

The Effect of Management Accounting Information Systems on Managerial Performance: Work Stress Level as a Moderating Variable

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Abstract. PT Dizamatra Powerindo is a prominent player in Indonesia's coal mining industry; however, its managerial performance remains suboptimal. This study aims to examine the moderating role of work-related stress levels in attenuating the relationship between management accounting information systems (MAIS) and managerial performance. The research involved 71 managers, with data collected via questionnaires and analyzed using Moderated Regression Analysis (MRA). Findings reveal that MAIS positively affects managerial performance, enhancing efficiency and decision-making capabilities. However, work-related stress levels do not significantly moderate this relationship, as managers effectively utilize MAIS despite stress, perceiving it as a supportive tool rather than a *stressor*. The study highlights the importance of optimizing MAIS—such as through the implementation of ERP systems—to further improve managerial outcomes. These results contribute to the literature by clarifying the limited role of work-related stress as a moderating variable in this context. Practical implications suggest that companies should focus on effective system implementation and training while exploring other potential moderating factors, such as motivation or self-esteem. Future research could expand the sample to other industries or incorporate additional variables to deepen understanding.

Keywords: management accounting information systems, managerial performance, work stress

INTRODUCTION

PT Dizamatra Powerindo is part of the Priamanaya Group, operating as a leading coal mining company in Indonesia. Its core activities are based in Lahat Regency, South Sumatra. As one of the major players in the Indonesian coal mining industry, PT Dizamatra Powerindo contributes in various areas, including job creation, the development of corporate social responsibility (CSR) programs, empowerment of *UMKM* (Micro, Small, and Medium Enterprises) in local communities, and state revenue through taxes and royalties paid over more than two decades of operation (Abuya, 2016; Lyulyov et al., 2022; Susanto & Ardini, 2016; Vallaster, 2017). Consequently, *sustainability* and long-term viability are critical components of the company's operational strategy. One of the key factors supporting organizational sustainability is **managerial performance**.

Badzaly (2021) emphasized that an organization's longevity is reliant on strong managerial competencies; as managerial performance improves, the likelihood of achieving organizational goals increases. Similarly, Teece, Pisano, and Shuen (1997) underlined the importance of managerial capabilities in identifying market opportunities, allocating resources, and adapting operational strategies—elements crucial for organizational sustainability. In this strategic decision-making process, the availability of accurate and relevant information is indispensable. One of the primary sources of such information is the **management accounting information system** (MAIS).

Research investigating the influence of MAIS on managerial performance has been widely conducted, though findings remain inconsistent. Studies by Manossoh et al. (2022), Christina et al. (2020), Fuadah (2020), Sudjiman & Sudjiman (2017), and Ratnawati & Setyaningsih (2011) demonstrate that MAIS positively impacts managerial performance, enhancing efficiency and decision-making. In contrast, research by Efendi & Kusuma (2021), Jumaidi & Lestari (2021), and Riasari (2017) found no significant relationship between MAIS and managerial performance.

Christina et al. (2020) noted that management accounting research often explores the interaction between accounting systems and organizational and behavioral factors, including their reciprocal relationship. One behavioral factor with significant influence is **work stress level**, a key psychological attribute that affects individual behavior within an organization.

Several studies by Arwidiana & Citrawati (2023) and Catherine & Fonceca (2022) indicate that elevated work stress levels can negatively affect managerial performance. These findings suggest that stress may play a moderating role in the relationship between MAIS and performance outcomes. As stress affects an individual's psychological and physical state in the workplace, it can influence how effectively managers utilize information derived from MAIS. Therefore, investigating the role of **work stress** is essential to better understand how it interacts with MAIS in shaping managerial effectiveness.

Although the benefits of MAIS in improving managerial performance have been widely acknowledged, the inconsistency in research findings suggests that contextual or moderating variables, such as stress, may influence outcomes. For instance, positive correlations have been documented by Manossoh et al. (2022), Christina et al. (2020), and Fuadah (2020), whereas

Efendi & Kusuma (2021) and Jumaidi & Lestari (2021) found no significant effect. These discrepancies underscore the need to explore the specific conditions under which MAIS enhances or fails to enhance performance. Behavioral factors like work stress may serve as key determinants but remain underexplored in current literature.

A notable gap in the literature is the limited focus on work stress as a **moderating variable** between MAIS and managerial performance. While studies like those of Arwidiana & Citrawati (2023) and Catherine & Fonceca (2022) affirm that high stress levels impair performance, few have investigated how stress interacts with MAIS to shape managerial outcomes. This is especially relevant in high-pressure environments such as coal mining, where stress levels are inherently high due to operational demands. Understanding whether stress mitigates or neutralizes the advantages of MAIS could provide valuable insights into optimizing system implementation and safeguarding employee well-being. Without addressing stress-related factors, organizations risk underutilizing MAIS, rendering such investments less effective in practice.

The urgency of this research stems from real-world challenges faced by companies like PT Dizamatra Powerindo, where managerial performance is critical, yet remains suboptimal. In a sector as performance-intensive as coal mining, sustainability depends on effective decision-making and optimal resource allocation—precisely the areas MAIS is designed to support. However, if high work stress undermines system use, expected benefits may not materialize. Given the growing integration of enterprise resource planning (ERP) systems in such industries, it becomes essential to assess whether work stress serves as a barrier to successful implementation. This study, therefore, addresses a practical and timely issue by evaluating how stress interacts with MAIS to influence managerial performance.

The novelty of this research lies in its focus on **work stress as a moderating variable**, a dynamic not extensively examined in the context of MAIS. While previous studies have explored MAIS and stress independently, their intersection—particularly in demanding work environments—remains largely unstudied. By integrating perspectives from **organizational behavior** and **management accounting**, this study offers a more comprehensive understanding of how psychological dimensions affect system efficacy. It contributes to the broader discourse on the human-technology interface, highlighting the necessity of incorporating behavioral insights into system design, training, and implementation. This multidimensional approach sets the study apart from existing research that tends to examine technical or behavioral factors in isolation.

The primary objective of this research is to determine whether **work stress levels moderate** the relationship between MAIS and managerial performance at PT Dizamatra Powerindo. Specifically, it seeks to investigate whether stress strengthens, weakens, or has no effect on this relationship. By clarifying these dynamics, the study aims to reconcile conflicting findings in the literature and identify conditions that enhance or hinder the effectiveness of MAIS. In addition to quantitative analysis, the study also explores managerial perceptions and adaptation strategies to MAIS under stress, offering qualitative insights that enrich the research outcomes. These objectives align with the broader goal of optimizing **performance**

management systems in high-pressure organizational settings.

The implications of this research extend to both academic and practical domains. From an academic standpoint, it advances theoretical understanding by investigating the interplay between MAIS and stress—an area currently underserved in the literature. For practitioners, the findings offer actionable strategies to reduce stress-related barriers, ensuring that MAIS implementation leads to better performance outcomes. Organizations may leverage these insights to design targeted training programs or make adaptive changes to system architecture, tailored to the behavioral context of users. Furthermore, the focus on the mining industry provides sector-specific findings, filling a gap in management accounting literature that tends to generalize across industries.

By addressing this research gap, the study lays a foundation for future investigations. Further research could explore other moderating variables such as self-esteem, job motivation, or emotional intelligence. Expanding the study to include other high-stress industries, or conducting longitudinal studies to observe the interaction between stress and MAIS over time—especially during organizational transitions—would offer deeper insights. Such investigations will enrich our understanding of how technology, human behavior, and performance intersect, ultimately contributing to more adaptive and resilient organizational practices.

The hypotheses used were:

- 1) H1: Management accounting information system affects managerial performance
- 2) H2: The Combination of Management Accounting Information Systems with Work Stress Levels Affects Managerial Performance
- 3) H3: Work stress levels weaken the relationship between management accounting information systems and managerial performance

MATERIALS AND METHODS

This study adopts a quantitative research approach using a survey method to examine the relationship between management accounting information systems (MAIS), work stress levels, and managerial performance. The research design is explanatory in nature, aiming to test hypotheses about the moderating effect of work stress on the MAIS–performance relationship. The study was conducted at PT Dizamatra Powerindo, a coal mining company in Indonesia, where 87 managers and assistant managers comprised the research population. Using the Slovin formula for finite populations with a 10% margin of error, a sample of 71 respondents was selected through proportional random sampling, ensuring representative coverage across various managerial levels and departments.

Data were collected using standardized questionnaires adapted from prior empirical studies to ensure construct validity. The MAIS instrument (19 items) was adapted from Chenhall and Morris (1986), the managerial performance scale (9 items) from Mahoney et al. (1963), and the work stress instrument (23 items) from Lapidus et al. (1997). Prior to distribution, the questionnaire underwent content validity testing by three experts in management accounting and organizational behavior, resulting in minor wording refinements.

Reliability testing was conducted through a pilot study involving 20 non-sample managers, with all constructs producing Cronbach's alpha values above 0.70, indicating acceptable internal consistency.

Data collection spanned four weeks, utilizing a combination of online surveys and in-person distribution methods. Strict confidentiality protocols and informed consent procedures were implemented to protect respondent privacy and ensure ethical compliance.

The data were analyzed using Moderated Regression Analysis (MRA) in SPSS 25.0 to evaluate both the direct and interaction effects of the variables. The analytical procedure followed three stages: (1) testing control variables (e.g., age, tenure) for potential influence on managerial performance, (2) assessing the direct effects of MAIS and work stress on performance, and (3) evaluating the interaction effect between MAIS and work stress to determine moderation. Prior to MRA, the dataset underwent classical assumption testing, including normality (Kolmogorov–Smirnov test), multicollinearity (Variance Inflation Factor, VIF < 10), and heteroscedasticity (Breusch–Pagan test), to ensure robust statistical modeling.

The significance level was set at $p < 0.05$ for hypothesis testing. In addition to quantitative analysis, qualitative insights from open-ended questionnaire items were thematically analyzed to contextualize the statistical results and provide a more comprehensive understanding of managerial perceptions and adaptation strategies related to MAIS usage under varying levels of work stress.

RESULTS AND DISCUSSION

The instrument test showed that all items listed in the questionnaire were valid and reliable. The results of the classical assumption test showed that the data used showed normal distribution, multicollinearity and heteroscedasticity did not occur. The results of the study are presented in the following table.

Table 1: Correlation Coefficient and Determination Results

Model Summary^b				
Model R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.266 ^a	.071	.044	6.02006
a. Predictors: (Constant), Work Stress Level*Management Accounting Information System (X)				
b. Dependent Variable: Managerial Performance (Y)				

Source: Data Processing, 2025

Based on the results of the table above, the value of R as a correlation coefficient is 0.266 while it is known *that the adjusted R square* is 0.044. These results can show the magnitude of the influence of independent variables on the rise and fall of dependent value variations. From the results of the analysis, although there is a relationship between independent and dependent variables, the effect is relatively small. The research model built can be used to predict because the results of the F test show the following significance.

Table 2: F Test Results

ANOVA					
Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	187.996	2	93.998	2.594	.082 ^b
Residual	2464.398	68	36.241		
Total	2652.394	70			
a. Dependent Variable: Managerial Performance (Y)					
b. Predictors: (Constant), Mod X*Z, Management Accounting Information System (X)					
<i>Source: Data Processing, 2025</i>					

Based on table 2, the F-calculation value of $2,594 < F\text{-table } 3,981$ with a significance of $0.082 > 0.05$ thus H_a is rejected and H_o is accepted, meaning that simultaneously there is no influence of independent variables on Y. This shows that the regression model is not significant at the 95% confidence level.

In addition, the significance value or p-value of 0.082 is greater than 0.05, which means that simultaneously the independent variables tested have no effect on managerial performance at a confidence level of 95%. Thus, the alternative hypothesis (H_a) is rejected and the zero (H_o) hypothesis is accepted, which indicates that overall, the independent variables in this model have no significant influence on managerial performance at a significance level of 5%.

Table 3: Multiple Regression Test Results

Coefficient					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.659	20.777		.032	.975
Management Accounting Information System (X)	.386	.197	1.099	1.952	.055
1 Work Stress Level (Z)	.546	.353	1.213	1.548	.126
Management Accounting Information System * Work Stress Level	-.005	.003	-1.422	-1.514	.135

a. Dependent Variable: Managerial Performance (Y)

Source: Data Processing, 2025

The researcher conducted a test of the level of work stress to weaken the relationship between the management accounting information system and managerial performance at PT. Dizamatra Powerindo, using *moderated regression analysis* (MRA), which is a partial hypothesis (t-test) with the following results.

H1: Management accounting information system affects managerial performance

Based on the test results, it can be concluded that the management accounting information system has a coefficient value of 0.386 with a significance value (p-value) of 0.055. SIAM has a positive effect on managerial performance.

H2: The Combination of Management Accounting Information Systems with Work Stress Levels Affects Managerial Performance

Based on the results of the test above, it is known that the coefficient value is 0.546 with a significance value of 0.126 so that it can be stated that the Work Stress Level has no effect on the Managerial Performance variable.

H3: Work stress levels weaken the relationship between management accounting information systems and managerial performance

Based on the test results, it showed a negative coefficient of -0.005 with a significance value of 0.135. These results can be interpreted as the level of work stress does not significantly moderate the relationship between the management accounting system and managerial performance. Thus, the level of work stress (Z) does not weaken the relationship between SIAM (X) and Managerial Performance (Y) but rather strengthens the relationship.

Discussion

The descriptive findings of each variable show that the managers at PT. Dizamatra Powerindo understands well the function of SIAM in managing its work activities, so that the effectiveness of SIAM implementation has an important role in supporting the performance of managers. This gives results that the better the system implemented, the more effective the manager will be in carrying out their duties. Since the end of 2023, the company has started implementing an *Enterprise Resource Planning* (ERP) system that supports various business functions in an integrated manner, including accounting, financial management, logistics, human resources, and mining asset management. This is in line with previous research by Christina, et al (2020), Manossoh (2020), Fuadah (2020), namely that improving the quality of SIAM is directly proportional to improving managerial performance.

While management accounting information systems with work stress levels do not have an effect on managerial performance, this can be explained for three reasons, namely (1) the complexity of implementing ERP systems is often a challenge and only requires time for adaptation and in-depth training. If the users (*users*), especially managers who have worked for more than 5 (five) years, who are used to using manual data and have not fully mastered the system, this can cause frustration, although in the end the system improves work efficiency; (2) Managerial primary tasks involve diverse responsibilities, quick decision-making, and doing many things at once. Management accounting information systems do help in providing accurate data to support decisions, but the stress experienced by managers often comes from external pressures. In this case, SIAM has a direct influence on work stress; and (3) other aspects that are in the company have an important role, so that high levels of work stress will still occur, regardless of the existence of SIAM.

The results of the third study found that work stress did not moderate the influence of management accounting information systems with managerial performance. The managers at PT. Dizamatra Powerindo have a good *coping* ability or coping strategy by seeing SIAM as a helpful tool, not as an additional source of pressure, so the negative impact of stress on performance can be minimized.

CONCLUSIONS

The findings indicate that the management accounting information system (MAIS) positively influences managerial performance at PT Dizamatra Powerindo, with effective system implementation leading to enhanced efficiency and accuracy even under work stress, which does not moderate this relationship. To further improve outcomes, it is recommended that company management optimize ERP features like workflow automation to streamline interdepartmental processes and minimize manual tasks. Future research should consider longitudinal designs to track how the MAIS–work stress–performance relationship evolves over time, especially during organizational changes or system upgrades. Additionally, examining other potential moderating variables such as self-esteem, locus of control, motivation, self-efficacy, organizational culture, and leadership styles could yield richer insights into contextual factors affecting MAIS effectiveness. Expanding the study to include other industries and employing qualitative methods, such as in-depth interviews, may further illuminate managers' experiences with MAIS under stress. Finally, leveraging advanced analytics, including machine learning, could uncover complex patterns in large datasets, enhancing understanding of system-performance dynamics under varying stress conditions.

REFERENCES

- Abuya, W. O. (2016). Mining conflicts and corporate social responsibility: Titanium mining in Kwale, Kenya. *The Extractive Industries and Society*, 3(2), 485–493.
- Arwidiana, D. P., & Citrawati, N. K. (2023). Hubungan stress kerja dengan kinerja pegawai. *Jurnal Cakrawarti*, 6(1), 116–123.
- Badzaly, F. N., & Fitriah, E. (2021). Pengaruh penerapan total quality management, motivasi kerja dan komitmen organisasi terhadap kinerja manajerial. *Jurnal Riset Akuntansi*, 1(2), 66–71. <https://doi.org/10.29313/jra.v1i2.411>
- Catherine, A. V., & Fonceca, C. M. (2022). Employee stress and its impact on their job performance. *Journal of Academia and Industrial Research*, 10(3), 34–38.
- Chenhall, R. H., & Morris, D. (1986). The impact of structure, environment, and interdependence on the perceived usefulness of management accounting system. *The Accounting Review*, 61(1), 16–35.
- Christina, V., Sopyansyah, S., & Budiman, M. A. (2020). Management accounting systems and managerial performance: Locus of control as a moderator. *Solid State Technology*, 63(3), 5076–5083.
- Efendi, D., & Kusuma, E. A. (2021). The role of the management accounting system and decision-making style on managerial performance. *Jurnal Keuangan dan Perbankan*, 25(1). <https://doi.org/10.26905/jkdp.v25i1.5330>
- Fuadah, L. L., Yuliani, Y., & Safitri, R. H. (2020). The mediating role of management accounting systems that influence management style on managerial performance. *Advances in Economics, Business and Management Research*, 142.
- Jumaidi, L. T., & Lestari, B. A. H. (2021). Pengaruh sistem informasi akuntansi manajemen, gaya kepemimpinan, trust, dan ketidakpastian lingkungan terhadap kinerja manajerial.

Valid Jurnal Ilmiah, 19(1), 36–50.

- Lapidus, R. S., Robert, J. A., & Chonko, L. B. (1997). Stressors, leadership substitutes, and relations with supervision among industrial salespeople. *Industrial Marketing Management*, 25, 395–409.
- Lyulyov, O., Pimonenko, T., Ziabina, Y., Owusu, O. E. K., & Owusu, E. (2022). Corporate social responsibility in human resource management. *Herald of Economics*, 4. <https://doi.org/10.35774/visnyk2021.04.102>
- Mahoney, T. A. (1963). *Development of managerial performance: A research approach*. South-Western Publishing Co.
- Manossoh, S. M., Alexander, S. W., & Kalalo, M. Y. B. (2022). Influence of characteristics of management accounting information system on managerial performance at PT. Bank SulutGo Cabang Tahuna. *Jurnal LPPM Bidang EkoSosBudKum*, 6(1), 315–324.
- Ratnawati, J., & Setyaningsih, D. (2011). Karakteristik sistem informasi akuntansi manajemen dan desentralisasi serta pengaruhnya terhadap kinerja organisasi. *Seminar Nasional Ilmu Ekonomi Terapan*, 21–32.
- Riasari, R. (2017). *Pengaruh sistem informasi akuntansi manajemen terhadap kinerja manajer dengan self efficacy sebagai variabel moderating* [Unpublished master's thesis]. Universitas Lampung.
- Sudjiman, L. S., & Sudjiman, P. E. (2017). Dampak karakteristik sistem informasi akuntansi manajemen pada kinerja manajerial. *Jurnal TelKa*, 7(1), 69–79.
- Susanto, C. M., & Ardini, L. (2016). Pengaruh Good Corporate Governance, Corporate Social Responsibility, dan Profitabilitas terhadap Nilai Perusahaan. *Jurnal Ilmu dan Riset Akuntansi (JIRA)*, 5(7).
- Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7), 505–533.
- Vallaster, C. (2017). Managing a company crisis through strategic corporate social responsibility: A practice-based analysis. *Corporate Social Responsibility and Environmental Management*, 24(6), 509–523.



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