Production Performance of Sugar Industry in Indonesia: The Role of Stakeholder Pressures

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Abstract: Sugar is one of the most important commodities in Indonesia. An increasing demand for sugar makes sugar companies in Indonesia encounter some difficulties to fulfill it. Despite the high demand for sugar, sugar companies cannot provide enough products for the consumers due to several reasons. Thus, it is important to know the factors that can increase sugar production. This study conducted an empirical research from 34 managers working in Indonesia sugar companies to investigate the influence of stakeholder pressures, including farmers, competitors, government, customers, and employees, on the production and organizational performance. By using Smart-PLS to test the hypotheses, the results of this study proved that stakeholder pressures can significantly increase sugar production and organizational performance. These findings are expected to provide some important references for further academic validation. Moreover, the results of this study can be useful to academicians and managers, especially in the sugar industry, to mprove the effectiveness of production and overall performance.

1 INTRODUCTION

Sugar is one of the most important food commodities in Indonesia since most Indonesian consume it every day. Cited from the Agricultural Socioeconomic Report by Sudana Friyanto, Muslim, and Soelistiyo (2000), Indonesia was reported as the world's second largest sugar exporting country after Cuba in the 1930s. The highest production at that time was approximately 3 million tons of sugar with 11-13% of sugar content. These were produced by 179 sugar factories in Indonesia. However, the current national sugar industry cannot deal with the increasing demand for sugar in today's society. The incapability is not only caused by the inreasing demand, but also due to a decline in sugar production which further causes an imbalance between sugar's supply and demand. Furthermore, the decline of national sugar production is also caused by several factors, such as low quality of sugarcane, inadequate number of sugarcane plantations, extreme weather changes, various demands from some farmers, low productivity of factory workers, government regulations, and so on. It was explained by Wahyuni, Seupriyati, and Sinuraya (2009) that the current condition of the sugar industry is not as good as it used to be, because sugarcanes are planted in some farmers' fields with cheap rental prices. It makes the farmers were less willing to sell their harvest to sugar companies. Low wages for labor and priority use of irrigation water are also some other factors which renderred sugar production ineffective and inefficient. Therefore, it is important for sugar companies to understand and address the factors affecting the companies' production performances and their overall organizational performances.

On similar notes, pressure from company stakeholders is one of the factors affecting the productivity of sugar companies (Proches & Bodhanya, 2013). In conducting its business, a sugar company must associate itself with its internal and external stakeholders, such as employees, farmers, competitors, and government. Therefore, these stakeholders also act as the drivers or triggers for the company to be more productive. For example, some farmers who can produce sugarcanes with high sugar content shall become the main suppliers of the company. However, those farmers sometimes also put some pressures on the factory, for instance, by demanding high price for their harvests which hindered the company to get the sugarcanes it needs. The pressures from farmers can further lead to a

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decrease in sugar quality produced by the company, because the company cannot get the highest quality of the raw material (sugarcane). Conversely, farmers pressure can also trigger the factory to find another farmer to supply them raw materials or to improve their negotiating skills with the existing farmers, so that the production processes can run smoothly and produce good-quality of sugar. It concludes that stakeholder pressures can both enhance and reduce the productivity of sugar mills. Based on this reciprocal relationship, this study aims to examine the positive influences of stakeholder pressures on the production and organizational performance of sugar companies in Indonesia. Furthermore, the results of this study are expected to be useful for academicians and sugar company managers in order to improve the effectiveness and efficiency of the sugar companies' production and organizational performance. In more details, this study contributes for some readers, who used to see pressures as the factors that can downgrade a company's performance, to understand that it actually helps managers to improve their productivity and overall performance.

2 LITERATURE REVIEW

2.1 Stakeholder Pressures in Sugar Industry

Based on Freeman (1984), stakeholders are groups of people or individuals affecting the achievement of organizational goals. Related to study, it is known that sugar industry is a complex industry as various stakeholders are entangled in its production processes and finished products, such as sugar, refined sugar, or sugar syrup (Proches & Bodhanya, 2013). Proches and Bodhanya (2013) also stated in their research that important stakeholders in sugar industry include farmers, millers, and transport-people. In general, other key stakeholders in sugar industries who need to be considered in order to achieve the companies' best productivity and maximum performance are the employees, competitors, consumers, and policy makers (government). Therefore, this research employs stakeholder pressure as a key factor influencing factor of the sugar companies' production performances.

Based on the stakeholder theory, manufacturers need to pay attention to the interests of stakeholders to achieve effective management performances (Freeman, 1984). Stakeholder theory explains that companies possess both direct and indirect relationships with various stakeholders who have the capacity to influence the company direction and powerful figures within the company (Freeman, 1984; Jones, 1995). Therefore, the company must be careful with its behavior against its stakeholders, if the company wants to be more effective and performs better.

Stakeholder pressure can come from both inside or outside of the company (Sarkis, Gonzalez-Torre, & Adenso, Diaz, 2010). In this study, we examine the stakeholder pressures coming from farmers, competitors, governments, customers, and employees as the main stakeholders in the sugar industry in Indonesia. Farmers are the important party for sugar companies, because they are the main suppliers of sugarcane for the factory. The sugar quality also depends on the sugarcane quality produced by farmers. Sugarcane with high sugar content are needed to produce high-quality sugar. However, farmers are rather demanding about which companies to supply, and they often choose sugar companies which they perceive as more profitable, rather that those closer to them in terms of distance.

Regarding competition, sugar companies are actually getting stronger competition from imports rather than from other domestic sugar companies. Related to that issue, Indonesia government regulation actually recommends to import sugar in order to fulfill national sugar demand. Nonetheless, relatively cheaper price of the imported sugar causes national sugar companies to suffer losses. In terms of customers, the increasing demand for sugar and company's need to meet the demand also enhance the pressure for the domestic sugar companies. Finally, from the employees' side, sugar companies need employees with qualified competence so they can produce good quality sugar effectively and efficiently. Employee trainings are urgently needed to achieve these goals.

From the explanation above, it is clear that stakeholder pressures have significant influence for sugar companies, especially in Indonesia. These pressures can actually inhibit the process of sugar production in general; conversely, the pressures cause the companies to put more efforts to solve and overcome the problems. Furthermore, it also triggers sugar companies to improve their value chain performance in order to be more effective and efficient.

2.2 Production Performances

In sugar industry, production performance refers to a plant's capability to produce sugar either within a year or another production period, and is usually measured by the units of 'ton'. Based on some data provided by the Indonesian Sugar Association (AGI), sugar companies' production in Indonesia actually has started to increase from year to year. It is evident from the improved amount of sugar production from 2.2 million tons in 2016 to 2.7 million tons in 2017. However, this slight rise has not yet capable of fulfilling national sugar demand which reached 6.7 million tons. In order to fulfill this demand, Indonesia government imports sugar in a very large amount. The existence of imported sugar does help meeting the national sugar requirement, but it also slows down domestic sugar market. One of the reasons is because the imported sugar is more affordable than domestic one. Based on this information, sugar companies in Indonesia should do better in improving the efficiency of their production process.

2.3 Organization Performances

Organizational performance refers to the success of an organization to achieve both its financial and non-financial goals (Li et al., 2006). Past researches have argued that the organizational performance can be measured using financial and market criteria, for example ROI (Return on Investment), market share, sales growth, etc. (Li et al., 2006; Vickery, Calantone, & Droge, 1999).

Based on the literature review above, this study predicts that there is a relationship between stakeholder pressure, production performance, and organizational performance. Based on the stakeholder theory (Freeman, 1984), a company must adjust the company's value with its stakeholders, because it will determine factories' ability to sell its products or services. Meixell and Luoma (2015) also pointed out that company stakeholders play important roles in facilitating and occasionally blocking the factory from running its business, which further impact on the effectiveness of the company's supply chain management. Moreover, external stakeholders are also influential in orchestrating public opinion; while the pressures from employees and managers can support a more proactive work environment (Zhu & Sarkis, 2006; Sarkis, et al., 2010). In sugar industry, pressures coming from farmers demand make the sugar companies to be more flexible when dealing with them, because all of them need farmers to produce good quality sugarcane. It is significantly related to the production performance of the company, because company with good sugarcane will produce high quality sugar. In addition, government pressure, such as on import policies to meet local needs, requires sugar companies to produce sugar more effectively and efficiently to enhance the product performance. Therefore, if the sugar companies are able to overcome the problem of stakeholder pressures and take the opportunity, they will be able to improve their production performance and even sustain their overall organizational performances. Based on these explanations, this study predicts that:

H1: Stakeholder pressures have a positive influence on production performance

H2: Stakeholder pressures have a positive influence on organizational performance

3 METHODOLOGY

In this study, stakeholder pressures were defined as the pressures from farmers, competitors, government, customers, and employees as the stakeholders in the sugar industry. Production performance was defined as how well a company produces sugar in a period of time; while organizational performance was defined as the overall performance of the organization. Based on these definitions, literature reviews, the objectives of this study, and a survey of some questionnaire items were designed. Research items for the 3 constructs were then developed. After that, a permission letter was sent to national sugarcane companies, PTPN X and PTPN XI. After obtaining permission from the companies, an online questionnaire was distributed to the managers. This study collected 34 questionnaires that were employed for further analysis.

Furthermore, Smart-PLS was applied to analyze the collected data. Construct measurement should be assessed with the reliability and validity for further analysis to achieve a level of consistency. The reliability of constructs can be classified as composite reliability (CR) and has to be recorded between 0.60 to 0.70 mark in exploratory research and 0.7 to 0.9 in more advance stages of research in order to achieve satisfactory results (Nunally& Bernstein, 1994).

Table 1: Measurement scale items and factor loadings.

Constructs	Research Items	Loadings	AVE	CR	α
Stakeholder Pressures	Customer		0.465	0.722	0.515
	PL2	0.686			
	PL3	0.744			
	PL4	0.610			
	Farmer		0.664	0.798	0.497
	PT4	0.778			
	PT5	0.850			
	Competitor		0.449	0.829	0.784
	PS1	0.747			
	PS2	0.692			
	PS3	0.574			
	PS4	0.649			
	PS5	0.718			
	PS6	0.625			
	Government		0.746	0.936	0.914
	PM1	0.875			
	PM2	0.879			
	PM6	0.847			
	PM7	0.784			
	Employee		0.699	0.901	0.854
	KY2	0.796			
	KY3	0.875			
	KY4	0.931			
	KY5	0.728			
Production Performance	PR1	0.701	0.581	0.905	0.875
	PR2	0.867			
	PR3	0.774			
	PR4	0.898			
	PR5	0.582			
	PR6	0.831			
	PR7	0.626			
Organizational Performance	KO1	0.754	0.509	0.861	0.806
	KO2	0.730			
	KO3	0.665			
	KO4	0.789			
	KO5	0.704			
	KO6	0.625			

The values below 0.60 indicate the construct is lacking of reliability. Besides, the constructs validity can be classified as critical values of CR which has to be higher than 0.8 and Cronbach's α should be higher 0.7 (Hair, et al., 2011). Furthermore, the goodness-of-fit (i.e., the GoF index) was also calculated.

4 RESULTS

To verify the validity and reliability of constructs in this study, PLS was applied. Table 1 depicts the results of measurement scale items and the factor loadings. Some questionnaire items were deleted, because it did not fulfill the requirements. The results proved that 'Customer' recorded AVE value of 0.465 and CR value of 0.722. The results also proved that its Cronbach's α value was 0.515. All items within this factor have loadings higher than 0.600. For 'Famer', it was recorded AVE value of 0.664 and CR value of 0.798. It was also scored Cronbach's α value of 0.497. All items within this factor have loadings higher than 0.750. Furthermore, for 'Competitor', AVE value was recorded at 0.449 and CR at 0.829; while Cronbach's α value for the factor was scored at 0.784 which was considered as acceptable. For 'Government', AVE value of this factor was 0.746 and CR value was 0.936. The results also recorded Cronbach's α value of 0.914. All items within this factor have loadings higher than 0.750. Moreover, 'Production Performance' recorded AVE value at 0.581 and CR at 0.905. The results also pointed out that Cronbach's α value for the factor was 0.875. The values of factor loadings are also still acceptable. Lastly, for the construct of 'Organizational Performance', AVE was recorded at 0.509 and CR was 0.861. The results also depicted that its Cronbach's α value was 0.806. All items within this construct have loadings higher than 0.600.

Hyp	Path	Standardize Estimate	*t*-value
H_1	SP → PP	0.464***	4.084
H_2	SP → OP	0.575***	7.190
	Construct R^2		
	PP	0.216	
	OP	0.331	
	Goodness-of-Fit:0.267		

Table 2: The influence of stakeholder pressures on product and organizational performance.

Notes: *** $p< 0.001$, ** $p< 0.01$

Furthermore, Table 2 illustrates the results of hypothesis testing. The results proved that stakeholder pressures have a positive influence on production performance (β=0.464, $p<0.001$) and organizational performance (β=0.575, $p<0.001$). It indicates that the pressures from stakeholders can improve production and organizational performance. These results are supported by the findings of Sarkis, et al. (2010) which stated that the pressures from stakeholders facilitate an organization to improve its productivity and performance. Furthermore, according to stakeholder theory (Freeman, 1984), managers also need to consider about their stakeholders (both internal and external) to manage its organization. Therefore, based on these findings, managers shall understand that the stakeholder pressures in sugar company actually developed productivity and organizational performance.

5 CONCLUSION

Based on the results above, several conclusions can be drawn. Firstly, stakeholder pressures have a positive influence on production performance. It is supported by Sarkis et al. (2010) who stated that stakeholder pressures in a certain level can improve value chain as the key of a company's production performance in sugar industry. Pressures from farmers, customers, competitors, government, and employees shall motivate the company to perform better. Sugar company will try to deal with those pressures and enable them enable to produce more sugar. From that explanation, the second conclusion is stakeholder pressure can also increase organizational performance. For the same reason, the whole performance of an organization can be improved after it successfully solved stakeholder pressures.

The findings of this study shall give more understanding for the academicians and managers regarding the importance of stakeholder pressures. However, this study also has limitations. First, it used cross-sectional data which possibly create an unclear, directional relationship. Thus, future study may try to combine it with other methods to confirm the results of survey data. Second, the numbers of respondents (managers) are quite small which may not be able to represent all managers' opinions. Therefore, future study may add more respondents with the same criteria to obtain some more accurate results.

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