Factors Affecting the Preferences of Agribusiness Actors of Aren Sugar toward Marketing Risk

WEKA GUSMIARTY ABDULLAH, USMAN RIANSE, RADEN MARSUKI ISWANDI,
SITTI AIDA ADHA TARIDALA, LUKMAN YUNUS, INE FAUSAYANA,
M. ARIEF DIRGANTORO, ILMA SARIMUSTAQIYMA RIANSE, HARTINA BATOA
Faculty of Agriculture
Universitas Halu Oleo
Kampus Hijau Bumi Tridharma Anduonohu, Kendari 93232
INDONESIA
wkgusmiarty09@yahoo.com, usman.rianse@gmail.com, marsuki_iswandi@yahoo.com,
aidataridala@yahoo.com, lukuyus@yahoo.com, inefausayana@ymail.com,
dirgantoro_m_a@yahoo.co.id, Ilma_lov3@yahoo.co.id hartina_batoa@yahoo.co.id
http://uho.ac.id

WEKA WIDAYATI
[2]Faculty of Technology and Earth Science
Universitas Halu Oleo
Kampus Hijau Bumi Tridharma Anduonohu, Kendari 93232
INDONESIA
weka_widayati@yahoo.com http://uho.ac.id

Abstract: Everyone has different preferences in addressing risk. Different types of risk preferences can lead to different treatment given to a person who would be facilitated optimizing its ability to manage risk. The purpose of this study was to determine the factors affecting the preferences of agribusiness actors of *aren* sugar in particular brokers and retailers toward marketing risk. Multiple linear regression was used in this study. The result of this study showed that risk preferences of *aren* sugar brokers was affected by the variation of length of business and revenue, negatively where the revenue as the dominant factor, while the risk lover preferences of *aren* sugar retailers was affected by the revenue only, negatively. The implication of this study is the importance of risk preferences serve as the basis for consideration of policy making about the empowerment of *aren* sugar agribusiness actors.

Key-Words: preference, risk lover, risk neutral, marketing risk, broker, retailer, *aren* sugar

1. Introduction

Aren sugar' is one potential alternative that Most of the Indonesian people has been very familiar with the brown sugar. There are many kinds name of brown sugar, depend on its main material (sap). We also called brown sugar as palm sugar. The most popular kinds of brown sugar or palm sugar is coconut sugar and *aren* sugar. Brown sugar is very important as a food flavoring and sweetening beverages. This is consistent with what is stated by [1] that the brown sugar for household consumption is widely used as a sweetener, additive aroma, and color. Food and drink typical of the region of Southeast Sulawesi is also in desperate need of brown sugar, such as traditional cakes (bowsprit, sugar apple, coconut sugar, *pisang epe*, and various other types of traditional cakes) and drinks (*sarabba*). Besides the brown sugar as well as raw materials in the food industry such as soy industry, *dodol*, jerky, candy, and so on. This is a great opportunity for the development of brown sugar industry, and for development of

aren sugar industry, certainty. [2] stated thad a*ren* sugar home industry also have great potency because of its financial, economic, and environmental feasibility. [3] also said that economically, brown sugar has proven to be a source of livelihood and feasible to be developed.

In addition to the growth opportunities and great potency known *aren* sugar industry as described above, it is also known that *aren* sugar agribusiness has a constraint that is the uncertainty that is more prominent in the processing and marketing as well as other agricultural commodities when compared to non-agricultural commodities. It is known that agricultural commodities has a characteristic form of perishable, bulky and voluminous. These uncertainties may cause the risk of the business of processing and marketing of *aren* sugar.

Everyone has different preferences in addressing risk. [4] says that in theory, can be identified three preferences for risk, i.e.: avoiding risk (risk averse), looking for (risk lover), and neutral towards risk (risk neutral). Different types of risk preferences can lead to different treatment given to a person who would be facilitated optimizing its ability to manage risk. It is suitable with information about behavior toward risk of farmer and other economic agent that have the important role in risk management [5]. Agribusiness actors of *aren* sugar should be able to manage the various risks to optimize the opportunities utilization of *aren* sugar business in domestic and international markets. Optimized utilization of these opportunities will require facilitation by the government, private sector, and universities.

According to [6] that issues of risk management are starting to be considered at the strategic level. These issues become the basis for strategic decision-making and business development. The situation is largely related to corporate governance, as well as the awareness of the risks not only as threats, but as also opportunities for business. Therefore, people with risk lover preference will get the opportunities for business easier.

People who has risk lover preference are people who have the additional satisfaction outweigh the additional revenue ($\Delta U > \Delta R$). It means that those who dare to risk more open to changes and challenges for the advancement of their business compared to only think about the present income that it generates. Thus, people with risk lover preference have greater potential for increasing the quantity and quality of business.

The risk preferences can be influenced by socio-economic characteristics of agribusiness actors, such as; age, gender, formal education, length of business, the number of dependents, and revenue. This is as result of research [7] that the behavior of farmers against the risk influenced by age, number of dependents, land area, and the number of family labor. Socio-economic factors that actually lead to the fulfillment of economic needs of the agribusiness actors that motivates them to have a certain preference for risk. In theory, addressing the needs are closely related to one's satisfaction. In summary, it can be said that the types of risk preferences can be found on the principle of marginal utility of well-being [4]

Based on the above, the factors affecting the preferences toward marketing risk of agribusiness actor (broker, retailer) of *aren* sugar is very important to know to be able to know the background of their risk preferences. This in turn can be used as a basis for formulating an optimization strategy considerations risk preferences of agribusiness actor.

2. Problem Formulation

This study was done in the Kolaka District, Southeast Sulawesi. Kolaka District is the second biggest producer of *aren* sugar in Southeast Sulawesi [8]. Census sampling was used for the *aren* sugar brokers, and retailer.

Risk preference of *aren* sugar agribusiness actors (brokers and retailer) has analized by [9] by formula of Quadratic utilities function, as follow:

$$U = \gamma 1 + \gamma 2\, M + \gamma 3\, M^2$$

where:

U = utility value (util)
M = Revenue in the equilibrium point of choise alternative in certainty ekuivalent (CE), (IDR)
$\gamma 1$ = intersep

$\gamma 3$ = risk preference coefficient

Next in this study, factors affecting the preferences of agribusiness actors of *aren* sugar toward marketing risk was analyzed with multiple linear regression.

$\gamma 3 = a + b1A + b2\ LB + b3\ E + b4Idp + b5\ R$

where:

$\gamma 3$ = preferences of agribusiness actors of *aren* sugar toward marketing risk (brokers, retailers)
A = age of respodent (year)
LB = length of business (year)
E = education (year)
Idp = number of independent (person)
R = revenue (IDR/month)

4. Problem Solution

The marketing activity as a part of agribusiness system of *aren* sugar involves two actors, namely brokers and retailers. Every agribusiness actors has a tendency to conduct business risk that they faces. Behavioral tendency of marketing actors here was referred to as risk preferences, and business risks faced by so-called marketing risks.

The brokers of *aren* sugar were those who reside in the main production areas of *aren* sugar but did not process *aren* sugar. The brokers only bought *aren* sugars to the way to the *aren* sugar farmers at the place of production. The purchase was not done every day, but every 2 or 3 days. It was done to the acquisition of *aren* sugar products were more so as to minimize the transportation cost of *aren* sugar distribution to the marketing locations (in the capital of Kolaka District, and in the Kendari city). There were only 2 to 3 brokers in each *aren* sugar production centers. Each brokers bought *aren* sugar from 15 to 25 *aren* sugar farmers.

Each brokers and retailers of *aren* sugar had different preferences on the risks involved in their marketing business. It could be seen in Table 1. In Table 1, it was known that there were variations in risk preferences on marketing actors (brokers and retailers) of *aren* sugar in Kolaka District, Southeast Sulawesi.

Table 1. Preference of *Aren* Sugar Broker and Retailer toward Marketing Risk

Risk Preference	Broker		Retailer	
	Quantity (People)	Percentage (%)	Quantity (People)	Percentage (%)
Risk Neutral	2	25.00	0	0.00
Risk Lover	6	75.00	10	100.00
Total	8	100.00	10	100.00

Source: [9]

The variations of such risk preferences could be influenced by social factors (age, length of business, education, number of dependents) and economic factors (revenue) of each *aren* sugar brokers. It could be seen in Table 2. This study suitable with the study of [10] who found that farmer behaviour and their perception toward risk and uncertainty in grain farming combined with other sosio-economic characteristics to affect their adoption decision.

Table 2. Factors Affecting Preference of *Aren* Sugar Brokers toward Marketing Risk in Kolaka District, Southeast Sulawesi

Dependent Variable	Independent Variable	Regressed coefficient		T_{count}	Sig	VIF
Risk coefficient ($\gamma 3$)	Intersept	-11.091		-4.825	0.000	
	Age (A)	0.181	ts	0.398	0.692	1.365
	Length of business (L)	-0.174	*	-1.442	0.157	1.328
	Education (E)	0.146	ts	1.021	0.314	1.139
	The number of dependents (Idp)	0.166	ts	1.262	0.214	1.073
	Revenue (R)	-1.167	***	-10.045	0.000	1.096
	R^2					0.738
	F_{hitung}					21.438
	Sig					0.000
	Durbin-Watson					1.020

***Significant at $\alpha = 0.05$
** Significant at $\alpha = 0.10$
* Significant at $\alpha = 0.20$
ts = not Significant

Results of regression between the risk coefficients of brokers with socio-economic variables showed coefficients of determination

(R^2) of 0.738. It means that 73.8% risk preference of *aren* sugar brokers toward marketing risk could be explained by the variable of age, length of business, education, the number of dependents, and revenue, while the remaining 26.2% was explained by other variables outside the model.

F test results indicated the significance of 0000 or significant at the 5% error level. It means that the variable of age, length of business, education, the number of dependents, and revenue of jointly (simultaneously) influenced the risk preference of *aren* sugar brokers toward marketing risk. F test results were significant and not be detected classical assumptions such as multicollinearity, heteroscedasticity, and autocorrelation also means that the t test could be done as the next test.

Table 2 showed that the risk preference for *aren* sugar brokers toward marketing risk affected by the variable of length of business, and revenue, and not affected by age, education, and number of dependents. The regression coefficient of length of business, and revenue were negative sign, each of which was -0714, and -1167. It means that more and more the length of business and the higher reveue of *aren* sugar brokers would cause the lower risk preference of *aren* sugar brokers toward marketing risk. In other words, they would be increasingly reluctant to risk (risk averse).

There was something interest, the longer length of *aren* sugar brokers's marketing business caused them tend to be neutral to reluctant to risk (risk averse). It could be explained that the longer marketing activities that were conducted by the *aren* sugar brokers, he would get a lot of market information about the other commodities that also profitable or more profitable besides *aren* sugar commodities. This condition led brokers were more focused on developing their marketing business scale of *aren* sugar but diversified into marketing other products e.g. plantation commodities (cashews, cloves). That plantation commodities had the marketing existing lines to the other provinces. However, the desire of brokers to enlarge their marketing business scale had correlation with *aren* sugar processing bussiness scale and the limitation willingness of society (as generally) and *aren* sugar farmer (especially) to cultivate *aren* sugar continuously and also the limitation quantity and quality of raw materials (sap). It was due to the lack of *aren* tree cultivation.

Market information mastery of the brokers during their *aren* sugar marketing business was still not perfect or minimalist. It was shown by the limited knowledge of brokers about the market opportunities for *aren* sugar so they were easy to switch to other commodities that more profitable. Therefore it is very important to improve market access of brokers through the use of technology information (IT). It was in line with research of [11] who said that the importance of skills development for entrepreneurs to create and manage IT projects. Thus, the length of business experience can positively associated with risk preferences as they will increasingly dominate the national and international market information. Increased broker's revenue of *aren* sugar could cause a decline in risk preferences towards marketing business risk. The increasing of broker's revenue that occurs could not be enjoyed in real terms by brokers for improving scale and quality of their marketing business. Many brokers were still scattered capital as a down-payment purchases among their *aren* sugar farmers customer. Thus, brokers were still cautious to their increased revenue that it generated that were not more scattered among the *aren* sugar farmer without clarity loan repayment.

Retailers of *aren* sugar had a preference toward marketing risks that were in the category of risk lover (100%) for all respondents. it was influenced by several social and economic factors as could be seen in Table 3.

Results of regression test between risk coefficients of *aren* sugar retailers with socio-economic variables showed coefficients of determination (R^2) of 0.903. It means that 90.3% risk preference of *aren* sugar retailers toward marketing risks could be explained by the variable of age, length of business, education, number of dependent, and revenue while the remaining 9.7% was explained by other variables outside the model.

F test results indicated the significance of 0000 or significant at the 5% error level. It means that the variable of age, length of business, education, number of dependent, and

revenue of jointly (simultaneously) influenced the risk preference for *aren* sugar retailers toward marketing risk. F test results were significant and not be detected classical assumptions such as multicollinearity, heteroscedasticity, and autocorrelation also means that the t test could be done as the next test.

Table 3. Factors Affecting Preferences of *Aren* sugar Retailers toward Marketing Risk in Kolaka District, Southeast Sulawesi

Dependent Variable	Independent Variable	Regressed coefficient		T_{count}	Sig	VIF
Risk coefficient ($\gamma 3$)	Intersept	-3.925		-2.604	0.012	
	Age (A)	0.004	ts	0.014	0.989	1.553
	Length of business (L)	0.011	ts	0.123	0.902	1.392
	Education (E)	-0.024	ts	-0.275	0.785	1.114
	The number of dependents (Idp)	-0.091	ts	-0.688	0.495	1.128
	Revenue (R)	-1.543	***	-20.272	0.000	1.093
	R^2					0.903
	F_{hitung}					91.058
	Sig					0.000
	Durbin-Watson					2.192

***Significant at $\alpha = 0.05$
** Significant at $\alpha = 0.10$
* Significant at $\alpha = 0.20$
ts = not Significant

Table 3 showed that the risk preferences of *aren* sugar retailers was only affected by the revenue variable, and not influenced by age, length of business, education, and number of dependents. The regression coefficient was negative sign, namely -1,543. It means that the higher revenue of *aren* sugar retailers would cause the lower risk preference of *aren* sugar retailer toward their marketing business risk. In other words, they will tend to had risk neutral preference. This condition similar with the *aren* sugar brokers. The retailers of *aren* sugar would also be more cautious to increase their marketing business scale if they had quite satisfied about their revenue. The main considerations for retailers in the Kolaka District and Kendari city (marketing areas) that they would balance wares with other basic commodities (nine staples) as well as their revenue source.

Although there were differences in the percentage of risk preferences, but it could be concluded that brokers and retailers of *aren* sugar had a tendency the same risk preferences, namely risk lover. It could also be explained that the *aren* sugar marketing activities carried out by brokers and retailers caused them more in touch with market participants and more displaced in order to create and maintain marketing channels. These activities improve the access about market information of the brokers and retailers. Information superiority about *aren* sugar market led to brokers be dare to give retainer to the *aren* sugar farmer on a number of *aren* sugar which was targeted for markets. Other causes was the awareness of the brokers about the magnitude of the risks involved in the business of *aren* sugar processing and the absence of palm sugar processing skills possessed by brokers.

Risk lover preference of the brokers and retailers were also influenced by their entrepreneurship mentality. They had profit-oriented and expect to higher benefit from day to day. This entrepreneurship mentality was be main source of motivation so that brokers and retailers seeking market information and seek to improve the quantity (business scale) and the quality of their marketing business. It could be argued that brokers and retailers have been able to think of creative ideas and innovative ways to expand their businesses. However, they are not really able to realize because of the limited ability of capital and have strong preferences dare risk it has. This is consistent with the results of the study [12] found that entrepreneurs in emerging countries have various and numerous innovative ideas that imply solutions for developing new or existing companies, but unfortunately they have few possibilities for implementing them.

5. Conclusions

Risk preferences of *aren* sugar brokers was affected by the variation of length of business and revenue, negatively where the revenue as the dominant factor, while the risk lover preferences of *aren* sugar retailers was affected by the revenue only, negatively. The increased of the length of business and the higher revenue cause more reluctant acceptance of marketing

risk (risk averse) because of the additional cost consequences for marketing risk management, and would be more and more the possibility of receiving the diverted as receivables to *aren* sugar farmer with obscurity the time of repayment.

The implication of this study is the importance of risk preferences serve as the basis for consideration of policy making about the empowerment of *aren* sugar agribusiness actors. Improving the quality of brokers and retailers can be done through empowerment programs by exploring entrepreneurial mentality that characterizes those who has risk lover preference, and also through training about marketing strategies with the use of information and technology.

References:

[1] Soekarto, dkk. 2010. *Kajian Beberapa Jenis Penggunaan Gula Merah untuk Industri dan Pengolahan Pangan di Indonesia*. http://repositori.ipb.ac.id /handle/123456789/26796. Access: September 2015.

[2] Rianse, I., S., et. al. 2016. *Financial, Economic, and Environmental Feasibility Analysis of Palm Sugar Domestic Industry in Kolaka Indonesia*. International Journal of Economics and Management Systems. Vol. 1: 104-109.

[3] Abdullah, W.G, et al. 2014. *Potency of Natural Sweetener: Brown Sugar*. WSEAS Transactions on Business and Economics. Vol.12:99-110.

[4] Salvatore, D. 1993. *Managerial Economics in a Global Economy*. Second Edition. McGraw-Hill. New York

[5] Barry, P. J. 1984. *Risk Management in Agriculture. The IOWA State University Press. AMES, IOWA.*

[6] Korableva, O., and O. Kalimullina. 2016. *An Innovative approach to Strategic Risk Management in Banking: Russian Banks Case Study*. WSEAS Transaction on Business and Economic. Vol. 13: 269-282.

[7] Abdullah, W.G. 2007. *Studi Komparatif Perilaku Petani terhadap Risiko Usahatani Padi Semi Organik dan Organik di Kabupaten Sragen Provinsi Jawa Tengah*. Tesis Ekonomi Pertanian Sekolah Pascasarjana. Universitas Gadjah Mada (UGM). Yogyakarta. Unpublished.

[8] Abdullah, W.G. 2015. *Manajemen Risiko Agribisnis Gula Merah*. Disertasi. Program Pasca Sarjana. Universitas Halu Oleo (UHO). Unpublished

[9] Abdullah, W.G. et.al. 2016. *Mapping and Preference of Marketing Risk of Eco Sweetener 'Aren Sugar'*. International Journal of Environmental Science. Vol. 1: 133-139.

[10] Botterill, L., and N. Mazur. 2004. *Risk and Risk Prception: a Literature Review. RIRDC Publication.*

[11] Sousa, M.J., and M.d.R. 2016. *Entrepreneurs Skill for Creating and Managing IT Project*. WSEAS Transactions on Business and Economics. Vol.13:154-161.

[12] Emilia, C., Alexandru, B.T., 2016. *Taking Financing Decision Considering Various Funding Possibilities for Entrepreneurs*. WSEAS Transaction on Business and Economic. Vol. 13: 283-291.