



Special Issue:

**ICMS 2025**

Website. :

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## The Influence Of Goods Specifications, Planning And Negotiations On Delays In The Procurement Process Of Goods And Services At The Pharmaceutical Bumn Holding.

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**Abstract.** This study examines the influence of goods specification (X1), procurement planning (X2), and negotiation (X3) on delays in the procurement process (Y) at Indonesia's Pharmaceutical SOE Holding. Using multiple linear regression on data from 200 respondents, the results reveal that all three independent variables have a significant negative effect on procurement delays ( $F = 17.031$ ;  $p < 0.001$ ), with an R-square of 0.207 (20.7%). The regression equation is  $Y = 22.426 - 0.273 X1 - 0.275 X2 - 0.154 X3$ . The findings support transaction cost economics and agency theory, indicating that improved specification quality, integrated planning, and effective negotiation significantly reduce delays. Practical implications include the need for user training, cross-division planning integration, and technology-supported negotiation.

**Keywords:** procurement delay, goods specification, procurement planning, negotiation, pharmaceutica

### INTRODUCTION

The pharmaceutical industry in Indonesia operates in a highly competitive environment, making efficient and timely procurement critical for operational continuity. Presidential Regulation No. 12/2021 mandates that public procurement must be efficient, transparent, accountable, fair, and competitive. However, delays in procurement processes at Indonesia's Pharmaceutical SOE Holding (comprising PT Bio Farma, PT Kimia Farma Tbk, PT IndoFarma Tbk, and PT Inuki) frequently occur due to immature goods specifications from users, misaligned planning across divisions, and failed negotiations. Such delays increase operational costs and threaten profitability. This study aims to empirically test the extent to which these three factors influence procurement delays and to provide actionable recommendations.

### LITERATURE REVIEW

Transaction cost economics (Williamson, 1985) and agency theory (Jensen & Meckling, 1976) suggest that unclear specifications and poor negotiation increase information asymmetry and transaction costs, leading to delays. Previous studies (Fidhia, 2017; Nurfitri, 2021) consistently identify immature documents and lack of planning integration as primary causes of delay in Indonesian public procurement. Based on the theoretical framework and empirical evidence, the hypotheses are: H1: Goods specification has a negative effect on procurement delays. H2: Procurement planning has a negative effect on procurement delays. H3: Negotiation has a negative effect on procurement delays.

## RESEARCH METHODS

This quantitative study employed multiple linear regression. The population consisted of employees involved in procurement at Indonesia's Pharmaceutical SOE Holding. A purposive sample of 200 respondents was obtained. The instrument comprised 20 Likert-scale items (5 items each construct). Validity was confirmed (item-total correlation 0.578–0.738;  $p < 0.01$ ), and reliability met the threshold (Cronbach's  $\alpha = 0.615$ –0.737). Data were analyzed using SPSS 27. Classical assumption tests (multicollinearity, heteroscedasticity, normality) were satisfied or robust due to large sample size ( $N=200$ ).

## RESULTS AND DISCUSSION

**Results of Validity and Reliability :** The validity test was conducted using item-total correlation (Pearson Product-Moment Correlation) with the acceptance criterion of  $r_{\text{calculated}} \geq r_{\text{table}} = 0.138$  ( $N = 200$ ,  $\alpha = 0.05$ , one-tailed test). All 20 items across the four variables exhibited item-total correlation coefficients ranging from 0.578 to 0.738, with all correlations statistically significant at  $p < 0.01$ . Since all computed  $r$ -values exceeded the critical value of 0.138, all items were declared valid.

The reliability test was performed using Cronbach's Alpha coefficient, with a minimum acceptable threshold of 0.60. The results of the Cronbach's Alpha analysis were as follows: product specification ( $X_1$ ) = 0.705 (good), procurement planning ( $X_2$ ) = 0.650 (acceptable), procurement negotiation ( $X_3$ ) = 0.615 (acceptable), and delay in the procurement process ( $Y$ ) = 0.737 (good). As all Cronbach's Alpha values exceeded 0.60, the entire instrument was deemed reliable and suitable for use in subsequent analyses.

**Results of Multiple Linear Regression Analysis:** Multiple linear regression analysis was conducted to examine the effects of Product Specification ( $X_1$ ), Procurement Planning ( $X_2$ ), and Procurement Negotiation ( $X_3$ ) on Delays in the Procurement Process of Goods and Services ( $Y$ ). The resulting regression equation is as follows:  $\hat{Y} = 22.426 - 0.273 X_1 - 0.275 X_2 - 0.154 X_3$ . The complete results of the multiple linear regression analysis are presented in the following table:

Table 1. Results of Multiple Linear Regression Analysis

Variable	B (Unstandardized Coefficient)	Std. Error	Beta	t	Sig.	VIF
(Constant)	22.426	1.283		17.483	0.000	
Product Specification ( $X_1$ )	-0.273	0.071	-0.265	-3.836	0.000	1.183
Procurement Planning ( $X_2$ )	-0.275	0.07	-0.253	-3.935	0.000	1.022
Procurement Negotiation ( $X_3$ )	-0.154	0.077	-0.138	-1.996	0.047	1.184

Source: SPSS output (2025)

**Coefficient of Determination:** The  $R^2$  value was 0.207 (20.7%), while the Adjusted  $R^2$  was 0.195. This indicates that 20.7% of the variance in delays in the procurement process ( $Y$ ) can be explained by product specification ( $X_1$ ), procurement planning ( $X_2$ ), and procurement negotiation ( $X_3$ ) combined. The remaining 79.3% is influenced by other factors not included in the model.

**Hypothesis Testing :** Hypothesis testing was conducted using the simultaneous F-test and partial t-tests. The critical t-value for  $N = 200$ ,  $df = 196$ , and  $\alpha = 0.05$  (one-tailed) was 1.653.

**Simultaneous F-test:** The calculated F-value was 17.031 with a significance level of 0.000 ( $p < 0.01$ ). Since  $F_{\text{calculated}} > F_{\text{table}} (2.65)$  and  $p < 0.05$ , product specification ( $X_1$ ), procurement planning ( $X_2$ ), and procurement negotiation ( $X_3$ ) jointly have a significant effect on delays in the procurement process ( $Y$ ).

### Partial t-tests:

- Product Specification ( $X_1$ ):  $t = -3.836$ ,  $p = 0.000$ . Since  $|t| > 1.653$  and  $p < 0.05$ ,  $X_1$  has a significant negative effect on  $Y$ . Hypothesis 1 is supported.
- Procurement Planning ( $X_2$ ):  $t = -3.935$ ,  $p = 0.000$ . Since  $|t| > 1.653$  and  $p < 0.05$ ,  $X_2$  has a significant negative effect on  $Y$ . Hypothesis 2 is supported.
- Procurement Negotiation ( $X_3$ ):  $t = -1.996$ ,  $p = 0.047$ . Since  $|t| > 1.653$  and  $p < 0.05$ ,  $X_3$  has a

significant negative effect on Y. Hypothesis 3 is supported. Thus, all three independent variables simultaneously and significantly affect procurement delays (sig. F < 0.05) and collectively explain 20.7% of the variation in delays ( $R^2 = 0.207$ ).

### Classical Assumption Tests

Prior to hypothesis testing, classical assumption tests were performed to ensure the validity of the regression model.

#### Multicollinearity Test

Tolerance values were 0.845 ( $X_1$ ), 0.978 ( $X_2$ ), and 0.844 ( $X_3$ ), all greater than 0.10. VIF values were 1.183 ( $X_1$ ), 1.022 ( $X_2$ ), and 1.184 ( $X_3$ ), all below 10. Therefore, no multicollinearity was detected in the regression model.

#### Heteroscedasticity Test

The scatterplot of standardized predicted values against standardized residuals showed random distribution of data points above and below zero on the Y-axis, with no systematic pattern (e.g., funnel or wave shape). Hence, the model is free from heteroscedasticity.

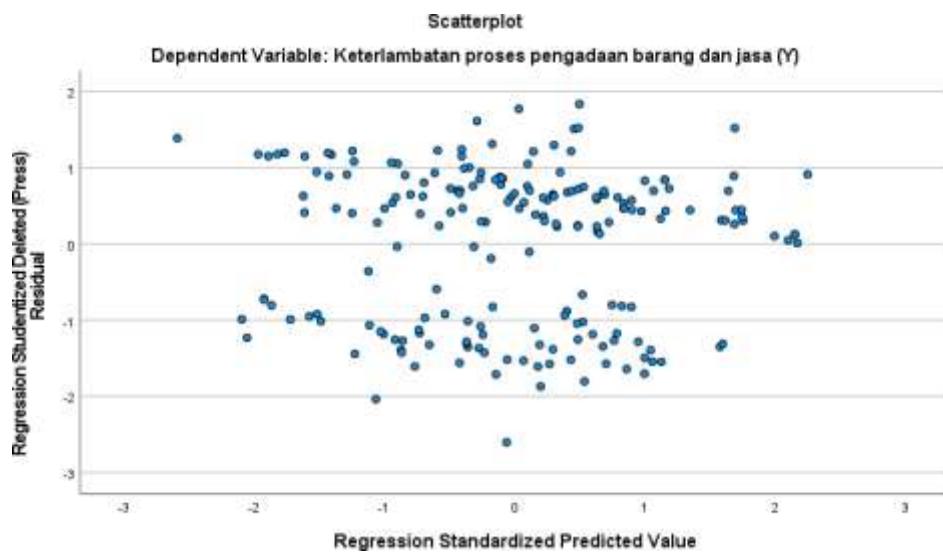


Figure 1 : Scatterplot of Heteroscedasticity Test

#### Normality of Residuals Test

The Kolmogorov-Smirnov test yielded a significance value of 0.000 ( $p < 0.05$ ), indicating that the residuals were not normally distributed. However, given the large sample size ( $N = 200$ ), the Central Limit Theorem applies, and violation of the normality assumption does not substantially affect the validity of the F- and t-test inferences. Therefore, the regression results remain interpretable.

## DISCUSSION

### Effect of Product Specification on Procurement Delays

The regression results reveal that Product Specification ( $X_1$ ) exerts a significant negative effect on procurement process delays ( $\beta = -0.265$ ,  $p < 0.001$ ). This implies that the better and more mature the product specifications prepared by users, the lower the level of procurement delays. This finding aligns with Transaction Cost Economics theory, which posits that complex or unclear specifications increase transaction costs and potentially lead to delays. The result also corroborates the problem identification in the background section, where immature specification documents were highlighted as a primary cause of delays within the Pharmaceutical State-Owned Enterprises Holding.

### Effect of Procurement Planning on Procurement Delays

Procurement Planning ( $X_2$ ) exhibits the strongest significant negative effect among the independent variables ( $\beta = -0.253$ ,  $p < 0.001$ ). This indicates that well-executed and inter-divisionally aligned planning is the most influential factor in reducing procurement delays. The finding is consistent with Presidential Regulation No. 12/2021, which emphasizes planning as the foundational stage determining the success of the entire procurement process. Poorly aligned planning, as identified in the background, was confirmed as a major operational bottleneck in the Pharmaceutical SOE Holding.

### Effect of Procurement Negotiation on Procurement Delays

Procurement Negotiation ( $X_3$ ) has a significant negative effect ( $\beta = -0.138$ ,  $p = 0.047$ ). More effective negotiation processes are associated with reduced delays. This result supports prior studies by Mustari et al. (2018) and Bambang Setyohadi et al. (2019), which found that poorly managed, protracted, or deadlocked negotiations can substantially hinder procurement progress. Although its effect is the weakest among the three variables, negotiation remains a critical component in achieving efficient agreements.

Collectively, the three independent variables significantly influence procurement delays and account for 20.7% of their variance. The remaining 79.3% is attributable to other factors (e.g., technical/technology issues mentioned in the background or external factors such as regulations and suppliers). These findings reinforce the argument that procurement delays in the Pharmaceutical SOE Holding not only affect costs and operations but can also be mitigated through internal improvements in these three key areas.

### Comprehensive Discussion: Integration of Influencing Factors and Practical Implications

The multiple linear regression analysis demonstrates that product specification ( $X_1$ ), procurement planning ( $X_2$ ), and procurement negotiation ( $X_3$ ) jointly exert a significant negative influence on delays in the procurement process of goods and services ( $Y$ ) within the Pharmaceutical State- Owned Enterprises Holding, with a coefficient of determination ( $R^2$ ) of 0.207. This suggests that improvements in these three independent variables can reduce delay levels by up to 20.7%, while the remainder is driven by external factors (e.g., technical issues or regulatory constraints) identified in the research background. These results are consistent with Transaction Cost Economics (Williamson, 1985), where immature specifications (e.g., discrepancies between User Requirement Specifications/Terms of Reference and field conditions) increase transaction costs and information asymmetry risks, thereby prolonging the procurement process. Similarly, misaligned inter-divisional planning—as regulated under Presidential Regulation No. 12/2021 regarding needs-planning stages—emerges as the primary operational barrier, exhibiting the strongest effect in the model ( $\beta = -0.253$ ). Recent Indonesian studies reinforce the present findings. Abduh et al. (2023) reported that low procurement unit maturity—particularly in planning and provider selection—leads to significant inefficiencies and delays in public construction projects, mirroring the dominant influence of  $X_2$ . Likewise, Sarwani and Baihaqi (2024) identified unclear contract specifications and material procurement delays as primary causes of project delays in Indonesian EPC projects, supporting the negative effect of  $X_1$  ( $\beta = -0.265$ ), where mature specifications minimize disputes and accelerate tendering. Regarding negotiation ( $X_3$ ), despite its relatively weaker effect ( $\beta = -0.138$ ), the result aligns with Mustari et al. (2018), who emphasized that prolonged or stalled negotiations due to inadequate preparation can halt procurement entirely ( $p = 0.047$ ). Darasepti (2025) further confirmed this in a Jakarta-based contractor case study, where material supply delays—often triggered by failed negotiations and ambiguous specifications—caused financial losses of 15–20% of project budgets, comparable to the profitability impacts noted in Chapter I.

Overall, integrating these factors with earlier works by Fidhia Nailani Mubarokah (2017) and Harry Purwoko et al. (2023) underscores that procurement delays in the Pharmaceutical SOE Holding are systemic rather than isolated issues. They can be mitigated through practical recommendations: (1) training in field-data-based specification development to reduce information asymmetry (Agency Theory); (2) implementation of integrated inter-divisional planning systems in accordance with Presidential Regulation No. 12/2021 to enhance procurement unit maturity; and (3) development of time-bound negotiation protocols supported by e-procurement technology to

prevent deadlocks. Budiman and Purba (2023) added that risk-based design-and-build approaches can reduce delays by up to 25% in similar infrastructure projects, offering positive implications for operational efficiency in the Pharmaceutical SOE Holding and supporting government-mandated principles of efficiency, transparency, and accountability.

## CONCLUSION AND RECOMMENDATION

### Conclusion

This study concludes that product specifications, procurement planning, and negotiations each have a significant negative impact on delays in the procurement process at the State-Owned Pharmaceutical Holding Company. Procurement planning shows the strongest influence, indicating that accurate identification of needs, appropriate scheduling, and coordination between divisions are the most decisive factors in reducing delays. Product specifications also contribute to reducing delays when they are clearly and comprehensively prepared, thereby minimizing revisions and information asymmetry. Meanwhile, although negotiations have a smaller impact, they remain an important element in preventing protracted discussions and supporting the timely achievement of agreements with suppliers.

The research model was able to explain 20.7% of the variation in procurement delays, indicating that internal managerial factors are an important component in understanding procurement inefficiencies. These findings reinforce the relevance of transaction cost theory and agency theory in the context of public sector procurement, particularly in the highly regulated environment of the State-Owned Pharmaceutical Holding Company. Overall, improvements in documentation quality, planning processes, and negotiation practices have been proven to contribute significantly to reducing procurement delays.

### Recommendation

Based on empirical findings, several recommendations can be made. First, organizations need to improve the quality of goods specification drafting through capacity building programs, the use of standard templates, and technical verification mechanisms to ensure the completeness of documents before the procurement process begins. Second, procurement planning needs to be strengthened through an integrated planning system that connects all divisions, accompanied by regular monitoring to maintain consistency and timeliness. Third, the effectiveness of negotiations can be improved through the development of structured negotiation protocols, market-based preparation, and the use of digital negotiation platforms.

In addition, the implementation of an integrated procurement information system is recommended to integrate the main stages—specification development, planning, and negotiation—thereby reducing manual processes and increasing efficiency. For further research, it is recommended to add variables such as supplier capabilities, human resource competencies, regulatory dynamics, and the level of e-procurement adoption to improve the explanatory power of the model. Expanding the research object to state-owned enterprises or other public institutions is also necessary to obtain broader generalizations.

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