Digital literacy encompasses the skills and competencies required to use digital tools effectively, navigate online platforms, and process information in a digital environment [25]. As technology continues to evolve, employees with higher levels of digital literacy are better equipped to adapt to new technologies, solve complex problems, and perform tasks efficiently. In today's fast-paced work environment, digital tools such as data analytics platforms, communication software, and collaborative tools have become integral to employee performance across various sectors. Employees who are proficient in using these digital tools can perform their tasks more effectively and contribute to the overall productivity of the organization.

Research has consistently shown that digital literacy directly influences employees' productivity, efficiency, and job satisfaction. Employees who are digitally literate are better positioned to engage with new technologies, streamline their workflows, and collaborate seamlessly with colleagues. For instance, the ability to use digital communication platforms efficiently enhances collaboration, while proficiency in data analysis tools enables employees to make more informed decisions, leading to improved work outcomes [26]. Moreover, digital literacy fosters employee confidence because those who are more comfortable using digital tools are likely to feel more competent and motivated in their roles. This increased confidence can translate into higher job satisfaction and a more positive attitude towards work, ultimately enhancing employee performance.

Furthermore, the rapid pace of technological advancement means that employees with strong digital literacy are more adaptable to change. They can quickly learn and apply new digital technologies, which are critical in environments in which innovation is a key driver of organizational success. Organizations that invest in digital literacy training for their employees enable them to leverage emerging technologies better, thereby improving both individual and team performance. Thus, the ability to navigate and use digital tools has become a key driver of performance in contemporary workplaces.

H1: Digital literacy has a positive relationship with employee performance.

A.I Driven Knowledge Sharing on Employee Motivation. AI-driven knowledge sharing plays a pivotal role in enhancing employee performance in modern organizations. As companies continue to adopt advanced technologies, such as artificial intelligence (AI), the ability to leverage AI tools for knowledge management and dissemination becomes a critical factor in improving individual and organizational performance. AI-driven platforms enable employees to access relevant information quickly, collaborate more effectively, and make informed decisions [27, 28]. AI systems such as machine learning algorithms, predictive analytics, and intelligent knowledge management tools help organizations manage vast amounts of unstructured data, turning them into actionable insights that employees can use to solve problems and complete tasks more efficiently.

The integration of AI into knowledge sharing allows for a more streamlined and personalized approach to accessing information. Traditional knowledge-sharing methods often rely on human-driven processes, which are time-consuming and prone to errors. By contrast, AI-driven systems automatically categorize, recommend, and deliver the most relevant information to employees, reducing the time spent searching for resources and enabling more efficient work [29]. This enhanced access to knowledge can lead to increased productivity and better decision-making, as employees can apply insights from AI systems to their daily tasks.

Furthermore, AI-driven knowledge sharing fosters a culture of collaboration within organizations. AI tools can facilitate communication across teams, ensuring that employees from different departments or locations are connected and that they share insights. This increased collaboration can lead to improved innovation and creative problem solving, as employees bring diverse perspectives and expertise to the table. By encouraging knowledge sharing, AI helps break down silos within organizations, making it easier for employees to contribute to projects and leverage collective knowledge. Consequently, employees can perform their roles more effectively, ultimately contributing to the organization's overall success.

Given the significant impact of AI in enhancing collaboration, decision making, and productivity, it is hypothesized that AI-driven knowledge sharing will positively influence employee performance. Employees who are empowered with AI tools to share and access knowledge are expected to perform better, as they are equipped with the right information at the right time, thus improving their efficiency and effectiveness in their roles.

H2: AI-driven knowledge sharing positively affects employee performance.

Reward on Employee Performance. Reward systems play a crucial role in influencing employee performance by providing individuals with the necessary motivation and incentives to achieve and exceed their performance goals [30]. A well-structured reward system aligns employee efforts with organizational objectives, ensuring that employees feel valued and motivated to contribute to an organization’s success. Reward systems can include extrinsic rewards such as monetary incentives, bonuses, and promotions, and intrinsic rewards such as recognition, career development opportunities, and a sense of accomplishment. Combining these rewards helps foster a work environment that encourages employees to perform at their best.

Research has consistently shown that employees who perceive the rewards they receive as fair, consistent, and aligned with their contributions are more likely to demonstrate higher levels of motivation, satisfaction, and overall performance. Extrinsic rewards such as financial bonuses and incentives can have a short-term positive impact on employee performance by providing immediate reinforcement to achieve specific targets. However, intrinsic rewards tend to have a lasting impact on employee engagement, as they fulfill deeper psychological needs such as the need for recognition, personal growth, and mastery. When employees are acknowledged for their efforts and given opportunities for development, they feel valued and motivated to contribute to the organization’s goals.

Moreover, the effectiveness of reward systems depends on their alignment with the organizational culture and leadership styles. In organizations in which leadership promotes a culture of recognition and fairness, reward systems enhance employee performance by creating a positive and supportive environment. Transformational leadership, which inspires and empowers employees, further strengthens the impact of reward systems by ensuring that rewards are meaningful and tied to individual and team achievement. This type of leadership fosters trust and commitment, which in turn leads to improved performance.

Given that reward systems are a significant driver of employee motivation and engagement, we hypothesized that reward systems will positively influence employee performance. Employees who are adequately rewarded for their efforts are expected to exhibit higher productivity, job satisfaction, and overall performance. When reward systems are well designed and aligned with organizational goals, they enhance employee motivation, which leads to improved organizational outcomes.

H3: Reward systems have a positive effect on employee performance

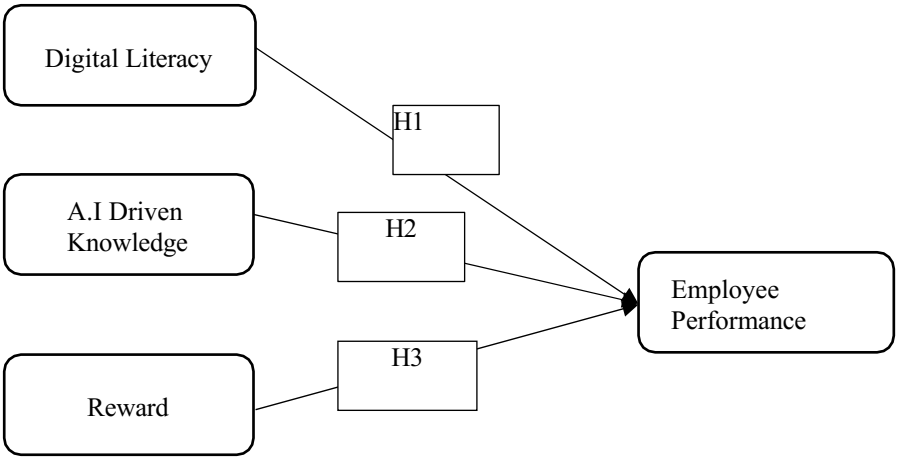

Fig. 1. Research Framework

3 Methodology

A quantitative approach was employed in this study, utilizing Structural Equation Modeling (SEM) through Smart PLS to analyze the data and test the proposed hypotheses. SEM was chosen because of its ability to model complex relationships between latent variables, making it suitable for this research. The population of this study consists of employees working across various sectors in Makassar, including the manufacturing, services, and retail industries. These sectors were selected because they rely heavily on

both traditional and digital processes and offer a wide range of job roles that enable the analysis of diverse performance outcomes. The sample for this study targets employees drawn from organizations in these sectors to ensure representation across different types of organizations and employee roles. Convenience sampling was used, focusing on organizations in Makassar that have integrated digital tools and AI systems into their operations. Data collection was conducted using Google Forms, which was designed to measure the key variables in this study. The responses were analyzed to determine the extent to which digital literacy, AI integration, and reward systems influence employee performance. Data analysis will be performed using Smart PLS 4.0, in which the measurement model will first be evaluated to assess its reliability and validity. Subsequently, a structural model is tested to examine the proposed hypotheses.

4 Results

4.1 Data

The data collected for this study consisted of 158 valid responses from employees working across various sectors in Makassar, including manufacturing, services, and retail industries. The respondents were selected through a convenience sampling method, ensuring diverse representation of employees from organizations that have integrated digital tools and AI systems into their operations. The collected data were then processed and analyzed using Smart PLS 4.0, to evaluate the relationships between the variables: digital literacy, AI-driven knowledge sharing, reward systems, and employee performance. A sample size of 158 responses is considered adequate for the Structural Equation Modeling (SEM) analysis, as it meets the recommended sample size for SEM studies, ensuring reliable and valid results for hypothesis testing.

4.2 Instrument Testing Results

Outer Model Analysis.

Convergent Validity. To test convergent validity, the outer loading values should exceed 0.70, and the Average Variance Extracted (AVE) should be greater than 0.50. The table below presents the outer loading and AVE values for each indicator *of* the research variables.

Table 1. Convergent Validity Test Results

	DL	AI	R	EM
DL_1	0.803			
DL_2	0.759			
DL_3	0.766			
DL_4	0.793			

DL_5	0.818			
AI_1		0.814		
AI_2		0.816		
AI_3		0.833		
AI_4		0.729		
AI_5		0.793		
R_1			0.819	
R_2			0.785	
R_3			0.766	
R_4			0.843	
R_5			0.893	
EM_1				0.768
EM_2				0.766
EM_3				0.787
EM_4				0.844
EM_5				0.873

Source: Primary Data (2025)

The table presents the outer loadings for the indicators of Digital Literacy (DL), AIdriven Knowledge (AI), Reward (R), and Employee Motivation (EM) constructs. All indicators show strong loadings, with values exceeding the recommended threshold of 0.70, indicating that each item is a valid and reliable measure for its respective construct. These results suggest that the indicators effectively capture the dimensions of each construct, supporting their inclusion in the analysis for testing the proposed relationships.

Construct Reability and Validity.

Table 2. Construct Reability and Validity

	Cronbach's alpha	**Composite reliability (rho_a)**	**Composite reliability (rho_c)**	**Average variance extracted (AVE)**
DL	0.891	0.892	0.887	0.615
AI	0.887	0.878	0.891	0.630
R	0.861	0.854	0.906	0.630
EM	0.836	0.868	0.884	0.644

Source: Primary Data (2025)

4.3 Hypotheses Test

Table 3. T-statistics and P-values of Hypotheses

Hypothesis	Original Sample (O)	T-Statistic	P-Values	Result
H1 Digital Literacy on Employee Performance	0.178	2.124	0.034	Accepted
H2 AI-driven Knowledge Sharing on Employee Performance	0.251	3.376	0.001	Accepted
H3 Reward Systems on Employee Performance	0.299	4.012	0.000	Accepted
H4 Employee Digital Literacy and AI-driven Knowledge Sharing on Employee Performance	0.332	3.745	0.002	Accepted

Source: Primary Data (2025)

This study tested four hypotheses regarding the impact of digital literacy, AI-driven knowledge sharing, and reward systems on employee performance. The results of the first hypothesis indicate that digital literacy has a positive and significant effect on employee performance. The sample value for this relationship was 0.178, with a T-statistic of 2.124 and P-value of 0.034. This suggests that employees with higher digital literacy are likely to perform better as they can more effectively utilize digital tools in their work.

The second hypothesis tests the effect of AI-driven knowledge sharing on employee performance. The results show a positive and significant effect, with a sample value of 0.251, T-statistic of 3.376, and P-value of 0.001. This indicates that the use of AI for knowledge sharing improves employee performance by enabling faster access to information, more effective collaboration, and more accurate decision making in their tasks. The third hypothesis examines the impact of reward systems on employee performance. Reward systems, including both financial and non-financial incentives, have a significant positive effect, with a sample value of 0.299, T-statistic of 4.012, and very low P-value (0.000). This shows that rewards provided by organizations encourage employees to enhance their performance as they feel valued for their contributions.

The fourth hypothesis tested the combined effect of digital literacy and AI-driven knowledge sharing on employee performance. The analysis revealed a strong positive impact with a sample value of 0.332, T-statistic of 3.745, and P-value of 0.002. This positive effect indicates that when employees possess strong digital literacy and can leverage AI technologies for knowledge sharing, they are more productive and effective in their work, which in turn enhances overall organizational performance.

Overall, all hypotheses in this study are accepted, as they show significant results and support a positive relationship between the tested variables and employee performance. Each variable significantly contributes to enhancing employee performance, indicating that investments in digital literacy, AI utilization, and appropriate reward systems can improve workplace performance.

5 Discussion

This study set out to explain employee performance in Makassar's multi-sector context by testing the roles of digital literacy, AI-driven knowledge sharing, and reward systems, as well as the joint effect of digital literacy and AI-driven knowledge sharing. The structural model provides consistent evidence that all hypothesized relationships are positive and statistically significant: digital literacy ($\beta = 0.178$; $p = 0.034$), AIdriven knowledge sharing ($\beta = 0.251$; $p = 0.001$), reward systems ($\beta = 0.299$; $p = 0.000$), and the combined effect of digital literacy and AI-driven knowledge sharing ($\beta = 0.332$; $p = 0.002$).

These findings reinforce the paper's central argument that employee performance is increasingly shaped by a bundle of human capital investments (skills), technology-enabled knowledge processes, and motivational architecture (rewards), rather than by single-factor interventions.

5.1 Digital literacy as a human-capital pathway to performance

The significant positive effect of digital literacy on employee performance supports Human Capital Theory's proposition that employees' competencies function as productive assets whose value can be increased through capability development [12]. In practical terms, digitally literate employees are better positioned to use tools and platforms to streamline tasks, improve decision quality, and adapt to technology changes [4–6]. This aligns with prior arguments in the manuscript that digital literacy is no longer limited to basic technical ability but represents broader competence in navigating digital environments and using technology for communication, collaboration, and problem solving [19–21]. The empirical result ($\beta = 0.178$) indicates that digital capability development is a meaningful lever for performance improvement, although it is not the dominant driver relative to reward systems and AI-driven knowledge sharing (discussed below).

From an organizational lens, the finding suggests that firms that treat digital literacy as structured workforce development (training, coaching, job-embedded learning) may realize performance gains not only through faster task execution, but also through improved employee confidence and adaptability in technology-rich workflows [25,26]. This is particularly relevant for organizations in manufacturing, services, and retail, where hybrid processes increasingly combine conventional routines with digital systems (as described in the study context).

5.2 AI-driven knowledge sharing as a productivity and decision-advantage mechanism

AI-driven knowledge sharing demonstrates a stronger direct effect on employee performance than digital literacy ($\beta = 0.251$; $p = 0.001$).

This supports the manuscript's logic that AI-enabled knowledge mechanisms improve performance by reducing search costs for information, accelerating access to relevant insights, and enhancing collaboration quality [7,8]. In knowledge-intensive tasks,

the performance impact plausibly occurs through two channels highlighted in the literature review: (1) operational efficiency, as AI systems curate and recommend relevant information, and (2) cognitive support, as analytics and intelligent systems transform data into actionable insights [22, 23, 27, 28, 29]. These mechanisms are consistent with knowledge management arguments that effective systems can strengthen knowledge exchange and improve work outcomes by making sharing easier and more rewarding [1].

Critically, this result implies that AI adoption alone is not the primary story; rather, performance improvements emerge when AI is embedded into day-to-day knowledge flows (capturing, organizing, recommending, and enabling reuse of insights). In environments where teams are distributed across roles and departments, AI-driven knowledge sharing can reduce silos and support problem solving by connecting employees to expertise and proven solutions faster than traditional methods [27–29]. This positions AI-driven knowledge sharing as a strategic capability: it does not just support "working faster," but supports "working smarter" by improving decision accuracy and coordination.

5.3 Reward systems as the strongest direct driver of performance

Among the direct predictors, reward systems show the largest coefficient ($\beta = 0.299$; $p = 0.000$).

This aligns with motivation and performance research indicating that well-designed rewards can drive effort, persistence, and alignment with organizational goals [9–11,30]. The literature review also emphasizes the dual role of extrinsic rewards (bonuses, incentives, promotions) in short-term performance reinforcement and intrinsic rewards (recognition, growth opportunities) in sustaining engagement and commitment over time [10,11,24]. In the context of this study, the strength of the reward-performance link suggests that organizations in Makassar may still be strongly responsive to perceived fairness, recognition, and tangible reinforcement, especially when performance expectations and reward criteria are clear.

At the same time, the result should be interpreted carefully: reward systems are most effective when employees perceive them as fair, consistent, and aligned with contributions [10,11,30]. If rewards are opaque or perceived as biased, the same system can reduce trust and undermine collaboration. Therefore, the managerial implication is not merely "increase rewards," but "optimize reward design," including transparency, differentiated recognition, and linking rewards to both outcomes and valuable behaviors (e.g., knowledge contributions, improvement initiatives, and responsible AI use).

5.4 Complementarity: why digital literacy and AI-driven knowledge sharing work best together

A key contribution of this study is demonstrating that the combined digital literacy and AI-driven knowledge sharing effect ($\beta = 0.332$; $p = 0.002$) is stronger than any single direct effect.

This supports the idea of complementarity: digital literacy supplies the capability to use tools effectively, while AI-driven knowledge sharing supplies the infrastructure and intelligence to amplify how knowledge is accessed, exchanged, and applied. Put simply, AI tools are most performance-enhancing when employees have the skills to interpret outputs, ask better questions, integrate insights into tasks, and collaborate using digital platforms. Conversely, digital literacy yields higher returns when the organization provides AI-enabled knowledge systems that reduce friction and accelerate learning.

This finding helps address the paper's stated gap about how these factors "interact" in shaping performance outcomes, rather than acting independently.

Theoretically, it extends Human Capital Theory [12] by illustrating that human capital (digital literacy) can be amplified by organizational knowledge systems (AI-driven sharing). Practically, it implies that organizations should avoid fragmented initiatives (training without systems, or AI systems without capability building). Performance gains are likely maximized through bundled implementation: (1) role-based digital literacy development, (2) AI-enabled knowledge workflows (repositories, copilots/chatbots, recommendation systems), and (3) incentives that reinforce both adoption and contribution behaviors.

5.5 5.5 Implications for theory and practice

Theoretical implications. The results collectively support the manuscript's framing that employee performance is shaped by a combined architecture of capability (digital literacy), knowledge process (AI-enabled sharing), and motivation (reward systems).

The complementarity result, in particular, strengthens the argument that human capital investments generate higher performance returns when paired with enabling technologies and organizational mechanisms that support knowledge application at scale [1, 12, 22, 23].

Practical implications. Managers and HR leaders can translate these findings into a coherent performance strategy:

1. Build digital literacy as a baseline capability via continuous training and job-embedded learning [25, 26].
2. Embed AI into knowledge-sharing routines (search, retrieval, collaboration, and decision support), not just as standalone tools [27, 28, 29].
3. Align reward systems to reinforce both results and the behaviors that drive results, including knowledge contribution and effective AI utilization [9, 10, 11, 30].
4. Implement bundled interventions because the strongest effects occur when digital capability and AI-enabled knowledge sharing are developed together.

5.6 Limitations and directions for future research

Interpretation should consider that the study relies on convenience sampling and a cross-sectional design, which limits generalizability and prevents causal inference across time.

Future research could employ probability sampling across sectors and adopt longitudinal designs to observe whether capability-building and AI knowledge-sharing adoption produce sustained performance effects or diminishing returns.

In addition, incorporating contextual variables such as organizational culture and leadership styles may help explain boundary conditions under which rewards and AIenabled knowledge processes become more or less effective.

6 Conclusion

This study explored the relationship between digital literacy, AI-driven knowledge sharing, reward systems, and employee performance. The findings demonstrate that each factor plays a significant role in enhancing employee performance. The results show that employees with higher levels of digital literacy tend to perform better as they are more capable of utilizing digital tools to streamline tasks and solve complex problems. Similarly, AI-driven knowledge sharing positively impacts employee performance by facilitating better access to information and enabling more efficient collaboration. Reward systems, both intrinsic and extrinsic, further motivate employees and reinforce positive behaviors, ultimately leading to improved performance.

However, this study has some limitations. One of the key limitations is the use of convenience sampling, which may not fully represent the broader population of employees across all sectors. Additionally, the study is cross-sectional, meaning that it only provides a snapshot of the relationships between the variables at a single point in time rather than capturing long-term trends. Future research could address these limitations by employing a more diverse sampling method and longitudinal approach to better understand how these factors influence employee performance over time. Furthermore, future studies could explore additional variables, such as organizational culture or leadership styles, and their interactions with digital literacy and AI, to provide a more comprehensive understanding of the factors influencing employee performance in modern work environments.

These findings offer practical insights for organizations seeking to improve employee performance through investments in digital literacy, AI tools, and well-structured reward systems. Future research could further refine these relationships and explore their applications in different cultural and industrial contexts.

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