Analysis of Marketing Channels and Price Effect to Rice Marketing Efficiency in Aceh, Indonesia

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Abstract

The objective of this study is to empirically explore the influence of marketing channels and price to rice marketing efficiency in Aceh Province, Indonesia. Six hundreds farmers' households from six districts of rice production base in Aceh were selected for the samples and analysed using the structural equation modelling (SEM). This study has been successfully documented how inefficient was the marketing of rice in Aceh because the farmers still tended to choose higher level of marketing channel with lower marketing performance. The price of rice was unstable, especially during the harvest and famine seasons, despite the government having set up a price policy. This study also found that marketing channels had positive and significant relationship with the rice marketing efficiency.

Keywords: Efficiency, Marketing, Prices, Rice Marketing Channels, Price Effect

Abstrak

Tujuan dari penelitian ini adalah untuk mengeksplorasi secara empiris pengaruh saluran pemasaran dan efisiensi harga pada pemasaran beras di Provinsi Aceh, Indonesia. Sebanyak enam ratus rumah tangga petani di enam kabupaten yang berada di daerah basis produksi di Aceh dipilih untuk sampel penelitian, dan dianalisis dengan structural equation modelling (SEM). Studi ini mendokumentasikan bagaimana pemasaran beras di Aceh tidak efisien: petani masih cenderung memilih tingkat yang lebih tinggi dari saluran pemasaran yang memiliki kinerja pemasaran yang lebih rendah. Harga beras ditemukan menjadi tidak stabil, terutama selama musim panen dan setelahnya, meskipun pemerintah

telah menyiapkan kebijakan harga. Studi ini juga menemukan bahwa saluran pemasaran memiliki dampak yang signifikan dan positif terhadap efisiensi pemasaran beras.

Kata kunci: Efisiensi , Pemasaran, Harga, Saluran Pemasaran Beras, Efek Harga

1. Introduction

The problem of food availability is a hot discussion topic. The regulation of food requires central and district governments to ensure country-wide security and sustainability. A government lacking the ability to provide a sufficient food supply affects economic, social and political stability. Fluctuation of food production is a common problem in Aceh. Although they actively produce rice, they have still encountered numerous food crises in the region (Arifin, 2008). Yet ironically, Aceh is well known as the rice barn of Java Island, due to its large area of rice production. As reported by the Statistics Bureau of Aceh (2010), more than half of the population of the province are the farmers who produce food, yet they still have inadequate food supplies and low incomes.

Current farming production is still less economical and subsistent to the welfare of the farmers' households in Aceh. According to E. Jamal, Hendiarto, Ening Ariningsih (2008), an income earned by the farmers was very much influenced by the marketing channels. Efficient marketing channels are determined by the mediator's performance and pricing policy set-up. The government has made a concerted effort to enhance the level of food production, but has failed to boost the income of the farmers or profits of farm enterprises. In other words, the effect of production improvement was not followed by the rise in income of the farm enterprises.

At the national level, rice production increased by more than 10% between 2004 and 2007, while the real income of farmers declined by 4–5%. This is simply due to the fact that increases in rice prices have not matched the increases in the price of other products. Secondly, farm enterprises were limited and small in comparison to business enterprises. Thus, to protect the welfare of the farmers and farm enterprises, the government has developed a price policy which aims to ensure the price stability of the rice (mostly during the harvest season due to its higher yield and relatively low price).

To the best of our knowledge, studies into marketing channel performances – either carried out by the government or farmers in the region – have been scarce. Therefore, this study attempts to examine the effects of perceived marketing channels and price of the perceived marketing efficiency. It includes the study on the stability degree of rice's price during famine and harvest season, the efficiency of its marketing channel and the effect of marketing channels and price to its marketing efficiency in the region. It is hoped that the findings of this study will help policymakers to shed some light on ways to enhance the prosperity of farmers.

At the same time, the study also contributes to the development of the science of rice marketing behaviour in the region. It is also hoped that the findings of this study could provide valuable input for revitalising marketing programmes for rice that could help farmers and enterprises generate greater profits.

2. Literature Review

Marketing channel is the chain of interrelated enterprises that take part in the process of the movement of goods from the producer to the consumer (Guibert, 2006). Marketing channels have traditionally been viewed as a bridge between producers and users. However, this perspective fails to capture the complex network of relationships that facilitate marketing flows: the movement of goods, service, information, and so forth between channel members. Marketing channel selection influences marketing decisions (Kotler & Keller, 2009), and over time it is important for producers to consistently evaluate marketing channel performance (Anderson, Day & Rangan, 1997). Producers should select the marketing channel with the best criteria for maximising profits (Rosenbloom, 2003). Marketing channel performance can be assessed and observed through the reputation of channel members (Neves, Zuurbier & Compamar, 2001), the common criteria being the performance-based financial measures (including marketing profit margin and marketing cost) (Spriggs, 1994) and performance-based behavioural measures (including marketing control).

Marketing channel selection for farm commodities is based on an evaluation of marketing activity, marketing cost, channel member profit and the consumer price segment received by the producer (Rahman & Mohiuddin, 2006). According to Dijkstra (2001), the marketing channel's form (such as direct selling, selling through intermediaries, dual distribution, or reverse channels) influences its performance and its level of marketing efficiency, the marketing channel's distance will affect marketing cost and margin fluctuation. The greater marketing channel's distance, the more complex marketing channel's form to ensure that products reach consumer in the place and time desired.

Price is commonly considered as the main determinant for consumers choosing which products and services to use/buy. Price is also an important element in determining market segmentation and profit. In many respects, price is not only seen as the main attention-grabber for consumers, but is also a crucial factor for the producer (Kotler & Keller, 2009). For food commodities, the market is divided into the consumer market and the producer market. Participants in both markets always strive for profit maximisation from marketing transactions; thus pricing policy becomes a central point to be focused on as part of efforts to enhance marketing efficiency.

The consumer price (buying price) and producer price (selling price) of rice influences the marketing of rice commodities (Arshad, 1992), while the market supply of rice will influence the marketing price of rice. Theoretically, during the great harvest, the supply of rice increases tremendously and in turn will cause the market price to fall (Saragih, 2006). However, in practice, marketing mediators and agents grab any opportunity to gain high profit during the harvest season without putting much effort into selling the rice at a high price. Thus, the excess supply of rice during the harvest season does not guarantee against a price decline for consumer (Arifin, 2006).

Government interventions to enhance market performance and rice marketing efficiency should therefore be conducted via pricing policies (Damarjati, 2006). The behaviour of buyer mediators influences the consumer price, producer price and disparity price. Subsequently, the market situation influences the fluctuation of price disparity (between grain and rice), which exists as a result of market structure and price instability (Arifin, 2006).

The right distribution channel ensures that customers in different locations around the country, or around the world, can get products and get the right level of service, or it will be failed to distributed in the country. Efficient marketing activities will result in a better marketing performance, and thus provide greater benefits for all market participants as well as increase farmers' income. The efficiency of the market and marketing system is shown by the normal distribution of marketing margins from trading commodities.

Marketing margin analysis is commonly used to assess how the cost distribution from each marketing activity benefits each mediator and produces a better price for the farmer (Arshad, 1992). In imperfect competitive markets, increases in marketing costs leads to a decrease in producer costs alongside an increase in consumer costs while the marketing mediator will gain an additional benefit due to a decline in marketing costs (Bakucs & Fertö, 2005). Marketing cost fluctuations influence marketing efficiency fluctuations, the marketing margin and consumer price received by farmers (Rahman & Mohiuddin, 2006): a stable price is reflected by its low coefficient of variation (Dewan Ketahanan Pangan, 2008).

Price movement and transmission from one level to another in a particular market is one indicator of marketing efficiency (Corriston, 2002). The price movement is a change in the of a *security* or other *asset,* especially in the *short term*, while price transmission analysis measures the effect of prices in one market on prices in another market. Price transmission has a linear relationship to the marketing efficiency: the higher and faster a price transmission, the higher the level of marketing efficiency (Bakucs & Fertö, 2005). Efficient marketing activities are reflected in more frequent price alteration across the markets (Meyer & Cramon-Taubadel, 2004). An efficient marketing strategy can boost producers' incomes and cause consumer prices to increase (Soekarwati, 2005). A portion of the consumer price received by the farmers is small if the market mediator or marketing channel is longer (Arshad, 1992); a lower portion received by the farmers is a reflection of inefficient marketing (Rahman & Mohiuddin, 2006).

This present study focuses on the effect of marketing channel and price to the marketing efficiency. Within these few years, several studies relating this issue have been made by some researchers in the world using different statistical tool. Those attempts have been provided invaluable literatures on testing marketing efficiency and related issues [see, for example, Arshad (2006), Rangasamy (2008), Durham (1995), Angulo (2007), Hau (2004) and Irawan (2007). In general, those researches were focused on the marketing efficiency issues as discussed in this paper.

 Arshad (2006), however, is more focused an efficient supply chain. While, Rangasamy (2008) focused on marketing price at each market chain, Durham (2008) emphasized on the transportation cost in a spatial market, Angulo (2007) focused on the achievement of an enterprise, Angela (2004) focused on the correlation of two market and its influential factors and Bambang (2007) examined the correlation of price variation and transmission. According to Rangasamy (2004), the marketing efficiency is much influent by marketing cost. By putting the marketing efficiency as an independent variable, Angulo (2004) analysed the effect of financial marketing value and marketing assets to marketing efficiency. So far, the use and selection of marketing channels by farmers are more based on habit or routine sells by ignoring the understanding and selection process based performance marketing channel. Their understanding about the effect of marketing channel level is still low. They tend to apathetic to marketing channel which involve agent in a marketing channel they want to choose.

The farmers' habit which became one of the causes that lowering their income is that they are less consider the time and place of sale at a better price. Rice prices at the consumer level perceived higher than the price of grain. Less availability of rice in market has driven the price, so the price is more expensive in the lean season instead of the harvest season. In the dry season the price competition is more pronounced than the harvest season and intermediaries take advantage of market supply shortage situation to increase the selling price.

Based on the research problem and literature review, two hypotheses can be formulated:

1. There is a significant impact of marketing channel efficiency and marketing system efficiency to the stability of price of rice in Aceh, Indonesia.
2. The marketing channel and price have an influence on rice marketing efficiency in Aceh, Indonesia.

3. Research Method

This research was designed in a descriptive and verification manner as a mean to provide an overview of examined variables (Kuncoro, 2006), which include marketing channels, price, and marketing efficiency. With this descriptive study it is hoped can describe the respondents identity, unravel and transform the data of farmers perception to the marketing channels, price and marketing efficiency in numbers, percentages and tables so that easy to interpreted.

This research was conducted by using survey method, i.e. measured the quantitative and qualitative characteristics of each unit analysis. The unit analysis is rice farmers' household in six centre of rice production in Aceh Province, they are Great Aceh District, Pidie District, Bireuen District, North Aceh District, East Aceh District, Aceh Tamiang District.

Primary data collection in this research was conducted by distributing the open- and close-ended questionnaires to farmers, farmers' household and agents. At the same time, formal and informal interviews were conducted with several marketing agents, Head of Provincial Food Security Agency, Head of Provincial Agriculture Agency, Head of Provincial Trade and Industry Agency and UMKM Aceh who had been involved in marketing and food security issues in Aceh.

The relevancy of marketing channels and marketing efficiency was analysed by conducting observation to rice commodity marketers, especially the agents who connect the farmers and consumers at various market levels. This research is essentially a explanatory research with the objective to examine the hypothesis about the correlation between the studied variables and the formulated hypothesis (Singarimbun, 1986). For the purposes of explaining the relationship between marketing channel, price and marketing efficiency as described in the formulation of the problem, the various relationships between variables were analyzed using descriptive statistics and inferential statistics. The Structural Equation Model (SEM) is used for inferential statistics. Table 1 shows the research variables used in this study.

Table 1. The Research Variables

Marketing channel (X₁)	Marketing channel phase (X_{11})	Interval
	Marketing channel performance (X_{12})	Interval
Price (X_2)	Farmer selling price (X_{21})	Interval
	Consumer buying price (X_{22})	Interval
	Government price policy (X_{23})	Interval
Marketing efficiency (Y)	Marketing cost (Y_{11})	Interval
	Intermediary benefit (Y_{12})	Interval
	Marketing margin (Y_{13})	Interval
	Price transmission (Y_{14})	Interval
	Consumer price segment received by farmer (Y15)	Interval
	Farmer income as producer (Y_{16})	Interval

The sample of this study consists of 600 farmers' households selected via the power of analysis technique and the consideration of regencies as rice production centre. The required number of samples in this study is based on the need of statistical analysis in examining this research hypothesis. In SEM, minimum required sample is generally 5 to 10 research indicators or minimum 100 respondents (Hoyle, 1995; Hair 1998). Determination of sample size for SEM with a power test is formulated as follows:

$$n = \frac{\hat{\lambda}}{RMSEA^2 \text{ x } db}$$ .... (3.1)

Where: λ : Max(c-db)

c   : $2nF_0$

db   : Degrees of Freedom

RMSEA (*Root Means Square Error Approximation*)

(MacCallum, 1996).

Based on the method used in this research, then the sample size is measured by using power test with the stipulation as follow:

RMSEA Population   : 0.07 (decided based on compatibility model test)

RMSEA under H_0 : 0.05

Alpha   (α)   : 0.05

Test Power   : 0.95

df : 84 (measured based on model identification)

The measurement of sample size with power test technique in this research is conducted by using Statistical Software 7.0. Considering that this measurement cannot be executed manually, so the power test was executed with iteration process. Descriptions of the score of each variable, namely the mean score from the respondents' answer, is used. The scale used in this research is a 1-5 point, 1 for extremely agree to 5 for strongly disagree, as explained below:

1.   Strongly Agree (Score 5)
2.   Agree (Score 4)
3.   No idea (Score 3)
4.   Disagree (Score 2)
5.   Strongly Disagree (Score 1)

The criteria used to accept or to reject null hypothesis based on $t_{\text{-count}}$ calculation compare with $t_{\text{-table}}$ for each variable at significant level of 5% and degree of freedom n-1. If each null hypothesis is rejected, it shows that the marketing channel was efficient, the price is already stable and the marketing system is also already efficient. To test the hypothesis, SEM is used to assess the correlation structure among the variables, marketing channel, price and marketing efficiency (Figure 1).

Quantitative analysis model, besides as causality to examine the efficiency of rice marketing, it is also as marketing margin and consumer's price segment which is received at each marketing channel by referring to this formula: (Rahman dan Mohiuddin, 2006).

Marketing Efficiency Index (MEI)= Marketing margin+ farmer's share/marketing margin X 100..(3.2)

IEP = $\underline{MP + FS}$ x 100...(3.3)
          MP

MP =   Ki +   BPi ....(3.4)
               m

Ki = HJi - HBi -   Bpis...(3.5)
       s = 1

FS (*farmer's share*) = price received by farmers / price paid by consumer X100…….(3.6)

where :

MEI = Marketing Efficiency Index,

Ki= Marketing agency profit

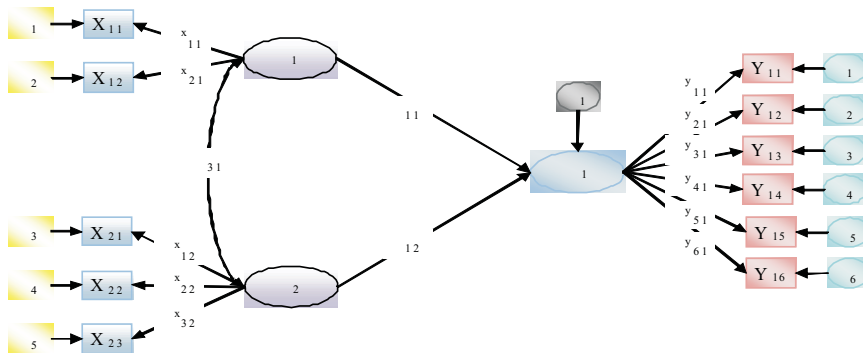Bpi = Marketing cost of marketing agency

FS = Farmer's share

Figure 1: Diagram path of the marketing channel, price of rice and marketing efficiency of the farmers' households.

● Based on Figure 1:

- ξ_1 is an exogenous latent variable of the marketing channel;
- X_{11} is a step marketing channel indicator;
- X_{12} is an intermediary performance indicator in the marketing channel;
- $\lambda^x_{1.1}$-$\lambda^x_{2.1}$ is a correlation coefficient between the latent variables of the marketing channel with its indicators;
- $\delta_1,\ldots,\delta_2$ are the error terms in assessing the exogenous indicator;
- ξ_2 is an exogenous latent variable of price;
- X_{21}, X_{22} and X_{23} are the farmer's selling price indicator, consumer buying price and government price policy indicator respectively;
- $\lambda^x_{1.2}$-λ^x_{32} is a correlation coefficient between price latent variable and its indicator;
- $\delta_3,..,\delta_5$ is the error term of price exogenous indicator;
- η_1 is an endogenous latent variable of rice marketing efficiency;
- $Y_{11}, Y_{12}, Y_{13}, Y_{14}, Y_{15}$ and Y_{16} are a marketing cost indicator, marketing intermediary profit, marketing margin, price transmission, consumer's price received by farmer and income indicator of farmer as producer respectively;
- λ^y_{11}-λ^y_{61} is a correlation coefficient between rice marketing efficiency and its indicators;
- $\varepsilon_1,.., \varepsilon_6$ is the error terms of the model in assessing the exogenous indicator in marketing efficiency;
- γ_{11} and γ_{11} is a coefficient step of the marketing channel influences on the marketing efficiency of rice in the farmers' households.

4. Discussion

Table 2 shows the results of the hypotheses testing. Three sub-hypotheses can be derived from Hypothesis 1: the marketing channel efficiency; stability of the price of rice; and the marketing system efficiency. Based on Table 2, the hypothesis testing results show that the rice marketing channel in Aceh, Indonesia is inefficient, the price of rice is unstable and the marketing system is inefficient.

Table 2. Descriptive Hypothesis Testing.

	Hypothesis	Mean	Variance	Standard Error	t_{count}	t_{table}	Decision
H_0: $_1$ 4	Marketing channel is inefficient(X_1)						
H_1: $_1 > 4$	Marketing channel is efficient(X_1)	3.829	0.317	0.023	-7.452	1.964	H_0 Accepted
H_0: $_2$ 4	Price is unstable (X_2)						
H_1: $_2 > 4$	Price is stable(X_2)	3.823	0.224	0.019	-9.153	1.964	H_0 Accepted
H_0: $_3$ 4	Marketing system is inefficient (Y_1)						
H_1: $_3 > 4$	Marketing system is efficient (Y_1)	3.817	0.421	0.026	-6.921	1.964	H_0 Accepted

As for the second hypothesis – the influence of marketing channel and price on rice marketing efficiency – the results of SEM testing are portrayed in Figures 2 and 3.
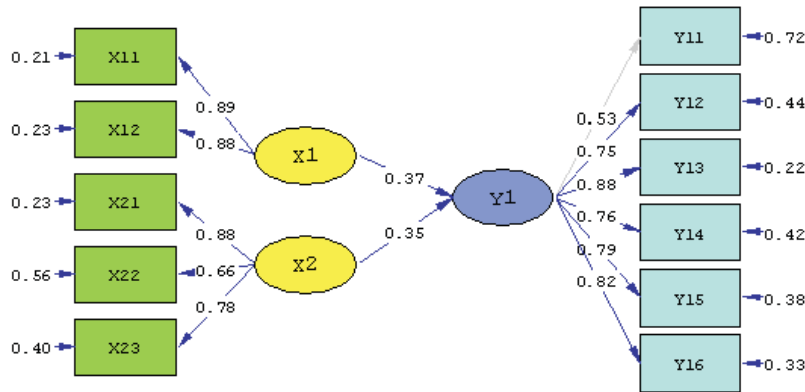
Chi-Square=28.12, df=41, P-value=0.93702, RMSEA=0.000

Figure 2. Diagram path of the influence of the marketing channel and price on rice marketing efficiency (standardized coefficient).
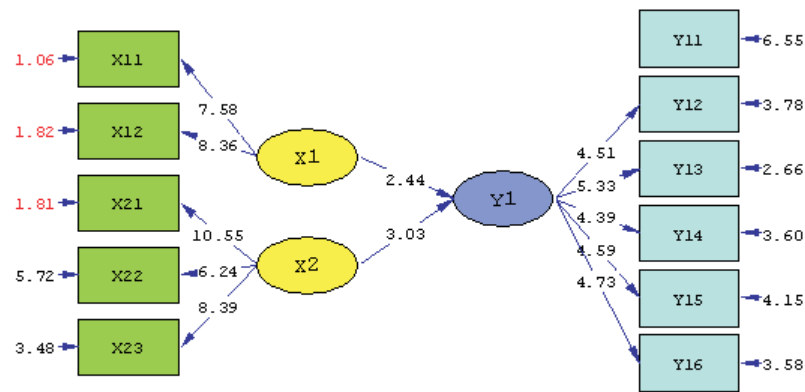
Chi-Square=28.12, df=41, P-value=0.93702, RMSEA=0.000

Figure 3. Diagram path showing the influence of the marketing channel and price on rice marketing efficiency (t-student).

Based on Figures 2 and 3, our model shows that the score of Satorra-Bentler Scaled Chi-Square = 28.12 (P = 0.94). Where the P value > 0.05, it indicates that the research hypothesis H_0 proves the model matches the data. Furthermore, empirical findings prove that the model matches the data as shown by the value of GFI = 0.98 and AGFI = 0.91, which are both higher than 0.90. As shown in Figures 2 and 3, all indicators have a path coefficient of more than 0.50, signifying that that all indicators are valid in assessing the latent variables of marketing channel, price and marketing system of the rice in Aceh, Indonesia. In short, all indicators are found to be valid and reliable in assessing the latent variables toward others latent variables using SEM. In this study, the use of SEM to analyse the influence of marketing channel and price on rice marketing efficiency of farmers' households in Aceh has sufficiently covered a testing of the subject matter. The SEM used is found to be a suitable, valid and robust model to assess the influence of the marketing channel and price on marketing efficiency of rice among the farmers in Aceh, Indonesia.

Table 3. Influence of the marketing channel (ξ_1) and price (ξ_2) on marketing efficiency (η_1).

Variable	Path coefficient	R^2	Standard Error	t_{-count}	t_{-table}	Remark
Marketing channel (ξ_1)	0.37	0.137	0.15	2.44	1.964	Significant
Price (ξ_2)	0.35	0.123	0.12	3.03	1.964	Significant
Coefficient of determination (R^2) = 0.35						
F_{-count} = 160.73 (F_{-table} = 3.011)						

Table 3 shows that the direct impact of the marketing channel on rice marketing efficiency is 0.37, indicating that a unit increase in the market channel results in 0.37 unit increase in the level of marketing efficiency. The coefficient of determination (R^2) for the marketing channel and marketing efficiency is 0.137, signifying that the variation in the rice marketing efficiency variable was explained by a marketing channel variable of about 13.7%. In addition, the study also found that the price of rice has a direct impact toward the rice marketing efficiency, too. The direct influence of rice price on rice marketing efficiency is shown by the coefficient of path analysis (0.35 with the coefficient of determination [R^2] of 0.123; this simply indicates that about 12.3% variations in the rice marketing efficiency variable were explained by the price variable of rice commodity).

Overall, the coefficient determination (R^2) of our model, the influence of the marketing channels and price on marketing efficiency is 0.35, indicating that 35% variations in marketing efficiency level were explained by the marketing channel and rice price, while the rest of the 65% can be explained by other variables which are not included in the research. This implies that, as note previously, there are many other variables that have an influence on the marketing efficiency, such as marketing cost (Rangasamy, 2008), market integration and the availability of product in the market at any given time (Durham *et. al*., 1995), marketing activity (Angulo, 2004), market share and profit margin (Min *et. al*., 2002). As found in this research, these variables give large impact to the marketing efficiency in those previous researches. Furthermore, with the efficiency of marketing process, the farmers will have good channels with good price to market their products so that they will be benefitted by the process. At the end, it is greatly hope that the farmer's income will be increase so that their standard of living will be increase as well. This is inline with the government program.

5. Conclusion

This study empirically examines the influence of marketing channels and price on marketing efficiency of rice in Aceh Province, Indonesia. Simultaneously, it is support the notion that marketing channel and price has significant effect to the rice marketing efficiency. Partially, marketing channel also showed its effect to the rice marketing efficiency. Based on SEM, the study showed that the marketing of rice in the Aceh is still inefficient which is characterized by high fluctuation and disparity between producer and consumer price with famine and harvest price. This led to unstable price in the whole market, despite the government setting up a price policy. The study also found that there was a significant and positive impact from marketing channels and price on the efficiency of rice marketing. This implies that to improve the marketing efficiency of rice, the market players and policymakers should focus on selecting the proper marketing channels and ensuring the price stability of rice in the region. Besides the farmers are also hoped to not directly sell their rice just after harvest or at least sell their rice in a bigger volume when the prices are at high rate. That is why the involvement of the government in stabilizing the price rate and manage an efficient market is crucial needs. This is important to encourage the rice marketing efficiency and farmers' income for the success of price policy and related program undertaken by the government.

References

A. Durham, J. Sexton and Joo Ho Song. (1995). *Transportation and marketing efficiency in the california processing tomato industry*. Giannini Foundation Research Report 343. Department of Agricultural and Resource Economics University of California.

Achmad, S. and Sudi, M. (2001). *Bunga Rampai Ekonomi Beras*. Jakarta, LPEM FEUI.

Anderson, E., Day G. S. and Rangan V. K. (1997). Strategic Channel Design. *MIT Sloan Management Review* 38 (4), 59–69.

Angela Maria Hau and Matthias Von Oppen. (2004). *The Efficiency of the Vegetable Market in Northern* Thailand. Proceedings of Conference on International Agricultural Research for Developmen Berlin, October 5-7, 2004.

Angulo, L. F. (2006). "*The Effect of Marketing Efficeincy, Brand Equity and Customer Satisfaction on Firm Performance*". Business Economics Department, Autonomous University of Barcelona, Spain.

Arifin, B, (2005) *Ekonomi Kelembagaan Pangan*. Jakarta, LP3ES.

——— (2007) *Diagnosis Ekonomi Politik Pangan dan Pertanian*. Jakarta, PT Rajagrafindo Persada.

——— **(2009)** *Economic Review*, **216 (June).**

Arshad, L. M. (1992) An Evaluation of Malaysia Paddy and Rice Market Structure: Conduct and Performance. *Pertanika*, 5 (2).

Bakucs L. Z. and Fertö, I. (2006) Marketing margins and price transmission in the Hungarian beef market. *Food Economics* 3–4: 151–160.

Buku Putih (2006). *Indonesia 2005–2015: Penelitian, Pengembangan dan Teknologi Bidang Ketahanan Pangan*. Jakarta, Kementerian Negara Riset dan Teknologi Republik Indonesia.

Darwanto (2005) Ketahanan Pangan Berbasis Produksi dan Kesejahteraan Petani. *Jurnal Ilmu Pertanian*, 12 (2):152–164.

Dewan Ketahanan Pangan (DKP). (2008. *Dokumen Kebijakan Indonesia Tahan Pangan dan Gizi 2015.*

Dijkstra, T. (2001). Applying Marketing Channel Theory to Food Marketing in Developing Countries: Vertical Disintegration Model for Horticultural Marketing Channels in Kenya. *Agribusiness*, 17 (2): 227–241.

E. Jamal., Hendiarto and Ariningsih, E. (2008.) Analisis Kebijakan Penentuan Harga Pembelian Gabah**.** *Pengembangan Inovasi Pertanian* 1 (1): 74–81.

Ferdinand, A. (2002) *Structural Equation Modelling Dalam Peneltian Manajemen*. 2nd edition, Seri Pustaka Kunci 03/BP UNDIP.

Hair Jr., J. F., Anderson, R. E., Tatham, R. L. and Black, W.C. (2006). *Multivariate Data Analysis*. 6th edition. New Jersey, Pearson Educational.

Hanani, N. (2008). *Diversifikasi Konsumsi Pangan*. Malang, Universitas Brawijaya.

Ilham, N. and Sinaga, B. (2009). *Penggunaan Pangsa Pangan Sebagai Indikator Ketahanan Pangan*. Bogor, Pusat Analisis Sosial Ekonomi dan Kebijakan Pertanian.

Irawan, B. (2007). Fluktuasi Harga, Transmisi Harga dan Marjin Pemasaran Sayuran dan Buah, *Analisis Kebijakan Pertanian*, 5 (4): 358–373.

Kotler, P. and Keller, K. L. (2009). *Manajemen Pemasaran. Volume 2, 13th edition, Jakarta, Penerbit Erlangga.*

Maccallum, R. C., Browne, M. W. and Sugawara H. M. (1996). Power Analysis and Determination Of Sample Size For Covariance Structure Modeling**,** Psychological Methods. *Journal of American Psychological Association* 1 (2):131–149.

Maxwell, S. and Frakenberger, T. (1992) *Household Food Security: Concept, Indicator, Measurement – A Technical Review*. New York, UNICEF-IFAD,

McCorriston S., Morgan C. W. and Rayner, A. J. (2001) Price transmission: The Interaction between Market Power and Returns to Scale. *European Review of Agricultural Economics,* 28:143–159.

Meyer J. and Cramon-Taubadel, S. von (2004). Asymmetric Price Transmission: A Survey. *Journal of Agricultural Economics* 55: 581–611.

Neves, M. F., Zuurbier, P. and Compamar, M. C. (2001) *A Model for the Distribution Channels Planning Process*. Chicago, IAMA.

Rahman, S. M. and Mohiuddin, M. (2006) Rice Farmers' Marketing Efficiency in Soutwestern Part of Bangladesh. *Journal of Applied Sciences* 6 (9): 2043–2050.

Rasa, B., Sonata A., (2008) The Specific Features of Marketing Channel Design. Economics of Engineering Decisions. ISSN 1392-2785 Engineering Economics. 2008. No 1 (56).

Soekartawi. (2005) . *Agribisnis Teori dan Aplikasinya*. Jakarta, PT Raja Grafindo Persada.

Tabor, S. and Sawit, M. H. (2006). Program Bantuan Natura Raskin dan OPK: Penilaian Makro. Jakarta, Pusat Penelitian dan Pengembangan Perum Bulog.