

The Effects of Innovative Leadership and Infrastructure on Military Personnel Performance: The Mediating Roles of Motivation and Competence at Battalion Headquarters

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ABSTRACT

Changes in operational demands and the complexity of tasks in military environments require soldiers to possess adaptive, competent, and professional performance. This study aims to analyze the effect of innovative leadership and infrastructure on soldiers' performance, with motivation and competence as intervening variables, at the Headquarters of the 18th Field Artillery Battalion (Yonarmed) Komposit Buritkang Labanan, Berau Regency. The study employed a quantitative approach with a sample of 210 soldiers. Data were collected through questionnaires and analyzed using Structural Equation Modeling based on Partial Least Square (SEM-PLS). The results indicate that innovative leadership and infrastructure have a positive and significant effect on soldiers' motivation and competence. Motivation was found to positively and significantly influence soldiers' performance, while competence showed a positive but relatively weaker effect. Furthermore, the mediation pathway through motivation was significant, strengthening the effect of innovative leadership and infrastructure on performance, whereas the mediation through competence was not significant. These findings highlight that soldiers' performance is more strongly influenced by innovative leadership, adequate infrastructure, and motivation than by competence alone.

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1. INTRODUCTION

In the era of globalization and increasingly complex geopolitical dynamics, every country is required to establish a strong, adaptive, and professional defense system. Changes in the strategic environment, advances in military technology, and the increasing potential for non-conventional threats require defense organizations to continuously transform. Such transformation

encompasses not only weaponry and technology but also organizational governance, leadership, human resource quality, and the availability of adequate infrastructure and facilities. Modern organizations, including military institutions, no longer rely solely on physical strength but on the integration of innovative leadership, personnel work motivation, individual

competence, and operational facility support [1], [2].

Indonesia has 21 Field Artillery Battalions distributed across various Regional Military Commands, ranging from Regional Military Command I/Bukit Barisan to Regional Military Command XIV/Hasanuddin. As combat support units, Field Artillery Battalions occupy a highly strategic position. Therefore, their operational readiness must be maintained at all times to ensure that they can immediately carry out national defense duties upon receiving orders. Such readiness is determined not only by the number of personnel but also by the quality of unit management, personnel development systems, and the availability of facilities and infrastructure that support the execution of military duties.

These conditions have raised concerns that the personnel of the Indonesian National Armed Forces stationed at Field Artillery Battalion 18/Buritkang may not yet be fully prepared to conduct military operations optimally. This concern is consistent with a statement made by Major General (Ret.) Rodon Pedrason, a member of the Indonesian House of Representatives and former member of the Indonesian National Armed Forces, who stated that "our military is still far from being ready for war." Former President Susilo Bambang Yudhoyono also stated that the Indonesian National Armed Forces remained at the level of a minimum essential force. These statements reinforce the urgency of improving unit readiness through stronger leadership and the optimization of facilities and infrastructure.

The novelty of this study lies in several aspects. First, this study develops an integrative model that simultaneously examines the effects of innovative leadership and facilities and infrastructure on military personnel performance through two intervening variables, namely motivation and competence. Accordingly, the proposed model is expected to provide a more comprehensive explanation of both direct and indirect relationships among the variables.

Second, this study is conducted within an Indonesian Army combat unit at the

battalion level, which possesses organizational characteristics that are fundamentally different from those of civilian organizations. Therefore, the study provides a contextual contribution to the development of human resource management theory within the defense sector.

Third, this study integrates human resource management and defense management approaches into a single conceptual framework that is relevant to the transition from a minimum essential force toward a maximum essential force. Fourth, this study provides a practical contribution by formulating innovative leadership strategies based on cross-sector collaboration to address facility limitations at the unit level in an adaptive and sustainable manner.

This study not only statistically examines the relationships among variables but also seeks to develop a conceptual model capable of explaining the dynamics of military personnel performance under conditions of limited facilities and infrastructure. The findings are expected to generate applicable strategic recommendations for strengthening operational readiness and enhancing the professionalism of military personnel at the unit level.

Based on the identified phenomenon gap and research gap, this study is relevant and important because it is expected to provide both theoretical and practical contributions to the development of human resource management within the Indonesian Army. On the basis of this background, the research questions are formulated as follows:

- 1) Does innovative leadership have a positive and significant effect on military personnel performance at the Battalion Headquarters?
- 2) Does innovative leadership have a positive and significant effect on motivation at the Battalion Headquarters?
- 3) Does innovative leadership have a positive and significant effect on competence at the Battalion Headquarters?

- 4) Do facilities and infrastructure have a positive and significant effect on military personnel performance at the Battalion Headquarters?
- 5) Do facilities and infrastructure have a positive and significant effect on motivation at the Battalion Headquarters?
- 6) Do facilities and infrastructure have a positive and significant effect on competence at the Battalion Headquarters?
- 7) Does motivation have a positive and significant effect on military personnel performance at the Battalion Headquarters?
- 8) Does competence have a positive and significant effect on military personnel performance at the Battalion Headquarters?
- 9) Does innovative leadership have a positive and significant effect on military personnel performance through motivation at the Battalion Headquarters?
- 10) Does innovative leadership have a positive and significant effect on military personnel performance through competence at the Battalion Headquarters?
- 11) Do facilities and infrastructure have a positive and significant effect on military personnel performance through motivation at the Battalion Headquarters?
- 12) Do facilities and infrastructure have a positive and significant effect on military personnel performance through competence at the Battalion Headquarters?

2. LITERATURE REVIEW

2.1 Human Resource Management

Human resource management refers to the systematic process of managing people within an organization to

enable them to perform their roles effectively and efficiently. Management generally comprises six elements, commonly referred to as the 6Ms: Men, Money, Methods, Materials, Machines, and Markets. The human element, or "Men," subsequently developed into a specialized field of management known as human resource management.

In modern organizations, people are no longer regarded merely as factors of production but as strategic assets that determine organizational success.

2.2 Organizational Behavior Theory

Organizational Behavior Theory is a branch of management science that examines human behavior within organizations and the ways in which such behavior affects organizational effectiveness and performance. [3] define organizational behavior as a field of study that investigates the effects of individuals, groups, and organizational structures on behavior within organizations, with the aim of applying this knowledge to improve organizational effectiveness. Meanwhile, [4] emphasizes that organizational behavior involves the systematic and scientific understanding, prediction, and management of human behavior within organizations.

2.3 Military Personnel Performance

From the perspective of Vroom's Expectancy Theory, performance is an outcome of motivation formed through an individual's perception of the relationship among effort, performance, and rewards. Individuals are likely to

demonstrate optimal performance when they believe that their efforts will result in successful performance and that such performance will produce outcomes that they consider valuable. This theory is relevant in a military context, in which personnel are expected to achieve clearly defined targets and are subject to performance- and discipline-based reward systems.

2.4 Innovative Leadership

Innovative leadership represents a development of modern leadership theory that emphasizes a leader's ability to initiate change, encourage creativity, and establish a learning-oriented organizational culture. This concept is rooted in the transformational leadership theory proposed by [5], which explains that transformational leaders are capable of inspiring their subordinates through a clear vision, intellectual stimulation, individualized consideration, and idealized influence [6].

2.5 Facilities and Infrastructure

The concept of facilities and infrastructure from an organizational management perspective is closely associated with work environment theory and Systems Theory. Within Systems Theory, an organization is viewed as an integrated entity consisting of various interrelated and interacting subsystems [7].

2.6 Motivation

Motivation is one of the central concepts in organizational behavior theory and human resource management. Theoretically, motivation explains why individuals behave in a particular manner, the degree of

effort they exert, and the length of time for which such effort is sustained [8].

2.7 Competence

The concept of competence in human resource management has developed from ability theory and the competency-based approach. Competence is regarded as a primary factor that determines an individual's success in performing assigned duties and achieving superior performance.

2.8 Research Conceptual Framework

The conceptual framework of this study proposes that innovative leadership and facilities and infrastructure are major factors affecting military personnel performance, both directly and indirectly through motivation and competence as intervening variables. Innovative leadership can enhance personnel morale, creativity, and capability development, whereas adequate facilities and infrastructure support the effective and efficient execution of military duties. High levels of motivation and competence are expected to strengthen the effects of these two variables, thereby leading to optimal improvements in military personnel performance.

3. METHODS

According to [9], a population in quantitative research refers to a group of individuals who share identifiable characteristics and constitute the primary focus of data collection for addressing the research problem. In this study, the population comprises all active military personnel operating within the same organizational and unit leadership system [10], [11].

4. RESULTS AND DISCUSSION

The findings indicate that all 210 questionnaires distributed to the respondents were successfully returned and deemed suitable for analysis, resulting in a response rate of 100%. The structural model was evaluated using a bootstrapping procedure, with statistical significance determined by a t-statistic greater than 1.96 and a p-value lower than 0.05.

The direct-effect analysis demonstrated that innovative leadership and facilities and infrastructure had positive and significant effects on military personnel performance, motivation, and competence. Innovative leadership affected military personnel performance with a coefficient of 0.271, motivation with a coefficient of 0.373, and competence with a coefficient of 0.405. Meanwhile, facilities and infrastructure affected military personnel performance with a coefficient of 0.309, motivation with a coefficient of 0.462, and competence with a coefficient of 0.332. Motivation had a positive and significant effect on military personnel performance, with a coefficient of 0.583, whereas competence had a positive and significant effect, with a coefficient of 0.126. Therefore, motivation was identified as the variable with the strongest direct effect on military personnel performance.

The indirect-effect analysis revealed that motivation significantly mediated the effect of innovative leadership on military personnel performance, with an indirect-effect coefficient of 0.220. Motivation also significantly mediated the effect of facilities and infrastructure on military personnel performance, with a coefficient of 0.272. In contrast, competence did not significantly mediate the effect of either innovative leadership or facilities and infrastructure on military personnel performance, as the respective p-values of 0.066 and 0.068 exceeded the significance threshold of 0.05. Overall, 10 of the 12 research hypotheses were accepted, while the two hypotheses involving competence as a mediating variable were rejected.

These findings confirm that improvements in military personnel performance can be achieved more effectively through the implementation of innovative leadership, the provision of adequate facilities and infrastructure, and the strengthening of personnel motivation. Although competence had a significant direct effect on performance, its mediating role was not sufficiently strong. Therefore, motivation can be regarded as the primary mechanism through which innovative leadership and facilities and infrastructure contribute to improved military personnel performance [12], [13].

Table 1. Results of Direct Effect Testing

H	Direct Effect			Standard deviation	T statistics	P values	Ket.
H1	KI (X1)	→	KP (Y)	0.042	6.460	0.000	Significant
H2	KI (X1)	→	M (Z1)	0.055	6.823	0.000	Significant
H3	KI (X1)	→	K (Z2)	0.052	7.794	0.000	Significant
H4	SP (X2)	→	KP (Y)	0.036	8.591	0.000	Significant
H5	SP (X2)	→	M (Z1)	0.053	8.742	0.000	Significant
H6	SP (X2)	→	K (Z2)	0.054	6.118	0.000	Significant
H7	M (Z1)	→	KP (Y)	0.053	11.009	0.000	Significant
H8	M (Z1)	→	KP (Y)	0.062	2.028	0.043	Significant

Source: Processed Primary Data (2026)

Table 2. Results of Indirect Effect Testing

H	Indirect Effect					Standard deviation	T statistics	P values	Keterangan
H9	KI (X1)	→	M (Z1)	→	KP (Y)	0.042	5.228	0.000	Significant
H10	KI (X1)	→	K (Z2)	→	KP (Y)	0.028	1.838	0.066	Non-Significant
H11	SP (X2)	→	M (Z1)	→	KP (Y)	0.039	6.962	0.000	Significant

H12	SP (X2)	→	K (Z2)	→	KP (Y)	0.023	1.826	0.068	Non-Significant
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Source: Processed Primary Data (2026)

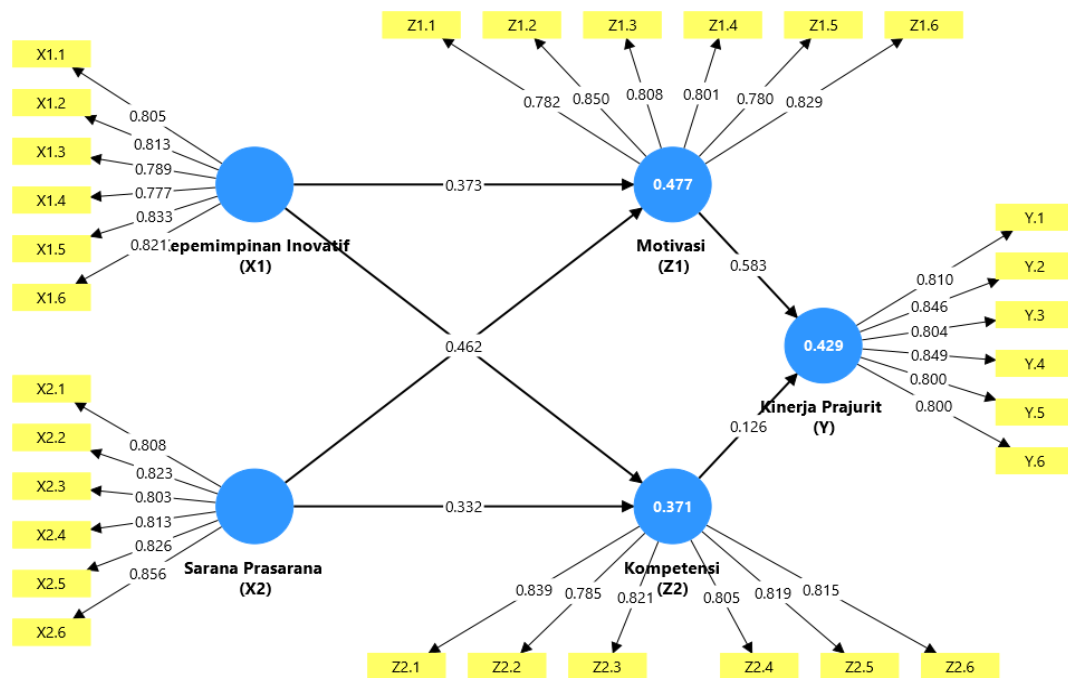


Figure 1. Results of SEM-PLS Structural Model Testing

5. CONCLUSION

- 1) **Innovative leadership has a significant effect on military personnel performance.** The findings indicate that an innovative leadership style, which emphasizes creativity, subordinate participation, and individual empowerment, can improve the work effectiveness of military personnel. Personnel led through an innovative approach demonstrate greater initiative, stronger discipline, and increased productivity. This finding confirms that innovative leadership is a key factor in improving the operational performance of the unit.
- 2) **Innovative leadership has a significant effect on military personnel motivation.** The findings indicate that innovative leaders can enhance personnel motivation through performance recognition, clear direction, and

opportunities for self-development. Motivated personnel demonstrate greater enthusiasm, stronger commitment to their duties, and greater determination in completing assigned tasks. This finding confirms that motivation serves as a primary mechanism through which innovative leadership influences military personnel performance.

- 3) **Innovative leadership has a significant effect on military personnel competence.** The findings indicate that innovative leadership promotes the development of personnel's technical and tactical competencies through training, mentoring, and structured guidance. Competent personnel are better able to perform complex duties and respond to changing operational conditions, thereby improving the overall

- readiness and effectiveness of the unit.
- 4) **Facilities and infrastructure have a significant effect on military personnel performance.** The findings indicate that complete and adequate facilities and infrastructure, including training facilities, transportation, and logistical support, facilitate the performance of military duties. The availability of such resources reduces technical obstacles, improves concentration, and enables personnel to work more efficiently, thereby enhancing operational performance.
 - 5) **Facilities and infrastructure have a significant effect on military personnel motivation.** The findings indicate that personnel who have access to adequate facilities and infrastructure feel more valued and supported by the organization. This condition strengthens their internal drive, enthusiasm, and morale. A high level of motivation encourages personnel to become more proactive, committed, and dedicated in performing their daily operational duties.
 - 6) **Facilities and infrastructure have a significant effect on military personnel competence.** The findings indicate that adequate facilities and comprehensive logistical support enable personnel to optimally develop their technical and tactical capabilities. Personnel are able to undertake training, improve their skills, and strengthen their operational readiness. Therefore, facilities and infrastructure play an important role in enhancing subordinate competence.
 - 7) **Motivation has a significant effect on military personnel performance.** The findings indicate that motivated personnel demonstrate higher levels of discipline, initiative, and responsibility, resulting in significant improvements in both individual and team performance. This finding confirms that motivation is a major determinant of work achievement and has a stronger influence on performance than competence alone.
 - 8) **Competence has a significant effect on military personnel performance.** The findings indicate that although its effect is more moderate than that of motivation, improvements in technical and tactical competence still contribute to personnel performance. Competent personnel are better able to adapt to complex assignments and make appropriate decisions, thereby supporting operational effectiveness.
 - 9) **Innovative leadership has a significant effect on military personnel performance through motivation.** The findings confirm that motivation acts as a significant mediating variable. Innovative leadership improves military personnel performance not only directly but also indirectly by increasing motivation. Motivated personnel are better able to translate the positive effects of innovative leadership into actual performance, making this mediating pathway a key mechanism.
 - 10) **Innovative leadership does not have a significant effect on military personnel performance through competence.** The

findings indicate that although innovative leadership can improve personnel competence, the mediating role of competence has not been proven to significantly influence performance. This suggests that improving skills alone is insufficient without motivation and a supportive work environment.

- 11) **Facilities and infrastructure have a significant effect on military personnel performance through motivation.** The findings indicate that motivation acts as a significant mediator in transmitting the effect of facilities and infrastructure on performance. Personnel with access to adequate facilities perceive greater organizational support, which strengthens their internal motivation and subsequently improves their operational performance.
- 12) **Facilities and infrastructure do not have a significant effect on military personnel performance**

through competence. The findings indicate that although facilities and infrastructure support competence development, the mediating pathway through competence has not been proven to significantly improve performance. This finding suggests that military personnel performance is influenced more strongly by motivation and leadership than by competence alone.

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