

THE EFFECT OF COMPETENCY ON INCREASING HUMAN RESOURCE PRODUCTIVITY AT THE PALM OIL MILL OF PT. TASIK RAJA

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Abstract

This study discusses the importance of human resources as a key factor in improving productivity at the Palm Oil Mill of PT. Tasik Raja, which still faces issues related to the alignment of competencies, technical skills, and employees' work capabilities. The purpose of this research is to analyze the effect of competence on employee work productivity using a quantitative approach and an associative research design, where data were collected through questionnaires and analyzed using validity tests, reliability tests, classical assumption tests, simple linear regression, and hypothesis testing. The results show that competence has a positive and significant effect on human resource productivity, indicating that higher levels of knowledge, skills, and work attitudes lead to increased productivity; therefore, the company is advised to enhance training programs, skill development, and continuous competency evaluation to support the achievement of production targets.

Keywords: Competence, Human Resource Productivity, Palm Oil.

Abstrak

Penelitian ini membahas pentingnya sumber daya manusia sebagai faktor utama dalam meningkatkan produktivitas di Pabrik Kelapa Sawit PT. Tasik Raja, yang masih menghadapi permasalahan terkait kesesuaian kompetensi, keterampilan teknis, dan kemampuan kerja karyawan. Tujuan penelitian adalah untuk menganalisis pengaruh kompetensi terhadap produktivitas kerja karyawan dengan menggunakan pendekatan kuantitatif dan jenis penelitian asosiatif, data dikumpulkan melalui kuesioner dan dianalisis menggunakan uji validitas, reliabilitas, asumsi klasik, regresi linear sederhana, serta uji hipotesis. Hasil penelitian menunjukkan bahwa kompetensi berpengaruh positif dan signifikan terhadap produktivitas sumber daya manusia, sehingga semakin tinggi pengetahuan, keterampilan, dan sikap kerja karyawan, maka semakin tinggi pula produktivitas yang dihasilkan; oleh karena itu, perusahaan disarankan untuk meningkatkan pelatihan, pengembangan keterampilan, dan evaluasi kompetensi secara berkelanjutan guna mendukung pencapaian target produksi.

Kata Kunci: Kompetensi, Produktivitas SDM, Kelapa Sawit.

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INTRODUCTION

The palm oil industry is one of the most vital sectors contributing to Indonesia's national economy, particularly as one of the world's largest crude palm oil producers (Zamri et al., 2022). The expanding global demand for palm oil, combined with increasingly competitive market dynamics driven by technological advancement, has necessitated companies to invest in adaptive and highly competent human resources (HR) (Widodo, 2017).

Effective HR management is recognized as the cornerstone of organizational performance and productivity. Competent employees are more likely to demonstrate discipline, accountability, and work effectiveness in executing production processes (Mangkunegara, 2017). Productivity, broadly defined as the ratio of output to input, is especially critical in capital-intensive industries such as palm oil

processing where labor, machinery, raw materials, and time must be coordinated efficiently (Sutrisno, 2016).

Employee work productivity is substantially influenced by competency levels, which encompass knowledge, skills, and work attitudes (Spencer & Spencer, 1993). Empirical evidence consistently demonstrates that employees with higher competency produce better performance outcomes and contribute more meaningfully to organizational goals (Sedarmayanti, 2017; Kasmir, 2016). Accordingly, HR competency enhancement is a decisive factor in boosting production output and sustaining competitive advantage (Wibowo, 2016).

The accelerating pace of technological change in the modern era further intensifies the demand for quality human resources (Dessler, 2020). Sound HR management encompassing recruitment, training, placement, development, and performance evaluation is essential for ensuring workforce adaptability to evolving job demands (Hasibuan, 2019). Organizational competence equally underpins strategic goal attainment and the capacity to navigate global challenges (Armstrong & Taylor, 2020).

Research urgency is substantiated by the proven direct influence of HR competency on work productivity, operational efficiency, and global competitiveness (Rivai & Sagala, 2018). Beyond the firm level, HR competency development also generates positive macroeconomic effects given the palm oil industry's status as a major foreign exchange contributor (Purba et al., 2021).

PT. Tasik Raja is a palm oil processing company established in September 1991, located in Rasau, Torgamba District, South Labuhanbatu Regency, North Sumatra. The mill operates with a processing capacity of 80 tonnes of FFB per hour and sources its raw materials from three main estates covering over 6,000 hectares, supplemented by supply from affiliated companies and surrounding communities. As a Foreign Direct Investment entity under the AEP Group, PT. Tasik Raja plays a significant role in the regional palm oil industry. However, the company faces challenges related to the alignment of employee competencies, technical skills, and work capabilities, which may affect overall human resource productivity. This makes PT. Tasik Raja a relevant context for investigating the relationship between competency and productivity in a real industrial setting.

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MATERIALS AND METHODS

a. Sampling

This research was conducted at the Palm Oil Mill (PKS) of PT. Tasik Raja, located in Rasau, Torgamba District, South Labuhanbatu Regency, North Sumatra. A quantitative approach was employed, which is systematic, structured, and aimed at testing hypotheses through statistical analysis (Sugiyono, 2019).

The research population encompasses all 141 employees of PT. Tasik Raja PKS. Sampling was conducted using simple random sampling with the Slovin formula (Umar, 2014), yielding 104 respondents. Primary data were collected through direct observation and questionnaire distribution using a Likert scale, while secondary data consisted of company documents.

The Slovin formula is expressed as: $n = N / (1 + N \cdot e^2)$, where n is the sample size, N is the total population, and e is the acceptable margin of error. In this study, a margin of error of $e = 0.05$ (5%) was applied to the population of $N = 141$ employees, yielding: $n = 141 / (1 + 141 \times 0.05^2) = 141 / 1.3525 \approx 104$.

104 respondents. This margin of error is standard for social science research and ensures a 95% confidence level in the representativeness of the sample.

The Likert scale used in this study consists of five response levels: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. This scale was applied to all questionnaire items measuring both the competency variable (X) and the work productivity variable (Y), enabling ordinal measurement of respondents' perceptions.

b. Data Collection

Research variables include competence as the independent variable (X) with indicators of motives, traits, self-concept, knowledge, and skills following the model of Spencer & Spencer (1993), and work productivity as the dependent variable (Y) with indicators of ability, improvement of results, work enthusiasm, self-development, quality, and efficiency (Sutrisno, 2016).

c. Data Analysis

Data analysis was conducted using IBM SPSS Statistics software, through instrument testing (validity and reliability), classical assumption testing including normality, multicollinearity, and heteroscedasticity (Ghozali, 2018), followed by simple linear regression analysis and the t-test for hypothesis testing, and the coefficient of determination (R^2) to quantify the explanatory power of the independent variable. The research is also equipped with a systematic flowchart and a research schedule designed to ensure that the entire process runs in a directed and timely manner (Creswell, 2018).

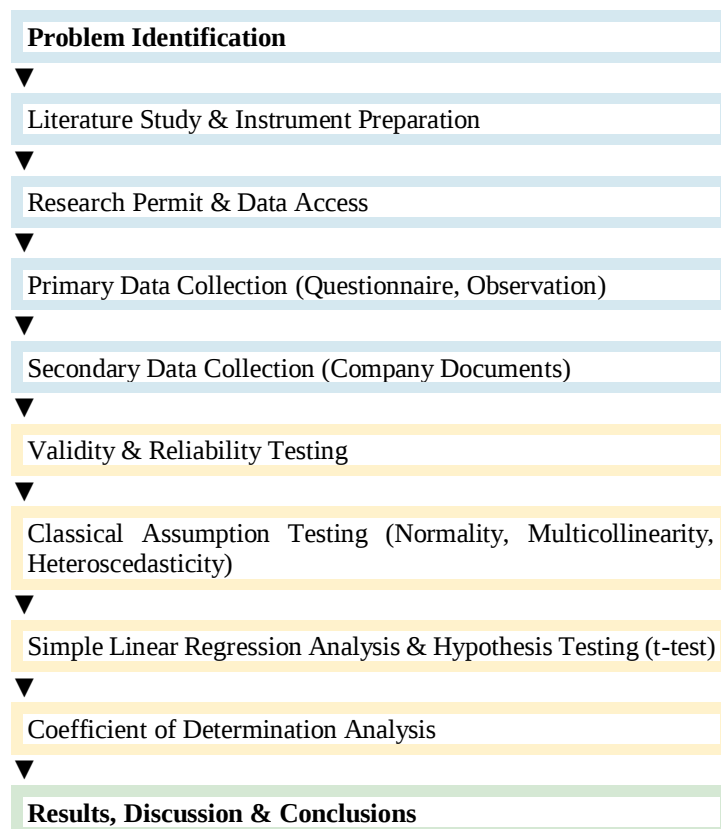


Figure 1. Research Flowchart of HR Competency and Productivity Study

RESULTS AND DISCUSSION

As shown in Table 1, the characteristics of the 104 respondents indicate that the workforce is predominantly male (99%), consistent with the physically demanding nature of palm oil mill operations (Hasibuan, 2019). Most respondents are in the 46–55-year age group, suggesting a mature and experienced workforce with a strong understanding of factory processes (Mangkunegara, 2017).

In terms of work experience, the majority have served between 1 and 20 years, reflecting a relatively high level of operational familiarity. Most employees hold a Senior High School (SMA) educational background, indicating that while the workforce possesses adequate foundational skills,

there remain limitations in advanced technical and managerial capacities that may require targeted training interventions (Sedarmayanti, 2017).

Table 1. Characteristics of Respondents at PT. Tasik Raja Palm Oil Mill

Characteristics	Category	Frequency (n)	Percentage (%)
Gender	Male	103	99%
	Female	1	1%
Age Group	46–55 years	Majority	–
Work Experience	1–20 years	Majority	–
Last Education	Senior High School	Majority	–

The description of the competency variable reveals that employees generally demonstrate adequate competence levels, particularly in knowledge, operational ability, teamwork, and task completion according to company standards (Spencer & Spencer, 1993; Wibowo, 2016). However, notable weaknesses persist in adapting to new technologies and in the perceived relevance of training to actual job requirements areas that remain suboptimal according to a portion of respondents (Dessler, 2020).

For the HR productivity variable, most employees are able to meet production targets, maintain work quality, and utilize time and resources efficiently (Sutrisno, 2016). Employees also demonstrate relatively high motivation to improve work quality and contribute to team productivity, although variability exists in managing work pressure and the consistency of performance improvement (Kasmir, 2016).

Instrument testing confirmed that all items in the questionnaire are valid and reliable, satisfying the requirements for further analysis (Ghozali, 2018). Classical assumption tests—normality, multicollinearity, and heteroscedasticity—were all fulfilled, confirming that the regression model is appropriate for inferential use (Sugiyono, 2019).

As presented in Table 2, the simple linear regression analysis yields the equation $Y = 14.829 + 0.499X$, indicating that competency exerts a positive effect on HR productivity. The t-test result ($t\text{-count} = 5.001 > t\text{-table} = 1.984$; $\text{sig.} = 0.000 < 0.05$) confirms that competency has a statistically significant effect on employee productivity at PT. Tasik Raja (Rivai & Sagala, 2018; Armstrong & Taylor, 2020).

Table 2. Results of Simple Linear Regression Analysis

Variable	Coefficient (B)	t-count	t-table	Sig.
Constant	14.829	–	–	–
Competency (X)	0.499	5.001	1.984	0.000
R Square	0.197	–	–	–

The coefficient of determination ($R^2 = 0.197$) indicates that competency accounts for 19.7% of the variance in HR productivity. While statistically significant, this figure suggests that 80.3% of productivity variation is attributable to other factors not examined in the present study, such as work motivation, work environment, and leadership style (Widodo, 2017; Purba et al., 2021). These findings are consistent with prior studies confirming the positive role of competency in driving organizational productivity (Nugroho & Susanto, 2020; Hidayati & Sari, 2021). Overall, the results affirm that systematic competency improvement through training, skills development, and professional work attitude guidance is a strategic imperative for the company to achieve optimal production targets (Hasibuan, 2019; Dessler, 2020).

CONCLUSIONS

This study concludes that competency has a positive and significant effect on employee work productivity at PT. Tasik Raja Palm Oil Mill, with a t-count of 5.001 exceeding the t-table value of

1.984 and a significance value of 0.000, confirming the research hypothesis. The regression equation $Y = 14.829 + 0.499X$ indicates that every unit increase in competency — encompassing knowledge, skills, and work attitude — corresponds to a proportional increase in HR productivity. However, the coefficient of determination ($R^2 = 0.197$) suggests that competency accounts for 19.7% of productivity variance, with the remaining 80.3% influenced by other factors beyond the scope of this study. Therefore, it is recommended that PT. Tasik Raja continuously enhance employee competency through structured training, skills development, and periodic competency evaluation to support optimal production performance.

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