

The Impact of Performance Measurement Systems on Employee Motivation and Productivity at Indonesia's Defense University

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Abstract This ponder analyzes the impact of execution estimation framework on work inspiration and representative efficiency at the Staff of Military Coordinations, Indonesia Defense College, and tests the intervening part of work inspiration. The inquire about strategy employments a quantitative approach with a study of 125 respondents (teachers, scholastic staff, and bolster staff). Information were analyzed utilizing SEM. The comes about appeared that the execution estimation framework incorporates a positive and noteworthy impact on work inspiration ($\hat{I}^2 = 0.52$, $p < 0.001$), and work inspiration encompasses a positive impact on representative efficiency ($\hat{I}^2 = 0.64$, $p < 0.001$). Work inspiration moreover altogether intercedes the relationship between execution estimation framework and worker efficiency ($\hat{I}^2 = 0.33$, $p < 0.01$). This finding bolsters Self-Determination hypothesis which emphasizes the significance of satisfying mental must increment natural inspiration. Show approval through the goodness-of-fit test appeared a great fit with the observational information (Chi-Square/df = 2.15, RMSEA = 0.06, CFI = 0.95, TLI = 0.93). For all intents and purposes, this ponder suggests an moved forward execution estimation framework that's more transparent and reasonable to extend worker inspiration and efficiency. The investigate suggestions give hypothetical and commonsense commitments to the advancement of execution administration within the military and comparative organizations.

Keywords: Performance Measurement System, Work Motivation, Employee Productivity, SEM, Faculty of Military Logistics Indonesia Defense University.

1. Introduction

A key element of human resource management (HRM) is a performance measurement system designed to enhance the efficiency and productivity of an organization. Agreeing to Neely et al., (2005), execution estimation frameworks perform two capacities: It evaluates and empowers workers to realize organizational objectives. This system is increasingly important in military educational institutions such as the Faculty of Military Logistics of the Indonesia Defense University (IDU) due to the many tasks and responsibilities assumed by staff and teachers. However, incorporating an efficient performance measurement system is still a challenge, especially to ensure that the system has the ability to improve employee productivity and increase their motivation (Kaplan, R. S., & Norton, 1996).

Work motivation is an important component that links performance evaluation systems to employee productivity. Concurring to Maslow's Progression of Needs Hypothesis and Herzberg's Two-Factor Hypothesis, both natural and outward inspiration are basic to one's execution. Factors such as discipline, loyalty, and a high sense of responsibility are often used in the military to influence work motivation (Wong, Bliese, & McGurk, 2003). However, recent research has shown that poor performance measurement systems can demotivate employees (DeNisi & Smith, 2014). This is especially true for systems that are perceived as

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unfair or non-transparent. Therefore, it is important to learn how to create an effective performance measurement system to increase employee productivity and motivation (Silitonga et al., 2024).

The Faculty of Military Logistics of Indonesia Defense University is facing a big problem. There is no comprehensive and integrated performance measurement system. This leads to unclear performance appraisals, which can affect employee morale and productivity. As shown by the preliminary study conducted by the researcher, most employees believe that the current performance measurement system does not provide useful feedback and does not encourage performance improvement (Tatar Bonar Silitonga, 2021). This is compounded by the lack of research investigating the relationship between military education systems that measure performance, motivation and productivity. However, the military has a distinctive work culture and strict hierarchy, which distinguishes it from civilian organizations (Soeters, 2006).

The reason of this ponder is to include to the accessible writing by looking at how the execution estimation framework influences representative inspiration and efficiency at the Staff of Military Coordinations of the Republic of Indonesia Defense College. Specifically, this study will look at how work motivation mediates the relationship between performance measurement systems and employee productivity. As such, this research will not only have an impact in providing a deeper understanding of the mechanisms underlying this relationship, but also provide practical suggestions on how institutional management can improve the performance measurement system.

This research is unique in that it incorporates performance management theory into the context of military education, which is still rarely discussed in the literature on this subject. In expansion, a quantitative strategy, Basic Condition Modeling (SEM) investigation, was utilized to assess the connections between factors in this consider. This method has a high degree of accuracy and confidence. Researchers can find a direct relationship between performance measurement systems and productivity with this method. They can also find the important role of motivation as a mediating variable.

This inquire about was conducted due to the pressing got to improve the quality of Indonesia's military instruction, particularly within the confront of progressively complex challenges around the world. The Defense University's Faculty of Military Logistics must ensure that the performance measurement system used can optimally improve employee motivation and productivity as they are responsible for producing competent military logistics cadres. Without a good system in place, the risk of performance degradation and operational inefficiencies will increase, which in turn could negatively impact the quality of education and training.

Viewed from two points of view, this research has both theoretical and practical contributions. Theoretically, it incorporates ideas about motivation and productivity in a military context into the literature on performance management. Essentially, the comes about are anticipated to serve as a reference for the administration of the Workforce of Military

Coordinations to plan and execute a more effective execution estimation framework. These proposals can too be utilized by other military educate in Indonesia to make strides human asset execution.

The purpose of this research is to study how the performance measurement system affects employee motivation and productivity and how motivational mediation plays a role in this relationship. It is expected that this research will provide useful information on how to build a more sustainable and efficient performance measurement system in the military education environment.

2. Literature Review

Performance measurement systems

To assess and improve individual and organizational performance, managers can use performance measurement systems. According to Bititci, Garengo, Dörfler, Nudurupati (2012), this system consists of a number of indicators and metrics intended to measure how far organizational goals have been achieved. Contemporary performance measurement systems pay attention to non-financial aspects such as employee satisfaction, innovation, and service quality in addition to financial aspects (Garengo & Biazzo, 2013). This is in line with Santos et al., (2012), who emphasize the importance of an effective performance measurement system to provide useful feedback and drive continuous improvement.

However, implementing a performance measurement system is often difficult, especially in complex organizations such as military institutions. Soeters, (2006) stated that the characteristics of military institutions, such as strict hierarchies and unique work cultures, can affect how effective performance measurement systems are. According to research conducted by Ferreira & Otley, (2009), performance measurement systems that do not fit the corporate culture are less likely to achieve their goals. Therefore, it is crucial to create a performance measurement system that fits the specific situation and requirements of the organization.

Work Motivation

A major factor that influences individual and organizational performance is work motivation. High work motivation can significantly increase employee productivity, because employees who feel motivated tend to work more efficiently and effectively (Rulianti, E., & Nurpribadi, 2023). According to Maslow's Hierarchy of Needs Theory (1943) and Herzberg's Two-Factor Theory (1968), motivation can come from both intrinsic (such as job satisfaction and self-development) and extrinsic (such as pay and rewards) sources. In the military, things like discipline, loyalty and a high sense of responsibility often influence motivation to work (Wong et al., 2003). However, according to Gagne & Deci, (2014), intrinsic motivation has a greater impact on long-term performance than extrinsic motivation.

In addition, through feedback and recognition mechanisms, performance measurement systems can influence work motivation. According to DeNisi & Smith, (2014), unfair or non-transparent performance measurement systems can lead to employee dissatisfaction and decrease employee motivation, whereas constructive and honest feedback can increase motivation. Therefore, it is crucial to ensure that the performance measurement system is designed with consideration of how it impacts work motivation.

Employee Productivity

One important measure of organizational performance is employee productivity. Employee productivity Focus on improving employee welfare (Labudo, 2013). Drucker (1999), states that productivity refers not only to physical output but also to the efficiency and effectiveness of resource use. In the context of military educational institutions, employee productivity can be measured in various ways, such as administrative efficiency, student satisfaction, and teaching quality (Soeters, 2006). However, psychological components such as job satisfaction levels and motivation levels also affect productivity.

The literature has extensively discussed the relationship between motivation and productivity. Mangkunegara (2015), study found that employees who have high work motivation tend to be more productive because they are more motivated to achieve organizational goals. Bakker, A. B., & Demerouti, (2017) study also found that intrinsically motivated employees tend to be more productive and more satisfied with their jobs. However, it is important to remember that the relationship between motivation and productivity is not always linear. This is because other variables, such as work environment and management support, can influence it.

Conceptual Framework and Hypotheses

- HI : Performance measurement system has a positive effect on work motivation
- H2 : Work motivation has a positive effect on employee productivity
- H3 : Work motivation mediates the relationship between performance measurement systems and employee productivity

Previous research results support this conceptual framework. For example, research by Ferreira & Otley, (2009) found that a well-designed performance measurement system can improve employee productivity and work motivation. In addition, research by Gagne & Deci, (2014) found that an important factor in the relationship between performance measurement systems and employee productivity is work motivation.

3. Research Methodology

This research was designed with a quantitative approach, where the survey method was chosen as the main tool for collecting data. Survey method is a method used to collect data from respondents through questionnaires. With this method, researchers can obtain information about respondents' opinions, attitudes, and behaviors towards a particular topic or issue (Dalati, Serene, Gomes, 2018). This approach is considered appropriate because the

research aims to measure and analyze the relationship between the variables studied, namely the performance measurement system, work motivation, and employee productivity. Surveys are an effective choice because they allow researchers to collect data from many respondents in a structured and efficient manner. In addition, the data generated from the survey can be analyzed statistically, making it easier to test the proposed hypothesis. According to Creswell & Creswell, (2018), the survey method is very suitable for research that wants to understand the relationship between variables in a broad context.

The population in this study included all employees at the Faculty of Military Logistics of the Indonesia Defense University, consisting of lecturers, academic staff, and other support staff. From the total population of 150 people, the research sample was taken using purposive sampling technique. This technique was chosen to ensure that the respondents involved met certain criteria, such as having worked for at least one year and willing to participate in the study. A total of 125 people met these criteria and were willing to become respondents. The sample composition consisted of 50 lecturers, 40 academic staff, and 35 other support staff, reflecting the proportion of the overall population. This sample size is considered adequate because it meets the recommendations of Hair, Babin, Anderson, & Black, (2022), which states that for Structural Equation Modeling (SEM) analysis, the minimum sample size is 100-150 respondents.

Data collection was carried out using a closed questionnaire designed based on the research variables. The questionnaire consisted of three main sections. The first section collected demographic data, such as gender, age, job title, and length of service. The second part measured the independent variable, namely the performance measurement system, using an instrument adapted from the study of Franco-Santos et al., (2012). This instrument includes indicators such as clarity of objectives, transparency of assessment, and frequency of feedback. The third section measures the mediating variable, namely work motivation, with an instrument adapted from (Gagne & Deci, 2014). Self-Determination theory. Indicators used include intrinsic satisfaction, work commitment, and desire to develop. Finally, the dependent variable, employee productivity, is measured using an instrument adapted from Mangkunegara, (2015) study, with indicators such as work quality, time efficiency, and target achievement. The measurement scale used is a 5-point Likert scale, with a range of 1 (Strongly Disagree) to 5 (Strongly Agree). The questionnaire was distributed online through the Google Forms platform to facilitate data collection and ensure respondent confidentiality.

Data evaluation was carried out in multiple phases. Initially, a descriptive analysis was performed to outline the demographic features of the participants and the spread of responses for each variable. This provided the investigator with insights into the demographic makeup of the participants and the overall patterns in the gathered data. Subsequently, assessments of validity and reliability were carried out to confirm that the research tools adhered to the necessary criteria. The validity test was conducted by measuring the loading factor using Confirmatory Factor Analysis (CFA). Items that have a loading factor greater than 0.7 were regarded as valid. The assessment of reliability was performed by determining the Cronbach's Alpha coefficient, with results exceeding 0.7 deemed reliable. The primary phase of data

analysis involves applying Structural Equation Modeling (SEM) to evaluate the connections among variables and the suggested hypotheses. SEM was chosen because of its ability to test complex relationships between variables, including mediation effects. The stages of SEM analysis include measurement model testing to ensure construct validity and reliability, structural model testing to test causal relationships between variables, and mediation analysis using the bootstrapping method to test the role of work motivation as a mediating variable.

This research also adheres to the principles of research ethics to ensure the integrity and trust of respondents. Respondents were given a full explanation of the purpose of the study and their right to refuse or withdraw at any time (informed consent). Respondents' identities were kept confidential, and the data were only used for academic purposes. In addition, the research procedures were transparently explained to the respondents to ensure voluntary and clearly understood participation. Thus, the study not only met academic standards, but also ensured that respondents' rights and privacy were fully respected.

4. Results And Discussion

Results

Descriptive Statistics

Descriptive statistical analysis was used to explain the characteristics of the respondents and how their answers were distributed on the research variables. Of the 125 respondents, 50 were lecturers (40 percent), 40 were academic staff (32 percent), and 35 were other support staff (28 percent). Most people are between 30 and 40 years old (45 percent), followed by people aged 41 to 50 years old (35 percent), and the last are people under 30 years old or over 50 years old. 60 percent of respondents have more than five years of work experience, while 40 percent have between 1 and 5 years of experience.

To describe respondents' general perceptions for the research variables, the mean and standard deviation (SD) scores were calculated. The performance measurement system (X) received a mean score of 3.85 (SD = 0.72), indicating that most people responded fairly favorably to the existing system, although there is room for improvement. As indicated by the mean score of 4.12 (SD = 0.68) for work motivation (M), respondents tend to feel motivated to work. Employee production (Y), on the other hand, has a mean score of 3.98 (SD = 0.75), indicating that their productivity is quite high.

The descriptive statistics results show that, although the performance measurement system is rated well, employees' work motivation and productivity tend to be higher. This suggests that work motivation may play an important role in improving productivity.

Hypothesis

Hypothesis testing was conducted using Structural Equation Modeling (SEM) with the help of AMOS software. SEM analysis was conducted in two stages: measurement model and structural model testing.

Measurement Model Testing

Validity and Reliability Test Results

Table 1. Research Instrument Validity Test Results

Construct	Indicator	Loading Factor	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)
Performance Measurement System (X)	X1	0.82	0.87	0.89	0.68
	X2	0.78			
	X3	0.85			
Work Motivation (M)	M1	0.88	0.91	0.92	0.71
	M2	0.91			
	M3	0.79			
Employee Productivity (Y)	Y1	0.84	0.89	0.90	0.69
	Y2	0.76			
	Y3	0.89			

Table 2. Research Instrument Reliability Test Results

Construct	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)	Threshold	Result
Performance Measurement System (X)	0.87	0.89	0.68	$\alpha \geq 0.7$; CR ≥ 0.7 ; AVE ≥ 0.5	Reliable
Work Motivation (M)	0.91	0.92	0.71	$\alpha \geq 0.7$; CR ≥ 0.7 ; AVE ≥ 0.5	Reliable
Employee Productivity (Y)	0.89	0.90	0.69	$\alpha \geq 0.7$; CR ≥ 0.7 ; AVE ≥ 0.5	Reliable

To guarantee that the markers utilized are substantial and solid to degree the aiming develop, Corroborative Figure Investigation (CFA) is conducted. The comes about appear that the stacking figure for each marker surpasses 0.7, assembly the legitimacy criteria; the Composite Unwavering quality (CR) esteem for each develop moreover surpasses 0.7, and the Normal Fluctuation Extricated (AVE) surpasses 0.5, which shows that the build has great unwavering quality and focalized legitimacy.

Structural Model Testing

Table 3. Goodness of Fit Index Parameter Test Results

Goodness-of-Fit Index	Value	Threshold	Result
Chi-Square/df	2.15	≤ 3	Good Fit
RMSEA	0.06	≤ 0.08	Good Fit
CFI	0.95	≥ 0.90	Good Fit
TLI	0.93	≥ 0.90	Good Fit

Based on the goodness-of-fit test comes about, the Basic Condition Modeling (SEM) demonstrate proposed in this ponder appears a really great fit with the experimental information. This will be seen from the fit list values that meet the foreordained criteria. To begin with, the Chi-Square/df (CMIN/DF) esteem of 2.15 is underneath the suggested greatest restrain (≤ 3), demonstrating that there's no critical contrast between the show covariance network and the observational information covariance matrix. Moment, the RMSEA (Root Cruel Square Blunder of Guess) esteem of 0.06 is additionally underneath the greatest restrain considered great (≤ 0.08), demonstrating that the demonstrate incorporates a moo level of guess blunder and is able to clarify the information well. Third, the CFI (Comparative Fit File) esteem of 0.95 and TLI (Tucker-Lewis File) of 0.93 both surpassed the prescribed least constrain (≥ 0.90). CFI and TLI values near to 1 show that the proposed show contains a exceptionally great fit compared to the standard show, and is able to clarify the change and covariance of the information viably. Hence, it can be concluded that the SEM demonstrate in this think about has met all measurable fit criteria, so the comes about of way investigation and speculation testing can be depended upon to reply investigate questions.

Hypothesis Testing

Based on the comes about of way investigation, it was found that:

Theory 1 (H1):

Execution estimation framework encompasses a positive and noteworthy impact on work inspiration ($\beta = 0.52$, $p < 0.001$). This appears that the way better the execution estimation framework, the higher the work inspiration of employees.

Theory 2 (H2):

Work inspiration encompasses a positive and noteworthy impact on representative efficiency ($\beta = 0.64$, $p < 0.001$). This implies that persuaded representatives tend to be more beneficial at work.

Hypothesis 3 (H3): Work motivation plays a crucial role in influencing the connection between performance measurement systems and the productivity of employees ($\beta = 0.33$, $p < 0.01$). This finding suggests that work motivation serves as a partial mediator, meaning that the performance measurement system impacts productivity not just directly, but also by enhancing work motivation.

Discussion

The reason of this think about was to assess how the execution estimation framework influences worker efficiency and work inspiration at the Staff of Military Coordinations, Indonesia Defense College. In expansion, this think about moreover examines the interceding part of work inspiration in this relationship. This objective is based on how vital the execution estimation framework is as a administration apparatus that allows to propel workers to realize organizational objectives in expansion to assessing the execution of each person. Due to the numerous assignments and obligations expected by staff and teachers in military educate, an viable execution estimation framework is fundamental. Be that as it may, these frameworks frequently confront issues, such as hazy evaluations and need of useful input. This ponder was outlined to fill the writing crevice by looking at the relationship between performance estimation frameworks, work inspiration and worker efficiency within the setting of military instruction.

The results showed that performance measurement systems positively and significantly influence work motivation. This result is in line with the self-determination theory by Gagne, (2014), which states that a good performance measurement system can increase employees' intrinsic motivation by fulfilling their basic psychological needs, such as connectedness, autonomy, and competence. For the Defense University's Faculty of Military Logistics, a fair and open performance measurement system provides employees with clear direction on how to improve their performance, which in turn increases their motivation to work. In expansion, it was found that work inspiration incorporates a positive and noteworthy affect on worker efficiency. This bolsters Maslow's Pecking order of Needs hypothesis and Herzberg's Two-Factor Hypothesis, which emphasize that both inherent and outward inspiration are pivotal to making strides one's execution. Since they feel esteemed for what they do and have a solid commitment to their work, persuaded workers tend to be more beneficial.

The results of hypothesis testing also show that work motivation significantly mediates the relationship between performance measurement systems and employee productivity. This conclusion suggests that an effective performance measurement system not only has a direct effect on productivity, but also increases work motivation indirectly. In other words, a good performance measurement system can make employees feel better at their workplace. This finding aligns with earlier studies conducted by Santos and his colleagues (Santos et al., 2012), which indicated that a thoughtfully crafted performance measurement system can enhance employee motivation..

The goodness-of-fit test was utilized to approve the investigate demonstrate; the comes about appear that the proposed SEM show fits the experimental information exceptionally well. All Chi-Square/df values of 2.15, RMSEA of 0.06, CFI of 0.95, and TLI of 0.93 met the set criteria, showing that this show can be precisely utilized to test the relationship between factors. Hence, the comes about of theory testing and way investigation can be depended upon to reply investigate questions .

This research yields significant theoretical and practical benefits. Theoretically, this study combines motivation and productivity perspectives in a military context to add to the literature on performance management. Practically, the results can serve as a reference for the

management of the Faculty of Military Logistics of the Indonesia Defense University to design and implement a more efficient performance measurement system. These proposals can be utilized by other military teach in Indonesia to progress human asset execution.

5. Conclusion And Recommendations

This think about found that the execution estimation framework includes a positive and critical impact on worker work inspiration at the Workforce of Military Logistics, Indonesia Defense College. Besides, work inspiration encompasses a positive and noteworthy impact on representative efficiency. In expansion, work inspiration serves as a halfway arbiter within the relationship between execution estimation framework and representative efficiency, which appears.

The theories underlying this research are in line with these findings. These theories include Self-Determination Theory (Gagne & Deci, 2014) which emphasizes how important it is to satisfy basic psychological needs to increase intrinsic motivation. In addition, theories such as Maslow's Hierarchy of Needs Theory and Herzberg's Two-Factor Theory emphasize the role of motivation in driving individual performance. In addition, validation of the model through the goodness-of-fit test shows that the proposed SEM model fits the empirical data very well. Therefore, the results of the study are reliable. This study shows that, especially in the context of military institutions, an effective performance measurement system can be an important managerial tool to improve employee motivation and productivity. The findings also provide theoretical contributions by adding to the literature on performance management and motivation, as well as practical contributions by providing recommendations for improving performance measurement systems in military education.

This study produces several recommendations that can be used to improve practice and further research. First, from a practical perspective, the management of the Faculty of Military Logistics, Indonesian Defense University, is advised to create a performance measurement system that is clearer, fairer, and allows for constructive criticism. This can improve employee productivity and motivation. In addition, the organization can provide training to managers and supervisors on how to provide effective feedback and motivate their employees. High-performing employees can also be motivated through an organized recognition and reward system. Second, the scope of the study should be expanded to include non-military organizations or other military institutions. This will allow for comparison of the results and testing of the results for generalization. In addition, further research can use a mixed-method approach, which combines qualitative approaches to dig deeper into employee perceptions and experiences related to performance measurement systems and work motivation. To enhance the analysis, it may also be considered to add additional variables, such as transformational leadership, organizational culture, or social support. Finally, once a better performance measurement system is implemented, long-term research can be conducted to track changes in employee motivation and productivity over the long term.

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