

# THE EFFECT OF LEADER-MEMBER EXCHANGE, MANAGERIAL SUPPORT, AND WORK ENVIRONMENT ON EMPLOYEE PERFORMANCE THROUGH THE MEDIATION OF WORK MOTIVATION IN THE MILLENNIAL GENERATION AND GENERATION Z AT PT PABRIK KERTAS TJIWI KIMIA TBK

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## Abstract

This research is motivated by the performance dynamics of Millennial and Generation Z employees in the paper production division of PT Pabrik Kertas Tjiwi Kimia Tbk. As younger employees tend to value supportive communication, organizational attention, and a comfortable work environment, it becomes important to understand how Leader–Member Exchange (LMX), managerial support, and the work environment influence their motivation and performance. This study examines the effects of these variables on employee performance, with work motivation positioned as a mediating factor. Leader–Member Exchange (LMX) reflects the quality of reciprocal interactions between supervisors and employees. Managerial support is viewed through the lens of Perceived Organizational Support (POS), which highlights employees' perceptions of how much the organization and supervisors value and support them. The work environment is analyzed based on ergonomic and industrial psychology perspectives, emphasizing physical comfort, safety, and psychological conditions. Work motivation is grounded in Self-Determination Theory (SDT), which explains how the fulfillment of autonomy, competence, and relatedness drives individuals to perform optimally. A quantitative approach using Partial Least Squares–Structural Equation Modeling (PLS-SEM) was employed. The study involved a population of 466 Millennial and Gen Z employees in the production division, from which 218 respondents were selected through simple random sampling. Data were collected using a Likert-scale questionnaire and tested for validity and reliability through convergent validity, discriminant validity, composite reliability, and Cronbach's Alpha. Hypotheses were evaluated through outer and inner model assessments and bootstrapping procedures. The findings reveal that LMX and managerial support do not have a significant direct effect on employee performance. However, both variables show a significant positive influence on work motivation. The work environment significantly influences both motivation and performance. Work motivation itself significantly contributes to performance and mediates the relationship between the independent variables and performance. These results indicate that for Millennial and Gen Z employees, motivation plays a crucial role in translating workplace relationships, managerial support, and environmental conditions into improved performance. Theoretically, this research reinforces the relevance of Leader–Member Exchange Theory, Perceived Organizational Support Theory, ergonomic and industrial psychology concepts, and Self-Determination Theory in understanding younger employees in manufacturing settings. Practically, the study suggests that companies should enhance employee performance by strengthening supervisor–employee relationships, improving organizational support, and optimizing ergonomically sound and psychologically supportive work environments.

**Keywords:** *Leader-Member Exchange (LMX), Managerial support, Work Environment, Employee Performance, Work Motivation*

## INTRODUCTION

The era of globalization and the development of the Industrial Revolution 4.0 have brought significant changes to the business world and human resource management. Companies are required to manage human resources effectively and strategically to compete in a dynamic environment (Mangkunegara, 2017). Industrial disruption and rapid organizational transformation have made improving human resource performance a primary

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focus in modern management practices. Employee performance is a key indicator of organizational success, particularly in the manufacturing sector, which relies heavily on workforce productivity (Robbins & Judge, 2017). Fierce global competition and the need for operational efficiency demand strategic and measurable employee performance management. In line with this, it is crucial to examine the industry and organizational context holistically. Amidst increasingly fierce global competition, manufacturing companies are required not only to excel in technology and production efficiency, but also in adaptive and highly competitive human resource management. The manufacturing sector is the economic backbone of many developing countries, including Indonesia. The performance of the sector's workforce directly impacts national output, export competitiveness, and regional economic stability. Data from the second quarter of 2025 show that the manufacturing sector grew by 5.60% and contributed 16.92% to GDP, confirming the critical role of human resource quality in achieving industrial performance (Ministry of Industry, 2025).

The dominance of millennials and Generation Z in the workforce adds to the complexity of managerial challenges. According to data from the Central Statistics Agency (2025), the Indonesian workforce in February 2025 will reach 153.05 million people, of which approximately 60% are from the millennial and Z generations. The unique characteristics of this generation, such as the need for flexibility, digital skills, and transparent communication, also shape their work patterns and interactions within the organizational environment (Ng & Parry, 2016; Amrullah, Perkasa, & Edward, 2020; Febriana & Mujib, 2024; Muchtar, 2024). Therefore, human resource management strategies need to be adjusted to optimize the potential and performance of the younger generation in the workplace. This situation emphasizes the importance of understanding the factors that influence employee performance so that organizational productivity can be maintained sustainably.

The quality of employee performance can be influenced by internal and external factors. Internal factors, including motivation, competence, and psychological well-being, are key determinants of an employee's ability to achieve work targets. Alfonso (2025) emphasized that in the context of manufacturing companies, motivated employees tend to be more proactive, productive, and able to cope better with work pressure. A Gallup survey (2025) revealed that employees who feel cared for, receive clear direction, and are given opportunities for development have higher levels of engagement and motivation. McKinsey (2024) also supports this finding, stating that companies that emphasize setting specific performance goals, providing regular feedback, and focusing on the human factor successfully drive superior productivity and performance. Therefore, attention to internal factors is crucial for improving employee performance in the competitive manufacturing sector.

External factors are also highly influential, as conditions outside the individual can impact productivity and work effectiveness (Robbins & Judge, 2019). Physical work environments, such as lighting, ventilation, and noise, can determine employee comfort at work (Cole, 2020). Furthermore, a Dell Technologies report (Business Insider, 2025) emphasized that creating a conducive work environment plays a crucial role in improving employee satisfaction and performance. Company policies and work-related pressures are also external factors that impact employees' ability to achieve work targets (Dessler, 2020). This demonstrates that managing external factors, both physical and social, is crucial to optimally supporting employee performance. Thus, the quality of employee performance is influenced by both internal competencies and external factors that shape the work context (Armstrong, 2020).

PT Pabrik Kertas Tjiwi Kimia Tbk (PT Tjiwi Kimia) as a large-scale manufacturing company in Indonesia, faces challenges in managing its workforce, especially the young workforce, namely the millennial and Z generations, who are projected to dominate the organizational structure in the next few years. Under the auspices of the Sinar Mas Group and part of the Asia Pulp & Paper (APP) Group, the company employs more than 5,000 permanent employees with a complex and dynamic organizational structure. Although the financial condition is relatively stable, there are variations in employee performance that require more attention in development, training, and motivation strategies. This shows that the effectiveness of human resource management is a critical factor in determining the overall operational success of the company.

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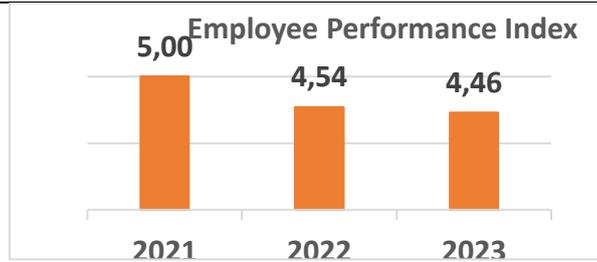


Figure 1 Employee Performance Index 2021-2023

Based on the data in Figure 1, the Employee Performance Index peaked in 2021, but declined by 9.2% in 2022 and continued to decline to 10.8% in 2023. This downward trend indicates challenges in maintaining productivity and work effectiveness. Therefore, a more in-depth analysis of the factors influencing employee performance is necessary to develop an appropriate and effective human resource development strategy.

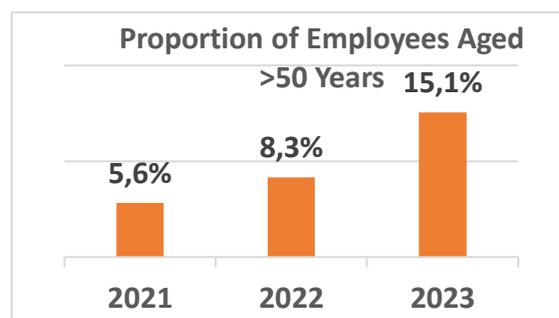


Figure 2 Proportion of Employees 2021-2023

Source: Tjiwi Kimia Sustainability Report

Figure 2 shows a sharp increase in the number of employees aged over 50, from 299 (5.6%) in 2021 to 434 (8.3%) in 2022, and reaching 780 (15.1%) in 2023. This phenomenon indicates an aging workforce that can impact overall productivity and work effectiveness. A study by Roziq et al. (2024) emphasized that the aging of Indonesia's productive population can increase dependence on the working-age group, thus requiring adaptive policies in human resource management. As the workforce ages, millennials and Generation Z are expected to increasingly dominate the workforce in the coming years. These generations possess distinct characteristics related to flexibility, technology, and the work environment. This aligns with the opinions of several production managers who state that younger employees tend to prefer efficient work methods and value work-life balance. Consistent with this, research by Nurjanah and Indrawati (2021) shows that work-life balance and job satisfaction positively influence the performance of millennial and Generation Z employees. This situation demands adaptive human resource management strategies, particularly in preparing for the regeneration of a younger workforce to maintain leadership continuity, operational stability, and long-term business sustainability.

PT Tjiwi Kimia has implemented a structured human resource management system through career development programs, annual performance management, and incentive schemes to boost employee motivation and productivity. These efforts demonstrate the company's commitment to maintaining the quality of employee performance on an ongoing basis. However, with the increasing proportion of the older workforce, the effectiveness of existing strategies requires a more in-depth evaluation. This is crucial for the company to design a more targeted approach, particularly in retaining and improving the performance of millennial and Gen Z employees, who will play a role in the future sustainability of the organization. One relevant approach in human resources research is to examine the role of leader-member exchange (LMX), managerial support, and the work environment as factors influencing employee motivation and performance. A quality relationship between leaders and team members in LMX can have a positive influence on intrinsic motivation and employee performance (Xue et al., 2022). Strong managerial support plays a crucial role in enhancing perceptions of organizational justice, building trust in management, and fostering employee loyalty and engagement (Mubashar et al., 2022), while a positive work environment promotes work comfort and efficiency (Nitisemito, 2018). This relationship conceptually illustrates the complexity of the interaction between structural, behavioral, and psychological factors within organizations, thus requiring comprehensive and contextual scientific exploration.

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Therefore, the novelty of this study lies in comprehensively examining the influence of Leader-Member Exchange (LMX), managerial support, and work environment on employee performance, with work motivation as a mediating variable rarely studied in a single model. The focus of this study is directed at millennial and generation Z employees, who have unique characteristics and have received little attention in the human resource management literature. This study also fills a research gap that is largely limited to the government, health, and education sectors. By presenting empirical evidence at PT Tjiwi Kimia, a large-scale manufacturing company in Indonesia, this study can broaden academic understanding of the factors that influence employee performance, while providing practical insights and new perspectives on managing millennials and generation Z in the manufacturing sector.

In this study, the grand theory used to explain the relationship between leader-member exchange, managerial support, work environment, work motivation, and employee performance is a multi-theoretical approach rooted in four complementary main theories. These theories were chosen because each provides a strong conceptual foundation in explaining the variables involved, while also being relevant to the empirical context in the manufacturing sector such as PT Tjiwi Kimia. First, the Leader-Member Exchange (LMX) Theory, developed by Graen & Uhl-Bien (1995) and Liden and Maslyn (1998), emphasizes the quality of the relationship between the leader and each individual team member. A good relationship is characterized by trust, support, and effective two-way communication. Leaders who are able to build positive interactions tend to provide greater attention, guidance, and development opportunities to their subordinates, thus triggering improved performance. In an organizational context, LMX explains that differences in relationship quality can affect employee motivation and work outcomes, where strong relationships will encourage good commitment and productivity.

Second, the Perceived Organizational Support (POS) theory introduced by Eisenberger et al. (1986) is used to explain the extent to which employees' perceptions of organizational attention and rewards can influence their motivation and work commitment. Based on the principles of social exchange theory by Blau (1964), this theory assumes that employees will reciprocate organizational support by increasing their loyalty and work performance. Therefore, this theory is highly relevant to support the analysis of the influence of managerial support on employee motivation and performance in this study. Third, Ergonomics Theory and Industrial Psychology are used to explain the influence of the work environment, both physical and psychosocial, on workforce well-being and productivity. Ergonomics theory emphasizes the importance of workplace design that suits human capacity, while industrial psychology highlights psychological factors such as job stress, social interactions, and perceptions of fairness as important determinants of work behavior (Bedny & Bedny, 2018; Neag et al., 2020). In this study, these theories provide a theoretical framework for understanding how an un-ergonomic or psychologically unsupportive work environment can reduce motivation and performance.

Fourth, as a conceptual link between the independent and dependent variables, Self-Determination Theory (SDT) developed by Deci and Ryan (1985; 2012) is used. SDT explains that work motivation will be optimal if an individual's basic psychological needs—autonomy, competence, and social connectedness—are met. In this context, work motivation is positioned as a mediating variable that bridges the influence of leader-member exchange, managerial support, and the work environment on employee performance. When the work environment and superior-subordinate relationships create space for autonomy, support, and recognition of employee competence, intrinsic motivation will increase, which will ultimately have a positive impact on work output. The integration of these four theories provides a solid theoretical foundation to answer the research questions. The leader-member exchange theory explains how quality relationships between leaders and team members can enhance motivation and individual potential within an organization. The organizational support theory emphasizes the importance of employee perceptions of the organization. Ergonomics and industrial psychology provide perspectives on the work environment as a stimulus for work behavior. Self-determination theory explains how all these stimuli interact within a motivational framework to produce optimal performance. Therefore, these four theories are not only individually relevant but also complement each other to provide a holistic understanding of the phenomena studied within the context of large organizations.

## LITERATURE REVIEW

### Employee Performance

Employee performance is the level of ability and effort of employees in the Tjiwi Kimia paper production department in completing their tasks and responsibilities according to production targets, quality standards, and factory operational procedures. This performance includes the ability to complete work, work attitude, and contribution to the smooth running of the overall production process. According to Koopmans et al. (2014),

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employee performance can be measured through 3 indicators, namely task performance (the ability to complete main tasks according to job descriptions), contextual performance (extra behaviors such as helping coworkers, working together, and supporting the organizational climate), and counterproductive work behavior.

## Leader-Member Exchange (LMX)

Leader-Member Exchange (LMX) is the quality of the relationship between managers and paper production employees at Tjiwi Kimia, encompassing communication, trust, and support in daily work processes. According to Liden et al. (1998), LMX can be measured through four dimensions: affect (emotional closeness), loyalty (mutual loyalty), contribution (participation in supporting the achievement of organizational goals), and professional respect (appreciation for the leader's competence and professionalism).

## Managerial Support (MS)

Managerial support refers to the attention, guidance, and provision of resources by managers to paper production employees at Tjiwi Kimia to help achieve production targets. According to Eisenberger et al. (1986), managerial support can be measured through a number of items reflecting the extent to which superiors care about the welfare of their subordinates, value their contributions, and provide assistance when needed such as Organizational Membership, Performance Appreciation, Consideration of Goals, Employee Well-being, Job Retention, Recognition, Fairness, Career Development, Work Support, Organizational Commitment, dan Job Satisfaction.

## Work Environment (WE)

The work environment is the physical, social, and psychological conditions within Tjiwi Kimia's paper production department that influence employee motivation, engagement, and performance. These conditions include interactions with coworkers, managerial support, work facilities, and clear procedures and policies. According to Patrick et al. (2021), the work environment can be measured using nine main aspects, including ethical dimensions, work autonomy, work pressure and workload, managerial practices, superior support, organizational commitment, role clarity, social responsibility, and cohesion among coworkers. These aspects are used to assess the extent to which working conditions support employee effectiveness.

## Work Motivation (WM)

Work motivation is an internal and external drive that influences employee behavior, effort, and goal achievement in the Tjiwi Kimia production department. Motivational factors can stem from personal satisfaction at work, rewards, or recognition from superiors and the team. According to Tremblay et al. (2009), work motivation can be measured through six indicators: intrinsic motivation, integrated regulation, identified regulation, introjected regulation, external regulation, and amotivation.

## METHOD

### Research Design

This study uses a quantitative approach with explanatory research, aiming to explain the causal relationship between leader-member exchange (LMX), managerial support, and work environment variables on employee performance, with work motivation as a mediating variable. This approach was chosen because it can empirically test hypotheses and measure the influence between variables through inferential statistical analysis. The analysis model used was Partial Least Squares-Structural Equation Modeling (PLS-SEM). This method was chosen because it is suitable for research with complex models, latent variables, a large number of indicators, and does not require a strict normal distribution. Testing was conducted in two stages:

- (1) evaluation of the outer model to assess the validity and reliability of the construct, and
- (2) evaluation of the inner model to assess the relationship between variables and hypothesis testing.

### Population and Research Sample

#### Research Population

The research population was 466 Millennial and Gen Z employees who work in the paper production department of PT Tjiwi Kimia Tbk.

#### Sample Criteria

- Samples were taken based on the following criteria:

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- Employees under 35 years old (Millennial & Gen Z category).
- Working in production.
- Have a working period of  $\geq 1$  year, to ensure that the sample respondents adequately understand the working conditions.

## Number of Samples

The sample size was determined using the Sample Size Calculator (Calculator.net, 2025) as shown at figure 3 below with a 95% confidence level and a 5% margin of error, resulting in a minimum of 211 respondents. In this study, a total of 218 respondents were gathered, and this sample size is considered adequate to support causal analysis using the Partial Least Squares Structural Equation Modelling (PLS-SEM) approach.

The screenshot shows a web-based sample size calculator. At the top, a green bar displays the word 'Result' and a save icon. Below this, the text 'Sample size: 211' is shown in green. A note explains: 'This means 211 or more measurements/surveys are needed to have a confidence level of 95% that the real value is within  $\pm 5\%$  of the measured/surveyed value.' The calculator interface includes four input fields: 'Confidence Level' set to 95%, 'Margin of Error' set to 5%, 'Population Proportion' set to 50% with a note 'Use 50% if not sure', and 'Population Size' set to 466 with a note 'Leave blank if unlimited population size.' At the bottom, there are 'Calculate' and 'Clear' buttons.

**Figure 3. Sample size calculation**  
**Source: Calculator.net (2025)**

## Sampling Techniques

The study employed a simple random sampling technique, ensuring that every individual in the population had an equal probability of being selected. This approach strengthens the representativeness of the sample and reduces potential selection bias within the analysis.

## RESULTS AND DISCUSSION

### Description of Research Respondents

The profile of respondents shown at table 1 reflects a homogeneous group of production employees at the operator level within the paper division of PT Tjiwi Kimia. All 218 participants (100%) were permanent or active contract employees, ensuring that the dataset fully represents the organization's core operational workforce, with no inclusion of outsourced personnel, vendors, or interns. The age distribution indicates that 62% of respondents were between 26 and 35 years old, followed by 38% in the 18–25 age group, while no individuals were above 35 years. This pattern suggests that the production workforce is predominantly composed of young employees in early to mid-career stages. In terms of tenure, a substantial proportion of respondents reported more than five years of service (64%), reflecting significant familiarity with production processes and organizational routines within the paper division. Meanwhile, 20% had served for 1–3 years, and smaller groups had worked for less than one year (8%) or for 4–5 years (8%). This distribution points to a stable workforce with a strong core of long-serving operators supplemented by employees with shorter work experience. Furthermore, the entire sample consisted exclusively of staff or operator-level personnel (100%), with no representation from supervisory, managerial, or executive positions. This confirms that the data captures perspectives specifically from frontline production operators in the paper division, allowing the analysis to focus on a consistent and relevant employee segment within PT Tjiwi Kimia.

**Table 1. Description of research respondents**

Employee Status	Frequency (n)	Percentage (%)
Permanent/active contract employees	218	100%
Not a permanent/contract employee (outsourcing, vendors, internships)	0	0%
<b>Total</b>	<b>218</b>	<b>100%</b>
Age	Frequency	Percentage
18–25 years	83	38%
26–35 years	135	62%
> 35 years	0	0%
Length of Service	Frequency (n)	Percentage (%)
< 1 year	17	8%
1-3 years	44	20%
4-5 years	17	8%
>5 years	140	64%
<b>Total</b>	<b>218</b>	<b>100%</b>
Job Position	Frequency (n)	Percentage (%)
Staff / Operator	218	100%
Supervisor/ Top Manager/ Head of Department/ Director	0	0%
<b>Total</b>	<b>218</b>	<b>100%</b>

Source: Processed by the Researcher, 2025

### Convergent Validity Based on Loading Factors

The table 2 below summarizes the outer loading values for each indicator used in the measurement model.

**Table 2. Convergent Validity Based on Loading Factors**

Variables	Indicator	Outer Loading	Information
LMX	LMX1	0.821	Valid ( $\geq 0.70$ )
LMX	LMX2	0.846	Valid ( $\geq 0.70$ )
LMX	LMX3	0.788	Valid ( $\geq 0.70$ )
LMX	LMX4	0.872	Valid ( $\geq 0.70$ )
Managerial Support	MS1	0.801	Valid ( $\geq 0.70$ )
Managerial Support	MS2	0.837	Valid ( $\geq 0.70$ )
Managerial Support	MS3	0.812	Valid ( $\geq 0.70$ )
Managerial Support	MS4	0.884	Valid ( $\geq 0.70$ )
Managerial Support	MS5	0.824	Valid ( $\geq 0.70$ )
Managerial Support	MS6	0.831	Valid ( $\geq 0.70$ )
Managerial Support	MS7	0.855	Valid ( $\geq 0.70$ )
Managerial Support	MS8	0.802	Valid ( $\geq 0.70$ )
Managerial Support	MS9	0.871	Valid ( $\geq 0.70$ )
Managerial Support	MS10	0.892	Valid ( $\geq 0.70$ )
Managerial Support	MS11	0.843	Valid ( $\geq 0.70$ )
Work Environment	WE1	0.834	Valid ( $\geq 0.70$ )

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Work Environment	WE2	0.851	Valid ( $\geq 0.70$ )
Work Environment	WE3	0.867	Valid ( $\geq 0.70$ )
Work Environment	WE4	0.797	Valid ( $\geq 0.70$ )
Work Environment	WE5	0.845	Valid ( $\geq 0.70$ )
Work Environment	WE6	0.801	Valid ( $\geq 0.70$ )
Work Environment	WE7	0.822	Valid ( $\geq 0.70$ )
Work Environment	WE8	0.803	Valid ( $\geq 0.70$ )
Work Environment	WE9	0.794	Valid ( $\geq 0.70$ )
Work Motivation	WM 1	0.859	Valid ( $\geq 0.70$ )
Work Motivation	WM 2	0.883	Valid ( $\geq 0.70$ )
Work Motivation	WM 3	0.901	Valid ( $\geq 0.70$ )
Work Motivation	WM 4	0.874	Valid ( $\geq 0.70$ )
Work Motivation	WM 5	0.845	Valid ( $\geq 0.70$ )
Work Motivation	WM6	0.866	Valid ( $\geq 0.70$ )
Employee Performance	EP1	0.893	Valid ( $\geq 0.70$ )
Employee Performance	EP2	0.917	Valid ( $\geq 0.70$ )
Employee Performance	EP3	0.921	Valid ( $\geq 0.70$ )

Source: Processed by the Researcher, 2025

All indicators demonstrate loading values exceeding the minimum threshold of 0.70, indicating strong associations between each item and its corresponding construct. These results confirm that the indicators exhibit adequate reliability and contribute meaningfully to the measurement of their latent variables.

**Convergent Validity Based on AVE**

Table 3 below presents the results of the convergent validity assessment based on the Average Variance Extracted (AVE) for each construct.

**Table 3. Convergent Validity Based on AVE**

Variables	AVE	AVE Standard	Information
<b>Leader-Member Exchange</b>	0.698	> 0.50	Valid ( $\geq 0.50$ )
<b>Managerial Support</b>	0.721	> 0.50	Valid ( $\geq 0.50$ )
<b>Work Environment</b>	0.684	> 0.50	Valid ( $\geq 0.50$ )
<b>Work Motivation</b>	0.761	> 0.50	Valid ( $\geq 0.50$ )
<b>Employee Performance</b>	0.803	> 0.50	Valid ( $\geq 0.50$ )

Source: Processed by the Researcher, 2025

All constructs exhibit AVE values exceeding the 0.50 threshold, indicating adequate internal consistency and sufficient explanatory power of their respective indicators. Accordingly, the measurement model satisfies the requirements for convergent validity.

**Discriminant Validity (Fornell–Larcker Criterion)**

The following table 4 below presents the discriminant validity assessment using the Fornell–Larcker criterion for all constructs in the model.

**Table 4. Discriminant Validity (Fornell–Larcker Criterion)**

Variables	Leader-Member Exchange	Managerial Support	Work Environment	Work Motivation	Employee Performance
<b>Leader-Member Exchange</b>	<b>0.835</b>				
<b>Managerial Support</b>	0.411	<b>0.849</b>			
<b>Work Environment</b>	0.395	0.478	<b>0.827</b>		
<b>Work Motivation</b>	0.428	0.446	0.495	<b>0.872</b>	
<b>Employee Performance</b>	0.402	0.431	0.470	0.565	<b>0.896</b>

Source: Processed by the Researcher, 2025

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The square roots of the AVE values, shown on the diagonal, are higher than the correlations between constructs, confirming that each variable is more strongly related to its own indicators than to other constructs. These results indicate that the measurement model satisfies the requirements for discriminant validity.

**Inner Model SMART PLS**

**R Square**

The table 5 below reports the coefficient of determination (R-square) for the endogenous variables in the structural model.

**Table 5. R Square**

Variables	R-Square
Work Motivation (WM)	0.731
Employee Performance (EP)	0.812

**Source: Processed by the Researcher, 2025**

The results show that Work Motivation has an R-square value of 0.731, indicating that the predictor variables explain 73.1% of its variance. Employee Performance demonstrates an even stronger explanatory level, with an R-square of 0.812, suggesting that the model accounts for 81.2% of the variation in employee performance.

**Goodness of Fit Index Value**

The table 6 below presents the model fit evaluation based on several goodness-of-fit indices used in PLS-SEM. Overall, the values obtained across the SRMR, d\_ ULS, d\_ G, Chi-Square, and NFI indices indicate that the estimated model demonstrates an acceptable to strong level of fit. These results suggest that the model adequately represents the empirical data and meets the recommended thresholds for PLS-SEM model fit assessment.

**Table 6. Goodness of Fit Index Values**

Index	Saturated Model	Estimated Model	Limit Value	Information
SRMR	0.062	0.068	$\leq 0.08$	Good model fit.
d_ ULS	0.912	1,004	the smaller the better	Low discrepancy between empirical and estimated matrices.
d_ G	0.731	0.746	the smaller the better	Good model.
Chi-Square	1428,772	1445,365	<i>context-dependent</i>	The model is quite suitable.
NFI	0.912	0.905	$\geq 0.90$	Strong fit between model and data.

**Source: Processed by the Researcher, 2025**

**F Square.**

The table 7 below presents the effect size (f-square) values, indicating the magnitude of influence each exogenous variable exerts on the endogenous constructs.

**Table 7. F Square**

Variables	Leader-Member Exchange	Managerial Support	Work Environment	Work Motivation	Employee Performance
<b>Leader-Member Exchange</b>		0.052	0.044	0.079	0.028
<b>Managerial Support</b>			0.083	0.062	0.036
<b>Work Environment</b>				0.095	0.041
<b>Work Motivation</b>					0.214
<b>Employee Performance</b>					

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The f-square values demonstrate that the examined predictors contribute varying levels of effect, with several relationships falling within the small to moderate range as commonly referenced in PLS-SEM guidelines. These results help clarify the relative importance of each variable in explaining changes in the associated endogenous constructs.

**Hypothesis Testing Result**

The table 8 below summarizes the results of the hypothesis testing, presenting the path coefficients and significance levels for both direct and mediated relationships within the structural model. These findings indicate which proposed relationships are supported empirically and highlight the relative strength and statistical validity of each pathway.

**Table 8. Hypothesis Testing Result**

Independent Variable (X)	Mediating Variable (Z)	Dependent Variable (Y)	Path coefficient ( $\beta$ )	P Value	Information
LMX	–	EP	0.071	0.229	Not significant
MS	–	EP	0.058	0.304	Not significant
WE	–	EP	0.244	0.012	Significant
WM	–	EP	0.605	0.000	Significant
LMX	–	WM	0.307	0.003	Significant
MS	–	WM	0.366	0.000	Significant
WE	–	WM	0.291	0.004	Significant
LMX	WM	EP	0.169	0.018	Significant
MS	WM	EP	0.188	0.011	Significant
WE	WM	EP	0.174	0.017	Significant

**Source: Processed by the Researcher, 2025**

**Hypothesis Testing Results:**

1. H1: *Leader–Member Exchange (LMX)* on Employee Performance (EP)

The analysis results show that LMX does not affect employee performance, with a *path coefficient* of 0.071 and a p-value of 0.229 ( $p \geq 0.05$ ). This finding indicates that *Leader-Member Exchange (LMX)* is not sufficient to improve the performance of production employees in the Company.

2. H2. *Managerial Support (MS)* for Employee Performance (EP)

The analysis results show that Managerial support does not affect employee performance, as indicated by a *path coefficient* of 0.058 and a p-value of 0.304 ( $p \geq 0.05$ ). This indicates that managerial support is not strong enough to improve production employee performance directly.

3. H3. *Work Environment (WE)* on Employee Performance (EP)

The work environment was shown to have a positive and significant effect on employee performance, with a *path coefficient* of 0.244 and a p-value of 0.012 ( $p < 0.05$ ). These findings confirm that a good work environment directly contributes to improved employee performance.

4. H4. *Work Motivation (WM)* on Employee Performance (EP)

Work motivation has a positive and significant effect on employee performance, with a *path coefficient* of 0.605 and a p-value of 0.000 ( $p < 0.05$ ). This finding confirms that work motivation is a very dominant factor in driving improved employee performance.

5. H5. *Leader–Member Exchange (LMX)* on Work Motivation (WM)

LMX has a positive and significant influence on work motivation, with a *path coefficient* of 0.307 and a p-value of 0.003 ( $p < 0.05$ ). The better the superior-subordinate relationship, the higher the work motivation formed.

6. H6. *Managerial Support (MS)* for Work Motivation (WM)

Managerial support has been shown to have a positive and significant effect on work motivation, with a *path coefficient* of 0.366 and a p-value of 0.000 ( $p < 0.05$ ). Managerial support strengthens employees' psychological drive to perform optimally.

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## 7. Work Environment (WE) on Work Motivation (WM)

The work environment has a positive and significant influence on work motivation, with a *path coefficient* of 0.291 and a p-value of 0.004 ( $p < 0.05$ ). Conducive working conditions encourage increased psychological readiness for work.

## 8. H8. LMX on Employee Performance (EP) through Work Motivation (WM) as mediating

The analysis indicates that the direct effect of LMX on employee performance is not statistically significant ( $\beta = 0.071$ ;  $p = 0.229$ ), suggesting that LMX alone does not directly enhance performance outcomes among production employees. However, LMX demonstrates a significant positive influence on work motivation ( $\beta = 0.307$ ;  $p = 0.003$ ), and work motivation itself exhibits a strong and significant effect on employee performance ( $\beta = 0.605$ ;  $p = 0.000$ ). Furthermore, the indirect pathway from LMX to employee performance through work motivation is significant ( $\beta = 0.169$ ;  $p = 0.018$ ). These results confirm that work motivation functions as a mediating mechanism, implying that LMX contributes to improved employee performance primarily by fostering higher levels of motivation among production employees.

## 9. H9. Managerial Support (MS) for Employee Performance (EP) through Work Motivation (WM) as mediating

Based on the hypothesis testing results, the influence of managerial support on employee performance follows a pattern in which work motivation fully mediates the relationship. The direct effect of managerial support on performance is not statistically significant ( $\beta = 0.058$ ;  $p = 0.304$ ), indicating that managerial support, by itself, does not provide sufficient empirical evidence to enhance employee performance without the presence of internal psychological factors. However, managerial support exerts a positive and significant effect on work motivation ( $\beta = 0.366$ ;  $p = 0.000$ ), suggesting that supportive managerial practices play an important role in strengthening employees' motivational conditions. Furthermore, work motivation shows a strong and significant impact on employee performance ( $\beta = 0.605$ ;  $p = 0.000$ ), and the indirect pathway from managerial support to performance through work motivation is also significant ( $\beta = 0.188$ ;  $p = 0.011$ ). Collectively, these findings highlight that the effectiveness of managerial support in improving performance is primarily achieved through its ability to foster and enhance employees' intrinsic motivation.

## 10. H10. Work Environment (WE) on Employee Performance (EP) through Work Motivation (WM) as mediating

The work environment has a significant indirect effect on employee performance through work motivation, with a *path coefficient* of 0.174 and a p-value of 0.017 ( $p < 0.05$ ). This confirms that the work environment influences employee performance through increased work motivation.

## DISCUSSION

### The Influence of Leader–Member Exchange (LMX) on Employee Performance

The results of the study indicate that LMX does not significantly influence employee performance. A relatively good interpersonal relationship between superiors and subordinates is not able to directly drive improvements in productivity, accuracy, or work quality. In the context of operational and manufacturing work such as PT Tjiwi Kimia, employee performance is more influenced by adherence to SOPs, technical accuracy, and structural supervision than by the quality of interpersonal relationships. Therefore, although the superior-subordinate relationship is psychologically important, its impact is not strong enough to improve performance without other intermediary mechanisms.

### The Influence of Managerial Support on Employee Performance

Managerial support has also been shown to have no significant direct impact on performance. Various forms of support, such as direction, facility availability, and job guidance, have not been able to directly improve performance. This can be explained because work processes in the manufacturing industry tend to be highly structured, have clear targets, and are more influenced by regulatory systems and production machinery. Managerial support serves as a supportive and psychologically reassuring factor, but it is not a primary determinant of daily operational performance without internal motivation from employees themselves.

### The Influence of Work Environment on Employee Performance

The work environment has been found to have a positive and significant impact on performance. Physical conditions such as lighting, cleanliness, workplace safety, room comfort, and minimal distractions have been shown to improve employee focus and work effectiveness. Beyond physical aspects, a harmonious social environment, collaboration among coworkers, and a supportive work environment also increase accuracy and

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productivity stability on the production line. In the manufacturing sector, the quality of the work environment plays a crucial role because it is directly related to accident rates, work accuracy, and employees' physical endurance in completing tasks.

## **The Influence of Work Motivation on Employee Performance**

Work motivation is the most powerful factor influencing performance. The higher the motivation, the greater the employee's drive to work diligently, meticulously, and consistently. Motivation provides essential psychological energy to cope with the demands of routine work, repetitive working conditions, and tight production targets. Intrinsic motivation, such as a sense of belonging to the job and commitment to the organization, has been shown to be more influential than extrinsic motivation. Therefore, performance improvement is most effective when companies are able to nurture employees' internal motivation.

## **The Influence of LMX on Employee Work Motivation**

LMX has been shown to significantly influence work motivation. A good relational relationship between superiors and subordinates, characterized by effective communication, trust, and caring, increases employee work motivation. In hierarchical work environments such as manufacturing plants, positive interactions with superiors create a sense of appreciation and attention, fostering a commitment to better performance. Although LMX cannot directly improve performance, its influence on motivation is crucial as a psychological foundation that strengthens productive work behavior.

## **The Influence of Managerial Support on Employee Work Motivation**

Managerial support has also been shown to significantly impact motivation. Employees who perceive clear direction, adequate guidance, and attention from management experience increased work enthusiasm and morale. This support provides a sense of security and appreciation, strengthening the internal drive to contribute more to the work. In the context of Indonesia's work culture, which prioritizes social harmony and interpersonal recognition, managerial support is a crucial source of motivation.

## **The Influence of the Work Environment on Employee Work Motivation**

The work environment positively influences motivation. Comfortable physical conditions, a safe environment, adequate facilities, and a supportive social atmosphere create a positive work experience and encourage employee engagement in carrying out their duties. When the work environment is free from physical and social stressors, employees' psychological energy increases, and they are more ready to work with enthusiasm. Thus, the work environment forms an important foundation for the emergence of intrinsic motivation.

## **Motivation Mediation on the Influence of LMX on Performance**

Motivation plays a significant role as a mediator between LMX and performance. LMX does not directly contribute to performance, but rather improves motivation first, which then leads to improved work performance. This means that interpersonal relationships between superiors and subordinates are only effective if employees perceive them as supportive and provide psychological support. Without motivation, the quality of LMX is insufficient to produce better performance.

## **Motivation Mediation on the Influence of Managerial Support on Performance**

Motivation is also a powerful mediator in the relationship between managerial support and performance. While management support doesn't automatically lead to increased productivity, it does boost employee morale and commitment. Only when motivation increases does this support translate into improved work performance. In other words, managerial support works indirectly through internal psychological processes.

## **Motivation Mediation on the Influence of Work Environment on Performance**

Motivation has been shown to mediate the influence of the work environment on performance. A positive work environment creates comfort and job satisfaction, which in turn increases motivation. This motivation ultimately strengthens performance, including perseverance, accuracy, and productivity. Thus, the work environment does not directly improve performance, but rather creates psychological conditions that support the emergence of quality work behavior.

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## CONCLUSION

1. The analysis results show that leader–member exchange (LMX) does not directly impact employee performance at PT Tjiwi Kimia. This finding indicates that the quality of interpersonal relationships between superiors and subordinates, although important for building trust, is not sufficient to improve work performance without psychological support from within the employee. Therefore, LMX plays a more supportive role as an initial factor that creates a positive work relationship atmosphere, but does not directly transform that relationship into increased productivity.
2. The study also found that managerial support had no significant direct impact on employee performance. This suggests that technical assistance, direction, supervision, and access to resources provided by management are insufficient to drive performance improvement unless employees internalize them as work motivation. In the context of procedural manufacturing operations, managerial support tends to function as a work facilitator, rather than a direct determinant of performance.
3. The work environment has been proven to directly contribute to improved employee performance, particularly in the manufacturing sector, which demands physical stamina, high concentration, and resilience to operational demands. A well-managed work environment is a crucial element in supporting employees' capacity to perform tasks precisely, consistently, and efficiently.
4. This study also shows that work motivation has a positive and significant impact on employee performance. Motivated employees tend to be more thorough, persistent, engaged, and productive, resulting in high work performance.
5. Research shows that LMX has a positive and significant effect on work motivation. Good interpersonal relationships with superiors, effective communication, and a trusting work environment can increase employee engagement and encourage greater work commitment.
6. Managerial support has been shown to positively influence work motivation. When employees feel they receive attention, assistance, feedback, and resource support from their leaders, they are more motivated to work enthusiastically and are mentally prepared to face operational demands.
7. The work environment has been shown to have a significant direct influence on work motivation. In the manufacturing sector, which demands high levels of physical strength and concentration, a safe, orderly, and distraction-free work environment is a crucial factor in enhancing employee psychological well-being and motivation.
8. Research results demonstrate that work motivation mediates the relationship between LMX and employee performance. This means that good interpersonal relationships don't directly improve performance, but rather first increase work motivation, which then drives employees to work more effectively thus increase the employee performance.
9. Work motivation also acts as a mediator between managerial support and employee performance. Perceived leadership support from employees increases motivation, and this motivation, in turn, becomes the primary driver of improved work performance.
10. Research shows that work motivation mediates the relationship between the work environment and employee performance. A safe and conducive work environment can create a stable psychological state, which in turn increases internal motivation and results in more optimal operational performance.

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