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

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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 that aren 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 (ΔU>ΔR). 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 choice alternative in certainty ekuivalent (CE), (IDR)
- \( \gamma_1 \) = intersep
γ3 = 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.

γ3 = a + b1A + b2 LB + b3 E + b4Idp + b5 R

where:

γ3 = preferences of agribusiness actors of aren sugar toward marketing risk (brokers, retailers)
A = age of respondent (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>
<thead>
<tr>
<th>Risk Preference</th>
<th>Broker Quantit (People)</th>
<th>Broker Percenta ge (%)</th>
<th>Retailer Quantit (People)</th>
<th>Retailer Percenta ge (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td>2</td>
<td>25.00</td>
<td>0</td>
<td>0.00</td>
</tr>
<tr>
<td>Risk Lover</td>
<td>6</td>
<td>75.00</td>
<td>10</td>
<td>100.00</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td>100.00</td>
<td>10</td>
<td>100.00</td>
</tr>
</tbody>
</table>

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 socio-economic characteristics to affect their adoption decision.

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

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Regressed coefficient</th>
<th>t count</th>
<th>Sig</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk coefficient (γ3)</td>
<td>Intercept</td>
<td>-11.091</td>
<td>-4.825</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Age (A)</td>
<td>0.181</td>
<td>0.398</td>
<td>0.692</td>
<td>1.365</td>
<td></td>
</tr>
<tr>
<td>Length of business (L)</td>
<td>-0.174</td>
<td>-1.442</td>
<td>0.157</td>
<td>1.328</td>
<td></td>
</tr>
<tr>
<td>Education (E)</td>
<td>0.146</td>
<td>1.021</td>
<td>0.314</td>
<td>1.139</td>
<td></td>
</tr>
<tr>
<td>The number of dependents (Idp)</td>
<td>0.166</td>
<td>1.262</td>
<td>0.214</td>
<td>1.073</td>
<td></td>
</tr>
<tr>
<td>Revenue (R)</td>
<td>-1.167 ***</td>
<td>-10.045</td>
<td>0.000</td>
<td>1.096</td>
<td></td>
</tr>
</tbody>
</table>

R² = 0.738

<table>
<thead>
<tr>
<th>Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>F Stat</td>
<td>21.438</td>
</tr>
<tr>
<td>Sig</td>
<td>0.000</td>
</tr>
<tr>
<td>Durbin-Watson</td>
<td>1.020</td>
</tr>
</tbody>
</table>

***Significant at α = 0.05
** Significant at α = 0.10
* Significant at α = 0.20
ts = not Significant

Results of regression between the risk coefficients of brokers with socio-economic variables showed coefficients of determination...
(R²) 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 revenue 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 interesting, the longer length of aren sugar brokers’s marketing business caused them to 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 (R²) 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 that it generated that were not more scattered among the aren sugar farmer without clarity loan repayment.
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

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Independent Variable</th>
<th>Regressed coefficient</th>
<th>Tcount</th>
<th>Sig</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk coefficient (y3)</td>
<td>Intercept</td>
<td>-3.925</td>
<td>-2.604</td>
<td>0.012</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age (A)</td>
<td>0.004</td>
<td>0.013</td>
<td>0.989</td>
<td>1.553</td>
</tr>
<tr>
<td></td>
<td>Length of business (L)</td>
<td>0.011</td>
<td>0.123</td>
<td>0.902</td>
<td>1.392</td>
</tr>
<tr>
<td></td>
<td>Education (E)</td>
<td>-0.024</td>
<td>-0.275</td>
<td>0.785</td>
<td>1.114</td>
</tr>
<tr>
<td></td>
<td>The number of dependents (ldp)</td>
<td>-0.091</td>
<td>-0.688</td>
<td>0.495</td>
<td>1.128</td>
</tr>
<tr>
<td></td>
<td>Revenue (R)</td>
<td>-1.543</td>
<td>-20.272</td>
<td>0.000</td>
<td>1.093</td>
</tr>
</tbody>
</table>

R² = 0.903
Fhitung = 91.058
Sig = 0.000
Durbin-Watson = 2.192

***Significant at α = 0.05
** Significant at α = 0.10
* Significant at α = 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:**


