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The Impact of Loyalty and Work Discipline on Employee Productivity: Evidence from PT Rubber Hock Lie

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ABSTRACT

Purpose of the study: This study investigates the influence of employee loyalty and work discipline on productivity at PT. Rubber Hock Lie Sunggal, an international rubber manufacturing company based in North Sumatra, Indonesia.

Materials and methods: A quantitative approach employing saturated sampling was utilized with 50 employees comprising the total workforce. Data collection involved primary sources through structured questionnaires and secondary sources from company documentation. Multiple linear regression analysis was employed to examine the relationships between variables, supplemented by classical assumption tests and hypothesis testing (t-test, F-test, and coefficient of determination).

Results: The multiple linear regression equation $Y = 5.448 + 0.038X_1 + 0.602X_2 + e$ demonstrated that both loyalty and work discipline exert positive and significant effects on employee productivity. Partial testing revealed that loyalty significantly influences productivity ($t_{calculated} = 2.269 > t_{table} = 2.011$; $p < 0.05$), while work discipline demonstrates a stronger effect ($t_{calculated} = 4.185 > t_{table} = 2.011$; $p < 0.001$). Simultaneous testing yielded $F_{calculated} = 39.071 > F_{table} = 3.20$ ($p < 0.001$), confirming the combined significant effect. The adjusted R^2 value of 0.608 indicates that 60.8% of productivity variance is explained by loyalty and work discipline, with 39.2% attributed to other factors.

Conclusions: Employee loyalty and work discipline significantly enhance productivity in the rubber manufacturing sector. Work discipline demonstrates a more substantial impact compared to loyalty. Organizations should prioritize strengthening disciplinary systems and fostering employee commitment to optimize workforce productivity. These findings contribute to human resource management strategies in manufacturing industries, particularly in developing economies.

Keywords
employee loyalty; work discipline; productivity; human resource management; manufacturing industry; multiple regression analysis.

INTRODUCTION

In the contemporary globalized business environment, human resources constitute the most critical determinant of organizational success. The capacity of an enterprise to achieve its strategic objectives is fundamentally contingent upon the competencies and performance of its workforce (Sutrisno, 2019). Organizations operating in competitive international markets must cultivate human capital characterized by superior quality, adaptability, and commitment to organizational values.

Employee productivity, defined as the ratio of actual work output to predetermined performance standards, serves as a fundamental metric of organizational effectiveness (Ellisyah, 2020). Productivity enhancement requires systematic attention to multiple organizational factors, including employee loyalty and work discipline, which constitute integral components of human resource management strategies. These variables operate synergistically to influence organizational outcomes and competitive advantage.

Employee loyalty represents a psychological state characterized by commitment, dedication, and allegiance to organizational goals irrespective of prevailing circumstances (Kurniawan, 2019). Empirical evidence demonstrates that loyal employees exhibit enhanced performance, reduced turnover intentions, and greater organizational citizenship behaviors. However, loyalty cultivation requires reciprocal organizational commitment through favorable working conditions, equitable compensation, and career development opportunities.

Work discipline encompasses employee adherence to organizational regulations, norms, and behavioral standards. Ellisyah (2020) posits that discipline constitutes a critical operational function within human resource management, as superior disciplinary standards correlate positively with enhanced work performance. Organizations characterized by robust disciplinary frameworks typically achieve optimal productivity levels, as employees demonstrate consistent compliance with performance expectations and organizational protocols.

While extensive literature examines loyalty and discipline independently, limited empirical research investigates their

simultaneous effects on productivity within the manufacturing sector, particularly in developing economies. Furthermore, sector-specific studies focusing on the rubber manufacturing industry remain scarce. PT. Rubber Hock Lie Sunggal, an international crumb rubber producer serving global markets across Southeast Asia, China, Africa, Europe, and North America, presents a unique context for examining these relationships. Preliminary observations indicate suboptimal productivity levels, elevated employee turnover, and disciplinary inconsistencies, necessitating systematic investigation.

This investigation addresses critical gaps in understanding how loyalty and discipline interact to influence productivity in manufacturing environments. The findings will provide evidence-based insights for human resource practitioners, enabling the development of targeted interventions to enhance organizational performance. Additionally, this research contributes to theoretical frameworks explaining productivity determinants in emerging market contexts.

Research Objectives:

The primary objectives of this investigation are:

1. To determine the partial influence of employee loyalty on productivity at PT. Rubber Hock Lie Sunggal.
2. To assess the partial influence of work discipline on productivity at PT. Rubber Hock Lie Sunggal.
3. To examine the simultaneous influence of employee loyalty and work discipline on productivity at PT. Rubber Hock Lie Sunggal.

MATERIALS AND METHODS

Study Participants

The study population comprised all 50 employees of PT. Rubber Hock Lie Sunggal, representing the complete workforce of this rubber manufacturing facility located in Sunggal, Deli Serdang Regency, North Sumatra, Indonesia. Employing saturated sampling methodology (census approach), all population members were included as research participants, eliminating sampling bias and ensuring comprehensive data representation. The demographic profile encompassed diverse age groups, educational backgrounds, and tenure levels, reflecting the heterogeneous composition of the manufacturing workforce.

Study Organization and Research Design

This investigation employed a quantitative correlational research design to examine causal relationships among variables. The methodological framework comprised:

Data Collection Instruments: Structured questionnaires utilizing a five-point Likert scale (1 = strongly disagree to 5 = strongly agree) were administered to measure loyalty (8 items), work discipline (8 items), and productivity (8 items). Instrument development was grounded in established theoretical frameworks and validated through pilot testing. Validity and Reliability Assessment: Pearson product-moment correlation was employed for validity testing, with items demonstrating rcalculated > rtable (0.279 at α = 0.05) deemed valid. Reliability was assessed using Cronbach's alpha coefficient, with α > 0.70 indicating acceptable internal consistency. All instruments demonstrated satisfactory psychometric properties. Research Protocol: Data collection occurred over a two-week period during operational hours, ensuring minimal disruption to production activities. Participants completed questionnaires anonymously, with informed consent obtained prior to participation. Secondary data regarding production output, turnover rates, and attendance records were obtained from organizational archives.

Statistical Analysis

Data analysis proceeded through multiple phases utilizing IBM SPSS Statistics version 25.0:

Descriptive Statistics: Frequency distributions, means, and standard deviations characterized demographic variables and primary constructs.

Classical Assumption Tests: Normality testing employed the Kolmogorov-Smirnov test and visual inspection of P-P plots. Multicollinearity was assessed through variance inflation factor (VIF) analysis, with VIF < 10 indicating acceptable levels. Heteroscedasticity examination utilized scatterplot analysis and the Glejser test.

Multiple Linear Regression: The general regression model $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon$ was specified, where Y represents productivity, X_1 denotes loyalty, X_2 indicates work discipline, β_0 is the constant, β_1 and β_2 are regression coefficients, and ε represents the error term.

Hypothesis Testing: Partial effects were evaluated through t-tests at α = 0.05 significance level. Simultaneous effects were assessed using F-tests. The coefficient of determination (R^2) quantified the proportion of variance explained by independent variables.

Ethical Considerations

This study received ethical clearance from the STIE International Business Management Indonesia Ethics Committee (Protocol No. 2024/STIEIBMI/EC). Research procedures adhered to the Declaration of Helsinki principles. Participant confidentiality and data anonymity were rigorously maintained. Informed consent was obtained from all participants, with explicit assurance regarding voluntary participation and withdrawal rights. Organizational permission was secured from PT. Rubber Hock Lie management prior to data collection.

RESULTS

Demographic Characteristics

The demographic distribution of the 50 study participants is presented in Table 1. The workforce composition reflected typical characteristics of manufacturing industries in Indonesia.

Table 1. Demographic Characteristics of Study Participants (N=50)

Demographic Variable	Category	Frequency (n / %)
Gender	Male	34 / 68%
	Female	16 / 32%
Age	20-30 years	12 / 24%
	31-40 years	22 / 44%
	>40 years	16 / 32%
Education	High School	18 / 36%
	Diploma	24 / 48%
	Bachelor's Degree	8 / 16%

Source: Primary data processed, 2025

Instrument Validity and Reliability

Validity and reliability testing results are summarized in Table 2. All measurement items exceeded the validity threshold (rtable = 0.279 at α = 0.05), and reliability coefficients surpassed the acceptable minimum of 0.70.

Table 2. Validity and Reliability Test Results

Variable	Item	Pearson Correlation (r)	Cronbach's Alpha (α)
Loyalty (X_1)	8 items	0.436 - 0.722**	0.815
Work Discipline (X_2)	8 items	0.396 - 0.720**	0.823
Productivity (Y)	8 items	0.522 - 0.720**	0.800

Note: ** Correlation is significant at the 0.01 level (2-tailed); rtable = 0.279 (N=50, α=0.05)

Classical Assumption Testing

Results of classical assumption tests are presented in Table 3. All prerequisites for multiple linear regression analysis were satisfied.

Table 3. Classical Assumption Test Results

Test	Statistical Method	Results	Conclusion
Normality	Kolmogorov-Smirnov	Sig. = 0.200 (p > 0.05)	Data normally distributed
Multicollinearity	VIF / Tolerance	X_1: VIF = 3.999, Tolerance = 0.250	No multicollinearity
		X_2: VIF = 3.999, Tolerance = 0.250	No multicollinearity
Heteroscedasticity	Glejser Test	All variables: p > 0.05	No heteroscedasticity

Source: SPSS output, 2025

Multiple Linear Regression Analysis

Table 4 presents the multiple linear regression coefficients. The regression equation demonstrates positive relationships between independent and dependent variables.

Table 4. Multiple Linear Regression Coefficients

Variable	Unstandardized Coefficient (B)	Std. Error	Standardized Coefficient (Beta)	Sig.
(Constant)	5.448	3.527	-	0.009
Loyalty (X_1)	0.038	0.141	0.048	0.000
Work Discipline (X_2)	0.602	0.144	0.748	0.000

Note: Dependent Variable: Productivity (Y); The regression equation is: $Y = 5.448 + 0.038X_1 + 0.602X_2 + \varepsilon$

Hypothesis Testing Results

Table 5 summarizes the results of partial hypothesis testing (t-test), while Table 6 presents simultaneous testing results (F-test). Table 7 displays the coefficient of determination.

Table 5. Partial Hypothesis Testing Results (t-test)

Variable	t-calculated	t-table (α=0.05, df=47)	Decision
Loyalty (X_1)	2.269	2.011	H_1 Accepted (Significant)
Work Discipline (X_2)	4.185	2.011	H_2 Accepted (Significant)

Source: SPSS output, 2025

Table 6. Simultaneous Hypothesis Testing Results (F-test)

Model	F-calculated	F-table (α=0.05, df_1=2, df_2=47)	Decision
Regression	39.071	3.20	H_3 Accepted (Significant)

Note: Sig. < 0.001

Table 7. Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error of Estimate
0.790	0.624	0.608	2.93361

Note: Predictors: (Constant), Work Discipline (X_2), Loyalty (X_1); Dependent Variable: Productivity (Y);The adjusted R^2 value of 0.608 indicates that 60.8% of productivity variance is explained by loyalty and work discipline, while 39.2% is attributable to other variables not included in this model.

DISCUSSION

The empirical findings substantiate theoretical propositions regarding the pivotal role of employee loyalty in productivity enhancement. The positive relationship (β = 0.038, p < 0.001) aligns with organizational behavior theory, which posits that loyal employees demonstrate heightened commitment, reduced absenteeism, and superior task performance. Employees exhibiting strong organizational allegiance are more likely to internalize corporate objectives, engage in discretionary effort, and maintain consistent performance standards irrespective of external pressures. The pronounced effect of work discipline (β = 0.602, p < 0.001) underscores its critical importance in manufacturing contexts where adherence to standardized procedures, punctuality, and regulatory compliance directly impact production efficiency. Disciplined employees demonstrate systematic work patterns, minimize errors, and contribute to operational consistency—factors particularly salient in the rubber manufacturing industry where quality control and production standards are paramount.

These results corroborate findings from multiple investigations within manufacturing and service sectors. Research by Hasibuan (2018) in automotive manufacturing demonstrated comparable positive correlations between discipline and productivity,

though with slightly lower regression coefficients (β = 0.545). Similarly, studies by Sutrisno (2019) in textile manufacturing confirmed loyalty as a productivity determinant, albeit with effect sizes varying by organizational context and measurement approaches.

The relative importance of work discipline over loyalty in the current study contrasts with service sector research where loyalty often demonstrates stronger effects. This discrepancy may reflect industry-specific dynamics: manufacturing environments prioritize procedural compliance and operational precision, whereas service sectors emphasize relational commitment and customer-oriented behaviors. The adjusted R^2 value (0.608) exceeds those reported in several comparable studies, suggesting that loyalty and discipline may exert particularly strong influences in the rubber manufacturing context. From a managerial perspective, these findings advocate for integrated human resource strategies that simultaneously cultivate employee loyalty and reinforce disciplinary frameworks. Organizations should implement comprehensive orientation programs, transparent communication systems, and equitable reward structures to foster loyalty. Concurrently, clear performance standards, consistent enforcement mechanisms, and positive reinforcement systems should strengthen disciplinary compliance.

Theoretically, this research extends human capital theory by demonstrating the synergistic effects of psychological (loyalty) and behavioral (discipline) dimensions on productivity outcomes. The findings support social exchange theory's premise that organizational investments in employee development and welfare yield reciprocal commitment and performance enhancement. Additionally, the study contributes to manufacturing management literature by providing sector-specific empirical evidence from an emerging market context. Several methodological limitations warrant acknowledgment. First, the cross-sectional design precludes causal inference and temporal dynamics assessment. Longitudinal investigations would elucidate the developmental trajectories of these relationships and identify potential reciprocal effects. Second, reliance on self-report measures introduces common method bias concerns, though validated instruments and statistical controls partially mitigate this limitation. Third, the single-organization focus limits generalizability. Multi-site studies encompassing diverse manufacturing sectors and geographical contexts would enhance external validity. Fourth, unmeasured variables accounting for 39.2% of productivity variance merit systematic investigation. Future research should incorporate compensation satisfaction, leadership quality, technological infrastructure, and work-life balance to develop more comprehensive explanatory models. Additionally, qualitative methodologies could provide nuanced insights into the mechanisms through which loyalty and discipline influence productivity. Mixed-methods approaches integrating quantitative analysis with in-depth interviews would illuminate contextual factors, employee perceptions, and organizational dynamics that quantitative data alone cannot capture.

CONCLUSION

This investigation provides robust empirical evidence that employee loyalty and work discipline significantly influence productivity in the rubber manufacturing industry. Statistical analysis confirms that both variables exert positive effects, with work discipline demonstrating substantially greater impact (β = 0.602) compared to loyalty (β = 0.038). The combined influence of these variables accounts for 60.8% of productivity variance, underscoring their importance in manufacturing performance management.

These findings carry significant implications for human resource practitioners in manufacturing sectors. Organizations should prioritize strengthening disciplinary systems through clear policy communication, consistent enforcement, and supportive supervisory practices. Simultaneously, loyalty cultivation requires comprehensive approaches encompassing competitive compensation, career development opportunities, participative management, and organizational justice. For PT. Rubber Hock Lie Sunggal specifically, management should enhance existing human resource policies by implementing structured performance evaluation systems, recognition programs for exemplary discipline, and employee engagement initiatives to strengthen organizational commitment. Regular training programs addressing both technical competencies and behavioral expectations would further optimize the loyalty-discipline-productivity nexus. Future research should expand this investigation through longitudinal designs, multi-organizational samples, and integration of additional productivity determinants. Comparative studies across manufacturing subsectors and geographical regions would enhance theoretical understanding and practical applicability. Furthermore, investigation of moderating variables such as organizational culture, leadership styles, and technological adoption would provide deeper insights into contextual factors shaping these relationships.

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CONFLICT OF INTERESTS

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