The Influence of KPI-Based Performance Assessment System on Employee Motivation and Productivity at PT. Berca Hardiaperkasa Luwuk Central Sulawesi

Juniche Irene Sarapang[1*], Christian August Harold Legoh[2], Nani Nurcahyani Hi. Yusuf[3], Wahyudin Rahman[4]
[1-4] Universitas Muhammadiyah Luwuk, Indonesia
breakfastgirene@gmail.com [1], christian.umlb@gmail.com [2], nanyfathan24@gmail.com [3], wahyu@unismuhluwuk.ac.id [4]*

Address: 3Q5Q+JX5, Jl. KH Ahmad Dahlan , New , Luwuk , Regency Banggai , Central Sulawesi 94712
Correspondence author: breakfastgirene@gmail.com

Abstract: *This study aims to analyze the effect of Key Performance Indicator (KPI)-based performance appraisal system, leadership style, and work motivation on employee productivity. The research method used is a quantitative approach with multiple linear regression analysis techniques. The results of the study indicate that simultaneously, the implementation of KPI, leadership style, and work motivation have a significant effect on employee productivity. Partially, the implementation of KPI and leadership style have a positive and significant effect on employee productivity, indicating that an effective KPI system and good leadership can improve individual performance. However, the results of the study also show that work motivation does not have a significant effect on employee productivity, indicating that there are other factors that may play a greater role in improving productivity. The implication of this study is that organizations need to focus more on optimizing the KPI system and developing a leadership style that can support the achievement of employee productivity.*

Keywords: *KPI, leadership style, work motivation, employee productivity, performance management.*

1. BACKGROUND

In today's competitive work environment, organizations must implement an effective performance management system to enhance employee productivity. A widely adopted method is the use of Key Performance Indicators (KPIs), which serve as measurable values to assess the performance of individuals, teams, and the organization as a whole (Yurii Semenenko,2024). By setting clear KPIs, organizations provide employees with specific expectations and standards for achievement, fostering a sense of direction and accountability (F. Silva ,, 2024) . This structured approach not only improves productivity but also aligns employee efforts with organizational goals, ultimately leading to increased engagement and motivation (F. Silva ,,2024). Additionally, integrating KPIs within a balanced scorecard framework can offer a comprehensive view of performance across multiple dimensions, including financial and customer perspectives, thereby facilitating data-driven decision making (Noel T.,2024). Overall, a well-implemented KPI system is critical to driving performance and achieving strategic goals in a dynamic business landscape (Krishan Kuma ,2024) .

Work motivation significantly affects employee performance and productivity. According to work motivation theory, employees are more motivated when they have a

clear understanding of their goals and how their performance is assessed (Heriawan Heriawan , ,2024) . A KPI-based appraisal system serves as an effective tool in this regard, as it sets specific, measurable, and achievable goals, thereby increasing transparency in the evaluation process (Irmohizam Ibrahim ,2024) . This system not only clarifies expectations but also provides constructive feedback, which is essential for employee motivation (KM Kulkarni , 2024) . Furthermore, goal-setting theory supports the idea that specific and challenging goals lead to higher motivation and performance levels (Elsa Dewi Farantika ,). By integrating these elements, organizations can foster a motivating work environment that encourages employees to excel, ultimately driving increased productivity and performance.

Employee productivity is critical to achieving organizational goals, and effective implementation of Key Performance Indicators (KPIs) plays a vital role in this process. KPIs serve as measurable values that allow organizations to objectively assess employee performance, fostering a culture of accountability and motivation (Amir Amrullah Fatah, 2024). By setting clear and measurable goals, organizations can leverage goal-setting theory to increase employee engagement and drive productivity (Divya Srivastava , 2024) . Furthermore, employee productivity metrics provide critical insights into individual performance, allowing organizations to identify areas for improvement and optimize their KPI systems (U.Ragavee , ,2024) . This data-driven approach not only eliminates bias in performance evaluation but also aligns employee efforts with organizational goals, ensuring that everyone is working toward a common goal (Sudaryanto Sudaryanto, 2024). Ultimately, a well-structured performance management system that incorporates these elements can significantly improve overall productivity and contribute to organizational success (Sukandi, A, 2019) .

Implementing a KPI system can significantly impact employee motivation and productivity, but its effectiveness depends on proper design and structure. A well-implemented KPI system is aligned with organizational goals and fosters a positive work environment, increasing motivation and productivity (Sudaryanto Sudaryanto ,2024) . Conversely, a poorly structured KPI system can lead to demotivation and stress, as it may not accurately reflect employee performance or organizational goals (Thea Thomas Mtau , 2024) . Selecting the right performance metrics is critical; metrics that are not aligned with employee roles can undermine motivation and creativity (P.S. Akshatha , ,2024) . In addition, effective feedback mechanisms are essential, as they provide employees with

valuable insights into their performance, promoting engagement and motivation (L. Sorokina ,2024) . Therefore, understanding the interplay between KPI design, performance appraisal, and feedback is essential to creating a system that supports rather than hinders employee performance.

2. LITERATURE REVIEW

Performance Assessment System Based on Key Performance Indicator (KPI)

Key Performance Indicators (KPIs) are essential tools for measuring individual, team, and organizational performance against strategic objectives. According to Kaplan and Norton, KPIs effectively link organizational strategy to individual performance, ensuring that everyone is aligned with the overarching goals (Yurii Semenenko ,2024) . To be effective, KPIs must adhere to the SMART criteria, which emphasizes that goals should be Specific, Measurable, Attainable, Relevant, and Time-bound. This framework not only clarifies expectations but also facilitates tracking of progress and results (Jennifer Grafton ,2024) . Furthermore, integrating KPIs into the performance management process improves organizational alignment, enabling a cohesive approach to achieving strategic objectives (Iryna Chmutova , ,2024) . By leveraging well-defined KPIs, organizations can ensure that their performance management systems are robust and responsive to changes in the business environment, ultimately driving success .

Employee Motivation

Work motivation is essential to increasing employee engagement, as highlighted by Herzberg's Two Factor Theory, which identifies intrinsic motivators such as achievement and recognition, alongside extrinsic factors such as company policies and work relationships (Rifanny Ananta Dharma ,2024) . Intrinsic motivation fosters a deeper connection to work, leading to greater job satisfaction and productivity [2] . In contrast, extrinsic factors can stabilize motivation but must be managed effectively to avoid dissatisfaction (Sari et al., 2024). Furthermore, Robbins and Judge emphasize that a clear and transparent performance appraisal system can significantly increase employee motivation by helping individuals understand their strengths and weaknesses, thereby setting achievable goals and receiving constructive feedback (Farantika et al., 2024) . Thus, integrating intrinsic and extrinsic motivation strategies is essential to fostering a motivated workforce.

Employee Productivity

Employee productivity, defined as an individual's ability to produce optimal output within a given time period, is significantly influenced by factors such as competence, motivation, and work environment (Khawaja & Karimi, 2024) . Competence encompasses the skills and knowledge required for effective job performance, while motivation drives employees to be engaged and committed to their tasks (Rachmawati et al., 2024) . Furthermore, the implementation of Key Performance Indicators (KPIs) can improve productivity by providing clear goals and direction, thereby aligning individual efforts with organizational goals (Fatah, 2024) . This alignment is crucial, as it not only fosters a sense of ownership among employees but also encourages them to strive for high-quality output (Prahasyila et al., 2024) . Ultimately, addressing these interrelated factors can lead to improved employee performance and organizational success, highlighting the importance of a holistic approach to productivity management.

3. METHOD

This study uses a quantitative approach with a survey method to measure the effect of a Key Performance Indicator (KPI)-based performance appraisal system on employee motivation and productivity. The population in this study were employees at PT. Berca Hardia perkasa Luwuk Sulawesi Tengah . The sample will be taken using the purposive sampling method , namely by selecting respondents who have experience in using KPIs in their performance evaluations. The number of samples in this study was 100 respondents. The variables in this study involved Independent Variables: KPI Assessment System (X1), Leadership Style (X2), Intervening Variable (Y1): Employee Motivation , Dependent Variable (Z): Employee Productivity .

4. RESULTS AND DISCUSSION

Validity and Reliability Test

Table 1. Validity Test

Correlations		
	Sig. (2-tailed)	**Information**
KPI Implementation	0,000	Valid
Leadership Style	0,000	Valid
Work motivation	0,000	Valid
Work Productivity	0,000	Valid
**. Correlation is significant at the 0.01 level (2-tailed).		

Interpretation

The results of data processing show that all items in this study have a significance value of 0.000 (<0.005), thus all items in this study are declared valid. And worthy to be continued in this study.

Table 2 Reliability Test Table

Reliability Statistics	
Cronbach's Alpha	N of Items
0.969	4

Interpretation

The results of statistical data processing show that all items in this study have a Cronbach`s Alpha value of 0.969 (> 0.700), thus all items in this study are declared Reliable. Thus, it is stated that it is feasible to continue to the next stage.

Multiple Linear Regression Test

a. Multiple Linear Regression Model 1

Table 3 t-Test Table

Coefficients [a]					
	Unstandardized Coefficients		Standardized Coefficients		
Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	3,629	0.329		11,024	0,000
KPI Implementation	0.227	0.053	0.497	4,295	0,000
Leadership Style	0.236	0.057	0.478	4,127	0,000
a. Dependent Variable: Work Motivation					

Interpretation

1) KPI Implementation Variables

Value = 4.295 , Sig. (p-value) = 0.000 , Because this value is much greater than the critical value of ±1.96 (for a significance level of 5%), it can be concluded that the Implementation of KPI has a significant influence on Work Motivation .

2) Leadership Style Variables

Value = 4.127 , Sig. (p-value) = 0.000 , This value is greater than 1.96, so Leadership Style has a significant effect on Work Motivation .

Table 4 F Test Table

Model		Sum of Squares	df	Mean Square	F	Sig.
ANOVA [a]						
1	Regression	663,521	2	331,760	767,688	,000 [b]
	Residual	41,919	97	0.432		
	Total	705,440	99			
a. Dependent Variable: Work Motivation						
b. Predictors: (Constant), Leadership Style, KPI Implementation						

Interpretation

value = 767.688 , Sig. (p-value) = 0.000 , Because the p-value < 0.05 , this means that the overall regression model is significant at the 95% confidence level. Thus, The implementation of KPI and Leadership Style together has a significant influence on Work Motivation .

Table 5 R Square Table

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
Model Summary				
1	,970 [a]	0.941	0.939	0.657
a. Predictors: (Constant), Leadership Style, KPI Implementation				

Interpretation

value = 0.941 , This means that 94.1% of the variables of KPI Implementation and Leadership Style contribute 94.1% to Work Motivation , the remaining 5.9% is influenced by other factors not included in this study .

b. Multiple Linear Regression Model 2

Table 6 t-Test Table

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Coefficients [a]						
1	(Constant)	7,110	0.744		9,562	0,000
	KPI Implementation	0.446	0.087	0.439	5,131	0,000
	Leadership Style	0.505	0.093	0.459	5,402	0,000
	Work motivation	0.213	0.153	0.096	1,394	0.167
a. Dependent Variable: Work Productivity						

Interpretation

1) KPI Implementation Variables

T-Statistic Value = 5.131 , Sig. (p-value) = 0.000 , Because p-value < 0.05, it means that KPI Implementation has a significant effect on Work Productivity .

2) Leadership Style Variables

T-Statistic Value = 5.402 , Sig. (p-value) = 0.00 , Since p-value < 0.05, we can conclude that Leadership Style has a significant influence on Work Productivity .

3) Work Motivation Variables

T-Statistic Value = 1.394 , Sig. (p-value) = 0.167 . Since the p-value is greater than 0.05 , it indicates that Work Motivation has no significant effect on Work Productivity .

Table 7 F Test Table

ANOVA [a]					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	3390,940	3	1130,313	1154,735	,000 [b]
Residual	93,970	96	0.979		
Total	3484,910	99			
a. Dependent Variable: Work Productivity					
b. Predictors: (Constant), Work Motivation, Leadership Style, KPI Implementation					

Interpretation

value = 1154.735 , Sig. (p-value) = 0.000 , Since the p-value < 0.05 , it can be concluded that the overall regression model is significant . Thus, Work Motivation, Leadership Style, and KPI Implementation together have a significant influence on Work Productivity .

Table 8 R Square Table

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,986 [a]	0.973	0.972	0.989
a. Predictors: (Constant), Work Motivation, Leadership Style, KPI Implementation				

Interpretation

value = 0.973 , means that 97.3% of the contribution of the influence of the variables of Work Motivation, Leadership Style, and KPI Implementation simultaneously on the

work productivity variable and the rest . 2.7% is influenced by other factors not included in this research model.

Hypothesis Testing

H_1: KPI implementation has a significant effect on employee productivity.

Results from the Coefficients table T-Statistic = 5.131 and Sig. (p-value) = 0.000 , Thus, The implementation of KPI has a significant effect on employee productivity . H1. *Accepted*

H_2 : Leadership style has a significant effect on employee productivity.

Results from the Coefficients table T-Statistic = 5.402 and Sig. (p-value) = 0.000 , thus Leadership Style has a significant effect on Employee Productivity . H2 *is Accepted*

H_3 : Work motivation has a significant effect on employee productivity.

The results of the T-Statistic table = 1.394 and Sig. (p-value) = 0.167 Because p-value > 0.05 , then Work Motivation does not have a significant influence on Employee Productivity . Hypothesis *Rejected*

H_4 : KPI-based performance appraisal system, leadership style, and work motivation simultaneously have a significant effect on employee productivity.

The result of the F-Statistic table = 1154.735 and Sig. (p-value) = 0.000 p-value < 0.05 , then the implementation of KPI, Leadership Style, and Work Motivation simultaneously have a significant influence on Employee Productivity . Hypothesis *Accepted*

5. CONCLUSION

Based on the results of the research that has been conducted, several main findings can be concluded regarding the influence of the KPI-based performance appraisal system, leadership style, and work motivation on employee productivity:

a. *Simultaneous Effects*

The results of the F test show that simultaneously, the implementation of KPI, leadership style, and work motivation have a significant influence on employee productivity. This means that the three independent variables together contribute to increasing employee productivity in the organization.

b. *The Impact of KPI Implementation on Employee Productivity*

The results of the T-test show that the implementation of KPIs has a significant effect on employee productivity. This indicates that a clear, transparent, and measurable KPI

system can help employees understand work expectations and encourage them to achieve more optimal results.

c. *The Influence of Leadership Style on Employee Productivity*

Leadership style also has a significant influence on employee productivity. This shows that effective leadership can provide motivation, direction, and support that have a positive impact on employee performance in the organization.

d. *The Influence of Work Motivation on Employee Productivity*

Unlike the two previous variables, the results of the study show that work motivation does not have a significant effect on employee productivity. This finding suggests that there are other factors that are more dominant in determining productivity, such as the work environment, reward system, or organizational policies implemented.

BIBLIOGRAPHY

Akshatha, P. S., Shankar, P., Danoosh, R. S., Basu, S., Rohit, V. S., & Bindu, S. (2024). Revolutionizing HRM: A comprehensive survey on AI-integrated motivational enhancement through KPIs. *Proceedings of ICCCNT*, 1–7. https://doi.org/10.1109/icccnt61001.2024.10725850

Bai, R., & Hemalatha, K. (2024). Effect of employee motivation on work performance - With special reference to leading firms in Chennai. *ComFin Research, 12*(3), 31–34. https://doi.org/10.34293/commerce.v12i3.7823

Chmutova, I., Zhang, Q., Mazhuta, V., & Nimets, A. (2024). Formulating key performance indicators for an integrated enterprise management system using a sustainable development balanced scorecard. *Digital Science & Innovation Management*. https://doi.org/10.31891/dsim-2024-6(43)

Farantika, E. D., Maulida, D. N., Lestari, T. W., Azzahra, E. Y., Ghifari, I. M., Widya, A. N., Qurratul'ain, S., & Sunarti, S. (2024). The impact of motivation on work assessment in organizations. *Jurnal Transformasi Digital Bisnis, 1*(4), 108–119. https://doi.org/10.61132/jutrabidi.v1i4.241

Fatah, A. A. (2024). Employee productivity optimization through training, discipline, and work motivation. *Deleted Journal, 3*(1), 10–18. https://doi.org/10.37481/jko.v3i1.127

Florencondia, N. T., Ladignon, C. M., & Muldong, R. M. C. (2024). Enhancing performance metrics: A Google Looker Studio approach to key performance indicator (KPI) management system for Homecorp offshore drafting team. *Engineering and Technology Journal, 09*(05). https://doi.org/10.47191/etj/v9i05.25

Grafton, J. (2024). Performance measurement, strategy, and strategic change. *Business Strategy & Performance Studies,* 186–210. https://doi.org/10.4337/9781803920672.00020

Heriawan, H., & Sari, N. (2024). The influence of work motivation on employee performance at PT. Kopenba job site engineering and manufacturing Tanjung Enim. *Journal of Management, 12*(3), 299–308. https://doi.org/10.36546/jm.v12i3.1297

Ibrahim, I., & Zainal Abiddin, N. (2024). Unlocking employee potential through motivation workplace dynamics and incentives: A holistic approach to driving productivity. *Edelweiss Applied Science and Technology, 8*(6), 3039–3047. https://doi.org/10.55214/25768484.v8i6.2643

Khawaja, S., & Karimi, H. (2024). Exploring factors influencing work productivity: A qualitative case study of employee motivation and leadership practices. *Edelweiss Applied Science and Technology, 8*(4), 727–736. https://doi.org/10.55214/25768484.v8i4.1451

Kulkarni, K. M., Arati, B., Mitra, H., Veeresh, K., Asha, A., Shweta, S., & Shiba, S. (2024). Enhancing employee engagement and productivity with AI. *Journal of Business Innovation, 13*(9), 188–193. https://doi.org/10.35629/8028-1309188193

Mtau, T. T., & Rahul, N. A. (2024). Optimizing business performance through KPI alignment: A comprehensive analysis of key performance indicators and strategic objectives. *American Journal of Industrial and Business Management, 14*(01), 66–82. https://doi.org/10.4236/ajibm.2024.141003

Pandey, K. K. (2024). The study on the impact of performance management system on employee performance. *Indian Scientific Journal of Research in Engineering and Management, 08*(04), 1–5. https://doi.org/10.55041/ijsrem32628

Prahasyila, T. A., Tanuwijaya, J., & Gunawan, A. W. (2024). The role of work motivation, workload, and competency in influencing employee performance through job satisfaction. *Journal of Syntax Transformation*. https://doi.org/10.46799/jst.v5i8.996

Rachmawati, E., Sumartono, E., Rini, A. S., Wiliana, E., & Faqih, M. (2024). The interplay between employee motivation, work-life balance, and job satisfaction in enhancing workplace productivity. *Global International Journal of Innovative Research, 2*(6), 1383–1396. https://doi.org/10.59613/global.v2i6.211

Ragavee, U., Jasmin, D. K. S. S., & Sundaram, A. (2024). Smart workforce: Enhancing employee productivity with real-time data analytics. *International Conference Proceedings*, 748–755. https://doi.org/10.1109/i-smac61858.2024.10714851

Sari, E. W., Kristanto, Y., & Army, W. L. (2024). The influence of work motivation on the work productivity of PT employees. GS Battery Karawang. *JISIP (Journal of Social Sciences and Education), 8*(3), 2077. https://doi.org/10.58258/jisip.v8i3.7227

Semenenko, Y. (2024). Роль KPI та OKR в ефективності діяльності компанії. *Вісник Хмельницького Національного Університету, 324*(6), 227–235. https://doi.org/10.31891/2307-5740-2023-324-6-37

Silva, F., & Spala, S. T. (2024). Verification and study of methodologies for determining goals for productive indicators. *Brazilian Journal of Production Engineering - BJPE, 10*(3), 142–152. https://doi.org/10.47456/bjpe.v10i3.45023

Sorokina, L. (2023). The influence of KPIs in personnel motivation on the economic security of the enterprise. *Economic Studies Journal, 4*(36), 147–151. https://doi.org/10.25634/mirbis.2023.4.17

Sudaryanto, S. (2024). The role of KPI in driving employee performance and organizational productivity. *Journal of Management and Business Economics, 1*(2), 61–72. https://doi.org/10.61132/jimakebidi.v1i2.67

Sukandi, A., Sofiati, N. A., & Sudaryo, Y. (2019). Implementation of digital marketing to increase customer satisfaction and impact on the image of banking institutions (A survey on national banking institutions). *Sosiohumaniora-Journal of Social Sciences and Humanities, 21*(3), 355–364.