A Value Chain Analysis of Rice Commodity: Value Addition and Develop Strategies

Shinta Amelya Sandra[1], Wisynu Ari Gutama[2], Destyana Ellingga Pratiwi[2], and Anni Rahimah[1(✉)]

[1] Department of Business Administration, Universitas Brawijaya, Malang, Indonesia
anni@ub.ac.id

[2] Department of Agricultural Socioeconomics, Faculty of Agriculture, Universitas Brawijaya, Malang, Indonesia

Abstract. Uncertainties in rice demand and supply has been impacted market price and simultaneously to each main actors marketing margin. Taking consciousness to the phenomenon, recent study was organized in order to serve a proper explanation of current rice marketing channel activity, involving its value addition processes to evaluate rice value chain performance. This study was carried out to describe the rice value chain activities and calculate each actor's profit. Research also concerned with portraying strategies to improve competitive advantage of Rumah Pangan Kita as a rice retailer. This research incorporates the value chain analysis (VCA) framework and Strength-Weakness-Opportunity-Threat analysis of the rice value chain (RVC) to look at value adds and suggested upgrading measures to identify various segments in the RVC and improve the competitiveness. Marketing and sales activity and firm infrastructure contributed the highest potential value to Rumah Pangan Kita's business. Meanwhile, marketing chain has shown that rice millers have the significant profit. The following analysis revealed that internal and external environment of Rumah Pangan Kita supported its strong position. Maintaining the sustainability of the rice value chain by involving Rumah Pangan Kita in its marketing channel will significantly boost actors' welfare and strengthen Rumah Pangan Kita's competitive advantage.

Keywords: Value Chain Analysis · Strategy · Competitive Advantage

1 Introduction

Food markets have globalized as well as agrifood value chains in most developing countries have transformed, as in Indonesia [1]. The unstable condition in the food markets implied gaps for involved parties in food value chains, including rice. Rumah Pangan Kita, or RPK, is a form of program initiated by the Indonesia Logistics Agency, widely known as Perum BULOG. RPK is an outlet selling staple foods and daily needs run by individuals, retail, or cooperative. This work focused on the rice value chain with RPK as one of the essential involved actors.

Value chain is denoted as a series of connection activities creating value from raw products to supply finished products for end-user consumers and either continuing until

I. P. Nuralam et al. (Eds.): BICBATT 2022, AEBMR 257, pp. 130–136, 2024.
https://doi.org/10.2991/978-94-6463-240-8_16

the recycling process or creating another new value chain [2]. Value chains are integrated activities in which products and services are arranged, manufactured, and sent to customers with marketing agents' support [3]. Higher value from products makes higher willingness of customers to pay, hence the critical success for the business competition is to create value continuously for customers [4].

During a competitive business environment, the value chain has gained considerable importance since commodity value chain efficiency is urgently needed [5]. Previous empirical studies have been discussing value chains in various products or commodities, such as the cassava value chain [6], the global value chain in coffee-producing [7], the fishery business value chain [8], tomato value chain [1], table grape value chain [9], maize value chain [5], and rice value chain [10].

Rice value chain can provide various value-adding opportunities to ensure better price and demand-supply equilibrium [10]. In addition, the value chain development generates higher profits and creates mutually beneficial outcomes for all stakeholders involved, and this line shows congeniality with the aim of RPK itself. This study aims to describe rice value chain activities in RPK Malang City while also analyzing each profit earned for involved actors along the chain and formulating strategies to boost RPK's competitive advantage for better business life. A comprehensive value chain analysis will show actors that take more advantages from the process. This study will carry out value chain perspectives using two methods of Kaplinsky and Morris, i.e., the point of entry for value chain analysis and mapping value chains [11]. Also, to support and broaden the explanation to research objectives, measuring value chain performances based on Porter was calculated, and assessing the internal and external environment of RPK using SWOT analysis.

To the best of our knowledge, this paper helps understand the relationship among crucial actors in the rice commodity chain. It contributes to escalating RPK's business performance in emerging markets. On a side note, findings from this research are expected to provide different perspectives on rice value chain analysis due to limited studies undertaking methods for value chain research [11].

2 Method

This study was conducted with a quantitative approach at Rumah Pangan Kita (RPK) outlets in Malang City. The research focused on actors involved in the rice value chain, with RPK as the centre point of the chain, respecting the point of entry method of value chain analysis [11]. Regarding this, the identification of value chain actors is done backward, including marketers, millers, and farmers, and forward to the end consumers.

Research samples were determined using a nonprobability sampling technique. RPK was determined purposively based on the recommendation from BULOG. Several RPK agents that made repeat purchases were chosen as research samples. Snowball sampling method is also utilized to determine samples that have a role in the value chain due to the unavailability of information about the total population of rice value chain actors. The total number of samples in this study was 15 respondents. While data were collected using an open and closed questionnaires instrument. All questionnaires included respondents' pieces of information and a set list of open questions related to actor specifications.

Descriptive statistics, value chain analysis, and SWOT analysis were utilized to analyse data. Value chain analysis was accommodated with the point of entry for value chains, mapping value chains, and measuring value chain performance. The initial entry point for the rice value chain started from RPK as a retailer, providing further information regarding the actors before and after it to the final consumers. Thus, observing each actor in upstream to producers and downstream to consumers and mapping the value chain actors and activities offered guidance to calculate obtained margin value of each channel. SWOT analysis was also carried out by identifying and assessing the internal and external environmental factors of RPK Malang. By this means, the total calculation of SWOT can be done.

3 Findings

3.1 Rice Value Chain Actors

Based on the point of entry for the value chain [11], RPK as a retailer, was an initial rice value chain. The finding revealed that rice value chain actors consisted of RPK agents, BULOG, rice millers, and farmers. This work also measured value chain performances concerning previous empirical work [12]. Primary activities include inbound logistics, operations, outbound logistics, marketing and sales, and services. Meanwhile, supporting activities include firm infrastructures, human resources management, technology development, and purchasing. The overall performance score of the rice value chain in RPK is 1.89 (see Table 1). The result indicates that value chain performance in RPK Malang is still below the average because the value is below 2. The highest score of primary activity is marketing and sales. Thus, maintaining its performance is vital since marketing and sales are considered the critical success of value chain performance and facilitate RPK's competitive advantage.

3.2 Value Chain Mapping

The highest profit margin in the RPK value chain is obtained by rice millers, as much as 53.5% for premium rice and 51.6% for Beras Kita Premium (see Table 2). The significant margin earned is due to the value-adding process carried out by rice millers. Meanwhile, the lowest profit margin is received by BULOG for premium rice, with a total of 8.4%, and RPK for Beras Kita Premium of 6.3%. This research surprisingly revealed facts that BULOG, which was supposed to be the market's price stabilizer, was receiving a decent profit margin, especially in the value chain of Beras Kita Premium.

Table 1. Primary activities performance of RPK value chain.

Primary Activity	**Weight**	**Rate**	**Score**
Inbound logistics	0,12	1,80	0,21
Rice availability			
Operations	0,07	1,80	0,13
Product maintainance before selling			
Outbound logistics	0,11	2,20	0,24
Distribution to consumers			
Marketing and sales	0,19	1,60	0,30
Promotions			
Sales force			
Services	0,12	2,20	0,27
Interaction with consumers			
Total			**1,15**
Supporting Activity	**Weight**	**Rate**	**Score**
Firm infrastructures	0,18	2,00	0,36
General management			
Finance			
Human resources management	0,03	1,40	0,04
Employee recruitment			
Technology development	0,08	1,80	0,14
Business supporting equipment			
Purchasing	0,09	2,20	0,20
Additional product purchasing			
Total			**0,74**

3.3 SWOT Analysis

Assessing internal and external factors of RPK using SWOT analysis was arranged to spill out competitive strategies to be applied for RPK. The determination of each internal and external factor was based on the author's discussion with BULOG. The result of the IFE matrix represented the value of the x-axis, while the EFE matrix represented the value of the y-axis. Therefore, the matrix exhibited RPK position as well as quadrant 1. The result explained that RPK is in fast market growth and has a solid competitive position. Hence, suggesting RPK accelerate its market development, market penetration, and product development to always keep up the business growth.

Table 2. Profit margin in RPK value chain.

No	Rice Value Chain	Value Chain (Rp/kgs)	Profit Margin Value (Rp/kgs)	Margin Percentage (%)
Premium Rice (Other Brands)				
1	Production costs	2.183	-	-
2	Price on farmers level	4.800	2.617	28,6
3	Price on rice millers level	9.700	4.900	53,5
4	Price on BULOG	10.472	772	8,4
5	Price on RPK level	11.330	858	9,4
6	Price on consumers level	11.330	-	-
Total			**9.147**	**100**
Beras Kita Premium (BULOG Brand)				
1	Production costs	2.183	-	-
2	Price on farmers level	4.800	2.617	27,6
3	Price on rice millers level	9.700	4.900	51,6
4	Price on BULOG	11.080	1.380	14,5
5	Price on RPK level	11.680	600	6,3
6	Price on consumers level	11.680	-	-
Total			**9.497**	**100**

4 Discussion

Recent findings have several similar rhymes to previous work [10], in which revealed that rice retailers received less value among all the actors. This work also stated that RPK and other retailers obtained the smallest profit margin within all identified rice value chains. One of the logical reasons is that farmers tend to add value minimally to their yields unless they have the capability and capacity to process grain into rice on their techniques. Additionally, retailers have limited capacity to add value to their products since they have price thresholds to be followed, thus reducing their opportunity to have a more significant margin.

According to value chain performance results, marketing and sales activity is considered the highest potential primary activity in creating value in RPK value chains. At the same time, firm infrastructure is the supporting one. Both aspects are needed continuous improvement to foster the better value of products. Marketing and sales activity are implemented throughout promotion activity and sales force ability. Nowadays, promotion methods effectively promote the company's brand or services since everything

is digitalized. Media promotion is considered a robust method based on agents' experiences. A periodic follow-up from BULOG is suggested, and a promotion method to increase consumer awareness is the recommendation strategy by utilizing the given opportunities to cover weaknesses.

Besides manifesting the points as this work has found, the following directions as suggested also possible to be implemented. For instance, development of low-cost processing stage, i.e. rice millers activity, can serve less margin difference among farmers, rice millers, and retailers. A balance distribution of actors margin will visualized value chain wellness [13].

This study was limited to the number of active agents, restricting results generalization. Authors considered that this condition lacked consumer awareness of RPK reducing agents' willingness to operate RPK. Rather than conducting a similar value chain analysis, authors suggest future studies to gain deeper explanations to increase consumer awareness toward RPK as staple foods and daily needs retailers, thus enhancing business revenue and performance. In addition, the present study only provides some strategy formulation without assessing the implementation. Future research is recommended to examine the effectiveness of any implementation of strategies to RPK's business performance.

5 Conclusion

Since farmers only received a profit margin less than millers, the government is suggested to pay serious attention to helping farmers' contribution to the rice value chain be more remarkable in the future. Farmer's economic welfare needs to be guaranteed by the government, as their critical role in rice availability for the country. In the discussion of RPK's value chain performance, marketing and sales activity are showing the highest potential value creation as well as assessment of internal and external environment exhibited its privilege under BULOG as the strength and opportunity to expand its business operation. However, RPK is still relatively new in the retail market. Based on research findings, some practical implications are recognized. First, it is essential to maintain the sustainability of RPK operation so that rice marketing channels remain short. Meanwhile, accommodating farmers with the capacity to convert their own grain into the rice and directly distribute it to BULOG for a stockist will subsequently boost RPK's profit margin and enhance farmers' welfare.

References

1. Hernández, R., Reardon, T., Natawidjaja, R., Shetty, S.: Tomato Farmers and Modernising Value Chains in Indonesia. Bulletin of Indonesian Economic Studies 51(3), 425–444 (2015).
2. Anindita, K.P., Ismoyowati, D., Suwondo, E.: Value Chain Analysis on Pigmented Rice: A Case Study in Sleman Regency, Special Region of Yogyakarta, Indonesia. AgriTECH 39(4), 315 (2019).
3. Sinaga, V.R., Variyanti, A., Tinaprilia, N.: Analisis rantai nilai pemasaran kentang granola di Kecamatan Pangalengan, Kabupaten Bandung, Jawa Barat. Prosiding Konferensi Nasional XVII dan Kongres XVI Tahun 2014 Perhimpunan Ekonomi Pertanian Indonesia, 191–210 (2014).

4. Mildawati, T.: Pemberdayaan Koperasi melalui Value Chain untuk Menciptakan Keunggulan Bersaing. Ekuitas 10(6), (2006).
5. Mango, N., Mapemba, L., Tchale, H., Makate, C., Dunjana, N., Lundy, M.: Maize value chain analysis: A case of smallholder maize production and marketing in selected areas of Malawi and Mozambique. Cogent Business and Management 5(1), 1–15 (2018).
6. Sewando, P.T.: Cassava value chain and its products in Morogoro rural district, Tanzania. Development in Practice 24(8), 1048–1061 (2014).
7. Neilson, J., Shonk, F.: Chained to Development? Livelihoods and global value chains in the coffee-producing Toraja region of Indonesia. Australian Geographer 45(3), 269–288 (2014).
8. Kabu, E., Tira, D.S.: Value chain analysis towards sustainability: A case study of fishery business in Kota Kupang, Indonesia. International Journal of Economics and Financial Issues 5, 150–156 (2015).
9. Deng, L., Wang, R., Dong, T., Feng, J., Weisong, M.: Assessing the table grape supply chain performance in China – a value chain analysis perspective. British Food Journal 118(5), 1129–1145 (2016).
10. Pavithra, A.S., Singh, K.M., Ahmad, N., Sinha, D., Mishra, R.: Analysis of Rice Value Chains - A Study of Bihar and Karnataka States in India. SSRN Electronic Journal (2018).
11. Kaplinsky, R., Morris, M.: A Handbook For Value Chain Analysis. Institute for Development Studies: Brighton, UK. September, 4–7 (2000).
12. Porter, M.: The value chain and competitive advantage. In D. Barnes (Ed.), Understanding business processes. The Open University, Routledge, New York, USA (2001).
13. Muflikh, Y.N., Smith, C., Brown, C., Aziz, A.A.: Analysing price volatility in agricultural value chains using systems thinking: A case study of the Indonesian chilli value chain. Agricultural Systems 192(May), 103179 (2021).