

## Boosting Firm Performance: Insights from the Food & Beverage Sector's Key Drivers

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**ABSTRACT:** The food and beverage industry is a vital contributor to Indonesia's economy, yet faces challenges in optimizing performance. This study investigates the impact of operating capacity, agency costs, and intellectual capital on firm performance within this sector. Analyzing financial data from 12 out of 26 listed companies spanning 2018 to 2022, with convenience sampling, panel data regression in EViews 12 reveals significant findings. Higher operating capacity positively influences revenue generation, marketing efficacy, and customer satisfaction. Agency costs serve as incentives for managerial alignment with shareholders' interests, enhancing governance and transparency practices. Intellectual capital fosters innovation, operational efficiency, and brand reputation, driving firm performance. The study underscores the strategic importance of these factors in managing firms within the food and beverage industry. For practitioners, insights gleaned from this research offer guidance in formulating effective strategies to enhance operational capacity, manage agency costs, and bolster intellectual capital. Moreover, investors gain valuable insights into assessing investment opportunities in this sector. Policymakers can utilize these findings to formulate policies conducive to fostering growth and sustainability within the food and beverage industry. By addressing these key determinants, firms can bolster their competitive edge and achieve sustained success in the dynamic landscape of the food and beverage sector in Indonesia.

**Keywords:** Agency Cost, Firm Performance, Operating Capacity, Intellectual Capital



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## INTRODUCTION

The food and beverage industry is one of the important industrial sectors in Indonesia, with significant contributions to Gross Domestic Product (GDP) and employment. Based on data from the Central Statistics Agency (BPS), in 2023, the food and beverage industry contributed 38.05% to the GDP of the non-oil and gas processing industry or 6.61% to the national GDP. This industry also absorbs 18.3 million workers, making it the industrial sector with the second largest employment in Indonesia.

The high operating cost is one of the main obstacles to increasing profitability for food and beverage companies. Based on the annual financial statements of food and beverage companies listed on the Indonesia Stock Exchange (IDX), the average ratio of operating costs to total revenue in 2023 was 75%. Fluctuations in the price of raw materials, such as wheat, sugar, and cooking oil, can cause a significant increase in operating costs. In 2023, wheat prices increased by 15%, sugar prices increased by 10%, and cooking oil prices increased by 20%. Intense competition in the food and convenience industry forces companies to implement various strategies, such as promotions and discounts, which can increase operating costs. Based on NielsenIQ data, by 2023, the average spending of food and beverage companies on promotion and discount activities will be 10% of total revenue. Operational efficiency is critical for food and beverage companies to reduce operational costs and increase profitability.

Agency costs are costs that arise due to information asymmetry and differences in objectives between the owner (principal) and manager (agent) of the company. Based on a study conducted by the World Bank in 2023, the average ratio of agency costs to total assets in Indonesia is 15%. In the food and minimization sector, agency costs can arise in various forms, such as suboptimal decision-making, improper transactions, and misuse of company assets. Based on a survey conducted by Transparency International Indonesia in 2023, the food and beverage sector is one of the sectors with a high level of corruption risk. The implementation of good corporate governance (GCG) can help minimize agency costs and improve company performance.

In the context of the food and beverage industry, the agency problem arises when managers prioritize their interests over those of shareholders, leading to potential inefficiencies and reduced performance of the company. Agency costs arise due to a misalignment of incentives between shareholders and managers, leading to conflicts that can negatively impact the financial performance of the company (Luo, 2010). This misalignment of incentives can manifest in various ways, such as managers making decisions that prioritize short-term gains over long-term sustainability, engaging in fraudulent activities such as manipulating financial statements for personal gain, or excessive compensation packages that do not align with the company's performance (Li, 2020; Umam & Halimah, 2021).

While the issue of agency cost is certainly a valid concern for companies in the food and beverage industry, it is essential to consider the broader context in which these companies operate. Agency costs may arise due to the separation of ownership and control, but it is essential to recognize that managers play a crucial role in steering the company toward success. In many cases, managers are incentivized to make decisions that are in the best interest of the company as a whole, as their own compensation and job security are tied to the company's performance (The effect of disclosure of Corporate Social Responsibility (CSR) and Good Corporate Governance (GCG) on company value (Asikin et al., 2019; Kamaliah, 2020).

Intellectual capital is an intangible asset owned by a company, such as brands, patents, copyrights, and employee knowledge. Based on a study conducted by the Intangible Asset Research Institute in 2023, the average ratio of intellectual capital to total assets in Indonesia is 40%. Intellectual capital is an essential source of competitive advantage for Food companies and minimizers in building differentiation and increasing company value. Based on Forbes Indonesia data, in 2023,

the top 10 food and beverage companies with the most significant market capitalization value have an average ratio of intellectual capital to total assets of 60%. Food and beverage companies with solid intellectual capital can develop innovative products and services, build strong brands, and improve operational efficiency. Based on NielsenIQ data, by 2023, the top 10 Food and beverage companies with the largest market share will have an average intellectual capital to total assets ratio of 55%. Effective intellectual capital management is the key for food and beverage companies to improve company performance and value.

This study is expected to make a valuable contribution to food and beverage companies, investors, and the government. For food and beverage companies, this research can provide a better understanding of the factors that affect company performance so that it can help companies formulate the right strategy to improve performance. For investors, this research can provide helpful information in making investment decisions in the food and beverage sector. For the government, this research can provide input in formulating policies that can support the development of the Food and beverage industry in Indonesia.

Based on this description, several research questions arise as follows:

- 1) Does operating capacity have a significant effect on firm performance?
- 2) Does agency cost have a significant effect on firm performance?
- 3) Does intellectual capital have a significant effect on firm performance?

This research has objectives for:

- 1) Explore and analyze the effect of operating capacity on firm performance.
- 2) Explore and analyze the effect of agency costs on firm performance.
- 3) Explore and analyze the effect of intellectual capital on firm performance.

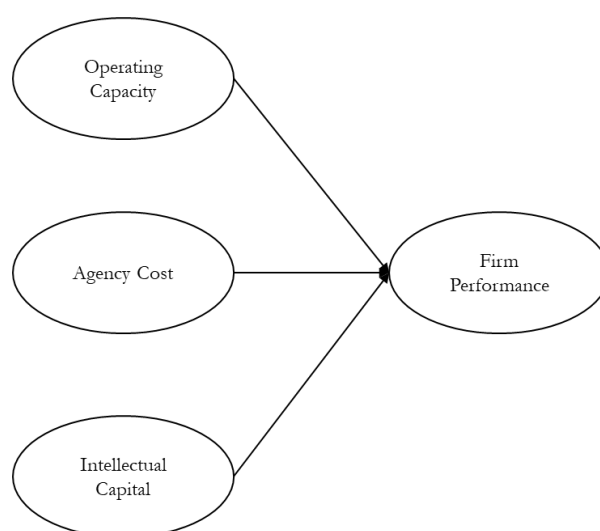


Figure 1. Research framework

Source: data processed (2024)

### Operating Capacity and Firm Performance

Operating capacity refers to the maximum production level that a company can achieve in a certain period ([Lim, 1977](#)). Increasing operating capacity can have a positive impact on company performance in the food and beverage industry. One of the direct effects of increasing operating capacity is an increase in production volume. By having a larger production capacity, companies can produce more products at the same time. This can increase the company's sales and revenue, as well as expand market share. In addition, increasing operating capacity can also have a positive impact on production efficiency ([Jonathan & Militina, 2019](#); [Ratmayanti & Suaryana, 2021](#)).

By increasing operating capacity, companies can optimize the use of existing resources, including labor, raw materials, and production facilities. This can reduce production costs per unit of product and increase company profitability ([Dekkers & Kanapathy, 2012](#); [Hamdani et al., 2020](#)). In addition, increasing operating capacity can also increase the company's flexibility in dealing with fluctuating market demand. With greater production capacity, companies can quickly adjust production volumes according to consumer demand.

Thus, companies can avoid stock shortages when demand increases and avoid inventory surpluses when demand decreases ([Bish & Suwandechochai, 2010](#); [Handiwibowo et al., 2021](#)). Increasing operating capacity can also have a positive impact on the quality of products and services offered by the company. With greater production capacity, the company can allocate sufficient resources to maintain and improve product quality and increase the level of customer satisfaction ([Handiwibowo et al., 2021](#); [Nurbismi & Gunawan, 2019](#)).

H<sub>1</sub>: operating capacity significantly effect firm performance

### Agency Cost and Firm Performance

The agency costs refer to the expenses incurred by a company in order to mitigate conflicts of interest between its managers (agents) and shareholders (principals), which arise due to the separation of management from ownership ([Jensen & Meckling, 1976](#)). In the context of the food and beverage industry, agency costs can have a significant impact on companies' performance. These costs can arise from various sources, such as monitoring and control mechanisms, managerial opportunism, and information asymmetry. The size of the company plays a crucial role in determining the level of agency costs ([Dalton et al., 2007](#); [Li, 2020](#)). Larger firms tend to have higher agency costs due to the greater separation of management from ownership. These costs can result in a decrease in the company's overall performance ([Ferris & Yan, 2009](#); [Grashuis, 2020](#)). One way to mitigate agency costs in larger firms is through increased information disclosure ([Boateng et al., 2022](#)).

By providing more information to shareholders and stakeholders, companies can reduce information asymmetry and improve transparency, which in turn can help align the interests of managers with the owners and shareholders ([Cadot, 2015](#); [Khuyen, 2021](#)). Additionally, highly leveraged firms may face higher agency costs due to increased auditing fees. As a result, such firms need to disclose more information in their annual reports as a means of reducing these costs. This can help enhance accountability and reduce the agency costs associated with managerial

opportunism ([Grashuis, 2020](#)). Furthermore, the agency theory suggests that managers of larger and more profitable firms may choose to disclose more information in order to gain personal advantages, such as maintaining their management position and securing higher compensation ([Luo, 2010](#)).

H<sub>2</sub>: Agency cost significantly effect firm performance

### Intellectual Capital and Firm Performance

The food and beverage industry is facing increasing pressure from various stakeholders, such as customers, regulators, and environmental activists, to address concerns related to health and the environment ([Xu et al., 2020](#)). In response to these concerns, companies in the food and beverage industry are recognizing the importance of intellectual capital and its impact on their overall performance. Intellectual capital refers to the intangible assets and knowledge that a company possesses, including its human capital (employees' skills and expertise), structural capital (the organization's systems, processes, and patents), and relational capital (relationships with customers, suppliers, and stakeholders) ([Arcese et al., 2015](#)). Research has shown that intellectual capital has a significant positive influence on the performance of companies in the food and beverage industry ([Kurfi et al., 2017](#)).

Firstly, human capital plays a crucial role in the success of food and beverage companies. A skilled and knowledgeable workforce is essential for innovation, product development, and maintaining high-quality standards in the industry. Employees with expertise in specific areas of food production, nutrition, and sustainable practices can contribute to the development of new products that meet consumer demands for healthier options. Additionally, employees with strong problem-solving and decision-making skills can help companies navigate complex challenges related to food safety regulations, supply chain management, and sustainability initiatives ([Kurfi et al., 2017](#); [Tsai & Mutuc, 2020](#); [Xu et al., 2020](#)).

Secondly, structural capital also has a significant impact on the performance of food and beverage companies. Effective systems and processes, such as quality control measures, supply chain management systems, and research and development capabilities, are essential for enhancing operational efficiency, productivity, and innovation in the industry. Companies that invest in developing and maintaining robust structural capital are better positioned to adapt to changes in consumer preferences, technological advancements, and regulatory requirements ([Xu et al., 2020](#); [Yanti & Munir, 2021](#); [Zhang et al., 2021](#)).

Thirdly, relational capital plays a crucial role in the success of companies in the food and beverage industry. Strong relationships with customers, suppliers, and stakeholders can provide companies with essential market insights, access to new distribution channels, and opportunities for collaboration and partnerships. Additionally, these relationships can enhance brand reputation and customer loyalty, leading to increased sales and market share ([Wardani et al., 2019](#); [Xiong et al., 2015](#); [Yanti & Munir, 2021](#)).

H<sub>3</sub>: Intellectual capital significantly effect on firm performance

**METHOD**

This research is associative research with a quantitative approach, which aims to find out the effect between independent variables (operating costs, agency costs, and intellectual capital) on the dependent variable (firm performance). The sampling technique used in this research is non-probability sampling with convenience sampling. This study uses secondary data, and the sample is taken from 12 out of 26 financial reports from food and beverage sector companies listed on the Indonesia Stock Exchange. The financial statements analyzed are for the financial statement period in 2018-2022 or as many as 5 years, so the total number of data observations is 60. Table 1 shows the measurements used in each variable adopted from several references.

**Table 1. Variable Measurement**

Variable	Measurement	Scale
Operating Cost (TATO)	$\frac{\text{total sales}}{\text{total asset}}$	Ratio
Agency Cost	$\frac{\text{Cost of sales} + \text{Adm. expense}}{\text{total sales}} \times 100$	Ratio
Intellectual Capital (VAIC)	VACA + VAHU + STVA	Ratio
Firm Performance (ROA)	$\frac{\text{net profit}}{\text{total asset}}$	Ratio

**Source: Sitorus and Fransiska (2023); Giofani (2022)**

The data analysis technique used is panel data regression using the Eviews version 12 tool. Before panel data regression and hypothesis testing are carried out, model selection testing starting from the Chow, Hausman, and Lagrange Multiplier tests is first carried out. In addition, classical assumption testing is also carried out if one of the model estimates is selected, starting from the normality, heteroscedasticity, multicollinearity, and autocorrelation tests. Classical assumption testing is not mandatory and depends on the selected model estimation.

**RESULT AND DISCUSSION**

Table 2 shows the results of the Chow test with the chi-square parameter showing a significance value of 0.000, meaning that the better model estimate is the fixed effect model, so further Hausman testing is needed to compare the fixed effect model estimate with the random effect.

**Table 2. Chow test**

Effects Test	Statistic	d.f.	Prob.
Cross-section Chi-square	98.761217	11	0.0000

**Source: data processed (2024)**



Table 3 shows the results of the Hausman test with a significance level of 0.0006, which means that the best estimate between the fixed effect and random effect is the fixed effect model. Hence, the estimation model chosen in this study is the estimation of the fixed effect model.

**Table 3. Hausman test**

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.345376	3	0.0006

**Source: data processed (2024)**

Furthermore, to ensure that the panel data regression model can be used, it is necessary to ensure that the classical assumptions are met. In this study, the selected model estimation is a fixed effect model, so the mandatory assumption tests are heteroscedasticity and multicollinearity tests, while other assumptions can be ignored (Gujarati & Porter, 2008). Table 4 shows that the results of the Glejser test have a significance value of 0.2017, meaning that the data avoid symptoms of heteroscedasticity or are homogeneous.

**Table 4. Uji Glejser**

Obs*R-squared	4.621275	Prob. Chi-Square(3)	0.2017
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**Source: data processed (2024)**

In the multicollinearity test, table 5 shows that the VIF value of each independent variable is smaller than 5, so it can be said that there are no multicollinearity symptoms so that panel data regression testing and research hypotheses can be carried out.

**Table 5. Multicollinearity Test**

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.000992	12.75530	NA
TATO	0.000228	4.543138	1.305455
CA	0.007397	5.067188	1.259157
VAIC	2.12E-05	3.902012	1.042585

**Source: data processed (2024)**

In table 6, the regression equation is obtained as follows:

$$\text{ROA} = -0.283222 + 0.055699 (\text{TATO}) + 0.440090 (\text{Agency Cost}) + 0.079188 (\text{VIAC})$$

The regression equation states that Return on Assets (ROA), or the rate of return on assets, is affected by Total Assets Turnover (TATO), Agency Cost, and Managed Intellectual Capital (VIAC). The coefficient associated with each variable indicates how much relative influence each independent variable has on the dependent variable, ROA. The positive coefficients for Agency Cost, TATO, and VIAC indicate that an increase in these three variables will increase ROA.

**Table 6. Fixed Effect Model and Hypotheses Test**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.283222	0.044177	-6.411080	0.0000
TATO	0.055699	0.022366	2.490407	0.0165
CA	0.440090	0.152781	2.880538	0.0061
VAIC	0.079188	0.003706	21.36888	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.028980	R-squared	0.947671	
Mean dependent var	0.120033	Adjusted R-squared	0.931391	
S.D. dependent var	0.127756	S.E. of regression	0.033463	
Akaike info criterion	-3.744405	Sum squared resid	0.050391	
Schwarz criterion	-3.220819	Log likelihood	127.3322	
Hannan-Quinn criter.	-3.539602	F-statistic	58.21016	
Durbin-Watson stat	2.073928	Prob(F-statistic)	0.000000	

**Source: data processed (2024)**

Furthermore, table 6 also shows the results of hypothesis testing both partially and simultaneously. Based on statistical testing results, the significance value of TATO of 0.0165 < 0.05 indicates that operating capacity (TATO) has a significant effect on company performance (ROA), so the first hypothesis is accepted. Furthermore, the significance value of agency cost (CA) of 0.0061 < 0.05 indicates that agency cost (CA) has a significant effect on company performance (ROA), so the second hypothesis is accepted. Likewise, the significance value of intellectual capital (VIAC) of 0.0061 < 0.05 indicates that intellectual capital (VIAC) has a significant effect on company performance (ROA), so the third hypothesis is also accepted.

The statistical results also show that simultaneously, operating capacity, agency costs, and intellectual capital significantly affect company performance. The amount of influence is 94.76%, and only 5.24% is influenced by other variables not tested in this study, so it can be concluded that this estimation model is robust.



### Operating Capacity and Firm Performance

The study results show that operating capacity significantly affects firm performance. Operating capacity refers to the maximum level of production that a company can achieve within a given period. The higher the operating capacity of a company in the food and beverage industry, the more products it can produce and sell ([Zhou et al., 2021](#)). This directly leads to increased revenue and profitability for the company. Furthermore, operating capacity also has a significant impact on various aspects of the business, including pricing, marketing, promotional plans, and customer perceptions. The ability to differentiate experience that balances consumer value with margins is one aspect that can be affected by operating capacity ([Ma et al., 2021](#)).

By having a higher operating capacity, companies in the food and beverage industry can meet customer demands more effectively during peak mealtime hours. This can lead to improved customer satisfaction and loyalty ([Andersson, 1995](#); [Chowdhury et al., 2020](#)). Another factor affected by operating capacity is the ability to drive restaurant improvements ([Ma et al., 2021](#)). By having an optimal operating capacity, companies can ensure efficient production and reduce wastage ([Chen et al., 2018](#); [Soni & Gupta, 2020](#); [Zhao & Stank, 2003](#)). The impact of operating capacity on performance in the food and beverage industry can be seen through several vital factors.

Firstly, operating capacity influences the company's ability to meet demand. By having a higher operating capacity, companies can produce and deliver more products to meet customer demands promptly ([Ma et al., 2021](#)). This not only helps in maximizing sales but also prevents the loss of potential customers due to the unavailability of products. Secondly, operating capacity affects pricing strategies. By increasing their operating capacity, companies in the food and beverage industry can achieve economies of scale, which can lead to cost savings. These cost savings can be passed on to customers in the form of lower prices, making the company more competitive in the market ([Gopalakrishna-Remani et al., 2016](#); [Hwang et al., 2010](#)).

Additionally, operating capacity plays a pivotal role in marketing and promotional plans. Companies with higher operating capacity can take on more extensive marketing campaigns, offer more promotions, and accommodate more significant events or gatherings. This allows them to reach a wider audience and attract more customers, ultimately leading to increased sales and market share ([Yeap, 2011](#)).

### Agency Cost and Firm Performance

The study results show that agency cost significantly affects firm performance. One reason why agency costs can have a positive impact on the performance of food and beverage companies is that it provides incentives for managers to act in the best interests of the shareholders ([Luo, 2010](#)). These incentives can lead to increased effort and motivation on the part of the managers, which in turn can improve the overall performance of the company ([Corbetta & Salvato, 2004](#); [Khuyen, 2021](#); [Kim et al., 2007](#)). Managers and shareholders may have different goals and interests. Managers may prioritize short-term profitability or personal gain, while shareholders typically focus on long-term value creation and maximizing shareholder wealth. The presence of agency costs helps align the interests of managers with those of shareholders ([Blanco-Mazagatos et al.,](#)

[2007; Haugen & Senbet, 1981; Schulze et al., 2001](#)). One way agency costs can positively influence the performance of food and beverage companies is through increased monitoring and control mechanisms. Shareholders will closely monitor the actions and decisions of managers to ensure that they act in the best interest of the company. This monitoring can lead to improved corporate governance practices, more effective decision-making, and better risk management ([Li, 2020; Umam & Halimah, 2021](#)).

Additionally, agency costs can lead to greater transparency and accountability within the company. Managers may be more incentivized to provide accurate and timely information to shareholders, as this can help mitigate agency costs and build trust. Managers may voluntarily disclose more information in annual reports, financial statements, and other communications to shareholders in order to reduce agency costs. This increased transparency can improve the overall performance of the company by providing shareholders with a better understanding of the company's operations, financial health, and prospects ([Alfadhl & Alabdullah, 2013; Boland et al., 2008](#)). Furthermore, addressing agency costs can also lead to improved efficiency and cost management within food and beverage companies. When agency costs are effectively managed, decision-making processes become more efficient, and costs can be better controlled. This can result in improved operational performance, reduced wastage, and increased profitability ([Luo, 2010; Mohan et al., 2020; Reynolds & Biel, 2007; Umam & Halimah, 2021](#)).

### Intellectual Capital and Firm Performance

The study results show that agency cost significantly affects firm performance. The food and beverage industry is a highly competitive sector that requires companies to continually innovate and adapt to changing consumer preferences ([Wardani et al., 2019](#)). Numerous studies have been conducted to examine the impact of intellectual capital on company performance, particularly in the food and beverage industry. Intellectual capital enables companies to innovate and differentiate themselves in a highly competitive market. This is particularly relevant in the food and beverage industry, where consumer preferences are constantly evolving. Companies that possess a strong intellectual capital can develop new and innovative products, improve existing products, and respond quickly to changing consumer demands. This gives them a competitive advantage and allows them to attract more customers and increase their market share ([Kurfi et al., 2017; Tsai & Mutuc, 2020](#)). Intellectual capital contributes to the efficiency and effectiveness of company operations. Companies that have a wealth of intellectual capital possess valuable knowledge, expertise, and skills that can be utilized to streamline processes, improve decision-making, and enhance overall operational performance ([Kanchana & Mohan, 2017; Wardani et al., 2019](#)).

Additionally, intellectual capital facilitates knowledge-sharing and collaboration within the organization. This encourages learning, creativity, and innovation among employees, leading to continuous improvement and increased efficiency ([Hsu & Sabherwal, 2012; Xu et al., 2020](#)). Intellectual capital plays a crucial role in building strong customer relationships and brand reputation. Companies that prioritize intellectual capital are more likely to invest in research and development, customer insights, and marketing strategies. This enables them to understand customer needs and preferences better, tailor their products and services accordingly, and build a strong brand reputation ([Kartikasari & Sukarno, 2023; Sharma, 2018; Igor et al., 2019](#)). By

consistently delivering high-quality products and creating positive experiences for customers, companies with strong intellectual capital can build trust and loyalty, ultimately leading to increased sales and profitability.

### CONCLUSION

Based on the results, there are significant findings related to three factors that influence firm performance in the food and beverage industry: operational capacity, agency costs, and intellectual capital. First, operational capacity plays a vital role in improving firm performance. High levels of operational capacity enable firms to increase production and sales of their products, which in turn increases revenue and profitability. In addition, optimal operational capacity affects various aspects of the business, including pricing, marketing, and customer perception. Second, agency costs have a positive impact on firm performance by encouraging managers to act in the interest of shareholders, improving monitoring and control, and increasing corporate transparency and accountability. Third, intellectual capital also has a significant contribution to firm performance by enabling innovation, operational efficiency, internal collaboration, and building strong customer relationships. The theoretical implications of these findings underscore the importance of paying attention to these aspects in the strategic management of firms. In contrast, the practical implications highlight the need to focus on developing operational capacity, agency cost management, and strengthening intellectual capital to improve firm performance in the food and beverage industry.

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