

Soft Skills and Self-Efficacy as Predictors of Employee Productivity

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Abstract : *Employee productivity is a strategic factor that determines organizational competitiveness, particularly amid digital transformation and the evolving demands of the modern labor market. This study aims to examine the influence of soft skills and self-efficacy on employee productivity at PT Megahputra Sejahtera. Soft skills refer to non-technical abilities related to communication, collaboration, adaptability, and problem-solving, while self-efficacy reflects an individual's belief in their capability to accomplish tasks effectively. Using a quantitative approach, data were collected from 30 employees selected through purposive sampling. Data analysis included validity testing, reliability testing, and multiple regression to assess both partial and simultaneous effects. The findings indicate that soft skills and self-efficacy have a positive and significant influence on employee productivity. These results highlight that strengthening interpersonal competencies and work-related confidence not only enhances individual effectiveness but also contributes directly to organizational performance outcomes. The study recommends that the company implement structured soft-skills training programs and self-efficacy enhancement interventions through coaching and systematic feedback.*

Keywords: *soft skills; self-efficacy; productivity; performance; human resources.*

Abstrak : Produktivitas karyawan merupakan faktor strategis yang menentukan daya saing organisasi, terutama di tengah tuntutan transformasi digital dan dinamika pasar kerja modern. Penelitian ini bertujuan untuk menganalisis pengaruh soft skill dan self-efficacy terhadap produktivitas karyawan pada PT Megahputra Sejahtera. Soft skill dipahami sebagai kemampuan non-teknis yang berkaitan dengan komunikasi, kolaborasi, adaptasi, dan pemecahan masalah, sedangkan self-efficacy merujuk pada keyakinan individu terhadap kemampuannya menyelesaikan tugas secara efektif. Penelitian menggunakan pendekatan kuantitatif dengan jumlah sampel 30 karyawan yang dipilih secara purposive. Analisis data dilakukan melalui uji validitas, reliabilitas, dan regresi linear berganda untuk menguji pengaruh simultan maupun parsial. Hasil penelitian menunjukkan bahwa soft skill dan self-efficacy berpengaruh positif dan signifikan terhadap produktivitas karyawan. Temuan ini menegaskan bahwa penguatan kompetensi interpersonal dan keyakinan diri kerja tidak hanya meningkatkan efektivitas individu, tetapi juga berkontribusi langsung pada pencapaian kinerja organisasi. Penelitian ini merekomendasikan perusahaan untuk mengembangkan program pelatihan soft skill dan intervensi peningkatan self-efficacy melalui coaching dan feedback terstruktur.

Kata kunci: soft skill; self-efficacy; produktivitas; kinerja; sumber daya manusia.

INTRODUCTION

Employee productivity is one of the key indicators of an organization's sustainability and competitiveness. In the era of digital transformation and global competition, organizations no longer rely solely on technology and physical capital; human capital—particularly non-

technical skills—has become a major determinant of organizational success. Soft skills such as communication, teamwork, adaptability, problem-solving, and time management are increasingly viewed as core competencies that enable employees to apply their technical knowledge effectively in real work contexts. Cross-country reports by international organizations emphasize that soft-skills development and lifelong learning are crucial for maintaining workforce relevance and improving national productivity (OECD, 2021).

In addition to soft skills, psychological aspects such as self-efficacy—an individual's belief in their capability to perform tasks and achieve goals—are strongly associated with motivation, persistence, and work performance. Bandura's social cognitive theory positions self-efficacy as a significant variable influencing task selection, the amount of effort exerted, and resilience to failure. Practically, employees with high self-efficacy tend to exhibit greater work engagement, initiative, and productivity. Recent empirical studies confirm the positive correlation between self-efficacy and work performance as well as pro-organizational behaviors, making it a relevant determinant for productivity assessment (Supriyadi, 2025).

Although the relationship between soft skills, self-efficacy, and productivity seems intuitive, the empirical literature reveals several gaps. First, many studies show positive but contextual results—depending on the industry sector, task complexity, and organizational environment—suggesting the need for further testing in specific local settings or subsectors. Several international and industry-based studies also highlight that the contribution of soft skills to productivity is substantial in knowledge-intensive service sectors, but varies across manufacturing and retail. This suggests the need for research models that consider both the work context and measurable productivity indicators (Criscuolo et al., 2021).

Second, although there is evidence that soft skills training affects productivity, the specific mechanisms of the relationship between soft skills and productivity tend to vary across studies. Some report indirect effects, while others highlight the direct effect of soft skills on efficiency. Therefore, it is important to design research that can examine the direct and simultaneous effects of soft skills and self-efficacy on employee productivity to provide more targeted HR policy recommendations (Kusumawati, 2025). From an organizational policy perspective, investing in soft-skills development and enhancing self-efficacy offers two strategic advantages. First, soft skills are transferable—communication, collaboration, and problem-solving can be applied across different tasks and teams. Second, interventions that enhance self-efficacy (e.g., coaching, stepwise tasks with positive feedback, mentoring) improve individual performance and foster a proactive, resilient work culture. OECD and labor-market reports show that “skills-first” strategies and workplace learning strengthen alignment between market needs and worker capabilities, supporting long-term productivity (OECD, 2021).

However, organizations also face operational challenges. Soft-skill assessment is often subjective and dependent on supervisor evaluation or self-reports, which may introduce biases. Likewise, measuring employee productivity can be difficult due to differences in job characteristics (quantitative vs. qualitative), workload variability, and inconsistent output indicators. Hence, this study must use valid and reliable measurement instruments—combining objective indicators (e.g., output per hour, target achievement) with standardized subjective measures (validated scales of soft skills and self-efficacy). Several recent local studies have applied mixed-methods approaches to complement quantitative data with in-depth interviews, providing a more comprehensive understanding of underlying mechanisms (Fida, 2025).

This study offers theoretical and practical contributions. Theoretically, it examines the relationship model between soft skills, self-efficacy, and employee productivity—clarifying whether self-efficacy acts as a mediator, moderator, or both—and adds empirical evidence to organizational and industrial psychology literature. Practically, the findings are expected to guide HR managers and organizational policymakers in developing effective competency-development programs—whether through direct soft-skills training, self-efficacy enhancement interventions, or a combination of both. The results may also help construct more

comprehensive performance-evaluation systems, enabling organizations to allocate training resources more efficiently (Fida, 2025).

Therefore, understanding how these two variables affect productivity is crucial not only for optimizing current performance but also for organizational readiness to face future work dynamics. With a robust methodological design and a representative sample within the context of organization X (adjusted to the research location/industry), this study is expected to produce evidence-based HR policy recommendations.

METHODOLOGY

This research was conducted at PT. Megahputra Sejahtera. Given the relatively limited employee population (30 people), the sampling technique used was census (saturated sampling). Census is a method in which the entire population is made the subject of research. Thus, N=30 respondents are the complete population of this study. The research design used was quantitative with a non-experimental approach (survey) to test the effect of independent variables (soft skills and self-efficacy) on the dependent variable (employee productivity). The primary analysis used was correlation analysis and multiple linear regression;

ANALYSIS AND DISCUSSION

Validity Test

The validity test was used to assess whether the questionnaire instrument was able to measure the variables it was intended to measure. With a significance level of 5% or 0.361, the *r* value was obtained based on a sample size (N) of 30 respondents

Table 1. Validity Test

Variabel	Indicator	R Calculated	R Table	Description
<i>Soft Skill</i>	X1.1	0.641	0,361	Valid
	X1.2	0.887	0,361	Valid
	X1.3	0.809	0,361	Valid
	X1.4	0.649	0,361	Valid
	X1.5	0.381	0,361	Valid
<i>Self Efficacy</i>	X2.1	0.788	0,361	Valid
	X2.2	0.930	0,361	Valid
	X2.3	0.920	0,361	Valid
	X2.4	0.661	0,361	Valid
<i>Employee Productivity</i>	Y.1	0.380	0,361	Valid
	Y.2	0.750	0,361	Valid
	Y.3	0.696	0,361	Valid
	Y.4	0.882	0,361	Valid
	Y.5	0.708	0,361	Valid

Source: Data Processed by SPSS 2025

Based on the validity test results shown in Table 1. all statement items for each research variable, namely Soft Skills (X1), Self-Efficacy (X2), and Employee Productivity (Y), showed calculated *r* values greater than the table *r* (0.361). Therefore, all statement items in these three variables were declared valid because they were able to measure what they were supposed to measure according to the construct of the variables being studied.

Reliability Test

The reliability test in this study was conducted using the Cronbach's Alpha analysis method. An instrument is considered reliable if the Cronbach's Alpha value obtained is greater than 0.60, in accordance with the Static Reliability criteria. A Cronbach's Alpha coefficient value approaching 1 indicates a high level of consistency and reliability of an instrument.

Table 2. Reliability Test

Varibel Penelitian	Nilai Cronbach Alpha	Keterangan
<i>Soft Skill (X1)</i>	0.672	Reliabel
<i>Self Efficacy (X2)</i>	0.846	Reliabel
<i>Employee Productivity (Y)</i>	0.805	Reliabel

Source: Data Processed by SPSS 2025

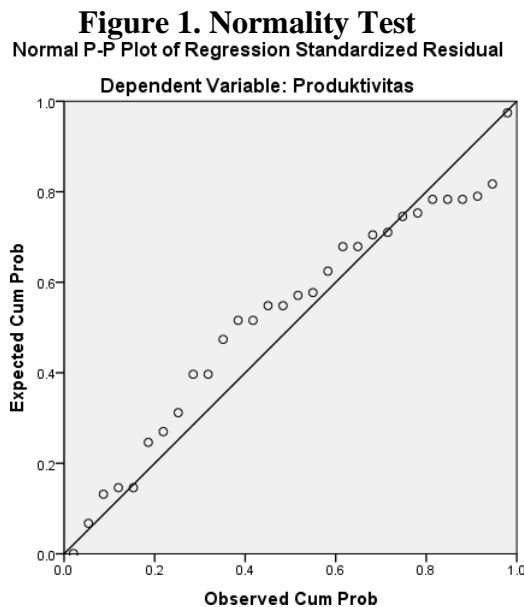
Based on the reliability test results presented in Table 2. all research variables—Soft Skills (X1), Self-Efficacy (X2), and Employee Productivity (Y)—showed Cronbach's Alpha values above 0.60. Thus, these three variables are considered reliable because they meet the minimum criteria for demonstrating good internal consistency of the measurement instrument.

Classical Assumption Test

The classical assumption test is conducted to ensure that the linear regression model meets the basic assumptions so that the analysis results can be interpreted validly and reliably. Without meeting these assumptions, regression results can be misleading. The following are the results of the classical assumption test:

Normality Test

This test aims to determine whether the residual data is normally distributed..



Source: Data Processed by SPSS 2025

Observing the graph, the residual points are mostly spread around the diagonal line and do not form a pattern that deviates significantly from it. This indicates that the residual distribution approaches a normal distribution.

Multicollinearity Test

This test is used to determine whether there is a strong linear relationship between the independent variables.

Table 3. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
X1	682	1.466
X2	682	

Source: Data Processed by SPSS 2025

Based on the multicollinearity test results in Table 3. the tolerance value for variables X1 (Soft Skill) and X2 (Self Efficacy) is 0.682, and the VIF (Variance Inflation Factor) value is 1.466, respectively. Therefore, it can be concluded that there is no multicollinearity among the independent variables in this regression model. Thus, variables X1 and X2 can be used together in the model without causing the problem of high correlation between the independent variables.

Multiple Linear Regression Test

Multiple regression analysis is used to determine the effect of more than one independent variable on a dependent variable, either simultaneously (together) or partially (each).

Table 4. Results of Multiple Linear Regression Analysis Test

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.205	2.877		3.199	.670		
	Soft Skill	.278	.186	.293	2.491	.000	.682	1.466
	Self Efficacy	.352	.217	.318	3.622	.000	.682	1.466
a. Dependent Variable: Employee Productivity								

Source: Data Processed by SPSS 2025

Based on Table 4. above, the multiple linear regression equation can be formulated as follows:

$$Y = 0.9205 + 0.278 X1 + 0.352 X2$$

- Based on Table 4.11, the constant (intercept) value of 9.205 indicates that if the Soft Skills (X1) and Self-Efficacy (X2) variables remain unchanged or are at zero, then Employee Productivity (Y) is estimated to be 9.205. This value reflects the baseline productivity that can be achieved without the influence of the independent variables.
- The regression coefficient for the Soft Skills variable is 0.278. This means that every one-unit increase in Soft Skills, assuming other variables remain constant, will increase Employee Productivity by 0.278 units. Thus, it can be concluded that Soft Skills have a positive influence on Employee Productivity.
- Based on Table 4.11, the regression coefficient for the Self-Efficacy variable (X2) is 0.352. This value indicates that every one-unit increase in Self-Efficacy, assuming other variables remain constant, will increase Employee Productivity by 0.352 units. Therefore, it can be concluded that Self-Efficacy has a positive effect on Employee Productivity.

Partial Test

Hypothesis testing in this study aims to determine whether the independent variables have a significant influence on the dependent variable. In this study, testing was conducted using multiple linear regression analysis, using partial tests (t-test) and simultaneous tests (F-test).

Table 5. Partial Test Results

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	9.205	2.877		3.199	.670		
	Soft Skill	.278	.186	.293	2.491	.000	.682	1.466
	Self Efficacy	.352	.217	.318	3.622	.000	.682	1.466

Source: Data Processed by SPSS 2025

At a significance level of $\alpha = 5\%$ (0.05), the t-table value used as the decision-making limit is 1.701. Based on the t-test results shown in Table 4.11, the following conclusions can be drawn:

- At a significance level of 5% ($\alpha = 0.05$), the t-table value is 1.701, while the calculated t-value for the Soft Skills variable (X1) is 2.491. Because the calculated t-value is greater than the calculated t-value ($2.491 > 1.701$), it can be concluded that Soft Skills have a significant effect on Employee Productivity. Thus, the hypothesis stating a positive effect of soft skills on employee productivity is accepted.
- At a significance level of 5% ($\alpha = 0.05$), the t-table value is 1.701, while the calculated t-value for the Self-Efficacy variable (X2) is 3.622. Because the calculated t-value is greater than the t-table ($3.622 > 1.701$), it can be concluded that self-efficacy has a significant effect on employee productivity. Therefore, the hypothesis that self-efficacy has a positive effect on employee productivity is accepted.

Simultaneous Test (F Test)

Tabel 6. Uji Simultan

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.271	2	28.635	5.561	.000 ^b
	Residual	139.029	27	5.149		
	Total	196.300	29			

Source: Data Processed by SPSS 2025

Based on Table 6. the F-test results show a calculated F-value of 5.561 with a significance value (Sig.) of 0.000. Because this significance value is less than 0.05, it can be concluded that the regression model involving Soft Skills (X1) and Self-Efficacy (X2) simultaneously has a significant effect on Employee Productivity (Y). These results indicate that both independent variables together can explain the variation in the productivity variable.

Coefficient of Determination (R²) Test

The coefficient of determination (R²) is used to determine the proportion of variation in the dependent variable (Productivity) that can be explained by the independent variables (Self-Efficacy and Soft Skills) in the regression model.

Table 7. Determinant Test

Model Summary ^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.540 ^a	.292	.239	2.26919	.814

Source: Data Processed by SPSS 2025

Based on Table 7. Model Summary, the R-Square value is 0.292. This indicates that 29.2% of the variation in the dependent variable (Productivity) can be explained by the independent variables, namely Self-Efficacy and Soft Skills. In other words, the Self-Efficacy and Soft Skills variables contribute 29.2% to increased productivity. Meanwhile, the remaining 70.8% is influenced by factors outside this research model.

At a significance level of 5% ($\alpha = 0.05$), the t_{table} value is 1.701, while the t-count value for the Soft Skills variable (X1) is 2.491. Since the t-count value is greater than ttable ($2.491 > 1.701$), it can be concluded that Soft Skills have a significant influence on Employee Productivity. Thus, the hypothesis stating that there is a positive influence of soft skills on employee productivity is accepted. Soft skills are non-technical skills that include communication, teamwork, time management, adaptability, leadership, and empathy. In a dynamic work environment such as PT Megahputra Sejahtera, a company engaged in the

automotive sector, soft skills are very important for employees to be able to work effectively and efficiently

Discussion

The Effect of Soft Skills on Employee Productivity at PT Megahputra Sejahtera

At a 5% significance level ($\alpha = 0.05$), the t-table value is 1.701, while the calculated t-value for the Soft Skills variable (X1) is 2.491. Because the calculated t-value is greater than the calculated t-table ($2.491 > 1.701$), it can be concluded that Soft Skills have a significant effect on Employee Productivity. Thus, the hypothesis stating a positive effect of soft skills on employee productivity is accepted.

Soft skills are non-technical skills that include communication, teamwork, time management, adaptability, leadership, and empathy. In a dynamic work environment like that of PT Megahputra Sejahtera, a company engaged in the automotive sector, soft skills are essential for employees to be able to work effectively and efficiently. Employees who have good communication skills are able to convey information clearly and avoid miscommunication, so that work can be completed more quickly and accurately. Furthermore, teamwork skills encourage solid collaboration, which ultimately improves overall team performance. Time management is also essential so that employees can complete tasks on time without sacrificing work quality.

This research is supported by the theory of Robbins and Judge (2020), which states that soft skills are a crucial factor in work success because they can influence individual behavior within an organization, particularly in terms of social interactions and the ability to complete tasks collectively. Therefore, the greater an employee's mastery of soft skills, the greater their contribution to increased work productivity. Therefore, continuous soft skills development is a strategic investment for companies in achieving optimal organizational performance. Furthermore, research by Widodo and Kusuma (2019) also demonstrated that systematic soft skills development has a positive and significant impact on employee productivity in Yogyakarta's creative industry. This demonstrates that employees' interpersonal skills and adaptive abilities are key to achieving work efficiency and effectiveness. Therefore, soft skills development is a strategic step that companies need to consider to improve the competitiveness and performance of their human resources.

Does self-efficacy influence employee productivity at PT Megahputra Sejahtera?

At a 5% significance level ($\alpha = 0.05$), the t-table value was 1.701, while the calculated t-value for the Self-Efficacy variable (X2) was 3.622. Because the calculated t-value is greater than the calculated t-table ($3.622 > 1.701$), it can be concluded that Self-Efficacy has a significant effect on Employee Productivity. Therefore, the hypothesis that Self-Efficacy has a positive influence on employee productivity is accepted.

These results reinforce the importance of Self-Efficacy in the PT Megahputra Sejahtera work environment. Strengthening employee self-efficacy is an effective strategy for increasing work productivity. Employees with high levels of self-efficacy tend to have greater confidence in completing tasks, dealing with pressure, and achieving company targets. Efforts to improve self-efficacy can be achieved through ongoing job training, direct support from superiors, providing positive feedback, and creating a conducive and supportive work environment. When employees feel valued and confident in their abilities, they tend to work with greater focus, efficiency, and results-oriented focus, thus directly contributing to increased overall company productivity. According to Luthans, Youssef, and Morgan (2021), self-efficacy is a component of psychological capital that significantly contributes to improved performance and productivity because it strengthens an individual's motivation, perseverance, and resilience in the face of work pressure. Therefore, developing self-efficacy is a strategic aspect in creating superior human resources. This statement aligns with the research findings of Pratama and Santosa (2022), which showed that self-efficacy has a positive and significant influence on employee productivity at PT DEF Jakarta. Employees with high levels of self-efficacy are able to

demonstrate more optimal performance in completing work independently and effectively. Therefore, developing self-efficacy is a strategic aspect in creating superior and productive human resources in the PT Megahputra Sejahtera workplace.

Conclusion

Based on the research findings, it can be concluded that: Based on field research, employees with good communication skills, the ability to work in a team, and strong interpersonal skills have been shown to be more productive in completing tasks. This is evident in their ability to complete work more efficiently and with minimal conflict, particularly in production, marketing, and administration. Employees' self-confidence and belief in their own abilities to complete tasks also influence work outcomes. Employees with high levels of self-efficacy demonstrate greater initiative, adapt more quickly to change, and are more independent in completing their work, particularly in finance, accounting, and operator positions.

Bibliography

- Astuti, M., & Gunawan, H. (2018). *Self-efficacy in Improving Employee Performance*. Yogyakarta
- Bandura, A. (2019). *Self-efficacy: The Exercise of Control*. New York: W.H. Freeman.
- Brown, D. (2022). Self-efficacy and Its Impact on Performance. *Journal of Applied Psychology*, 107(3), 456–467.
- Chotimah, U., & Suryani, T. (2020). Self-efficacy from a psychological perspective. *Indonesian Journal of Psychology*, 9(2), 397–405.
- Daft, R. L. (2017). *Management* (12th ed.). Boston: Cengage Learning.
- Elbandiansyah. (2019). *Human resource management: A productivity approach* (p. 250). Bandung: Alfabeta.
- Fauzan, R., & Markoni. (2022). The influence of soft skills on work productivity. *Journal of Management and Organization*, 11(1), 15–23.
- Fitri, Nurul Ainun Ananda, Sultan, & Reza Afandy Ghulam. (2025). The Influence of Brand Image and Marketing Mix on Purchasing Decisions of Flora Passion Fruit Syrup, Gowa Regency, Indonesia. *BJRM (Bongaya Journal for Research in Management)*, 8(2), 12–18. <https://doi.org/10.37888/bjrm.v8i2.693>
- Fitriani, A., & Putra, R. (2020). Employee productivity from an organizational behavior perspective. *Scientific Journal of Economics and Business*, 4(2), 78–86.
- Fitriana, N., & Suharnomo. (2020). The Effect of Self-Efficacy on Employee Performance with Motivation as a Mediating Variable. *Journal of Industrial and Organizational Psychology*, 9(1), 45–55
- Fitriandari, D. (2019). *Self-efficacy and its influence on work performance*. Surabaya: Laksana Press.
- Ghozali, I. (2020). *Application of multivariate analysis with IBM SPSS 25*. Semarang: Diponegoro University Publishing Agency.
- Hafni Sahir, & Syafrida. (2022). The use of multiple linear regression tests in analyzing the influence of independent variables on the dependent variable. *Journal of Statistics and Economics*, 8(1), 50–59.
- Inayah Putri, I. (2023). Soft skills in human resource development. *Journal of Applied Psychology*, 5(1), 22–30.
- Indrawati, H., & Yulianingtyas, A. (2020). The Influence of Soft Skills and Hard Skills on Employee Performance in the Digital Era. *Journal of Management and Entrepreneurship*, 22(2), 123–132
- Kasmir, (2016). *Customer Service Ethics*. Jakarta: Prenadamedia Group.

- Kustini, A., & Sari, D. (2020). Work Productivity in Performance Management. *Journal of Business Administration*, 6(3), 45–54.
- Luthans, F. (2017). *Organizational Behavior: An Evidence-Based Approach* (13th ed.). New York: McGraw-Hill Education.
- Monika, R. (2018). *Self-Efficacy and Work Motivation* (p. 58). Bandung: Remaja Rosdakarya.
- Permana, R. A. (2021). Soft Skills as a Determining Factor for Career Success in the Workplace. *Journal of Social Sciences and Humanities*, 10(1), 67–74.
- Pratama, D. R., & Santosa, T. M. (2022). The Role of Self-Efficacy in Increasing Employee Work Productivity. *Journal of Applied Psychology*, 14(3), 201–210
- Rauf, R., Marida, Raheni, C., Hannase, U. and Tafsir (2025). Entrepreneurship for Sustainable Development. *World Journal of Entrepreneurship, Management And Sustainable Development*. Vol 21 (1).
- Sinambela, L. P. (2016). *Human Resource Management*. Jakarta: Bumi Aksara.
- Sugiyono. (2018). *Quantitative, Qualitative, and R&D Research Methods*. Bandung: Alfabeta.
- Saputra, I. K., & Handayani, S. (2021). Analysis of Factors Influencing Employee Productivity in Manufacturing Companies. *Journal of Economics and Business*, 18(2), 89–98.
- Wibowo, A. (2023). *Employee Performance Management: Theory and Practice*. Yogyakarta
- Widodo, T., & Kusuma, D. (2019). The Effect of Soft Skills Development on Employee Productivity in the Creative Industry at CV Jaya Yogyakarta. *Journal of Creativity and Innovation*, 6(4), 120-131.
- Yuliana, S., & Ramadhan, A. (2023). The influence of soft skills and self-efficacy on employee performance at the technology startup PT GHI Bandung. *Journal of Technology and Management*, 20(1), 55-67.
- Yusvita, L., & Pujiani, E. (2020). Self-efficacy in increasing individual productivity (p. 87). *Journal of Cognitive Psychology*, 2(1), 85–90.
- Zimmerman, B. J. (2017). Self-efficacy and educational development. *American Educational Research Journal*, 54(1), 45–56.