CONTROLLING FACTORS OF MARKETING ACTIVITIES: A CASE STUDY OF FRUIT PROCESSING INDUSTRIES IN EAST JAVA, INDONESIA

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Abstract

In East Java, Fruit Processing Industries (FPIs), are a key part of agroindustrial activities there. In term of agroindustry, three basic components in any agroindustrial system are procurement of raw material, processing and marketing. How to encourage fruit processing, as an agroindustrial activity and area potential, has become a crucial issue and a major priority for area development in East Java. Understanding the problems in FPIs would give support to success cases. Based on a sample survey of five districts in East Java province (Banyuwangi, Jember, Lumajang, Probolinggo and Malang), this paper reviews controlling factors, especially marketing activities, based on three basic components of the agroindustrial system. The paper concludes that in term of SMFPIs, education and technology are considered as determinant factors of marketing activities. The existence of big industries has strong effect to marketing performance. Understanding these factors can aid policy makers of FPIs in designing and implementing appropriate programs.

Keywords: *marketing, fruit process, industries*

Introduction

Agroindustrial sector as a sub-system of agribusiness, has unique advantages of utilizing agricultural raw material in agro-product processing. Some problems associated with the food industry found in other countries, are the shortage of raw material, quality, lack of continuous supply of seasonal raw material, inadequately trained labor force, costly imported packing material, and infrastructure and technological deficiencies (Hicks, 1991).

As agro-processed products are becoming very competitive in the world market, it is important to understand the problems faced by FPIs. The perception of problems by FPIs' owners or operators could influence their activities. For policy makers, understanding of such problems will aid in formulating policies conducive for the development of small and medium industries (SMIs) (Walsh, 1988).

Common criteria for classification of industries is the number of employees, small-scale (1-4 workers), medium scale (5-10 or 11-19 workers), and large-scale (20-99 workers). Small and medium industries are often considered together (Soon, 1984). For the developing countries, SMIs which still are fairly labor intensive, the criterion of employment of less than 50 workers is still applicable (Theng and Boon, 1996).

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Mishra (1999) and Tambunan (2000) reported that the most SMIs are still using traditional technology for processing. Tambunan and Keddie (1998), from their study on SMIs in Yogyakarta, revealed that with simple technology and low skill, the ability of SMIs to make innovations in their product and production process will be very limited. Krishnankutty (2000) in his study argued for setting up the society to facilitate SMIs activities and help adoption of technology.

Tambunan (2000) revealed that passive marketing, selling product locally, unstable demand, difficulties in transportation, limited market and dependence on retailer or wholesalers for marketing are common problems in SMIs.

This study reviewed the determinant marketing factors in fruit processing industries (FPIs) which are including small and medium fruit processing industries (SMFPIs) and big fruit processing industries (BFPIs). The data used for analysis was obtained through a survey conducted in the study area.

Research Methodology

A questionnaire was prepared to obtain required data from the selected industries. The questions were related to procurement of raw material, processing, and marketing activities. Questions were designed to assist in analyzing current status of SMFPIs. A few other factors felt to be relevant to the local context were included too. The question styles employed were questions requiring open and closed responses and others which used a Likert scale to obtain attitudinal data. Respondents were encouraged to include other useful information based on their individual experiences and knowledge.

Questionnaire was addressed to 63 fruit processing SMIs randomly chosen from five districts in East Java consisting of Banyuwangi, Jember, Lumajang, Probolinggo and Malang. These five districts are major supplier of fruits in Indonesia and provide significant amount of raw material to fruit processing SMIs. The questionnaire was filled in during visits, meetings and interviews with key person or representative of SMFPIs.

This study identified the determinant factors in small and medium fruit processing industries (SMFPIs) and big fruit processing industries (BFPIs). Correlation analysis was used to determine factors which has strong relationship among basic component factors, total score and total sales as determinant factors. The total score and total sales of industries are represented the industry performance. The detail factors of basic components used are:

1. **Company Profile** factors: (1) time existence, (2) age of owners, (3) education, (4) technology used, (5) number of employee.
2. **Marketing Activity** factors: (1) consumer level, (2) place of sale, (3) using of label, (4) selling area, (5) product appearance, (6) packaging, (7) color, (8) taste, and (9) promotion.

This analysis based on the score of the questionnaire filled by industries (SMFPIs and BFPIs) consist of raw material, processing and marketing. The result of analysis is classified based on the following criteria: very strong with r value 0.80 to 1; strong with r value 0.60 to 0.79; medium with r value 0.40 to 0.59; weak with r value 0.20 to 0.39; very weak with r value 0 to 0.19.

Result and Discussion

Identification of Determinant Factors in SMFPIs

Table 1 shows that education (r=0.72) and technology (r=0.66) have strong relationship with marketing activity. This indicates that education and technology are considered as determinant factors of marketing activities. Through higher education level, the owners or managers have more ability to market their products. Higher level of technology is required to maintain better quality of product that strongly affect to higher total sales.

Table 1: Relationship (r) between SMFPIs Profile and Basic Components of Agroindustries.

Factors	Raw material	Processing	Marketing
Time existence (year)	0.12 (very weak)	0.20 (weak)	0.32* (weak)
Age of owners	0.15 (very weak)	0.16 (very weak)	0.09 (very weak)
Education	0.37**(weak)	0.49**(medium)	0.72**(strong)
Technology Used	0.23 (weak)	0.48**(medium)	0.62**(strong)
Number of Employee	0.44**(medium)	0.42**(medium)	0.46**(medium)

**. Correlation is significant at the 0.01 level (2-tailed)

*. Correlation is significant at the 0.05 level (2-tailed)

In term of training experience shows that general management has strong relationship (r=0.68) with total score as performance of the SMFPIs. This indicates that general management training was strongly required to improve the SMFPIs' performance. Government officer including training center was suggested to improve facilities and material of training program to support SMFPIs to reach better performance.

Table 2: Relationship (r) among Marketing Factors, Total Score

Marketing Factors	Total score	
	r	Criteria
Consumer level	0.50**	Medium
Market channel (place)	0.62**	Strong
Using of label	0.65**	Strong
Selling area	0.60**	Strong
Product appearance	0.65**	Strong
Packaging	0.89**	very strong
Color	0.58**	Medium
Taste	0.70**	Strong
Promotion activity	0.72**	Strong

 **.Correlation is significant at the 0.01 level (2-tailed).

 *.Correlation is significant at the 0.05 level (2-tailed).

Table 2 shows that packaging has very strong relationship (r=0.89) in marketing activities. Market channel (r=0.62), using of label (r=0.65), selling area (=0.60), product appearance (r=0.65), taste (r=0.70), and promotion activities (r=0.72) have strong relationship with total score. This study revealed that packaging was the most common activities in SMFPIs particularly in marketing activities. On the quality factors packaging tends to be a strong factor. Some of SMFPIs did packaging in simple and traditional way that strongly affects quality and appearance of product. Considering the problems and the strong factors found in this study, it was suggested to improve marketing activities supported by facilities to achieve better performance of SMFPIs.

Identification of Determinant Factors in BFPIs

Table 3 shows that time existence of industries has strong positive relationship (r=0.60) with marketing activities of BFPIs. This indicates that the existence of big industries has strong effect to marketing performance. Time existence represents the market share of the company or the product. Longer of time existence gives more chance

to reach bigger market. Technology used or level of technology has medium relationship (r=0.55) tends to be a strong relationship with raw material activities. Particularly in BFPIs, higher technology used has strongly relationship with large quantity of raw material requirement in processing activities.

Table 3: Relationship (r) between BFPIs profile and basic components

Company Profile	Raw Material	Processing	Marketing
Time existence (year)	-0.15 (very weak)	-0.11 (very weak)	0.60* (strong)
Age of owners	0.51 (medium)	0.43 (medium)	0.40 (medium)
Education	0.05 (very weak)	0.30 (weak)	0.20 (weak)
Technology used	0.55 (medium)	0.42 (medium)	0.42 (medium)
Number of employee	0.15 (very weak)	0.26 (weak)	0.07 (very weak)

   **.Correlation is significant at the 0.01 level (2-tailed).

   *.Correlation is significant at the 0.05 level (2-tailed).

In case of training experience, raw material and organization have strong relationship (r=0.60 and r=0.77) with total score as the performance of BFPIs. This indicates that these training programs strongly affect better performance of BFPIs. Better raw material handling influences strongly to the quality of finished product. Large quantity of raw material supply needs better handling process to maintain the quality of raw material. Training experience in organization is strongly required to manage complicated process in BFPIs and to improve the performance in general.

Table 4 shows that market channel, product appearance, packaging and color of product have strong and very strong relationship (r=0.60, r=0.71, r=0.85, and r=0.63, respectively). This indicates that these marketing factors strongly affect to the performance of BFPIs. Better market channel or product distribution helps the consumer to find the products easier. Packaging, product appearance and color are often used as first consideration in buying process. Better packaging, product appearance and color are still suggested to BFPIs to maintain better product quality.

Table 4: Relationship (r)between Marketing Factors and Total Score of BFPIs

Marketing Factors	Total score	
	r	Criteria
Consumer level	0.43	Medium
Market channel (place)	0.60*	Strong
Using of label	0.14	Very weak
Selling area	0.56	Medium
Product appearance	0.71*	Strong
Packaging	0.85**	Very strong
Color	0.63*	Strong
Taste	0.43	Medium
Promotion activity	0.28	Weak

**.Correlation is significant at the 0.01 level (2-tailed).
*.Correlation is significant at the 0.05 level (2-tailed).

Through identification of strong factors in fruit processing industries includes SMIs and BIs, their owners, operators and managers, may prepare themselves, through a varieties of activities such as information for technology, education and training program. Another, this identification also helps to training organizations, external consultants to identify areas of training and consulting. As well as for the policy maker, support their areas of greatest potential for improvement in fruit processing sector.

Conclusions

In term of SMFPIs, this research revealed that education (r=0.72) and technology (r=0.66) have strong relationship with marketing activity. This indicates that education and technology are considered as determinant factors of marketing activities. Result showed that packaging has very strong relationship (r=0.89) in marketing activities. Market channel (r=0.62), using of label (r=0.65), selling area (=0.60), product appearance (r=0.65), taste (r=0.70), and promotion activities (r=0.72) have strong relationship with total score. This study revealed that packaging was the most common activities in SMFPIs particularly in marketing activities.

This research found that time existence of industries has strong positive relationship (r=0.60) with marketing activities of BFPIs. This indicates that the existence of big industries has strong effect to marketing performance. Market channel, product appearance, packaging and color of product have strong and very strong relationship (r=0.60, r=0.71, r=0.85, and r=0.63, respectively). This also indicates that these marketing factors strongly affect to the performance of BFPIs.

References

[1] Hicks PA, Food Processing In Asia And The Pacific: An Overview Of Principles, Policies And Status. APO, Tokyo, Japan, 1991.

[2] Krishnankutty CN, Bamboo Weaving Sector In Kerala: Current Status And Future Possibilities For Rural Development, Journal Of Rural Development, 2000, 19(3), 399-410.

[3] Mishra SN, Can Agroindustries be An Effective Tool For Promoting Rural Development In Orissa, Journal Of Rural Development, 1999, 18(2), 161-84.

[4] Soon TT, Management Guidance System for Small And Medium Enterprise, APO, Japan, 1984.

[5] Tambunan T, Local Orientation of Rural Small Scale Industries: An Empirical Study From Ciomas Sub District West-Java Indonesia, Asia-Pacific Journal of Rural Development, 1994, 4(1-2), 85-117.

[6] Tambunan T, Development Strategy of Rural Small-Scale Industries With A Cluster Approach: A Case Of Indonesia, Asia-Pacific Journal of Rural Development, 2000, 10 (1), 66-98.

[7] Tambunan T and Keddie J, Yogyakarta Area Leather Goods Cluster, UNIDO, Jakarta, 1998.

[8] Theng LG and Boon JL, An Explanatory Study Of Factors Affecting The Failure Of Local Small And Medium Enterprises, Asia-Pacific Journal of Management, 1996, 13(2), 47-61.

[9] Walsh JP, Selectivity And Selective Perception: An Investigation Of Managers' Belief Structure And Information Processing, Academy of Management Journal, 1988, 31(4), 873-96.