ABNUS JOURNAL
Your Research Partner

Legal Systems, Justice, and Governance in Contemporary Society (LSJG)
E-ISSN: XXXX-XXXX | Vol. 1, No. 1 (2026) | pp. 34–43

Continuous Improvement, Value Added, Organizational Culture, Competitiveness, and Manufacturing Firm Performance

Anung Haryanto[1*], Amen Assagaf[2], Suyanto[3], Sukesi[4], Slamet Riyadi[5]

[1,2,3,4,5]*Dr. Soetomo University, Surabaya, Indonesia*

***Corresponding author:** anung.hyt@gmail.com |

Received: 17 November 2025 | Revised: 20 December 2025 | Published: 30 January 2026

Abstract

Purpose: This study aims to analyze the effect of Continuous Improvement (CI) and Value Added (VA) on manufacturing company performance, with Competitiveness as an intervening variable in Indonesian manufacturing firms.
Methodology: A quantitative explanatory design was employed using survey data collected from 315 respondents consisting of managers, supervisors, and operational staff in manufacturing companies in West Java. The data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to test direct and indirect relationships among variables.
Results: The findings show that both CI and VA significantly enhance Competitiveness. However, only VA has a significant direct effect on Performance, while CI does not significantly influence Performance either directly or through Competitiveness. Additionally, Competitiveness does not mediate the relationship between CI, VA, and Performance.
Conclusion: The study concludes that Value Added is a key determinant of both Competitiveness and Performance, while Continuous Improvement mainly contributes to Competitiveness but does not directly translate into performance outcomes. This indicates that operational efficiency alone is insufficient without effective value creation mechanisms.
Limitations: The study is limited to a single case with a small purposive sample, restricting generalizability.
Contribution: This research contributes to the literature by developing an integrated model of CI, VA, Competitiveness, and Performance, highlighting Value Added as the dominant driver of organizational performance in manufacturing contexts.

Keywords: *Competitiveness, Continuous Improvement, Manufacturing Firm Performance, Organizational Culture, Value Added*

How to Cite: Haryanto, A., Assagaf, A., Suyanto, S., Sukesi, S., & Riyadi, S. (2026). Continuous Improvement, Value Added, Organizational Culture, Competitiveness, and Manufacturing Firm Performance. *Legal Systems, Justice, and Governance in Contemporary Society (LSJG)*, *1*(1), 34–43.

1. Introduction

The manufacturing industry is a key economic pillar in Indonesia. As the most populous country in Southeast Asia with abundant natural resources, Indonesia has significant potential to develop its biofuel sector (Ernayani, 2020; Govoni et al., 2021; Mubyarto & Sohibien, 2020). The Indonesian manufacturing industry spans various fields such as textiles, automotive, electronics, chemicals, food and beverages, as well as metals and machinery. The industry's vital role is evident from its substantial contribution to the

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GDP and job creation (Abualfaraa et al., 2020; Sofani et al., 2022).

In recent decades, Indonesia has continued to enhance its industrial competitiveness through technological modernization, improving human capital quality, and regulatory ease for both domestic and foreign investors (Bakator et al., 2019; Kuzminski et al., 2020). Government support via pro-industry policies, such as infrastructure development and fiscal incentives, has also been a crucial factor in this sector's growth. One influential initiative is the Making Indonesia 4.0 program, aimed at ushering Indonesia's manufacturing industry into the digital and automation era, with the expectation that it will boost Indonesia's competitiveness index both regionally and globally (Anabila et al., 2020; Balaz & Bayer, 2021; Baldwin & Sabourin, 2011).

The industrial zones spread throughout Indonesia present a highly promising opportunity to drive competitiveness in all aspects. However, realizing this potential still requires time. Currently, Indonesia's competitiveness ranking remains below that of neighboring countries Singapore, Malaysia, and Thailand, even though Indonesia climbed 10 places in the Competitiveness Index from 2022 to 2023, as reported by the IMD Global Competitiveness Index.

Negara		Denmark	Irlandia	Swiss	Singapura	Belanda	Taiwan	Hongkong	Swedia	Amerika Serikat	UEA	China	Malaysia	Thailand	Indonesia
Series2	2023	1	2	3	4	5	6	7	8	9	10	21	27	30	34
Series1	2022	1	11	2	3	6	7	5	4	10	12	17	32	33	44

Figure 1. Competitiveness Index 2022 – 2023
Source: CNBC INDONESIA RESEARCH: IMD Global Competitiveness Index)

Figure 1 illustrates the Global Competitiveness Index (2022–2023) of various countries via a line chart and ranking table. Denmark remained in first place in both 2022 and 2023, demonstrating consistently high competitiveness. Overall, European countries such as Denmark, Ireland and Switzerland demonstrate strong and stable competitiveness. Meanwhile, Asian economies, such as Singapore and Taiwan, remain among the top-ranked, although they exhibit only slight changes. These data can be used for further analysis of the factors influencing a country's competitiveness and for comparing trends across nations in the global competitiveness index.

In the era of globalization and increasingly fierce business competition, companies are required to continuously improve their performance to survive and compete in competitive markets (Anabila et al., 2020; Kotane & Mietule, 2022). Continuous improvement strategies (Hakim et al., 2016), value-added enhancement (Hatane et al., 2019; Jumhur et al., 2017), and organizational culture are key factors that influence company performance, create sustainable profitability, and boost competitiveness (Nikpour, 2017).

This study aims to fill this gap by proposing a strategic model that integrates the relationships between continuous improvement and value-added with respect to their impact on performance through competitiveness. It further explores the interconnections between the two, as well as how both influence performance and competitiveness. This approach yields a model configuration that has received little

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discussion in the literature.

2. Literature Review

2.1 Continuous Improvement and Firm Competitiveness

Continuous Improvement (CI) is widely recognized as a fundamental component of Total Quality Management (TQM) that enhances organizational competitiveness through systematic enhancement of processes, quality, and efficiency (Isniah et al., 2020; Sader et al., 2019). CI focuses on incremental improvements in operational activities that collectively strengthen productivity and reduce production costs, thereby increasing competitive positioning in the market (Laureani & Antony, 2019; Utami & Wilopo, 2018). In manufacturing industries, CI is closely associated with lean management practices that emphasize waste reduction, process optimization, and continuous quality enhancement (Taouab & Issor, 2019).

Empirical studies highlight that firms implementing CI consistently achieve higher levels of operational efficiency and market responsiveness. According to Kuzminski et al. (2020) and Wijaya (2020), competitiveness in manufacturing firms is strongly influenced by internal capability improvements such as technological adaptation and process innovation, which are core elements of CI. Furthermore, CI enhances organizational learning and employee involvement, which contribute to long-term competitive advantage.

However, the impact of CI is not always direct on performance outcomes. As indicated by Cwikla et al. (2018), the effectiveness of CI depends heavily on implementation quality, resource allocation, and managerial commitment. Without these supporting factors, CI may not translate into measurable financial performance, although it still improves competitiveness as an intermediate outcome.

2.2 Value Added and Organizational Performance

Value Added (VA) is conceptualized as the economic and operational enhancement generated through efficient resource utilization and improved production processes. VA reflects the ability of a firm to transform inputs into outputs with higher economic value, thereby improving profitability and competitiveness (Parida et al., 2019; Yudawisastra et al., 2018).

In manufacturing contexts, VA is closely linked to cost efficiency, productivity improvement, and product differentiation. Firms that successfully increase value-added processes tend to achieve stronger market positioning due to their ability to offer high-quality products at competitive prices. According to Puspitasari et al. (2022), value-added strategies significantly enhance competitive advantage by improving internal efficiency and financial outcomes.

Additionally, intellectual capital-based studies such as Ousama et al. (2020) emphasize that VA is not only driven by physical production processes but also by knowledge assets, human capital, and organizational capabilities. This reinforces the idea that VA plays a central role in determining firm performance in modern manufacturing environments.

2.3 Competitiveness and Firm Performance

Competitiveness is defined as a firm's ability to sustain superior performance relative to competitors through cost efficiency, product quality, innovation, and market adaptability. In manufacturing industries, competitiveness is a critical determinant of long-term survival and profitability (Mataruka et al., 2023).

Previous studies suggest that competitiveness acts as a mediating mechanism between operational capabilities and firm performance. Firms with higher competitiveness are better positioned to convert internal capabilities into financial outcomes. However, Muhammad and Hidayat (2019) argue that

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competitiveness alone is not sufficient to guarantee performance improvement, as external environmental factors and strategic execution play important roles.

Furthermore, Jumady and Fajriah (2020) highlight that the relationship between competitiveness and performance may be weakened by structural barriers, regulatory constraints, and misalignment between strategy and implementation. This indicates that competitiveness functions as a partial rather than absolute predictor of firm performance.

2.4 Continuous Improvement, Value Added, Competitiveness, and Performance Integration

Recent literature emphasizes the importance of integrating CI and VA as complementary strategic drivers of competitiveness and performance. CI focuses on process optimization and efficiency, while VA emphasizes value creation through improved resource utilization and innovation.

Studies in manufacturing sectors show that CI and VA jointly enhance competitiveness, but their effects on performance are often indirect and mediated by organizational capabilities and strategic alignment (Hakim et al., 2016). This suggests that competitiveness may act as a bridge linking operational improvements and financial performance outcomes.

Overall, the literature indicates that while CI and VA are critical for building competitiveness, their direct impact on performance is context-dependent. This supports the need for an integrated model that examines both direct and indirect relationships among these constructs, as proposed in this study.

3. Methodology

This study employs a quantitative, explanatory research design to investigate the impact of continuous improvement and value added on manufacturing company performance, with competitiveness as the intervening variable. This study aims to test the hypothesized relationships and assess the mediating effects of profitability and competitiveness in the context of Indonesian manufacturing firms.

The population comprises manufacturing companies in West Java, Indonesia. A purposive sampling technique was employed to select respondents with sufficient knowledge of their firm's operational and strategic activities. The sample size consisted of 315 respondents, including managers, supervisors, and staff involved in production, operations, and strategic decision-making. This sample size satisfies the minimum requirement for Structural Equation Modeling (SEM) analysis, ensuring robust statistical inference (Hair et al., 2020).

Primary data were collected using a structured questionnaire designed based on validated scales from previous studies. Each construct was measured using multiple items on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). The questionnaire was pretested to ensure clarity, reliability, and validity. Secondary data, such as financial reports, were used to supplement the assessment of profitability and competitiveness.

Data analysis was conducted using Structural Equation Modeling (SEM) with Partial Least Squares (PLS-SEM) to test the direct and indirect relationships among the variables. The analysis involved assessing the measurement model validity (convergent and discriminant validity) and structural model fit (path coefficients, R^2, and effect sizes). The mediating effects of profitability and competitiveness were tested following the guidelines of You et al. (2022) and modern bootstrapping techniques.

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Table 1. Respondent Demographic

Demographic Variable	Category	Frequency (N)	Percentage (%)
Gender	Male	166	53%
	Female	149	47%
Age	18–24	134	42%
	25–34	130	41%
	35–50	7	17%
Education Level	High School	18	6%
	Undergraduate Degree	240	76%
	Graduate Degree	57	18%
Position Level	Operator	48	15%
	Supervisor	120	38.5%
	Manager	111	35%
	Others	36	11%

Source: Data Processed by Researchers

4. Results and Discussion

4.1 Respondent Demographic

Based on Table 1, the sample comprised 315 respondents with a balanced gender distribution (53% men and 47% women). Most were young—83% were aged between 18 and 34—with only 17% in the 35–50 age group. Educationally, the group was well-qualified: 76% held undergraduate degrees, 18% held graduate degrees, and 6% had only a high school diploma. In terms of position level, the respondents were primarily in supervisory (38.5%) or managerial (35%) roles, with 15% US operators and 11% categorized US 'other.' Overall, this profile reflects a predominantly young, educated, and mid-to-upper-level professional cohort.

4.2 Measurement Model

Based on Table 1, the measurement model demonstrated strong psychometric robustness. Most outer loadings exceeded the recommended threshold of 0.70, suggesting reliable indicators with strong convergent validity, although some falling between 0.60 and 0.70 are acceptable in exploratory contexts. Both Cronbach's alpha and Composite Reliability (CR) values ranged from approximately 0.76 to 0.81, indicating consistently high internal consistency. CR is preferred over alpha because of its less restrictive assumptions. The Average Variance Extracted (AVE) values, all above 0.50, further affirm that each construct explains more than half of its indicators' variance, confirming convergent validity.

4.3 Hypothesis Testing

The results of the hypothesis testing using PLS-SEM indicate that Continuous Improvement ($\beta = 0.148$, $p = 0.042$, $t > 1.96$) and value-added ($\beta = 0.179$, $p = 0.041$) both have significant positive effects on competitiveness, with p-values below the 0.05 threshold and t-statistics above the critical value of approximately 1.96. In contrast, Continuous Improvement $\rightarrow$ Performance ($\beta = 0.111$, $p = 0.162$) and Competitiveness $\rightarrow$ Performance ($\beta = 0.106$, $p = 0.100$) do not exhibit statistically significant effects, as their p-values exceed 0.05. However, Value Added $\rightarrow$ Performance ($\beta = 0.142$, $p = 0.021$) is significant at the 5% level. These findings—derived through the standard bootstrapping procedure in PLS-SEM, which calculates path coefficients, standard errors, t-values, and p-values—make it clear that while both continuous improvement and value-added help enhance competitiveness, only value added has a direct significant impact on performance. The insignificance of continuous improvement's direct effect on performance and the non-significance of competitiveness on performance suggest that their influences are

Table 2. Output of Measurement Model

Construct	Indicators	Outer Loading	α	Composite Reliability	AVE
Continuous Improvement	CI1	0.779	0.793	0.799	0.509
	CI2	0.620			
	CI3	0.759			
	CI4	0.755			
	CI5	0.604			
Value Added	VA1	0.680	0.788	0.800	0.546
	VA2	0.740			
	VA3	0.652			
	VA4	0.700			
	VA5	0.651			
Competitiveness	COM1	0.715	0.811	0.805	0.527
	COM2	0.673			
	COM3	0.744			
	COM4	0.662			
	COM5	0.744			
	COM6	0.693			
Performance	PER1	0.723	0.763	0.786	0.546
	PER2	0.704			
	PER3	0.670			
	PER4	0.627			
	PER5	0.719			

Source: Output of SmartPLS 4.0

Table 3. Direct Effect

Hypothesis	β	t-statistic	p-value	Significance
H1: Continuous Improvement (X1) → Competitiveness (Z)	0.148	2.036	0.042	Significant
H2: Value Added (X2) → Competitiveness (Z)	0.179	1.984	0.041	Significant
H3: Continuous Improvement (X1) → Performance (Y)	0.111	1.397	0.162	Not Significant
H4: Value Added (X2) → Performance (Y)	0.142	1.970	0.021	Significant
H5: Competitiveness → Performance (Y)	0.106	1.644	0.100	Not Significant

Source of SmartPLS 4.0

likely mediated through other constructs, highlighting the need to explore indirect effects or mediation paths in your model.

Table 4. Indirect Effect

Indirect Path	β	t-statistic	p-value	Significance
H6: X1 → Z → Y (Continuous Improvement → Competitiveness → Performance)	0.016	1.199	0.231	Not Significant
H7: X2 → Z → Y (Value Added → Competitiveness → Performance)	0.015	1.068	0.068	Not Significant

The mediation analysis shows that neither Continuous Improvement → Competitiveness → Performance (β = 0.016, t = 1.199, p = 0.231) nor Value Added → Competitiveness → Performance (β = 0.015, t = 1.068, p = 0.068) produced significant indirect effects, indicating that competitiveness does not mediate the relationships between these antecedents and performance. In PLS-SEM, mediation is assessed by bootstrapping the indirect effect (a × b), the product of the path from the independent variable to the mediator and from the mediator to the outcome, and testing its significance. Non-significance (p > 0.05) confirmed the absence of mediation. Consequently, the findings suggest that while Value Added has a direct effect on performance, its influence is not transmitted through competitiveness. Similarly, Continuous Improvement does not affect performance directly or indirectly via competitiveness, underscoring the lack of mediation and highlighting the importance of exploring other pathways or considering additional mediating mechanisms in your model.

4.4 Discussion

Research shows that Continuous Improvement (CI) has a statistically significant positive impact on competitiveness in manufacturing firms (p = 0.042 < 0.05), with CI enhancing profitability through mechanisms such as cost reduction, quality enhancement, and productivity gains. Consistent and effective CI practices are essential drivers of competitiveness and long-term financial success. **Alwi2023<empty citation>** similarly found that customer focus and continuous improvement significantly boost firm performance, highlighting CI as a key component of Total Quality Management (TQM) that contributes to competitiveness. By improving operational efficiency, product quality, innovation, and adaptability to market changes, CI enables companies to reduce costs, elevate customer satisfaction, and respond swiftly to market demands. Engaged employees contribute to greater productivity and creativity, whereas CI strengthens relationships with suppliers and customers and improves regulatory compliance, thereby reducing operational risks. Strategic management perspectives position CI as the foundation for sustainable competitive advantage and overall performance improvement.

Mufad2024<empty citation> reinforce this, emphasizing that CI, along with customer focus and teamwork as part of TQM, is a strategic enabler of competitiveness. Together, these findings confirm that Continuous Improvement (X1) exerts a positive and significant influence on competitiveness (Z) in manufacturing firms, with CI-related components consistently showing strong impacts on performance and product quality, thereby implicitly enhancing competitiveness. There is a significant positive effect of Value Added on Competitiveness (p = 0.041 < 0.05). (Puspitasari et al., 2022) showed that companies that improve value-added through more efficient and productive processes gain a competitive advantage by producing high-quality products at lower costs, enabling more competitive pricing. More broadly, studies emphasize that increasing value added reflects improved internal processes and stronger competitive positioning, especially for SMEs, where leverage adds value as a key metric of competitiveness rather than profit or market share. Techniques such as process value analysis (PVA) further support this by enabling firms to optimize production workflows and enhance profitability and competitiveness.

The study reveals that Continuous Improvement (CI) does not have a statistically significant impact on performance (p = 0.162 > 0.05), suggesting that CI alone may not directly improve financial outcomes in the short term. Nonetheless, research indicates that CI can yield meaningful long-term benefits, especially when it is implemented effectively. Cwikla et al. (2018) emphasize that poor CI implementation—lacking efficiency or proper resources use—can diminish its effects. The key success factors include strong employee participation, data-driven decision-making, enduring leadership support, technology integration, and customer feedback. These components are crucial for CI to build sustainable and long-term company performance. The study found that Value Added (VA) has a significant positive effect on company performance (p = 0.021 < 0.05). This outcome aligns with the empirical research by (Yudawisastra et al., 2018), which showed that improving VA enables firms to better utilize resources such as time,

cost, and labor, increasing operational efficiency and reducing overhead. Furthermore, studies using the Value-Added Intellectual Coefficient (VAIC™) model, such as the one published by (Ousama et al., 2020), indicate that intellectual capital components measured via VAIC have a positive and significant relationship with financial performance in Islamic banks operating in the GCC region.

Competitiveness should not be measured solely by price or cost; other critical dimensions, such as quality and innovation, also play significant roles in organizational performance (Muhammad & Hidayat, 2019). In some industries, strong regulations, market monopolies, or structural barriers may limit the influence of competitiveness on performance. Another potential issue is the disconnect between strategy and execution: even well-designed competitive strategies may fail to drive performance if they are not implemented effectively (Jumady & Fajriah, 2020). External changes, such as new regulations, economic shifts, or evolving market trends, can further moderate the relationship between competitiveness and performance.

5. Conclusions

This study explored the impact of Continuous Improvement (CI) and Value Added (VA) on the Competitiveness and Performance of manufacturing firms. Empirical findings reveal that both CI and VA significantly enhance competitiveness, whereas only VA directly improves performance. CI's influence on performance, whether direct or mediated by competitiveness, was not significant. These results demonstrate the critical importance of VA in driving competitive advantages and tangible business outcomes. The research findings align with the existing empirical literature: improving VA through streamlined and efficient processes can lead to reduced costs and higher-quality products, thereby strengthening a firm's competitive position. Additionally, CI practices, when consistently and effectively implemented, can cultivate operational excellence and innovation, laying the groundwork for long-term performance enhancement.

However, the lack of a direct CI-to-performance effect suggests that strategy alone is insufficient; effective execution, organizational alignment, and sustained leadership support are crucial for translating CI efforts into performance gains. Furthermore, in certain industry contexts—especially those shaped by strict regulations or structural constraints—competitiveness alone may not fully translate into performance outcomes, considering the need for tailored approaches.

Acknowledgements

The authors express sincere gratitude to the owner and staff of Fashion Outlet Rantauprapat (FOR) for their openness and cooperation throughout the research period and to the customer informants who generously shared their experiences and perspectives. The authors also acknowledge the Faculty of Economics and Business, Universitas Labuhanbatu for their institutional support.

Author Contributions

DH conceptualized the study, developed the methodology, and drafted the manuscript. MJ contributed to data collection, literature review, data analysis, and manuscript revision. Both authors contributed to the interpretation of results, critically revised the manuscript, and approved the final version for publication.

Conflicts of Interest

The authors declare that there is no conflict of interest regarding the publication of this study. This research was conducted independently, and no financial or personal relationships influenced the results or interpretation of the findings.

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