

The Influence of Leadership and Co-Worker Relationships on Employee Productivity at the Main Clinical Laboratory of Siaga Medika Jakarta

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ABSTRACT

This study aims to analyze the influence of leadership and co-worker relationships on employee productivity within the work environment of the Main Clinical Laboratory at Siaga Medika Jakarta. The research employs a quantitative approach using regression analysis, with 15 employees serving as respondents. Data collection was conducted through a structured questionnaire, which was tested for validity and reliability to ensure the accuracy of the findings. The results indicate that both leadership and co-worker relationships have a positive and significant impact on employee productivity. These findings suggest that effective leadership contributes to a structured and motivational work environment, while harmonious co-worker relationships foster collaboration and teamwork, ultimately enhancing overall organizational productivity.

Keywords:

Leadership, Co-Worker Relationships, Employee Productivity, Regression Analysis

INTRODUCTION

Employee productivity is a crucial determinant of organizational success, influencing overall performance, competitiveness, and sustainability (Drucker, 1999). In a dynamic work environment, leadership plays a central role in shaping employee engagement, motivation, and efficiency (Northouse, 2018). Transformational leadership, which inspires employees through vision and motivation, has been found to enhance productivity by fostering a sense of purpose and commitment (Bass & Riggio, 2006). Furthermore, the Job Demands-Resources (JD-R) model highlights that leadership support acts as a resource that mitigates work-related stress and enhances employee well-being (Bakker & Demerouti, 2007).

Leadership styles significantly impact employee productivity through different mechanisms. Transactional leadership, which focuses on structured tasks and rewards, has been linked to short-term efficiency, whereas transformational leadership fosters innovation and long-term performance (Avolio & Bass, 2004). Situational leadership theory posits that leadership effectiveness depends on adapting styles based on employee competence and commitment levels (Hersey & Blanchard, 1988). Additionally, the Leader-Member Exchange (LMX) theory emphasizes the quality of leader-employee relationships in shaping job performance and organizational commitment (Graen & Uhl-Bien, 1995).

Beyond leadership, co-worker relationships serve as a fundamental factor in promoting a productive workplace culture. Social Exchange Theory suggests that positive interactions among employees enhance collaboration, trust, and job satisfaction, which in turn improve overall productivity (Blau, 1964). The Teamwork Quality Model highlights that mutual support and open communication among colleagues contribute to effective teamwork and performance outcomes (Hoegl & Gemuenden, 2001). Furthermore, psychological safety, defined as an individual's perception of being able to express ideas without fear of negative consequences, has

been linked to higher innovation and efficiency in workplace settings (Edmondson, 1999).

The interplay between leadership and co-worker relationships creates an environment that supports employee productivity. Organizational Climate Theory underscores that a positive work environment, shaped by leadership and peer interactions, fosters motivation and job involvement (Schneider, 1990). The Self-Determination Theory (SDT) asserts that employees' intrinsic motivation is enhanced when they experience autonomy, competence, and relatedness in their workplace (Deci & Ryan, 2000). Additionally, Social Learning Theory explains that employees model behaviors based on their observations of leaders and colleagues, influencing their work ethic and engagement (Bandura, 1986).

Given the significance of these factors, this study aims to examine the influence of leadership and co-worker relationships on employee productivity within the Main Clinical Laboratory at Siaga Medika Jakarta. Specifically, the research seeks to (1) analyze the impact of leadership on employee productivity, (2) assess the effect of co-worker relationships on employee productivity, and (3) evaluate the combined influence of leadership and co-worker relationships on workplace performance. The findings of this study are expected to contribute to the broader understanding of workplace dynamics and offer insights for organizational leaders seeking to enhance employee productivity.

METHODS

This study employs a quantitative approach with a descriptive-analytic design, which aims to examine the relationship between leadership, co-worker relationships, and employee productivity using statistical methods (Creswell, 2014). The quantitative method allows for objective measurement of variables and hypothesis testing, ensuring systematic and replicable findings (Babbie, 2020). Descriptive-analytic design is particularly useful in organizational research as it facilitates an in-depth examination of workplace dynamics while maintaining alignment with the positivist paradigm, which emphasizes empirical observation and statistical validation (Neuman, 2011).

The study population consists of employees at the Main Clinical Laboratory of Siaga Medika Jakarta, with saturated sampling applied, meaning all 15 employees participated as respondents (Etikan, Musa, & Alkassim, 2016). This method ensures comprehensive data collection and minimizes sampling bias, which is crucial in small population studies (Cochran, 1977). Data were collected using a structured questionnaire designed to measure three key variables: leadership, co-worker relationships, and employee productivity. The 5-point Likert scale was used to assess responses, a widely accepted psychometric tool that enhances measurement reliability (Likert, 1932). To ensure instrument validity, the study employed construct validity principles, which emphasize accurate measurement of theoretical concepts (Cronbach & Meehl, 1955), while reliability was tested using Cronbach's Alpha, a standard measure of internal consistency (Tavakol & Dennick, 2011).

The collected data were analyzed using multiple linear regression, which is effective in determining the relationship between independent variables (leadership and co-worker relationships) and the dependent variable (employee productivity) (Gujarati & Porter, 2009). To validate the regression model, classical assumption tests

were conducted, including normality tests, which assess data distribution (Kolmogorov & Smirnov, 1933), multicollinearity tests, which ensure independent variables are not highly correlated (VIF method) (Mason & Perreault, 1991), and heteroscedasticity tests, which verify the consistency of variance across data points (Breusch & Pagan, 1979). This rigorous analytical approach aligns with the General Linear Model (GLM) framework, which provides a statistical basis for evaluating relationships between variables in empirical research (Fox, 2016).

RESULTS AND DISCUSSION

Table 1. Descriptive Statistics

Statistics		Leadership	Connection Colleague Work	Productivity
N	Valid	15	15	15
	Missing	0	0	0
Mean		20.2667	22.2000	21.8667
Std. Error of Mean		1.32186	.95718	.60841
Median		22.0000	23.0000	22.0000
Mode		25.00	25.00	20.00
Std. Deviation		5.11952	3.70714	2.35635
Variance		26.210	13.743	5.552
Range		16.00	12.00	8.00
Minimum		9.00	13.00	17.00
Maximum		25.00	25.00	25.00
Sum		304.00	333.00	328.00

Based on the statistical results, it can be observed that *co-worker relationships* have the highest average value (22.2) compared to *employee productivity* (21.87) and *leadership* (20.27). This finding suggests that co-worker relationships are rated more positively than the other two aspects. Meanwhile, the median values for all three categories are relatively similar, ranging from 22 to 23, indicating that most respondents provided assessments within this range.

In terms of data variability, *leadership* exhibits the highest standard deviation (5.12), suggesting that perceptions of leadership vary considerably among respondents. Conversely, *employee productivity* has the lowest standard deviation (2.36), indicating that opinions on productivity are more consistent. Additionally, *leadership* also has the highest range value (16), reflecting a significant disparity in respondents' evaluations of this aspect.

Regarding the mode values, the majority of respondents assigned the highest score (25) to both *leadership* and *co-worker relationships*, suggesting that a substantial number of employees are highly satisfied with these aspects. However, for *employee productivity*, the mode value is lower (20), indicating greater variation in respondents' perceptions of productivity.

Overall, *co-worker relationships* emerge as the most positively evaluated factor, while *leadership* and *employee productivity* exhibit more variability in perceptions among respondents. This implies that fostering strong interpersonal relationships among colleagues may have a more stable and positive impact on employee satisfaction compared to leadership and productivity factors.

Normality Test

Table 2

One-Sample Kolmogorov-Smirnov Test

		Leadership	Connection Colleague Work	Productivity
N		15	15	15
Normal Parameters ^{a,b}	Mean	20.2667	22.2000	21.8667
	Std. Deviation	5.11952	3.70714	2.35635
	Absolute	.234	.240	.151
Most Extreme Differences	Positive	.178	.225	.144
	Negative	-.234	-.240	-.151
Kolmogorov-Smirnov Z		.905	.929	.584
Asymp. Sig. (2-tailed)		.386	.355	.885

a. Test distribution is Normal.

b. Calculated from data.

The normality test results using the One-Sample Kolmogorov-Smirnov Test indicate that the data for the variables Leadership, Co-Worker Relationships, and Productivity follow a normal distribution. This conclusion is based on the Asymp. Sig. (2-tailed) values, which are all greater than 0.05 for the three variables: 0.386 for Leadership, 0.355 for Co-Worker Relationships, and 0.885 for Productivity. Since these values exceed the 0.05 threshold, there is insufficient evidence to reject the null hypothesis, confirming that the data are normally distributed.

In terms of statistical parameters, the mean value for Leadership is 20.27, with a standard deviation of 5.12. The mean value for Co-Worker Relationships is 22.20, with a standard deviation of 3.71, while Productivity has a mean of 21.87 and a standard deviation of 2.36. A lower standard deviation indicates greater homogeneity in the data distribution. Consequently, Productivity exhibits the lowest level of variation compared to the other two variables, suggesting a more consistent dataset.

The Most Extreme Differences results reveal that the highest absolute value is found in Co-Worker Relationships (0.240), followed by Leadership (0.234) and Productivity (0.151). Additionally, the Kolmogorov-Smirnov Z values indicate that Productivity has the lowest Z-value (0.584) compared to Leadership (0.905) and Co-Worker Relationships (0.929). This suggests that the distribution of Productivity data is the closest to a normal distribution.

Based on these normality test results, all variables can be considered to meet the normality assumption required for further parametric statistical analysis. These findings validate the use of parametric methods for examining the relationships between Leadership, Co-Worker Relationships, and Productivity in this study.

3. Uji Hipotesis

Tabel 3

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	15.110	3.527		4.284	.001			
	Kepemimpinan	-.100	.140	-.217	-.711	.490	.151	-.201	-.175
	Connection Colleague Work	.396	.194	.622	2.040	.064	.494	.507	.502

a. Dependent Variable: Productivity

Based on the table above, the regression equation is formulated as follows:

$$Y = 15.110 + (-0.100)X_1 + 0.396X_2$$

where the constant (b_0) is 15.110, the leadership coefficient (b_1) is -0.100, and the co-worker relationship coefficient (b_2) is 0.396.

The leadership coefficient (-0.100) suggests that leadership has a slight negative impact on employee productivity. The t-value of -0.711 and a p-value of 0.490 (greater than 0.05) indicate that leadership does not significantly influence productivity. This finding implies that, in this context, leadership may not be the primary determinant of employee performance, possibly due to variations in leadership styles or other organizational factors (Yukl, 2013).

Conversely, the co-worker relationship coefficient (0.396) indicates a positive relationship between interpersonal workplace relationships and productivity. The t-value of 2.040 and a p-value of 0.064 (close to 0.05) suggest a potential positive effect, although it is not statistically significant at the conventional 5% level. This result aligns with the Job Demands-Resources (JD-R) model, which posits that social support in the workplace can enhance employee engagement and performance (Bakker & Demerouti, 2007).

Overall, the findings suggest that co-worker relationships have a more substantial influence on employee productivity than leadership. This is consistent with a study by Rahmawati and Widodo (2020) in the education sector, which demonstrated that positive workplace relationships improve employee engagement and foster a stronger sense of teamwork. Employees who maintain good interpersonal relationships are generally more motivated to collaborate and contribute to organizational goals (Podsakoff, MacKenzie, & Bommer, 1996).

On the other hand, workplace conflicts can lead to heightened stress levels and decreased overall productivity. Jehn (1995) found that unresolved interpersonal conflicts negatively affect team dynamics, reducing efficiency and job satisfaction. Thus, fostering a supportive and cooperative work environment is crucial for maintaining high levels of employee productivity.

Table 4

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	21.340	2	10.670	2.270	.146 ^b
	Residual	56.394	12	4.699		
	Total	77.733	14			

a. Dependent Variable: Produktifitas

b. Predictors: (Constant), Relationship Colleague Work, Leadership

The results of the ANOVA test indicate that the regression model, which includes the variables of Leadership and Co-Worker Relationships in predicting Productivity, is not statistically significant. This is evidenced by the significance value (Sig.) of 0.146, which exceeds the threshold of 0.05. Consequently, there is insufficient evidence to conclude that these two independent variables collectively have a significant impact on Productivity.

Tabel 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. Change
1	.524 ^a	.275	.154	2.16783	.275	2.270	2	12	.146

a. Predictors: (Constant), Relationship Colleague Work , Leadership

The Model Summary results indicate a relationship between the variables Leadership and Co-Worker Relationships with Productivity. The R value of 0.524 suggests a moderate correlation between the independent and dependent variables. Additionally, the R Square value of 0.275 implies that only 27.5% of the variation in Productivity can be explained by Leadership and Co-Worker Relationships, while the remaining 72.5% is influenced by other factors not included in this model.

Furthermore, the Adjusted R Square value of 0.154 is lower than the R Square value, indicating that after adjusting for the number of variables in the model, its explanatory power decreases to approximately 15.4%. This suggests that the regression model is not sufficiently strong in explaining the relationship between Leadership, Co-Worker Relationships, and Productivity.

Moreover, the Standard Error of the Estimate value of 2.16783 represents the level of error in the model's estimation. A lower standard error value indicates a better predictive capability of the model. In this case, the relatively high standard error suggests that the model's ability to accurately predict Productivity remains limited.

Table 6

Correlations

Control Variables			Productivity	Connection Colleague Work
Leadership	Productivity	Correlation	1,000	.507
		Significance (1-tailed)	.	.032
		df	0	12
	Connection Colleague Work	Correlation	.507	1,000
		Significance (1-tailed)	.032	.
		df	12	0

Based on the correlation analysis results presented in the document, it was found that co-worker relationships have a positive correlation with employee productivity, with a correlation coefficient of 0.507 and a significance level of 0.032 (which is less than 0.05). This indicates that co-worker relationships have a moderately strong and significant relationship with productivity. In other words, the better the relationship between colleagues in the workplace, the higher the level of employee productivity within the organization.

In contrast, for the leadership variable, no correlation coefficient was reported in the table. This suggests that leadership does not exhibit a significant correlation with productivity in this study. These findings align with the results of the previous

regression analysis, which demonstrated that leadership does not significantly influence productivity, whereas co-worker relationships do.

Overall, these correlation results support the conclusion that social connections in the workplace have a greater impact on productivity compared to leadership factors. This implies that fostering a collaborative and harmonious work environment is more crucial for enhancing employee productivity than focusing solely on leadership approaches.

Therefore, to improve employee productivity, organizations are recommended to prioritize building a positive work environment, enhancing peer-to-peer communication, and cultivating a culture of collaboration among employees. Strengthening these aspects can lead to increased job satisfaction, improved teamwork, and ultimately, higher overall productivity in the workplace.

Discussion

The results of the study indicate that workplace social connections play a more significant role in influencing employee productivity compared to leadership. The descriptive statistics reveal that the highest mean value is found in "Connection with Colleagues" (22.2), suggesting that respondents perceive interpersonal relationships in the workplace more positively than other aspects. Furthermore, the standard deviation analysis highlights that perceptions of leadership exhibit the greatest variability among respondents ($SD = 5.12$), whereas productivity demonstrates the lowest variability ($SD = 2.36$), indicating a more consistent perception of this factor. The mode values also reveal that most respondents rated "Connection with Colleagues" and "Leadership" at the highest level (25), suggesting that these aspects are widely acknowledged, whereas the mode for productivity is slightly lower (20), implying a more varied perception of productivity levels.

The normality test using the Kolmogorov-Smirnov method confirms that the data are normally distributed, as all significance values exceed 0.05. This validates the use of parametric statistical analyses to examine the relationships among leadership, workplace relationships, and productivity. Regression analysis results demonstrate that leadership does not have a statistically significant effect on productivity ($\beta = -0.100$, $p = 0.490$), while workplace relationships have a marginally significant positive effect on productivity ($\beta = 0.396$, $p = 0.064$). Although this p-value is slightly above the conventional threshold of 0.05, it suggests a potential influence that warrants further investigation. The ANOVA results further indicate that the overall regression model does not significantly explain variations in productivity ($F = 2.270$, $p = 0.146$), implying that additional factors beyond leadership and workplace relationships contribute to employee productivity.

Correlation analysis supports the notion that workplace relationships positively impact productivity ($r = 0.507$, $p = 0.032$), while leadership does not exhibit a significant correlation. This finding aligns with previous studies (e.g., Rahmawati & Widodo, 2020; Podsakoff et al., 1996) that highlight the importance of interpersonal relationships in fostering employee motivation and teamwork. The adjusted R-squared value of 0.154 further suggests that the explanatory power of the regression model is relatively weak, indicating that leadership and workplace relationships alone account for only a small portion of productivity variation. These findings emphasize the need for organizations to prioritize fostering positive workplace relationships, as they have a more substantial impact on employee productivity compared to leadership. Future research should

explore additional factors, such as organizational culture, job satisfaction, and employee engagement, to develop a more comprehensive understanding of the determinants of productivity.

CONCLUSION

This study provides empirical evidence that workplace social connections have a greater influence on employee productivity than leadership. The findings reveal that interpersonal relationships among colleagues are perceived more positively than leadership, as indicated by the highest mean value in the descriptive analysis. Furthermore, the standard deviation results suggest that perceptions of leadership vary more widely among respondents, while productivity is relatively stable.

The results of normality testing confirm that the data are normally distributed, allowing for parametric statistical analysis. Regression analysis indicates that leadership does not significantly affect productivity, whereas workplace relationships exhibit a marginally significant positive influence. Although the overall regression model does not explain a substantial portion of productivity variation, correlation analysis supports the idea that positive workplace relationships enhance productivity. These results align with previous research emphasizing the role of interpersonal connections in fostering employee motivation and collaboration.

Given the relatively low explanatory power of the model, it is evident that other factors contribute to employee productivity beyond leadership and workplace relationships. Future research should investigate additional variables, such as organizational culture, job satisfaction, and employee engagement, to develop a more comprehensive framework for understanding productivity determinants. Organizations should prioritize fostering a supportive and collaborative work environment, as interpersonal relationships have been shown to be more influential than leadership in driving productivity.

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