

Understanding Strategic Initiatives Contributing to The Implementation of Cost Leadership and Differentiation Strategy to Achieve Competitiveness: A Case Study of Indonesia's Cement Industry

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Abstract

This paper highlights the implementation of cost leadership and differentiation strategy by the cement industry to gain competitive advantage. As formulated by Porter, cost leadership is one of the generic strategies framework that emphasizes on cost formulation processes, while differentiation allows a company to charge a higher price for its product or services to gain customer loyalty. For the last decades, development of infrastructures has been rapidly increasing globally, resulting in the growth of the cement industry. This creates competition in the cement industry requiring companies to determine and implement strategic initiatives to secure business sustainability. This research was conducted to define the contributing factors and present how cost leadership and differentiation strategy was implemented by cement companies to strategically maintain the cost of goods sold and implement product development affecting positively to the company's financial performance, as well as to overcome issues related to cost involved in its operation. Furthermore, the analysis also identifies which one is the most significant strategic initiative supporting cost leadership strategy affecting cost of goods sold. This research proves that cost leadership's strategic initiatives and product development affects positively to the financial performance of the companies in a highly competitive market.

Keywords

Cost Leadership, Cement Industry, Generic Strategies, Differentiation, Competitiveness

1. Introduction

Cement is one of the main industries and economic contributors in the world. Cement as the major component of concrete is commonly used as one of the main materials for infrastructure and buildings. It had a total production volume of about 6 billion m³ in 2017 globally (Hache et al. 2019). Cement acts as the glue for concrete to construct buildings, roads, bridges, dams and other infrastructure (Potgieter 2012). Concrete is second only to water in terms of its use by mankind (Hansson 1995).

According to Schlorke (2020), there were over 1,000 cement producers operating over 2,300 integrated cement plants and more than 600 grinding stations all over the world. Based on information obtained by CW Research in 2020, there are five countries that cover almost three-quarters of the world's cement production, with China leading with a 57-percent share globally, then followed by India, Vietnam, the United States, and Indonesia. Each country faces different challenges in its cement production and operation processes due to different socio-economic conditions, cultures, and regulations in each country.

However, almost all cement producers face challenges regarding business sustainability. The increasing energy consumption, raw material, distribution and manufacturing cost undoubtedly affect the financial health of the cement producers. The arrival of new competitors in the industry by selling at lower prices also gives threats to the incumbent, requiring the firm to take strategic actions on their overall business. McKinsey (2015) conducted a research using

cement-industry synthetic index composed of 74 cement companies all over the world for over the past 30 years, at the value of approximately \$ 450 billion, the cement industry's financial condition has shown mixed performance. This condition encourages many cement companies to find coherent commercial strategies to overcome issues such as underperformance in cost involved.

Moreover, related to the dynamics of cement's demand as one of main materials in the construction industry, specifically in the year of 2020 where the Covid-19 outbreak began to hit major countries, there were significant changes in the number of cement demand and sales in several countries even though there were still no significant alternative to replace cement in the construction industry. Recessions were inevitable in most countries, even for major countries like the United States, Germany, Japan, South Korea and Italy. World Economic Outlook (2021) reported that global economic growth reached -3.5%, even though it then began to bounce back gradually in the third quarter of 2020. This condition forced industries, including cement companies, to re-evaluate their strategic decisions to adapt to changes caused by either demand and also government policies or regulations affecting their operational process. Construction and infrastructure projects had been slowed down by the dynamics of economic and regulation changes in many countries during the first quarters of the pandemic outbreak resulting in the demand for cement material becoming disrupted. This condition led to overcapacity in many big cement producers, yet they still need to strengthen their competitiveness in the industry.

To overcome these issues, cement producers need to implement strategies to generate profits more than their operating cost. Besides, firms also need to create returns on invested capital (ROIC) more than their cost of capital. One of the strategies that could be implemented is by performing differentiation strategies. Porter (1985) stated that differentiation involves the creation of a product or service that is perceived throughout its industry as unique. A successful differentiation strategy allows a firm to charge a higher price for its product and to gain customer loyalty, affecting positively to the firm's financial performance. Product development is an example of a strategy offering the advantages of differentiation.

Another strategy that could be used is by implementing the cost leadership strategy focusing on the cost reduction as much as possible on the premise of ensuring product quality, so as to get low cost per unit which will help the firm to achieve competitiveness (Ma 2021). Cost control is at the center of cost leadership strategy allowing a firm to fetch above-average returns (Ma 2021). Much research has been done regarding cost leadership, especially in the cement industry.

As one of the examples, some cement companies succeed by blending structural moves, such as changes in asset footprints or supply chain, based on the understanding of market dynamics. One large cement company in a major Asian country applied this method to gain leadership in price and margin in an important micro-market (McKinsey 2016). Latest technology, its seamlessness and functionalities that have wider acceptance and usage will also reduce operating cost considerably (Shankar et al. 2020). Bailey and Farrel (2004) stated that firms seek to increase their competitive position in the marketplace by relying on outsourcing processes for activities which they view as supplementary to their core business. Another way is by identifying the energy efficiency in the cement industry. Energy costs are the single largest variable production cost at cement plants contributing around 50% of overall operating cost in the cement industry (Kema Inc. 2005).

Even though much research has been conducted to understand the implementation of cost leadership and differentiation strategy in the cement industry, there is no single research discussed on the comprehensive strategies executed by a cement producer to pursue cost leadership and differentiation. Furthermore, most of the research on the cement industry only focuses on the application of latest technology to decrease the operating cost or exploring the sourcing process to reduce the raw material prices. This research aims to explore the extensive initiatives taken contributing to the execution of cost leadership and differentiation strategy in the cement industry.

1.1 Objectives

This research aims to understand strategic initiatives contributing to the implementation of cost leadership and differentiation strategy in order to achieve competitiveness in the market. To achieve this aim, the following objectives are defined as:

1. To understand strategic initiatives influencing cost leadership strategies implemented by the cement industry.
2. To understand strategic initiatives influencing differentiation strategies implemented by the cement industry.
3. To identify the significant cost leadership initiatives affecting the cost of goods sold.

2. Literature Review

2.1 Competitiveness

The implementation of strategic management is mainly aimed to achieve competitive advantage. Alfredo and Nurcahyo (2018) stated that competitiveness is one of organizations' goals that can be achieved by entering the customer image and keeping the loyalty, so that companies need to maintain their product quality. A company could have a competitive advantage when it achieves a superior position resulting from the product or service offered in the market creating customer preference (Dombrowski et al. 2018). According to Engert (2015), this concept of strategic management as explained by Porter, even gives rise to some form of competitive advantage. Explaining how firms generate a competitive advantage in the first place is important for understanding the challenges of a highly dynamic and disruptive economic environment (Priem et al. 2018). Competitive advantage is mainly related to the competitiveness of a company in an industry (Porter 1985). There are various interpretations of competitiveness definitions that have been described by a lot of researchers.

Siudeck and Zawajska (2014) compiled some popular definitions of competitiveness by other scholars in their research. One of them is a concept of competitiveness at the national level as national productivity described by Porter (1990) as "competitiveness was defined as an ability of an economy to provide its residents with a rising standard of living and high employment on a sustainable basis". Another definition of competitiveness was explained by Adamkiewicz-Drwiłło (2002) describing competitiveness of a company as "adapting its products to the market and competition requirements, particularly in terms of product range, quality, price as well as optimal sales channels and methods of promotion". On the other hand, Chao-Hung and Li-Chang (2010) explained that the definition of a firm's competitiveness is its economic strength against its rivals in the global marketplace where products, services, people and innovations move freely despite the geographical boundaries. From the perspective of competitiveness in its relation to global transformation, Wibowo and Nurcahyo (2020) stated that the concept of competitiveness in terms of national level, can be implemented as a policy strategy in building the strength of the national economy by integrating macroeconomic policies.

However, among various context and theoretical interpretations of competitiveness, the basic understanding about its definition would lead to the strategy formulation to achieve targeted advantages and also the vision of the company as a whole. To determine how a company formulates their strategy in order to improve their performance in terms of income, profit and business strategy, it is necessary to have a comprehensive understanding about the strategy itself.

Porter (1996) stated that strategy is the creation of a unique and valuable position involving a different set of activities, also it requires you to make trade-offs in competing. Strategy involves creating fit among a company's activities, that has to do with the ways a company interacts and reinforces one another (Porter 1996). According to Lyngso (2019), Porter argues that strategy is how to take a creative position, differentiate ourselves to customers, add value through mixed activities that are different from its competitors. The strategies are used as a means that can be used by a company and its competencies, both product differentiation or low product costs (Erika 2012). Strategy is also an incremental improvement, based on the perspective of what to expect in the future (Nurcahyo et al. 2018).

According to Engert (2015), Johnson et al. (2008) and Zhang et al. (2013), corporate strategy is the combination of strategic analysis, choice, and implementation. If an organization's overall strategy is wrong or ineffective, then all the efficiency in the world may not be enough to allow success (David 2011). This emphasizes why the selection of strategies may hold an important role in a company's success.

Each different manufacturer and company apply different strategies in order to gain competitive advantage and maintain their performance in a highly competitive industry. According to Porter, selection of strategies allows a

company to gain its own advantages compared to other competitors. Porter (1980) stated that the company could gain a competitive advantage by implementing 3 strategies which are called generic strategies.

Generic strategies consist of cost leadership, differentiation, and focus strategies. The strategy execution allows the company to operate in one broad direction (Mahfod 2017). This is done through the integration of organizational plans, objectivity, policies, and programs launched in improving performance, a long tradition of strategic research with the aim of identifying relatively few conditions through strategic choices (Greckhamer 2019).

2.2.1 Cost Leadership Strategies

The purpose of cost leadership strategy is to offer products from a company at low cost with references taken from experience, investment in product facilities, conservation, and good monitoring of the total operational costs (Birjandi 2012). Cost leadership also aims to have a comprehensive cost advantage over competitors (Dombrowski et al. 2018). To obtain an advantage in the market, a company must provide benefits to customers at a lower cost than competitors and / or the company must provide benefits that other competitors have not thought of (Muasa 2014). This action makes the company more valuable in the eyes of its customers.

Cost is generated by performing activities in which cost advantage arises from performing particular activities more efficiently than competitors (Porter 1996). In the cost leadership strategy, a company can establish itself as a producer with the lowest cost with the same advantages as its competitors (Zapletalová 2016). In addition, if the company is able to create an effective cost leadership strategy, the company will be able to become a low-cost producer which is characterized by prices that are in line with the customer's expectations, then the customer will be satisfied with the company's product or service (Pearce and Robinson 2009).

To maintain this strategy, companies need to continue the research with reduced costs in all aspects of the business. Strategies are implemented in order to get the widest possible distribution such as by means of promotion. This is done by requiring a sizable market share advantage in access to raw materials, components, labor, and other important inputs. Porter states "The most successful companies are those that limit costs at every point in the value chain" (Stonehouse and Snowdon 2007).

2.2.2 Differentiation Strategies

The differentiation strategy can be achieved in a number of ways, such as determining general criteria for success. These criteria can be in the form of price, company image, product quality, and speed in performing services (Greckhamer and Gur 2021). Pricing a product in market share using differentiation strategies must be higher than its competitors. This aims to show that the product or service provided is completely different from competitors. In contrast to cost leadership, price is not a determining factor in maintaining differentiation strategies (Brenes et al. 2014).

Differentiation strategy can be implemented in various types of companies. In small companies, differentiation strategies can be implemented to minimize fatal interactions with their competitors. This can increase business export activities in international markets (Zapletalová 2016). According to Kotler and Armstrong (2013) differentiation is defined as "the act of designing a set of meaningful differences to distinguish the company's offerings from competitors' offerings". To be unique in its sector, a company must have characteristics that can position itself to fulfill customer needs in which standard goods and services do not fulfill customer needs (Bertozzi 2017).

Companies applying differentiation strategies have strong characteristics in marketing, product and services, creativity, research and development, quality, and cooperation with distribution channels (Brenes et al. 2014). Banker et al. (2015) in their research state that companies adopting the differentiation strategy can achieve a competitive advantage by investing in developing products or services that offer unique qualities desirable to customers.

2.2.3 Focus Strategies

In the world of strategy, the company strives to be unique in its industry on several dimensions that are widely valued by buyers and are considered better or different from the competitors. Customer needs become opportunities for strategic planning in providing products that are clearly different from competitors by targeting a wider group of customers (Zapletalová 2016). When a company seeks scope with less competition, selects segments in the industry

and adjusts its strategy to serve customers to the exclusion of others, the strategy is called a focus strategy (Porter 1985).

The focus strategy relies on an industry segment that is sufficiently sized, has good growth potential, and is not critical to the success of other major competitors. David (2011) defined Focus Strategy as “most effective when consumers have different preferences or requirements while rival firms are not trying to specialize in the same target segment”. Companies can decide to focus their marketing targets on certain customer groups, target groups, certain product series, or certain geographic areas (Porter 1979).

3. Methods

The concept of cost leadership and differentiation strategy has attracted authors to explore its scope and implementation in the cement industry which was chosen due to its competitive market. This competitive market urges cement producers to deliver quality products with cheaper prices, as cheaper price is one of the fundamental goals of the cost leadership strategy. This research uses a case study approach. The case study chosen for this research is one of the leading cement industries in Indonesia, PT Semen Indonesia (Persero) Tbk. A brief profile of PT Semen Indonesia (Persero) Tbk. is described further in Table 1.

The case study will then analyze the operations of PT Semen Indonesia (Persero) Tbk. The analysis will explore the strategic initiatives pursued by the company in order to maintain the cost of goods sold. The analysis will limit and focus on the cost of goods sold components which comprise raw material, energy, distribution and manufacturing cost as the strategic initiative driver. Moreover, the analysis also covers the strategic initiatives executed to increase the firm’s revenue by implementing differentiation strategies.

This research also aims to identify the most significant cost leadership initiatives contributing to the cost of goods sold by using a statistical analysis carried out using Minitab 18. The method used in the statistical analysis is the multiple linear regression. Nurcahyo et al. (2019) used multiple linear regression to describe how the capability in production or operations significantly affects all aspects of manufacturing strategy. Using a similar method, this study explores the most significant strategic initiative contributing to cost leadership strategy affecting cost of goods sold in PT Semen Indonesia (Persero) Tbk. by observing components that have positive correlation to cost of goods sold, observing R square and p-value results from the analysis.

Multiple linear regression was used to examine the correlation between 4 independent variables (X) which consist of raw material, energy, distribution and manufacturing cost to 1 dependent variable (Y) which is the cost of goods sold. The study then interprets the multiple linear regression result by observing the R square and p value to identify which components take significant roles to cost leadership strategy in the company.

Table 1. Company profile of the case study

Company name	PT Semen Indonesia (Persero) Tbk.
Industry sector	Cement
Location	Indonesia & Vietnam
Number of plants	9 Integrated cement plant, 6 grinding plant, 32 packing plant
Number of employees (in 2020)	7729
Utilized capacity	53 million tons / annum
Annual revenue	Around 185 million US\$

4. Data Collection

Authors use secondary data collected from annual reports of cement companies in Indonesia, PT Semen Indonesia (Persero) Tbk. The annual reports were officially released on the Indonesia Stock Exchange website. The research examines the annual report of the company within 2011 to 2020. In order to show the cost leadership implementation

effect on the company's financial performance, authors collected data from the income statements then imported it into graphs and also developed the cost of goods sold components performance. The components in cost of goods sold that were examined in this research are the cost of raw material, energy, distribution and manufacturing. To show the differentiation strategy implementation, income composition is also collected then imported into graphs to show cement and non-cement sales contribution.

5. Results and Discussion

5.1 Strategic Initiatives Influencing Cost Leadership Strategy

Based on the data from the annual reports during the year of 2011 to 2020, this research analyzes profit and loss statements and also the components of cost of goods sold of PT Semen Indonesia (Persero) Tbk. The financial data obtained was tabulated in Table 2.

Table 2. Profit & Loss Statement of PT Semen Indonesia (Persero) Tbk. in billion rupiah

Profit & Loss Statement	Year									
	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Income	16,379	19,598	24,501	26,987	26,948	26,134	27,814	30,688	40,368	35,172
Cost of Good Sold	9,932	11,109	12,500	14,027	14,937	14,707	17,998	19,834	25,698	23,555
Gross Profit	6,447	8,489	12,001	12,960	12,011	11,427	9,816	10,854	14,670	11,617
Gross Profit Margin (Percentage)	39.3%	43.3%	48.9%	48.0%	44.5%	43.7%	35.2%	35.3%	36.3%	33.0%

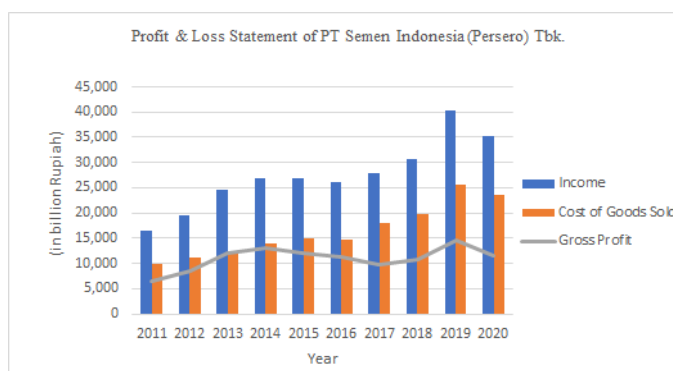


Figure 1. Profit and Loss statement of PT Semen Indonesia (Persero) Tbk.

Table 2 shows the profit and loss statement data of PT Semen Indonesia (Persero) Tbk. The financial data includes the company's income, cost of goods sold, gross profit and gross profit margin. Moreover, Figure 1 shows the visualization of profit and loss statement data during the year of 2011 to 2020. It shows changes in income, gross

profit, and cost of goods sold. There were increasing numbers of income and cost of goods sold in 2011 to 2015, except in 2015 in which the income slightly decreased from before, and 2016 to 2019.

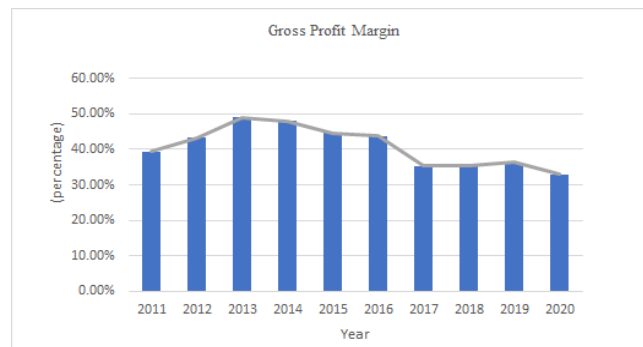


Figure 2. Gross Profit Margin of PT Semen Indonesia (Persero) Tbk.

Figure 2 shows the fluctuation of gross profit margin presented in percentage. There were two events of notable decrease of gross profit in 2014 to 2017 which affected the percentage of gross profit margin. In 2014, the demand for cement products began to decrease, which encouraged the company to implement a cost transformation strategy. In 2016, the company started to face the problem of production overcapacity and the decrease of cement prices to 6.5%. In 2016, the company started to consolidate its domestic market and tried to overcome the competition that began to rise by applying an approach to lower energy expense using lowered coal consumption and optimized utilization of existing power plants.

In 2017, as shown by Table 2 and Figure 2, there were significant changes in the gross profit margin from 43,7% in 2016 to 35,2% in 2017 or there was -8,5% growth in gross profit margin. There was a significant change of gross profit caused by the increase of income that was not proportional to the increase of cost of goods sold, in which the component of raw material cost increased while the selling price of the product decreased. The company emphasized on implementing cost transformation in components of energy and distribution cost. In 2017, PT Semen Indonesia (Persero) Tbk. was starting to fully consolidate its subsidiary entity after the acquisition in 2016. The initiative taken by the company was emphasizing on cost transformation on operational and distribution cost to maintain its competitiveness. Due to the significant increase in global cost of coal affecting electricity cost in 2017, the company needed to adapt by managing its manufacturing cost.

In addition, Table 3 shows the major components of cost of goods sold, those are energy, distribution, raw material, labor and manufacturing cost.

Table 3. Cost of Goods Sold Statement of PT Semen Indonesia (Persero) Tbk. in billion rupiah

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Energy	3,534	4,092	5,277	5,865	5,964	5,562	6,991	7,349	8,996	7,818
Distribution	1,385	1,667	2,120	2,423	2,367	1,813	2,109	2,376	3,204	2,514
Raw Material	588	568	1,047	873	873	1,376	1,877	1,876	1,874	1,628
Labor	1,149	965	1,399	1,372	1,402	1,534	1,487	1,223	2,254	2,228
Manufacturing cost	3,276	3,817	2,657	3,494	4,331	4,422	5,534	7,010	9,370	9,367

Total Cost of Goods Sold	9,932	11,109	12,500	14,027	14,937	14,707	17,998	19,834	25,698	23,555
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In 2020, as shown by Table 3 and Figure 1, there was a 13,09 % decrease in energy cost from 8.996 billion to 7.818 billion rupiah in 2020 due to the decrease of the coal price and the implementation of the company's cost transformation strategy in optimizing energy consumption and production volume. The company decreased its number of coal and fuel consumption to adapt to the number of the demand. The company's initiative to lower the production volume was due to the decrease of domestic demand of cement products and overall construction materials in 2020 during the outbreak of Covid-19. The company applied a cost transformation strategy in manufacturing cost by optimizing shipping utilization to increase the efficiency of freight cost, maximizing supply chain management by integrating distribution facilities, and optimizing the heavy equipment procurement process. The company also conducted some initiatives in managing raw materials such as by optimizing the use of materials with the most efficient composition and utilizing recycled material. Overall this cost transformation strategy affected the number of cost of goods sold in 2020, which decreased 8,33% from the previous year.

In summary, during 2011 to 2020, PT Semen Indonesia (Persero) Tbk. implemented cost leadership strategy by applying cost transformation initiatives to manage cost of goods sold components, with the objective to optimize its operational and production process. This strategy was also conducted by the company to adapt to the dynamics of the global economy and competition in the cement industry. The observation in this research would be focused on cost transformation initiatives related to the cost of energy, distribution, raw material and manufacturing. The component of labor would not be observed further because there were not many significant initiatives done by the company.

1. Strategic Initiatives related to Energy Cost

The energy cost component consisted of the cost of coal and fuel to generate electricity. Among the initiatives conducted by the company were as follows:

- a. Evaluating the purchase of coal, prioritizing contracts that can be applied by purchasing stocks of coal in bulk from the suppliers located in the nearest area to the operation area.
- b. Optimizing usage index of electricity used by heavy manufacturing machines which consumes a big amount of power and maintains the performance of each machinery.
- c. Enhancing the usage of existing power plants.

2. Strategic Initiatives related to Distribution Cost

Due to the fluctuation of demand, the volume shipped and delivered to the customer, the company applied cost transformation initiatives by implementing actions as follows:

- a. Maximizing the function of supply chain management by combining distribution facilities.
- b. Re-estimation of shipping contracts to obtain the most efficient route and rate of shipping.
- c. Optimizing land transportation mode by re-evaluating choice of transportation mode and distribution pattern.

3. Strategic Initiatives related to Raw Material Cost

The initiatives on raw material cost were considered based on the company's production volume:

- a. Optimizing the raw material from the closest resource.
- b. Optimizing the utilization of recycled material and industrial waste.
- c. Optimizing the most efficient composition of the materials.

4. Strategic Initiatives related to Manufacturing Cost

The manufacturing cost consists of maintenance cost, administrative needs, packaging cost, insurance and other costs. The fluctuations of manufacturing cost was related to the demand of the product and initiatives taken as follows:

- a. Optimizing index of maintenance and decreasing patch job.
- b. Optimizing procurement of heavy machinery with more efficient patterns.
- c. Increasing the composition of local spare parts and substituting lubricants with the competitive materials.

5.2 Strategic Initiatives Influencing Differentiation Strategy

Another strategic initiative executed by PT Semen Indonesia (Persero) Tbk. to achieve competitiveness in the market is by implementing a differentiation strategy to develop diversified products from the non-cement sector in order that

the company could increase revenue. This could be done by producing ready-mixed concrete to supply the construction sectors, cement bags to meet the cement bag demand and limestone mining.

Table 4. Income Composition of PT Semen Indonesia (Persero) Tbk. in billion rupiah

Income	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Cement	16,179	19,195	24,126	26,335	26,155	24,729	24,776	27,729	36,224	31,918
Non-cement	545	791	375	652	793	3,141	9,436	2,959	4,144	3,254
Total	16,724	19,986	24,501	26,987	26,948	27,870	34,212	30,688	40,368	35,172



Figure 3. Income Composition of PT Semen Indonesia (Persero) Tbk.

Table 4 shows the income composition of PT Semen Indonesia (Persero) Tbk. from 2011 to 2020 from the cement and non-cement sector. From figure 3, it is clear that the non-cement contribution dynamically increases year by year except in 2018 and 2020. This non-cement sector contribution results in the increase of revenue.

5.3 Significant Strategic Initiatives Affecting Cost of Goods Sold (COGS)

Statistical analysis as described previously has been conducted on annual report data of PT. Semen Indonesia (Persero) Tbk from 2011 to 2020. Data processing was carried out using statistical analysis. This research uses multiple linear regression to identify whether there is a correlation between independent variable to dependent variable and to understand the significant factor contributing to cost of goods sold components. Independent variables (X) in this research are energy, distribution, raw material and manufacturing cost, while dependent variable (Y) is the total cost of goods sold. The calculation results using Minitab 18 are shown in Table 5.

Table 5. Multiple linear regression of Cost Leadership initiatives to COGS

Standard Error	R Square	R Square (adj)	R Square (pred)
293.03857	99.83%	99.688%	99.35%

Table 6. Analysis of Variance (ANOVA)

	df	SS	MS	F	Significance F
Regression	4	247,232,062.08049	61,808,015.52012	719.77245	0.0000004
Energy Cost	1	300,940.77608	300,940.77608	3.50454	0.12010
Distribution Cost	1	17,925.51179	17,925.51179	0.20875	0.66691

Raw Material Cost	1	11,995.04105	11,995.04105	0.13969	0.72392
Manufacturing Cost	1	6,756,711.27330	6,756,711.27330	78.68388	0.00030
Residual	5	429,358.0195	85,871.6039		
Total	9	247,661,420.1			

Table 7. Coefficients

	Coefficients	Standard Error	T-Value	P-value	VIF
Constant	308.66322	461.43985	0.6689132	0.5331892	
Energy	1.4174952	0.7571917	1.8720426	0.1200980	169.114675
Distribution	0.5958569	1.3041602	0.4568893	0.6669143	46.1084672
Raw Material	0.3908523	1.0457710	0.3737456	0.7239174	32.6204659
Manufacturing	1.0528823	0.1186962	8.8703936	0.0003028	8.9137093

From the analysis above, the four initiatives implemented by PT Semen Indonesia (Persero) Tbk. show positive correlation to the cost of goods sold. From the calculation conducted using Minitab 18, the regression equation of total COGS is :

$$\text{Total COGS} = 309 + 1.417 \text{ Energy Cost} + 0.60 \text{ Distribution Cost} + 0.39 \text{ Raw Material Cost} + 1.053 \text{ Manufacturing Cost}$$

R square results from the analysis is 0.998, which is close to 1, proving the strong linear relationship between the independent and dependent variable. To identify the significant initiatives contributing to the cost of goods sold, p-value is provided for each initiative. This research uses 95% confidence intervals. From table 5, we can conclude the p-value of manufacturing cost is below 0.05, indicating this initiative is the most significant initiative to the cost of goods sold.

6. Conclusion

This research utilises a case study approach using PT Semen Indonesia (Persero) Tbk. as the company case study representing the cement industry. This research aims to understand strategic initiatives influencing cost leadership and differentiation strategies implemented by the cement industry and to identify which one is the significant cost leadership initiatives affecting the cost of goods sold. Authors use secondary data from the annual report within 2011 to 2020.

The strategic initiatives such as controlling energy, raw material, distribution and manufacturing cost could slow down the growth rate of cost of goods sold, altering positively to financial performance of the company. The company also pursues differentiation strategies by implementing product development to increase the revenue from the non-cement sector. Moreover, the result of the research identifies manufacturing cost as the significant strategic initiatives contributing to the cost leadership strategy implementation.

This research provides practical contribution to the firm implementing cost leadership and differentiation strategy, especially in the cement industry. The limitation of this research lies in the lack of annual financial performance data

and the number of case studies. Thus, future research should be done by conducting and exploring more case studies involving cement firms implementing cost leadership and differentiation strategy.

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