Improving Performance of Krayan Rice Farming Entrepreneurship-based Indonesia-Malaysia Border Society

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Abstract. The agribusiness sector as the basis of regional development and economic development is an important factor in improving the welfare of rural communities especially in border regions Indonesia-Malaysia. The amount of potential economic based on natural resources in the border regions is not matched the ability of human resources in term of utilization and management This study aims to improve the Krayan rice farming entrepreneurship performance. In the data collection, a total sample of 200 farmers purposive sampling method were used. The model based collected data was developed using the structural equation model and assisted by the AMOS program. The results showed that overall, the entrepreneurial intention model fulfilled the norms of the model fit (Chi-Square: 68.333; Probability: 0.398; RMSEA: 0.013; GFI: 0.956; AGFI: 0.930; CFI: 0.998) which means the developed model was appropriate with the existing empirical conditions. The entrepreneurship variable has a great influence in shaping the performance of farmers with a coefficient value of 0.992 which proves that entrepreneurship is an intermediary variable to increase human resources in the border region, especially for adan rice farmers in Krayan district, Nunukan district.

Keyword: competence management, subjective norm, motivation, entrepreneurial, farm performance, structural equation models.

1. Introduction
The agriculture or agribusiness sector of regional development and economic development is an important factor in improving the welfare of rural communities in the Malaysia-Indonesia border region. Agricultural development, including land, labor potential and rural local economic base, is inseparable from the development which place agriculture as the main force of the economy. The economic structure of a region is a basic factor that distinguishes one region from another. The difference is very closely related to the condition and potential of an area in terms of physical environment, socio-economic and institutional. Krayan Subdistrict, Nunukan Regency is a border area that has an important and strategic role because its position is acting as a territorial boundary and state sovereignty with the Sarawak state of Malaysia.

Most of the people in the district of Krayan work as rice farmers who cultivate paddy as a mainstay commodity for marketing to Malaysia and Brunei Darussalam. Several problems such as farmers’ low quality in managing economic potential and low existing social and economic infrastructure are major problems in improving farming performance in the Krayan sub-district. Underdeveloped border region has a high dependency on neighboring countries as a manifestation of the lack of state presence in the region [1]. Interestingly, in the midst of the low socio-economic conditions of the Krayan sub-district farmers, there is still a high enthusiasm and motivation from the
farmers in carrying out agricultural and animal husbandry activities as a medium to meet basic living needs. It is this high motivation that makes adan rice farmers and buffalo breeders still exist to this day in Krayan district, Nunukan Regency.

Entrepreneurship in the agricultural sector is a strategic, comprehensive and sustainable solution for increasing the capacity of farmers in Indonesia, where unemployment and poverty become challenges in border and rural areas. The development of entrepreneurial activities oriented towards local potential is a core requirement for the growth of the agricultural sector, improvement of human resources[2-3]. The existence of entrepreneurship in the agricultural sector can create and provide value-added products with new innovations, create a society that is more creative, independent and able to develop agricultural businesses towards business. Entrepreneurship can be defined as risk taking to run one's own business by utilizing opportunities to create new businesses or with innovative approaches so that managed businesses develop into large and independent companies in facing competitive challenges [4]. Entrepreneurship is not just practical knowledge but is more inclined to a certain lifestyle and principles that will affect business performance. If this concept is shared by all agricultural business people, then it is certain that agriculture will be more developed and growing rapidly [5].

The performance of farmers' human resources can be developed through motivation [6]. Improvement of farmers' performance due to high motivation will certainly improve the performance of the farm itself. This condition is in line with Maslow's hierarchy of needs theory, which is fulfilling the basic needs of human life, fulfilling a sense of security, meeting social needs, meeting the needs of appreciation and meeting the needs of self-recognition [7]. Farmers who are the main development actors in the Krayan sub-district must get serious attention in the form of entrepreneurship-based formal and non-formal education programs. The entrepreneurship-based education programs provided to farmers individually and institutionally is expected to give farmers management and technical competence that can improve the capacity and quality of farmers in farming-oriented to entrepreneurial activities. The creation of farmers' entrepreneurship is also expected to be able to create jobs for the rural population in the border region that is competitive, increasing sources of income, as a means to try, as well as a means to be able to change destinies for the better.

The high motivation of farmers in the Krayan sub-district in carrying out agricultural activities is manifested in their commitment and responsibility towards their work as rice farmers and to fulfill the need for friendship. This shows the achievement theory proposed by David Mc Clelland, namely the strong desire to be friends, the desire to gather and worry about breaking up friendship [8]. Adan rice farmers in Krayan sub-district have a high sense of optimism in the unfavorable situation of conducting adan rice cultivation and dare to take risks in developing agricultural potential in the Krayan sub-district region as a challenge to meet basic needs. Attitudes and motivations are an interrelated part and have mutual relations in realizing the spirit and spirit of entrepreneurship for farmers. Entrepreneurship is a sustainable solution for improving the ability and quality of farmers in border areas.

Research conducted by [9] showed that entrepreneurial behavior has a strong influence on farm performance of Gayo Arabica coffee farmers. Entrepreneurship has a great influence on improving farm performance [10], the same thing using SEM analysis shows that entrepreneurship is a variable that has a large influence on farm performance [11]. Entrepreneurial skills possessed by farmers have a positive and significant effect on the performance of organic farming businesses [12]. Research conducted by entrepreneurial characteristics with business performance is correlated real and positive. This means that when entrepreneurial characteristics increase, performance will increase [13]. Research conducted by [14] shows that farmers' business performance in the integration of crops and livestock is influenced by entrepreneurial behavior that has a positive and significant effect.

The scale of the relationship between entrepreneurship and economic development makes entrepreneurial activities a very important mediation in the process of regional economic development through an innovation that impacts on the welfare of the people of the region [15]. Farmers as an entrepreneur must be able to see a business opportunity and use it to achieve benefits or benefits for the family and the surrounding area. The policy of developing growth centers in the border region is directed into the sector of human resource development (farmers), social engineering, institutions, capital, technology and markets [16]. The performance or work of farmers who have an entrepreneurial behavior will be measured based on physical success which includes; (1) an increase
in revenue obtained from calculating the amount of production, (2) expansion of marketing areas, (3) competitive advantage. While the success is non-physical or social capital of farmers, namely: (4) commitment in farming [17] [18]. This study aims to determine 1) the effect of management competence, subjective norms, and motivation on entrepreneurship, 2) the effect of subjective norms on management competence and motivation, and 3) the effect of entrepreneurship on farm performance.

2. Methods
The study was conducted by using survey design. The primary data of this research was obtained through questionnaires, interview, and observations. Whereas secondary data was obtained using the documentation method. In conducting the survey, researchers used a private approach to each farmer to conduct in-depth interviews with farmers about the contents of the questionnaire to be filled out by respondents to get appropriate answers. The study population was farmers in the Krayan sub-district of the Indonesia-Malaysia border region, Nunukan Regency, North Kalimantan Province with a total sample of 200 farmers by using purposive sampling technique with the criteria of farmers who carry out rice cultivation and who have more than five years’ experience.

Data analysis methods used were: 1) Confirmatory Factor Analysis (CFA) to test the validity of construct indicators or latent variables. Indicator validity is said to be valid and can reflect a variable or construct if the loading factor value of the indicator is indicated by the estimated value of standardized regression weight > 0.50 (Ghozali, 2017). 2) Structural Equation Model (SEM) analysis in full model to obtain a structural model that is fit or feasible by conducting a suitability test by referring to the fit model criteria Godness of Fit Index (GOF). Goodness of fit index criteria that must be met in the structural equation model are: Chi Square value approaching 0, probability ≥ 0.05, CMIN/DF ≤ 2.00, RMSEA ≤ 0.08, GFI, AGFI, CFI, IFI, NFI and TLI ≥ 0.90.

The variables in this study consisted of three exogenous variables and two endogenous variables. Exogenous variables consist of (i) management competence variable with four indicators, which are X1, X2, X3, and X4 indicate planning, organizing, actuating, and controlling respectively [19][20]; (ii) subjective norms variable with five indicators which are X5, X6, X7, X8, and X9 indicate family background, work experience, education, family support, and government support, respectively [21][22][23]; (iii) motivation variable with four indicators which are X10, X11, X12, and X13 indicate meeting basic needs, meeting security needs, meeting social needs, and meeting self-recognition needs respectively [24]. Endogenous variables consist of (i) entrepreneurship variable with five indicators which are Y1, Y2, Y3, Y4, and Y5 indicate independent, creative, confident, leadership, and daring to take risks respectively [25][26]; (ii) farmer performance variable with three indicators which are Y6, Y7, and Y8 indicate increase in income, expansion of marketing areas, and competitive advantage respectively [27][28].

3. Results and Discussion

3.1 Confirmatory Factor Analysis
The confirmatory Factor Analysis (CFA) value was produced which shows three indicators that have a loading factor value below 0.50, namely: indicator (X7) of education with a loading factor value of 0.482 on the subjective norm variable, indicator (Y2) is independent with a value loading factor of 0.294 on the entrepreneurship variable and indicator (Y7) competitive advantage with a loading factor value of -0.078 on the farmer performance variable. Model of confirmatory factor analysis shown in figure 1.

The ability of farmers to have the capacity as entrepreneurs is to have entrepreneurial skills by getting education and training on entrepreneurship. The low level of infrastructure in the education sector in Krayan is one of the factors causing the low quality of education in border areas. The growth of quality and independent entrepreneurs in border areas has an impact on the performance of farmers in their business fields. Farmers' independence supported by entrepreneurial skills will create agricultural products that can compete with similar products from other regions, especially agricultural products from Malaysia. Entrepreneurship education for farmers has made a positive contribution to the development of entrepreneurship among farmers which aims to foster agricultural development and farmer welfare [29].
Result of Confirmatory Factor Analysis showed that the management competence variable reflected by planning indicators with a coefficient value of (0.786), organizing (0.749), actuating (0.513), and controlling (0.702). Constructors or latent variables has four indicators and of them is planning indicators which showed great influence in shaping the management competence variable. The subjective norm variable was shown by family background indicators with a coefficient value of (0.552), work experience (0.640), family support (0.592) and government support (0.593). Work experience indicators also have a great influence in forming subjective norm variables. The motivation variable is reflected by indicators meeting basic needs with a coefficient of (0.714), meeting the needs of a sense of security (0.532), meeting social needs (0.721) and meeting the needs of self-recognition (0.571). Next, the four indicators that form constructs or latent variables indicators meet social needs that have a great influence on nature forming motivation variables.

The entrepreneurship variable is reflected by indicators of independence with a coefficient of (0.843), confidence (0.738), leadership (0.652) and risk taking (0.661). The indicator of independence has the most influence in shaping the entrepreneurship variable. Farmer performance is reflected by indicators of increasing income with a coefficient of (0.565) and an expansion of marketing areas with a coefficient of (0.776). Finally, out of three indicators that make up the farmer performance variable, there is one invalid indicator, which is an indicator of competitive advantage, while the indicator that has the most influence in forming the farmer performance variable is an expansion indicator of marketing territory with a coefficient of (0.776). Coefficient value > 0.50 declared valid and < 0.50 declared invalid.
Table 1. Result of Confirmatory Factor Analysis

| Variables         | Indicators | Estimation Standardized Regression Weight |
|-------------------|------------|-------------------------------------------|
| Management Competence | [X1]       | 0.786                                     |
|                   | [X2]       | 0.749                                     |
|                   | [X3]       | 0.513                                     |
|                   | [X4]       | 0.702                                     |
| Subjective Norm   | [X5]       | 0.552                                     |
|                   | [X6]       | 0.640                                     |
|                   | [X7]       | 0.482                                     |
|                   | [X8]       | 0.593                                     |
|                   | [X9]       |                                           |
| Motivation        | [X10]      | 0.714                                     |
|                   | [X11]      | 0.532                                     |
|                   | [X12]      | 0.721                                     |
|                   | [X13]      | 0.571                                     |
| Entrepreneurship  | [Y1]       | 0.843                                     |
|                   | [Y2]       | 0.244                                     |
|                   | [Y3]       | 0.738                                     |
|                   | [Y4]       | 0.652                                     |
|                   | [Y5]       | 0.661                                     |
| Farmer Performance| [Y6]       | 0.565                                     |
|                   | [Y7]       | -0.078                                    |
|                   | [Y8]       | 0.776                                     |

3.2 Structural Equation Model Analysis

Structural Equation Model analysis conducted to get the most fit structural model or fit by meeting the criteria of the fit model Goodness of Fit Index shown in table 2. Based on figure 2, the Goodnes of Fit Index (GOF) value produced does not meet the required cut-off value. To meet the Goodnes of Fit Index (GOF) value, the structural model must be modified by connecting between the variant error indicators based on the Modification Indices shown in Figure 2. After going through the modification process, a Goodness of Fit Index (GOF) value that meets the cut-off value is generated required. Value which does not meet the measurement index criteria named marginal.
Figure 2. Full Structural Equation Model

Based on table 2, the Goodness of Fit Index values have met the model fit criteria, which means that the overall equation model constructed in figure 2 of the full model is an acceptable Fit Model. Thus, there is no significant difference between the data covariance matrix of the observed variables and the matrix of the specified model (implied covariance matrix).

| Size Index Criteria | Cut off Value | CFA Model Evaluation | Full Model Good Fit |
|---------------------|---------------|----------------------|---------------------|
| Chi Square Probability | ≥ 0,05 | 0,000 | Bad | 0,398 |
| CMIN/DF RMSEA GFI AGFI TLI IFI CFI | ≤ 2,00 | ≤ 0,08 | ≥ 0,90 | ≥ 0,90 | ≥ 0,90 | ≥ 0,90 | ≥ 0,90 | 68,333 |
| Get smaller 413,594 Marginal 0,956 0,930 0,997 0,998 0,998 |

Table 3 shows the influence of variables in the structural equation model of positive and significant value except the effect of motivation on entrepreneurship is negative (-0.274). Based on the estimated value of standardized regression weight in table 3, a large influence was shown by entrepreneurship with farmer performance with a coefficient value of (0,992) and subjective norm on management competence with a coefficient value of (0,704) and subjective norm on motivation with a coefficient value of (0,582). The magnitude of the effect of entrepreneurship on improving farming performance proves that entrepreneurship was a mediating variable for efforts to increase human resources in the border region, especially for adan rice farmers in the Krayan district of Nunukan district. The same thing was shown by subjective norm which has a great influence on the formation of management ability and motivation of farmers in conducting rice cultivation. Meanwhile, small
influence was shown by subjective norm on entrepreneurial with a coefficient value of (0.455) and the effect of management competence on entrepreneurship (0.359) and the influence of motivation on entrepreneurship (-0.274).

Table 3. Standardized Regression Weight Influence between Variables Estimation

| Variables Influence | Estimate | C.R  | P Value |
|---------------------|----------|------|---------|
| Management Competence | 0.704 | 6.674 | *** |
| Motivation | 0.582 | 3.477 | *** |
| Entrepreneurship | 0.455 | 2.633 | 0.008 |
| Entrepreneurship | 0.359 | 2.738 | 0.006 |
| Entrepreneurship | -0.274 | -2.181 | 0.029 |
| Farmer Performance | 0.992 | 8.602 | *** |

Entrepreneurship in the agricultural sector is important for increasing the capacity of farmers in improving the performance of their farms. The existence of entrepreneurship in the agricultural sector can create and provide value-added products or new innovations, make people more creative, independent and able to develop agricultural businesses into business. Inner entrepreneurial culture the agricultural sector has been recognized as a factor important in the development process agriculture [30].

4. Conclusion
Entrepreneurship is inseparable from the process of increasing human resources, especially farmers who are the main actors in the development and development of agriculture. The magnitude of the influence of entrepreneurship in improving the performance of adan rice farming must be supported by government policies in the form of formal and informal entrepreneurship education assistance programs for farmers in the Krayan sub-district so that farmers. Building the capacity and capability of farmers' human resources in the border region based on entrepreneurship has a positive and significant impact on the formation of adan rice farming performance. By improving the performance of rice farming activity, it is expected farmers’ income and their ability to expand their market to expand as well because this independence can become the key for farmers to have competitive advantage and reduce their dependency to Malaysia.

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