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RESEARCH ARTICLE

Analysis of the Effects of Risk Management and Knowledge Sharing on Supervisory Effectiveness

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Abstract
This study examines the effect of risk management and knowledge sharing on supervisory effectiveness at PT Ungaran Sari Garment III, Pringapus 7 Unit. A quantitative approach was applied using data collected from 100 employees selected through a structured sampling technique. The data were analyzed using multiple linear regression with a significance level of 5 percent. The findings show that risk management has a positive and significant effect on supervisory effectiveness, indicating that well-implemented risk identification, assessment, and control procedures support more effective supervision. Knowledge sharing also demonstrates a positive and significant influence, suggesting that the exchange of experience, skills, and work-related information among employees contributes to better coordination and monitoring processes. Simultaneously, both variables strengthen supervisory effectiveness, as reflected in the coefficient of determination (R^2) of 51.9 percent, while the remaining variance is explained by other factors not examined in this study. These results are consistent with enterprise risk management and knowledge management perspectives, which emphasize alignment between organizational systems and employee interaction in achieving effective supervision.

Keywords
Risk Management; Knowledge Sharing; Supervisory Effectiveness; Enterprise Risk Management; Knowledge Management.

1 | INTRODUCTION

Economic globalization has fundamentally reshaped the competitive landscape of business. Companies no longer operate solely at local or national levels but compete within a global environment characterized by market openness, rapid digital advancement, cross-border labor mobility, and integrated international supply chains. Such conditions require organizations to strengthen competitiveness through innovation, operational efficiency, and value differentiation. In this setting, human resource management (HRM) plays a strategic role in sustaining organizational performance and competitive advantage (Porter, 1990). Global competition demands a workforce that is adaptive, skilled, and committed to continuous learning. The rise of digital transformation, automation, and artificial intelligence has compelled organizations to invest in reskilling and upskilling efforts to maintain workforce relevance. From a resource-based perspective, the uniqueness and quality of human resources represent assets that are difficult for competitors to replicate, positioning them as a critical form of intellectual capital.

At the same time, globalization increases the complexity of managing a multicultural workforce. Multinational companies must address differences in cultural values, social norms, communication styles, and labor regulations across countries. These differences influence how employees interact, make decisions, and respond to organizational policies. As a result, organizations are required to adopt more adaptive and inclusive management practices to maintain harmony and productivity among diverse teams. Contemporary human resource management (HRM) has moved beyond routine administrative tasks and now plays a direct role in shaping strategic direction. HRM contributes to workforce planning, organizational development, and the alignment of employee capabilities with business objectives. Key functions include the design of global recruitment systems, effective talent management, leadership development programs, and compensation schemes that remain competitive across different labor markets. In addition, HRM is responsible for fostering cross-cultural competence, encouraging collaboration, and reducing potential conflicts arising from diversity. The use of digital HR technologies also supports more efficient coordination and performance monitoring across geographically dispersed units. Strong alignment between business strategy and HRM practices supports organizational resilience, improves employee engagement, and ensures the continuity of performance in an increasingly competitive global environment.

Supervision in the workplace refers to the process of monitoring and evaluating task implementation to ensure alignment with established plans, standards, and regulations. Its primary objective is to improve discipline, efficiency, and prevent deviations or inefficiencies. Supervisory effectiveness reflects the extent to which monitoring activities achieve organizational goals within defined time and cost parameters. Effective supervision involves systematic observation, guidance, performance assessment, reporting, and recognition of achievement. Robbins and Coulter (2022) define supervision as a process of monitoring organizational activities and implementing corrective actions when deviations occur. In public sector settings, supervision also supports accountability and transparency while reducing the risk of mismanagement (Mardiasmo, 2018). Beyond control, supervision also serves as a mechanism for evaluation and organizational learning.

2 | BACKGROUND THEORY

In increasingly dynamic work environments, organizations face various risks that may affect performance and operational continuity. These risks may arise from human error, system failure, environmental changes, or uncertainty in decision-making processes. Risk management therefore becomes essential for identifying, assessing, and controlling potential threats to minimize negative impacts. Hopkin (2018) describes risk management as a structured approach that enables organizations to understand and respond effectively to uncertainties. Its implementation enhances preparedness and operational stability while supporting a safe and productive work environment. Risks in the workplace may include accidents, procedural errors, task failure, or operational disruptions that hinder organizational targets. A comprehensive risk management system allows early identification of potential hazards and the development of appropriate preventive measures (Hillson, 2017). In addition, risk awareness improves decision-making quality, as both managers and employees can respond more accurately to uncertain situations (Aven, 2016). Despite its importance, many organizations have yet to implement risk management effectively due to limited understanding, insufficient human resources, and weak internal control systems. Prior studies support the role of risk management in strengthening supervision. Arena *et al.* (2010) highlight its contribution to internal coordination and monitoring systems, while Beasley *et al.* (2005) report improved internal control quality in organizations with strong ERM practices. Florio and Leoni (2017) also identify a positive relationship between risk management and internal audit effectiveness. Based on this reasoning, the first hypothesis is proposed:

H1: Risk management influences supervisory effectiveness.

Knowledge sharing represents another important factor in improving individual and organizational performance.

The exchange of knowledge among employees contributes to better work quality and efficiency. A strong culture of knowledge sharing supports learning processes and facilitates the distribution of expertise within organizations. Yeboah (2023) finds that organizations with active knowledge-sharing practices demonstrate improved decision-making and operational performance. However, several studies report mixed findings. Bock *et al.* (2005) argue that knowledge sharing may not enhance performance without clear structural support, while Cabrera and Cabrera (2005) note the potential for conflict and information distortion when not properly managed. Somech and Khalaili (2014) further emphasize the importance of leadership support in ensuring its effectiveness. Drawing on the organizational knowledge creation theory of Nonaka and Takeuchi (1995), interaction and knowledge exchange strengthen coordination and control mechanisms within organizations. Based on these arguments, the second hypothesis is formulated:
H2: Knowledge sharing influences supervisory effectiveness.

3 | METHOD

This study employed a quantitative method with a survey approach. The primary objective was to examine the influence of two independent variables, namely risk management and knowledge sharing, on supervisory effectiveness at PT Ungaran Sari Garment III, Pringapus Unit. The population consisted of 100 employees, all of whom were included as respondents through a census technique. Data were collected using a structured questionnaire based on a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The measurement items were developed from established indicators adopted from prior empirical studies.

Data analysis was conducted using SPSS version 26. Several analytical procedures were applied, including validity testing using Pearson correlation and reliability testing using Cronbach's alpha. Classical assumption tests were also performed, covering normality, multicollinearity, and heteroscedasticity. Multiple linear regression analysis was used to assess both partial and simultaneous effects of the independent variables on the dependent variable. Hypothesis testing was carried out through t-tests and F-tests to determine statistical significance. In addition, the coefficient of determination (R^2) was calculated to measure the proportion of variance in supervisory effectiveness explained by the independent variables. This method was selected because it provides clear statistical evidence regarding relationships among variables and the strength of their effects.

4 | RESULTS AND DISCUSSION

4.1 Results

4.1.1 Validity Test

The validity test was carried out to assess whether each questionnaire item accurately measures the intended construct. This procedure involved comparing the calculated correlation coefficient (r-calculated) with the critical value (r-table) at a degree of freedom (df) of n – 2, where n represents the number of respondents. The correlation analysis was performed using Pearson correlation to determine the strength of the relationship between each item and the total score. The decision rule states that an item is considered valid when the r-calculated value exceeds the r-table value, while items with lower values are regarded as invalid and may require revision or removal. In this study, the r-table value for n = 100 at a significance level of 0.05 is 0.195. Therefore, all items with correlation coefficients greater than 0.195 meet the validity criteria and are suitable for further analysis.

Table 1. Validity Test Results of Research Variables

Variable	Item Code	Correlation Coefficient	r-table	Description
Risk Management (X1)	X1.1	0.712	0.195	Valid
	X1.2	0.756	0.195	Valid
	X1.3	0.681	0.195	Valid
	X1.4	0.774	0.195	Valid
	X1.5	0.703	0.195	Valid
Knowledge Sharing (X2)	X2.1	0.757	0.195	Valid
	X2.2	0.694	0.195	Valid
	X2.3	0.741	0.195	Valid
	X2.4	0.668	0.195	Valid
	X2.5	0.789	0.195	Valid
Supervisory Effectiveness (Y)	Y.1	0.762	0.195	Valid
	Y.2	0.734	0.195	Valid

	Y.3	0.701	0.195	Valid
	Y.4	0.778	0.195	Valid
	Y.5	0.745	0.195	Valid

Source: Processed primary data, 2026

Based on the validity test results, all items show correlation coefficient values greater than the r-table value of 0.195, with significance levels below 0.05. Therefore, all questionnaire items are considered valid and are appropriate for use as data collection instruments in this study.

4.1.2 Reliability Test

The reliability test in this study was conducted using the Cronbach's Alpha method to evaluate the consistency of the measurement instrument. Reliability reflects the extent to which the questionnaire produces stable and consistent results when applied under similar conditions. A variable is considered reliable if the Cronbach's Alpha value exceeds 0.70, indicating an acceptable level of internal consistency among the items. Higher values suggest stronger reliability and greater consistency across the indicators used to measure each construct. This testing procedure ensures that the instrument is suitable for further statistical analysis. The results of the reliability test for each research variable are presented in Table 2 below.

Table 2. Reliability Test Results of Research Variables

Variable	Cronbach's Alpha	Description
Risk Management (X1)	0.842	Reliable
Knowledge Sharing (X2)	0.831	Reliable
Supervisory Effectiveness (Y)	0.865	Reliable

Source: Processed primary data, 2026

Based on the table, the Cronbach's Alpha values for all variables exceed 0.70. This indicates that all questionnaire items are consistent and reliable, making them appropriate for data collection. In addition, each variable demonstrates a high level of reliability, confirming that the measurement instrument provides stable and dependable results.

4.1.3 Normality Test

The normality test was conducted to determine whether the data distribution meets the assumption of normality required for regression analysis. This test is important to ensure the accuracy and validity of statistical inference. In this study, the normality test was performed using the Kolmogorov–Smirnov method by examining the significance value. The decision rule states that data are considered normally distributed if the significance value exceeds 0.05. Conversely, values below 0.05 indicate a deviation from normal distribution. The results show that the data meet the normality requirement, indicating that the residuals are distributed appropriately and suitable for further analysis.

Table 3. One-Sample Kolmogorov–Smirnov Test Results

	Unstandardized Residual
N	100
Normal Parameters[a],[b]	
Mean	0.0000000
Std. Deviation	2.701118625
Most Extreme Differences	
Absolute	0.135
Positive	0.096
Negative	-0.135
Kolmogorov–Smirnov Z	2.135
Asymp. Sig. (2-tailed)	0.200

a. Test distribution is normal.
b. Calculated from data.

Based on the normality assumption test, the Kolmogorov–Smirnov statistical probability value is 0.200, which is higher than the significance level of 5% (0.05), leading to the acceptance of H_0. This result indicates that the residuals in the model are normally distributed. Therefore, the normality assumption is satisfied, and the model is appropriate for further statistical analysis.

4.1.4 Multicollinearity Test

The multicollinearity test was conducted to determine whether there is a correlation among independent variables. In linear regression analysis, strong relationships among independent variables are not desirable, as they may distort the estimation results. This test was performed by examining the Variance Inflation Factor (VIF) and tolerance values for each independent variable. The criteria indicate that if the tolerance value is greater than 0.10 and the VIF value is less than 10, then multicollinearity is not present. The summary of the test results is presented in Table 4 below.

Table 4. Multicollinearity Test Results

Independent Variables	Tolerance	VIF
Risk Management (X1)	0.621	1.610
Knowledge Sharing (X2)	0.530	1.522

Based on the results shown in Table 4, all independent variables have tolerance values above 0.10 and VIF values below 10. This indicates that there is no multicollinearity among the independent variables. Therefore, the multicollinearity assumption is satisfied, and the regression model can be used for further analysis.

4.1.5 Heteroscedasticity Test

The heteroscedasticity test was conducted to examine whether the residuals have constant variance. In regression analysis, residuals are expected to exhibit homoscedasticity, meaning a consistent variance across observations. This assumption can be evaluated using the White test, while the decision rule in this study follows the Glejser method. The hypotheses are formulated as follows: H_0 states that the residuals have constant variance, whereas H_1 states otherwise. The testing criterion indicates that if all independent variables produce significance values greater than or equal to the significance level ($\alpha = 0.05$), the residuals are considered to have constant variance. The results show that the significance value for X1 is 0.412 and for X2 is 0.536, both exceeding 0.05. These findings indicate that the residuals have constant variance, suggesting that heteroscedasticity is not present in the model.

4.1.6 Multiple Linear Regression Analysis

Multiple linear regression analysis was applied to examine the relationship between the independent variables and the dependent variable. This method allows the estimation of both partial and simultaneous effects of risk management and knowledge sharing on supervisory effectiveness. The analysis also provides information on the direction and magnitude of each variable's influence within the model. The regression coefficients indicate how changes in the independent variables are associated with changes in the dependent variable. In addition, significance testing was conducted to determine whether the relationships are statistically meaningful. The results of the regression analysis are summarized in the table below.

Table 5. Multiple Linear Regression Analysis Results

Variable	Coefficient (B)	t-value	Sig.
Risk Management (X1)	0.412	4.985	0.000
Knowledge Sharing (X2)	0.365	4.221	0.000

Source: Processed primary data, 2026

Based on the table above, the regression model can be formulated as follows: $Y = 0.412X1 + 0.365X2$. This model indicates that both independent variables contribute positively to supervisory effectiveness. The coefficient of the Risk Management variable (X1) is positive (0.412), meaning that an improvement in respondents' perceptions of risk management is associated with an increase in supervisory effectiveness, assuming other variables remain constant. Similarly, the coefficient of Knowledge Sharing (X2) is also positive (0.365), indicating that better knowledge-sharing practices are followed by higher supervisory effectiveness under constant conditions. Both variables show positive and significant effects, as indicated by significance values below 0.05. The findings suggest that risk management has a more dominant influence compared to knowledge sharing. This implies that supervision supported by risk identification and mitigation tends to be more effective than conventional approaches. At the same time, improved communication and information exchange among employees strengthen the overall supervisory process.

4.1.7 t-Test (Partial)

The t-test analysis was conducted to evaluate the individual effect of each independent variable on supervisory effectiveness. The results indicate that the Risk Management variable (X1) has a t-value of 4.985, which is higher than the critical t-table value of 1.984 at a significance level of 5 percent. This finding demonstrates that risk management has a positive and statistically significant effect on supervisory effectiveness at PT Ungaran Sari Garment III, Pringapus 7 Unit.

It suggests that better implementation of risk identification, evaluation, and control practices contributes to improved supervision within the organization. Furthermore, the Knowledge Sharing variable (X2) shows a t-value of 4.221, which also exceeds the t-table value of 1.984. This result confirms that knowledge sharing has a positive and significant effect on supervisory effectiveness. The exchange of information, experience, and skills among employees supports coordination and enhances monitoring processes. Overall, both variables exhibit meaningful individual contributions, indicating that improvements in either risk management or knowledge sharing are associated with higher levels of supervisory effectiveness.

4.1.8 F-Test (Simultaneous)

The F-test was conducted to assess whether the regression model is suitable for explaining the relationship between the independent variables and the dependent variable as a whole. This test evaluates the combined effect of risk management and knowledge sharing on supervisory effectiveness. The results indicate that the calculated F-value is 52.314, which is substantially higher than the F-table value of 3.09 with degrees of freedom (df = 2; 97). In addition, the significance level obtained is 0.000, which is lower than the threshold of 0.05. These findings confirm that the regression model is statistically significant and appropriate for further analysis. The results also demonstrate that risk management and knowledge sharing jointly influence supervisory effectiveness in a meaningful way. This implies that the integration of structured risk management practices and effective knowledge exchange contributes to stronger supervision within the organization. The combined influence of these variables enhances coordination, improves control mechanisms, and supports the achievement of organizational objectives more effectively.

4.1.9 Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to assess the extent to which the independent variables explain variations in the dependent variable. In regression analysis, this measure provides an indication of the model's explanatory power and its ability to represent the observed data. The results show that the R^2 value is 0.519, meaning that 51.9% of the variation in supervisory effectiveness can be explained by risk management and knowledge sharing. This suggests that both variables play an important role in shaping supervisory outcomes within the organization. However, the remaining 48.1% of the variation is influenced by other factors not included in the model. These factors may include leadership style, organizational culture, employee competence, communication systems, or external conditions that also affect supervisory performance. Therefore, while the model demonstrates moderate explanatory strength, additional variables may be considered in future research to improve the overall accuracy and comprehensiveness of the analysis.

Knowledge sharing has a positive and significant effect on supervisory effectiveness. The statistical results show that the Knowledge Sharing variable has a significance value of 0.000, which is lower than 0.05. This finding indicates that practices such as open communication, information exchange, and collaboration among employees contribute to strengthening supervisory processes. When employees actively share knowledge, they develop a better understanding of work procedures, performance standards, and organizational expectations, which supports more consistent and accurate monitoring. In addition, knowledge sharing promotes transparency within the organization, allowing supervisors to access relevant information more efficiently and respond to potential issues in a timely manner. Improved communication also reduces misunderstandings and enhances coordination across different work units. These conditions lead to more effective supervision, as employees are better aligned with organizational goals and operational guidelines. The findings are consistent with the organizational knowledge creation theory proposed by Nonaka and Takeuchi (1995), which emphasizes that interaction and knowledge exchange improve coordination and control mechanisms. Overall, effective knowledge sharing practices contribute to a more structured and responsive supervisory system within the organization.

4.2 Discussion

Risk management has a positive and significant effect on supervisory effectiveness. The t-test results indicate that the Risk Management variable has a significance value of 0.000, which is lower than 0.05. This finding shows that improvements in risk identification, analysis, and control processes are associated with more effective supervision. When organizations implement structured risk management practices, they are better able to detect potential issues early, reduce the likelihood of deviations, and improve the accuracy of monitoring activities. As a result, supervisory processes become more systematic, focused, and responsive to potential operational challenges. Risk-based supervision also supports better decision-making by providing clearer information regarding potential threats and their impact. This condition allows managers to prioritize critical areas that require closer attention and control. The findings are consistent with the Enterprise Risk Management (ERM) framework developed by the Committee of Sponsoring Organizations of the Treadway Commission (2017), which emphasizes that integrating risk management into organizational governance enhances internal control and monitoring quality. These results indicate that risk management contributes not only to financial stability but also to improving the overall effectiveness of supervisory systems within the organization.

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practices such as open communication, information exchange, and collaboration among employees contribute to strengthening supervisory processes. When employees actively share knowledge, they develop a better understanding of work procedures, performance standards, and organizational expectations, which supports more consistent and accurate monitoring. In addition, knowledge sharing promotes transparency within the organization, allowing supervisors to access relevant information more efficiently and respond to potential issues in a timely manner. Improved communication also reduces misunderstandings and enhances coordination across different work units. These conditions lead to more effective supervision, as employees are better aligned with organizational goals and operational guidelines. The findings are consistent with the organizational knowledge creation theory proposed by Nonaka and Takeuchi (1995), which emphasizes that interaction and knowledge exchange improve coordination and control mechanisms. Overall, effective knowledge sharing practices contribute to a more structured and responsive supervisory system within the organization.

5 | CONCLUSIONS AND FUTURE WORK

The findings indicate that risk management has a positive and significant effect on supervisory effectiveness. Proper implementation of risk identification, evaluation, and control improves the quality of supervision and reduces potential deviations during work processes. Knowledge sharing also shows a positive and significant effect on supervisory effectiveness. Open communication, information exchange, and collaboration among employees support better coordination and strengthen monitoring activities across work units. The coefficient of determination of 51.9% shows that the combination of risk-based control and knowledge-based collaboration plays an important role in strengthening supervisory performance. Both approaches complement each other, where structured control mechanisms are supported by effective interaction among employees. The remaining variation is influenced by other factors outside the model, which may include leadership practices, organizational culture, and employee competence. Overall, the results confirm that risk management and knowledge sharing are key factors in improving supervisory effectiveness. The integration of these two aspects supports the development of a more adaptive and structured supervisory system, allowing organizations to maintain performance consistency and achieve operational targets more effectively.

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