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Manufacturing Company Performance Strategies and Influencing Factors with Competitiveness as Intervening Variable

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Abstract: This study aimed to develop and empirically test a strategic model integrating Continuous Improvement (CI), Value Added (VA), and Organizational Culture, and their effects on Profitability, Competitiveness, and Performance in manufacturing firms. Utilizing a quantitative research design with survey data from manufacturing executives, the model was tested using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results reveal that both CI ($\beta = 0.148$, $p < 0.05$) and VA ($\beta = 0.179$, $p < 0.05$) significantly enhance Competitiveness, while only VA ($\beta = 0.142$, $p < 0.05$) directly and significantly improves Performance. CI's influence on performance—both directly and via competitiveness—was not statistically significant, and no mediation effect of competitiveness was observed. This indicates that although CI supports competitive positioning, its translation into performance may rely on additional factors such as effective implementation, cultural alignment, or contextual conditions. The study contributes by pinpointing VA as a key driver of both competitive advantage and performance, and by revealing the limitations of CI's direct impact in the absence of executional rigor. Its originality lies in the development of a novel integrative model that simultaneously examines CI, VA, and culture within a manufacturing setting, filling a gap in current empirical literature.

Keyword: Continuous Improvement, Value-Added, Competitiveness, Company Performance, Manufacturing Industry.

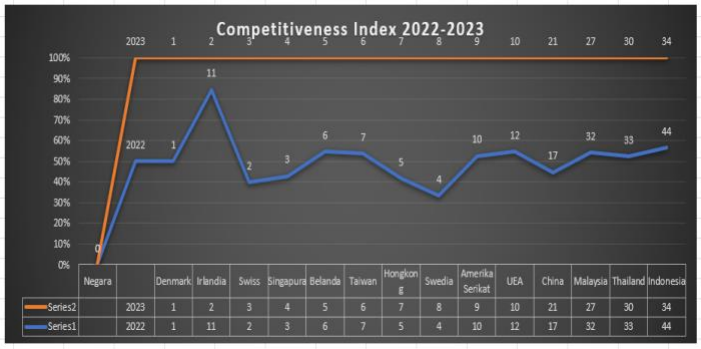
INTRODUCTION

The manufacturing industry is one of Indonesia's key economic pillars. As the most populous country in Southeast Asia with abundant natural resources, Indonesia has significant potential to develop this sector (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 contributions to GDP and job creation (Sofani et al., 2022).

Over recent decades, Indonesia has continued efforts to enhance its industrial competitiveness through technological modernization, improving human capital quality, and regulatory ease for both domestic and foreign investors (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 (Tu et al., 2022).

The industrial zones spread throughout Indonesia present a highly promising opportunity to drive competitiveness in every aspect. However, realizing this potential still requires a long time. Currently, Indonesia's competitiveness ranking remains below 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 for 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 like Singapore and Taiwan remain among the top-ranked, though they exhibit only slight changes. These data can be used for further analysis of 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 enhance their performance to survive and compete in a competitive market (Anabila et al., 2020). Continuous improvement strategies (Hakim et al., 2016), value-added enhancement (Hatane et al., 2019), and organizational culture are key factors that can influence company performance, create sustainable profitability, and boost competitiveness (Nikpour, 2017).

This research aims to fill that gap by proposing a strategic model that integrates the relationships between continuous improvement and value added, with respect to their impacts on performance through competitiveness. It further explores the interconnection between the two, as well as how both influence performance and competitiveness. This approach yields a model configuration that has seen little discussion in prior literature.

METHOD

This study employs a quantitative, explanatory research design to investigate the impact of continuous improvement and value added on manufacturing company performance,

competitiveness as intervening variables. The research aims to test hypothesized relationships and assess the mediating effects of profitability and competitiveness in the context of Indonesian manufacturing firms.

The population comprises manufacturing companies operating in West Java, Indonesia. A purposive sampling technique was employed to select respondents who have sufficient knowledge of their firm's operational and strategic activities. The sample size consists 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 Modelling (SEM) analysis, ensuring robust statistical inference (Hair et al., 2020)(Hair et al., 2021).

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

Data analysis was conducted using Structural Equation Modelling (SEM) with Partial Least Squares (PLS-SEM) to test direct and indirect relationships among variables. The analysis involved assessing measurement model validity (convergent and discriminant validity) and structural model fit (path coefficients, R^2, and effect sizes). Mediation effects of profitability and competitiveness were tested following the guidelines of Baron and Kenny (1986) and modern bootstrapping techniques.

RESULTS AND DISCUSSION

Respondent Demographic

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/Manager Assistant	111	35%
	Others	36	11%

Source: Data Processed by researchers

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

Measurement Model

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

Measurement model demonstrates strong psychometric robustness. Most outer loadings exceed 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 range from approximately 0.76 to 0.81, indicating consistently high internal consistency—CR in particular is preferred over alpha due to 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.

Hypothesis Testing

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

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 → Performance ($\beta = 0.111$, $p = 0.162$) and Competitiveness → Performance ($\beta = 0.106$, $p = 0.100$) do not exhibit statistically significant effects, as their p-values exceed 0.05. However, Value Added → Performance ($\beta = 0.142$, $p = 0.021$) remains 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 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	**No 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) produces 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 ($p > 0.05$) confirms the absence of mediation. Consequently, your 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.

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 both competitiveness and long-term financial success. Alwi (2023) similarly finds that customer focus and continuous improvement significantly boost firm performance, and he highlights CI as a key component of Total Quality Management (TQM) that contributes to competitiveness. Through 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, while CI strengthens relationships with suppliers and customers and improves regulatory compliance—reducing operational risks. Strategic management perspectives further position CI as the foundation for sustainable competitive advantage and overall performance improvement.

Studies by Mufad & Lastanti (2024) 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. A significant positive effect of Value Added on Competitiveness ($p = 0.041 < 0.05$). Puspitasari et al., (2022) showed that companies improving 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, which leverage added value as a key metric of competitiveness rather than profit or market share. Techniques like 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 implemented effectively. Cwikla et al., (2018) emphasize that poor CI implementation—lacking efficiency or proper resource use—can diminish its effects. 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, 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 empirical research by Yudawisastra et al. (2018), which showed that improving VA enables firms to better utilize resources such as time, cost, and labor, boosting 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 shouldn't be measured solely by price or cost—other critical dimensions like quality and innovation also play significant roles in organizational performance (Muhammad & Hidayat, 2019). In some industries, strong regulation, 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 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.

CONCLUSION

This study explored the impact of Continuous Improvement (CI) and Value Added (VA) on Competitiveness and Performance in manufacturing firms. Empirical findings reveal that both CI and VA significantly enhance competitiveness, while 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 both competitive advantage and tangible business outcomes.

The research findings align with 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 not enough; effective execution, organizational alignment, and sustained leadership support are crucial to translating CI efforts into performance gains. Furthermore, in certain industry contexts—especially those shaped by strict regulation or structural constraints—competitiveness alone may not fully translate into performance outcomes, emphasizing the need for tailored approaches.

Implications and Future Directions

These insights underscore the strategic value of focusing on Value Added as a lever for both competitiveness and performance. At the same time, firms should ensure that CI initiatives

are well-supported with implementation fidelity, employee engagement, and a feedback-driven culture to unlock their full potential. Future research could examine industry-specific moderators, such as regulation or resource dependency, and explore additional mediating or moderating variables, including firm size, organizational culture, or digital transformation readiness

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