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THE IMPACT OF INTERNAL, EXTERNAL, AND COMPETITOR FACTORS ON MARKETING STRATEGY PERFORMANCE: A CASE STUDY OF FOUR SCRAP METAL COMPANIES IN INDONESIA

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Abstract. This study analyzes the impact of internal and external factors, as well as competition, on the performance of marketing strategies in Indonesia's scrap metal industry. This industry plays a crucial role in the circular economy by supplying secondary raw materials to various manufacturing sectors. However, companies in this sector face challenges such as raw material price fluctuations, government regulations, and intense competition from both local and global players. This study employs a quantitative approach using the Structural Unobserved Regression (SUR) method to examine the relationship between key factors affecting the marketing performance of four scrap metal companies in Indonesia. The findings reveal that the average selling price has a positive and significant impact on marketing performance in PT OPMS, PT GDST, and PT GGRP, while global market demand significantly affects PT KRAS. Competitor product variations also positively influence PT GGRP. Conversely, marketing expenditures, interest rates, and competitor prices do not significantly impact most companies. This study confirms that optimizing selling prices, understanding global market demand, and adapting to competitor product variations are key factors in enhancing competitiveness. Therefore, companies must implement flexible pricing strategies, improve operational efficiency, and expand their global market share to address industry challenges.

Keywords: marketing strategy, scrap metal industry, internal factors, external factors, competition, circular economy.

I. INTRODUCTION

The manufacturing industry is a key driver of global economic growth, contributing significantly to value creation and job opportunities. According to the World Bank (2023), manufacturing accounts for 15.35% of global GDP and continues to evolve with technological advancements and industrial digitalization. Changes in trade policies and global value chains (Gereffi & Lee, 2014) have also influenced the industry's transformation, highlighting the need for efficient raw material and waste management (Stahel, 2019).

The circular economy has gained prominence in manufacturing, emphasizing reducing, reusing, and recycling materials to extend product life cycles and minimize environmental impact (Hartini et al., 2022). A crucial component of this model is the scrap metal industry, which supplies secondary raw materials for sectors like automotive, construction, and electronics. Unlike metal recycling, which involves refining and reprocessing used materials, scrap metal businesses focus on collecting, sorting, and distributing metal waste to manufacturers (Reck & Graedel, 2012). This reduces industrial waste and dependence on primary metal mining, mitigating environmental harm (Graedel et al., 2011).

Table 1. Differences Between Scrap Metal Industry and Metal Recycling

No	Aspect	Scrap Metal	Metal Recycling
1	Definition	Usable or resellable metal waste	Processing waste into new raw materials
2	Focus	Collection, sorting, and resale	Refining and repurposing metals
3	Source	Scrap iron, automotive parts, and industrial waste	Pre-processed scrap metal
4	Process	Sorting and selling	Smelting and manufacturing
5	Key Players	Collectors, scrap dealers, exporters	Recycling plants, manufacturers
6	Example	Selling scrap iron to recycling plants	Melting scrap into new steel

The scrap metal industry plays a vital role in reducing reliance on metal mining, which contributes to carbon

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emissions and ecosystem degradation (Graedel et al., 2011). The International Aluminium Institute (2023) reports that over 75% of the world's aluminum remains in use due to recycling. The global scrap metal market was valued at USD 407.02 billion in 2023 and is expected to reach USD 568.76 billion by 2032, growing at a 3.8% CAGR (Fortune Business Insights, 2023). Rising sustainability awareness and stricter regulations are expected to drive further growth (OECD, 2023), supporting a transition to a low-carbon economy (Ellen MacArthur Foundation, 2021).

In Indonesia, the scrap metal industry is growing alongside manufacturing expansion and government policies promoting a circular economy. The Indonesian Iron and Steel Industry Association (IISIA, 2023) estimates national steel consumption at IDR 200 trillion, with output exceeding IDR 100 trillion and export revenues approaching the same figure. Government initiatives encouraging recycled materials and reducing metal imports further support domestic growth (Ministry of Industry, 2023).

Despite its potential, the industry faces challenges, including raw material price fluctuations, global trade policy shifts, and fluctuating demand (World Bank, 2023). Price instability creates supply chain uncertainties, impacting production costs and profitability (OECD, 2023). Competition has intensified, with multinational firms leveraging advanced technology and efficient supply chains to dominate the market (Reck & Graedel, 2012). Many local companies struggle due to limited technology, production capacity, and marketing strategies (Ministry of Industry, 2023). Conventional financial management in the sector also limits expansion and innovation (Nurhalimah et al., 2017).

Companies that fail to adopt modern processing technology or expand their market reach risk stagnation and declining competitiveness (OECD, 2023). Studies highlight that operational efficiency and pricing strategies are crucial for competitive advantage (Supriyanto et al., 2019; Sholeh, 2020). Effective marketing strategies—such as differentiation, branding, and export expansion—enhance long-term competitiveness (Gereffi & Lee, 2014).

This study explores how internal, external, and competitive factors influence marketing performance in Indonesia's scrap metal industry. Using Seemingly Unrelated Regression (SUR), it examines key variables affecting four major companies. Previous research has typically analyzed either internal or external factors separately (Purwidianti & Rahayu, 2015; Munizu, 2010). By integrating both perspectives, this study provides a comprehensive analysis of the industry.

While existing studies focus on global trends, research on Indonesia's scrap metal industry remains limited due to data accessibility and regulatory variations (Ministry of Industry, 2023). IISIA (2023) data indicate that Indonesia's steel industry has significant economic value, yet faces challenges like raw material import restrictions and inadequate processing facilities. The study offers fresh insights by applying SUR GLS methodology to analyze how market dynamics impact business performance.

In an increasingly competitive market, scrap metal companies must optimize supply chain management, processing efficiency, and marketing adaptability. Some firms, like PT Optima Prima Metal Sinergi Tbk, have successfully navigated these challenges (PT Optima Prima Metal Sinergi Tbk, 2023). Others struggle to keep pace with rapid industry changes. This research aims to identify key marketing strategies that enhance competitiveness and sustainability in Indonesia's scrap metal sector.

II. RESEARCH METHODS

This study adopts a quantitative research approach utilizing panel data and time series analysis to explore the impact of internal, external, and competitive factors on marketing strategy performance in Indonesia's B2B scrap metal industry. By applying the Seemingly Unrelated Regression (SUR) model, which offers more efficient parameter estimation than Ordinary Least Squares (OLS) by accounting for correlations among residuals across equations, the study provides a robust framework for analyzing interconnected marketing dynamics. The research focuses on four companies—PT OPMS, PT GDST, PT GGRP, and PT KRAS—selected based on criteria such as scale, supply chain role, and data availability. Secondary data spanning 2020–2023, drawn from annual reports, industry publications, and macroeconomic databases, are converted into quarterly observations using Hanssens' interpolation method to capture industry fluctuations and lagged strategic effects more precisely. The analysis process includes data cleaning, descriptive statistics, SUR-based regression modeling, and statistical testing (e.g., VIF, Breusch-Pagan, and Durbin-Watson tests) to ensure validity and reliability. Building on Ibrahim and Harrison's (2019) model but tailored to the scrap metal sector's B2B context, the research contributes a nuanced understanding of how firm-specific and external factors jointly influence profitability, offering practical insights for strategic marketing adaptation amid volatile market conditions..

III. RESULT AND DISCUSSION

Descriptive Statistics

Descriptive statistics from the four companies (PT OPMS, PT GDST, PT GGRP, and PT KRAS) provide an overview of the variations in internal strategy, external factors, and competitor presence affecting their marketing strategy performance. In terms of internal strategy, there is a significant difference in marketing expenditures. PT GDST has the highest average marketing expenditure (12,567) compared to PT OPMS (1,529), PT GGRP (1,984), and PT KRAS (7,667), indicating a more aggressive promotional strategy at GDST. The average selling price also varies significantly, with PT GDST recording the highest figure (525,429), while PT OPMS has a much lower selling price (11,604), reflecting differences in business models and market segments.

Regarding external factors, global market demand remains relatively stable across all companies, averaging around 6.1 million units, while the interest rate remains constant at 0.06 with low variability (std. dev. 0.002), indicating relatively uniform macroeconomic conditions across the companies. However, fuel prices show a relatively

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high standard deviation (around 5.7–5.9), which may impact operational costs and pricing strategies.

In terms of competition, competitor prices show significant differences between PT GDST (463,329) and PT OPMS (10,113), reflecting different industry dynamics. Competitor product variations remain relatively uniform, averaging around 110.7 across all companies, suggesting that product differentiation is not highly extreme. Regarding marketing strategy performance (gross profit), PT GDST has the highest gross profit (62.1), while PT OPMS has the lowest (1,324), indicating that marketing strategies and operational efficiency significantly contribute to profitability. Overall, the data suggest that while external factors remain similar, companies have highly different internal strategies and competitive positions. Firms with higher marketing expenditures and competitive pricing tend to have greater profitability, while reliance on external factors such as fuel prices and interest rates remains a risk that needs to be managed.

Assumption Tests

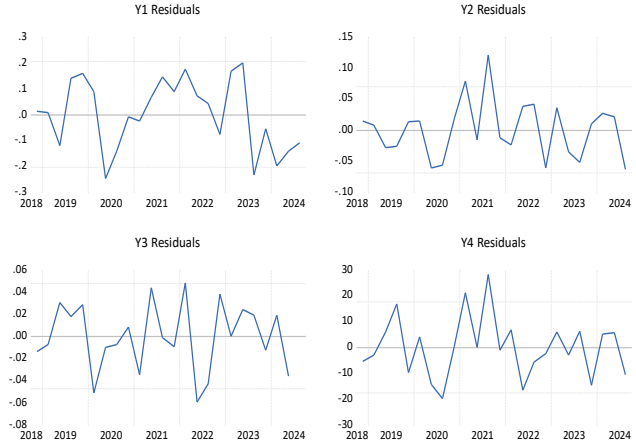
Normality Test

In regression analysis, the normality test of residuals aims to ensure that residuals from each regression equation are normally distributed. Normal residual distribution supports the validity of estimation results. The normality test in this model was conducted using the Jarque-Bera test, where the probability value (Prob.) was compared with a 5% significance level (0.05). The results show that the probability values for all components are greater than 0.05, indicating that the residuals are normally distributed. The joint normality test also supports this conclusion, suggesting that the Seemingly Unrelated Regression (SUR) model does not experience normality issues.

Multicollinearity Test

The multicollinearity test aims to determine whether there is a strong correlation among independent variables in the SUR model. Based on the correlation matrix results, the relationships between dependent variables remain moderate, with the highest correlation at 0.5018 between Y2 and Y4. No correlation exceeds the threshold of 0.8, suggesting that the model does not suffer from severe multicollinearity.

Heteroskedasticity Test



The heteroskedasticity test was conducted to identify whether residual variance changes across different levels of independent variables. Based on the residual time-series plot, the residuals for Y1, Y2, and Y3 fluctuate randomly around zero, suggesting no strong heteroskedasticity. However, the residuals for Y4 show some variance increases over time, which might indicate mild heteroskedasticity.

Autocorrelation Test

The System Residual Portmanteau Test for Autocorrelations was conducted to detect potential autocorrelation. The probability values across different lags are consistently above 0.05, indicating that there is no significant autocorrelation in the residuals. Thus, the model satisfies the assumption of independent residuals.

SUR Model Estimation Results

The estimation results indicate that some variables significantly influence marketing performance across different companies. The average selling price consistently has a significant positive impact ($p < 0.01$) on company performance, highlighting the crucial role of pricing strategies in profitability. Conversely, competitor prices exhibit a significant negative effect on three companies, emphasizing that increasing competitor prices can reduce market competitiveness. Some other variables, such as interest rates and competitor marketing activities, show different effects across companies, reflecting variations in strategies and sensitivity to external factors. These results provide valuable insights for decision-makers in developing more adaptive and data-driven marketing strategies.

Hypothesis Testing

Partial Test (t-Test)

The t-test results show that the average selling price, interest rate, and marketing expenditure significantly influence gross profit in some companies, while other variables such as distribution capacity and fuel prices do not strongly explain marketing performance. This suggests that internal pricing strategies and financial structures are more influential than external economic conditions in determining profitability.

Simultaneous Test (F-Test)

The F-test results indicate that the regression models are highly robust in explaining the relationship between internal, external, and competitor factors on marketing performance. The R-squared values are particularly high for PT OPMS (0.997), PT GDST (>0.99), and PT GGRP (>0.99), meaning nearly all variations in gross profit can be explained by the model. However, PT KRAS has a lower R-squared (0.788), suggesting that additional external factors not included in the model may influence its marketing performance.

The scrap metal industry in Indonesia plays a This study confirms that marketing strategies in Indonesia's scrap metal industry are shaped by internal factors, external conditions, and competition, as analyzed using the Seemingly Unrelated Regression (SUR) model. Internal aspects such as average selling price, product diversification, and operational efficiency significantly impact profitability. Meanwhile, external conditions, including interest rates and global market

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demand, vary in influence across companies, indicating the importance of macroeconomic stability for business performance. Competitive dynamics, particularly pricing strategies and distribution networks, also play a critical role in shaping a company's market position.

Findings indicate that pricing strategy is a key driver of profitability, as demonstrated by the positive effect of average selling price on gross profit in most companies. However, marketing expenditures do not always translate into increased revenue unless integrated with digital and sustainability-driven strategies, as seen in PT KRAS. Companies with high reliance on external financing, such as PT OPMS, are more vulnerable to fluctuations in interest rates, while those with an export focus are more affected by shifts in global market demand. Additionally, competition in pricing exerts significant pressure on profitability, particularly for PT GDST, which operates in a highly competitive market.

The success of companies in this industry depends not only on internal strategies but also on their ability to adapt to external conditions and competitive pressures. The regression model used in this study demonstrates a high level of accuracy, especially for PT OPMS, GDST, and GGRP, with an R^2 exceeding 0.99, suggesting that nearly all variations in profit are well-explained by the identified factors. However, the lower R^2 of PT KRAS (0.788) implies that other external variables may also influence its marketing performance, necessitating further analysis.

To strengthen competitiveness and profitability, companies in this industry should optimize pricing strategies by adopting a flexible, market-driven approach that considers production costs and competitor movements. Implementing dynamic pricing models can help manage price fluctuations and competitive pressures more effectively. For firms that rely on external financing, mitigating interest rate risks through hedging or diversifying funding sources can reduce financial vulnerability.

Enhancing operational efficiency and supply chain management is also crucial. Investing in automation and artificial intelligence (AI) for sorting and processing scrap metal can improve productivity while minimizing costs. Expanding distribution networks, both domestically and internationally, can help companies, especially large-scale producers like PT KRAS, maintain competitiveness in an evolving market landscape.

In response to increasing competition, differentiation through sustainability-driven strategies can offer a long-term competitive advantage. The adoption of green marketing and environmental certifications can distinguish companies from their competitors while aligning with global sustainability trends. Collaborations with manufacturing industries that implement circular economy principles can also create stable demand for recycled metals, providing a more secure market for scrap metal companies.

Export-oriented businesses must remain agile in navigating fluctuations in global demand and trade regulations. Expanding distribution channels and diversifying product offerings to meet international market needs will enhance their resilience to external shocks.

Beyond corporate strategies, this study also offers insights for academics and policymakers. Future research could explore the role of technological advancements, environmental regulations, and long-term sustainability strategies in shaping the industry. For policymakers, supporting supply chain efficiency and providing incentives for recycling-based industries could foster long-term competitiveness and economic sustainability.

By embracing adaptive, innovative, and sustainability-driven marketing strategies, Indonesia's scrap metal industry can enhance its position both domestically and globally, ensuring continued growth in an increasingly competitive market

IV. CONCLUSION

This study reveals that profitability in the scrap metal industry is strongly influenced by average selling prices, while the impact of marketing expenditures is contingent upon integration with digital and sustainability-oriented strategies. Companies with high reliance on external financing face greater financial risk due to interest rate volatility, and those targeting export markets are particularly exposed to changes in global demand. Competitive pricing remains a significant challenge, especially in saturated markets. Furthermore, the regression model demonstrates high explanatory power for most companies, though the lower R^2 value for PT KRAS suggests the presence of unobserved external factors affecting marketing performance, indicating a need for further research.: To sustain profitability and strengthen competitiveness, companies should adopt flexible, market-responsive pricing strategies and mitigate financial risks through diversified funding and hedging mechanisms. Investment in operational efficiency, particularly through automation and AI, is essential for cost control and productivity. Embracing sustainability-driven marketing, such as green certifications and circular economy collaborations, can provide strategic differentiation. Export-oriented firms must diversify products and markets to navigate global volatility. Additionally, academic researchers should investigate technological and regulatory influences on this sector, while policymakers are encouraged to support recycling-based industries through incentives and infrastructure improvements to ensure long-term industry resilience and sustainability.

REFERENCES

[1] Badan Pusat Statistik (BPS). (2023). Kontribusi Sektor Manufaktur terhadap PDB Nasional Tahun 2023. Jakarta: BPS RI.
[2] Bartels, R. (2014). Seemingly Unrelated Regressions. https://doi.org/10.1002/9781118445112.STAT07758.

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e-ISSN: 2598-120X; p-ISSN: 2598-117X

[3] Ellen MacArthur Foundation. (2021). The circular economy: A transformative approach. Ellen MacArthur Foundation.
[4] Ellen MacArthur Foundation. (2021). The circular economy: A transformative approach to industrial sustainability. Retrieved from https://ellenmacarthurfoundation.org
[5] Gereffi, G., & Lee, J. (2014). Economic and social upgrading in global value chains: Why governance matters. SSRN Electronic Journal. Retrieved from https://doi.org/10.2139/ssrn.2721292
[6] Graedel, T. E., Allwood, J., Birat, J. P., Reck, B. K., Sibley, S. F., & Sonnemann, G. (2011). What Do We Know About Metal Recycling Rates?. Journal of Industrial Ecology, 15(3), 355-366. https://doi.org/10.1111/j.1530-9290.2011.00342.x
[7] Gupta, R., & Sahu, P. (2021). Emerging trends in metal recycling: A global perspective. Journal of Sustainable Materials Management, 12(2), 89-110.
[8] Hasibuan, H. A., Setiawan, N., & Ashara, V. (2024). Analysis of internal and external environment towards competitive advantage and performance of SMEs Klambir V. Jurnal Ekonomi Manajemen Akuntansi dan Keuangan, 5(4), 1–6..
[9] Haas, W., Krausmann, F., Wiedenhofer, D., & Heinz, M. (2021). Circular economy strategies for metal recycling. Journal of Industrial Ecology, 25(3), 455–472. https://doi.org/10.1111/jiec.13175
[10] Hu, X., Wang, C., Lim, M.K., et al. (2020). Characteristics and community evolution patterns of the international scrap metal trade. Journal of Cleaner Production, 243, 118576. ISSN 0959-6526. https://doi.org/10.1016/j.jclepro.2019.118576
[11] International Aluminium Institute. (2023). Global aluminium recycling. London: IAI.
[12] Hartini, S., Sari, D., Alkaisi, F., & Naufal, T. (2022). Sustainable Manufacturing dan Circular Economy: A Systematic Literature Review. J@ti Undip: Jurnal Teknik Industri, 17(3), 191-201. https://ejournal.undip.ac.id/index.php/jgti/article/view/49488
[13] Farida, I., & Setiawan, D. (2022). Business strategies and competitive advantage: The role of performance and innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, 8(3), 163.
[14] Ibrahim, E. B., & Harrison, T. (2019). The impact of internal, external, and competitor factors on marketing strategy performance. Journal of Strategic Marketing, 28(7), 639–658.
[15] International Aluminium Institute. (2023). Global aluminium recycling. London: IAI.
[16] Kementerian Energi dan Sumber Daya Mineral Republik Indonesia. (2020). Grand strategy mineral dan batubara. Diakses dari: https://www.esdm.go.id/assets/media/content/content-buku-grand-strategy-komoditas-minerba.pdf
[17] Kementerian Perindustrian RI. (2023). Kebijakan Pengelolaan Industri Besi dan Baja Nasional. Jakarta: Kemenperin RI. Retrieved from https://kemenperin.go.id
[18] Kementerian Perindustrian RI. (2023). Strategi Penguatan Industri Logam Nasional dalam Mendukung Ekonomi Sirkular. Jakarta: Kemenperin RI. https://www.kemenperin.go.id
[19] Dahmiri, D., Junaidi, J., Johannes, J., & Indrawijaya, S. (2024). The impact of market orientation on marketing performance: Exploring the moderating role of competitive advantage. Business: Theory and Practice, 25(1), 164–174
[20] Nurhalimah, Setiawan, A. R., & Haryadi, B. (2017). Praktik akuntansi manajemen bisnis besi tua berbasis budaya persaudaraan Madura. Jurnal Akuntansi Multiparadigma, 8(2), 255-268. https://doi.org/10.xxxx/jamal.2017.v8.i2
[21] OECD. (2023). The role of recycling in the global economy. Paris: Organisation for Economic Co-operation and Development.
[22] OECD. (2023). The Role of Scrap metal in Global Supply Chains and Its Economic Impact. Paris: OECD Publishing. https://www.oecd.org
[23] OECD. (2023). Unlocking potential in the global scrap steel market. Organisation for Economic Co-operation and Development (OECD) Reports. Diakses dari:
[24] https://www.oecd.org/en/publications/unlocking-potential-in-the-global-scrap-steel-
[25] Porter, M. E. (1980). Competitive strategy: Techniques for analyzing industries and competitors. Free Press.
[26] PT Optima Prima Metal Sinergi Tbk. (2023). Embarking a Greener Future in Metal Scrapping: 2023 Annual Report and Sustainability Report.
[27] Reck, B. K., & Graedel, T. E. (2012). Challenges in Metal Recycling. Science, 337(6095), 690-695. https://doi.org/10.1126/science.1217501
[28] Reck, B. K., & Graedel, T. E. (2022). Future trends in metal recycling. Environmental Science & Technology, 56(7), 3291-3302.
[29] Reimann et al., (2021). The influence of dynamic and adaptive marketing capabilities on the performance of Portuguese SMEs in the B2B international market. https://doi.org/10.3390/SU13020579
[30] Purwidianti, W., & Rahayu, T. S. M. (2015). Pengaruh Faktor Internal dan Eksternal Terhadap Kinerja Usaha Industri Kecil dan Menengah di Purwokerto Utara. KINERJA, 19(1), 149-159.
[31] Stahel, W. R. (2019). The circular economy: A user's guide. Routledge.
[32] Supriyanto, A., Widyarfendhi, W., & Salafuddin, I. (2019). Analisis Keunggulan Kompetitif Industri Jual Beli Besi Bekas pada UD. Multi Baja Kuin Cerucuk Banjarmasin. Jurnal Reksa: Rekayasa Keuangan, Syariah, dan Audit, 6(2), 142-156. https://doi.org/10.12928/j.reksa.v6i2.1424
[33] Tang, X., Chen, M., & Liu, Y. (2021). Challenges and opportunities in the metal recycling sector. Materials Today Sustainability, 14, 100065.

Volume 09, Number 01, Page 235-240
e-ISSN: 2598-120X; p-ISSN: 2598-117X

[34] World Bank. (2023). Commodity Markets Outlook: Trends in Metal Prices and Market Dynamics. Washington, DC: World Bank Group. https://www.worldbank.org/en/research/commodity-markets
[35] World Bank. (2023). Commodity markets outlook: Trends in metal prices and market dynamics. Washington, DC: World Bank Group. Retrieved from https://www.worldbank.org/en/research/commodity-markets
[36] World Steel Association. (2023). Steel recycling and sustainability report. Brussels: World Steel Association.
[37] Wijaya, I. G. N. S., Latanro, A. B. B. S., & Sugianitri, N. N. A. R. (2024). The influence of marketing strategy on marketing performance from a management perspective in the disruption era. Binus Business Review, 15(1), 15–28.
[38] Zeng, X. (2023). Dynamic market analysis in recycling sectors. Journal of Industrial Ecology, 27(2), 354–369. https://doi.org/10.1111/jiec.13350.