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Ali Fuad, Sri Rahayu, Choirul Anam, Putri Rahma Dayanti

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***Corresponding author:**
Ali Fuad
Mahardhika Economic College, Surabaya

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Analysis Of Competency, Innovation, Market Orientation, And Motivation On The Performance Of Papuan Nutmeg (*Myristica Argantea*) Communities In Fakfak District

Ali Fuad[1], Sri Rahayu[2] , Choirul Anam[2] , Putri Rahma Dayanti[2]

[1]Mahardhika Economic College, Surabaya
[2]Mahardhika Economic College, Surabaya

Abstract

The research aims to determine how much influence competence, innovation, market knowledge and motivation have on the ability of the people of Fakfak regency to realize downstream Papuan nutmeg, in order to obtain added value that can strengthen regional economic development. The research design uses a semi-quantitative analysis approach. The description explains the relationship between research variables which is the result of correlation analysis using the Spearman method. The description also explains qualitatively and in depth the things represented in the regression equation model obtained from the SPSS version 2.3 tool calculations. The results of research during the research show that the real conditions of the work culture of the nutmeg farming community and other nutmeg business actors; just carrying out the same activities for years, even for generations. This resulted in efforts to downstream and increase the scale of production that could already be controlled, basically never happening. The willingness and ability to do business to obtain added value from downstream production of Papuan nutmeg is very low, due to the fear of not knowing the market, and limited access to working capital.

Keyword: downstream, papuan nutmeg, market orientation, motivation, Fakfak

1. Introduction

Indonesia is the largest nutmeg producer in the world (Asrol & Heriyanto, 2017). In 2019 Indonesia produced 37 thousand tonnes and supplied the international market with 20 thousand tonnes out of a total of 52 thousand tonnes of nutmeg demand in various countries in the world (Hafif, 2021). Nutmeg as a spice plant has benefits as an essential oil, food ingredient, functional food, basic ingredient for cosmetics, and so on. Nutmeg is a plant native to Indonesia (Wattimena, Serkadifat, & Kabes, 2020).

The optimal productivity of nutmeg plants (Myristica Argentea Warb or Papuan nutmeg and Myristica fragrants Hunt or Banda nutmeg) in Indonesia varies. In 2021, West Papua Province is the number 3 producer of nutmeg in Indonesia with an estimated production of 5,823 tons/year after North Sulawesi with an estimated production of 11,366 tons/year and Aceh 6,236 tons/year. However, in the 2018-2019 period, West Papua recorded the highest production growth of minus (-) 42.35% in Indonesia, while Bali recorded the highest growth of 249.99% (Anonymous, 2021).

The nutmeg trap or Myristica Trap is a negative phenomenon in the development of the lives of families who own nutmeg trees in Fakfak regency. Nutmeg trees, which are passed down from generation to generation, generally grow in people's fields or forests. This nutmeg plant grows and reproduces naturally, and completely without plant care. People since their ancestors only knew about picking nutmeg twice a year.

The nutmeg trap is the comfort zone of living as a family of nutmeg owners, who are completely unaware that land ownership and the number of nutmeg trees are getting smaller as generations of owners change. Apart from that, what is also completely unnoticed is that nutmeg trees grow irregularly, do not comply with the rules for cultivating nutmeg plants properly, and it is clear that the trees are getting older, without any effort to rejuvenate them. This clearly causes a decline in nutmeg production from year to year. The saddest thing is that control of the continuously decreasing nutmeg harvest is generally controlled by the head of the family, most of whom do not master financial management, business management, and the education level of the majority is still low.

Research (Parliansyah, Riniarti, & Duryat, 2019) states that the productivity of nutmeg trees should reach an average of 60 Kg/tree/year, with a plant density of 80.6 trees/Ha, the productivity per hectare is recorded at 4,836 Kg/Ha. Furthermore, research (Suryadi, 2017) confirms that the productivity of nutmeg plants in Indonesia is recorded at only 472 Kg/Ha, which is actually still much lower than the productivity of nutmeg plants in India which reaches 745 Kg/Ha. Meanwhile, the productivity of Papuan Nutmeg tends to be even lower. The absence of improving plant varieties, productivity engineering, good and correct maintenance, and plant rejuvenation are factors that cause nutmeg production in Indonesia to continue to decline.

The decline in nutmeg production, empirically, is also caused by the very low competency and motivation in the nutmeg business of nutmeg plant owners, especially in the Fakfak regency of West Papua as the largest producer of Papuan nutmeg. This competence and motivation is clearly visible in the form of no maintenance of nutmeg plants, no rejuvenation of plants, no attention to plant spacing, no fertilization efforts, and all of this occurs due to the ignorance of nutmeg tree owners, who are lazy, who are already used to just picking. (did not

participate in planting because it was a heritage tree), and felt satisfied that he was satisfied with the proceeds from selling nutmeg without any downstream efforts to provide added value, or to obtain a higher selling value.

According to (Dinar, Suyantohadi, & Fajar, 2013), the quality standards of nutmeg cultivation products in Indonesia, which are generally obtained directly from the community, are still very low. The background of social problems and the internal financial conditions of the nutmeg farming community, which sometimes need funds/money immediately, often produces nutmeg on trees that are not yet ready to be harvested; so it is picked more quickly in order to get money to meet the demands and needs of his family as soon as possible. Research by (Susanti & Yuliana, 2021), (Novidayanti, Hodijah, & Mustika, 2019), and (Sayidah, Iskandar, & Iswarini, 2014) strongly suggests that the low quality competitiveness of Indonesian nutmeg in the export market is caused precisely by the actions of farmers. The owner of his own nutmeg plantation, who only wants the proceeds from selling nutmeg to be enjoyed as quickly as possible, without paying attention to the quality of the nutmeg he sells to middlemen.

The research aims to determine how much influence competence, innovation, market knowledge and motivation have on the ability of the people of Fakfak regency to realize downstream Papuan nutmeg, in order to obtain added value that can strengthen regional economic development.

2. Material and Method

Descriptive research. Data was obtained through quantitative techniques from respondents' information obtained through surveys.

2.1 Design Study

The research design uses a semi-quantitative analysis approach. The description explains the relationship between research variables which is the result of correlation analysis using the Spearman method. The description also explains qualitatively and in depth the things represented in the regression equation model obtained from the SPSS version 2.3 tool calculations. In order to sharpen the analysis, researchers also describe the meaning written in the determinant coefficient numbers. Experience, in-depth knowledge, and involvement of the main researcher as a practitioner in the cultivation and post-harvest as well as simple processing of Papuan nutmeg; also determine the validity of the data. Validity testing of the information was carried out using triangulation techniques between research respondents.

Respondents were selected and determined deliberately, in proportional numbers, and were ensured to be figures who understood the cultivation, post-harvest, downstreaming and business of Papuan nutmeg. The total number of respondents was 112 people. All respondents are in the Fakfak district area and have their own or shared nutmeg plantations with their families. Respondents were spread across 12 sub-districts which were recorded as nutmeg producing areas. Some respondents have other professions apart from being farmers or producers of processed nutmeg.

2.2 Data Analysis

The variables studied were determined by the researcher after going through the preliminary research stages. The variables studied include: X_1 competence, X_2 innovation, X_3 market orientation, and X_4 motivation; towards Y downstream.

The basis for selecting these variables is:

a) Researchers confirm that there are competency problems among nutmeg business actors from upstream to downstream, almost all of whom do not have mastery of knowledge in the agricultural sector. This is reinforced by the empirical fact that the community's nutmeg trees are a legacy that has been passed down from generation to generation;
b) Researchers obtained information that nutmeg gardening and nutmeg processing are activities that were also passed down from our ancestors. There are several efforts to improve gardening techniques and nutmeg processing which are still carried out by limited groups and are not yet widely known;
c) Researchers also experienced problems in the form of not being able to sell nutmeg other than selling it to middlemen in the city of Fakfak. Attempts to sell nutmeg directly to buyers outside the city of Fakfak actually experienced losses;
d) Researchers also feel together with nutmeg business actors to try to make various breakthroughs to be able to do good gardening, increase nutmeg productivity, process nutmeg, and market nutmeg; However, it still faces various obstacles.

Researchers, through in-depth discussions with nutmeg business actors, also established several criteria that could help nutmeg business actors to improve their performance. The performance in question includes: nutmeg harvest productivity, nutmeg quality, post-harvest handling, processing, product manufacture and marketing.

Research data was obtained from interviews using a questionnaire. The interview results are given a weighting value in the form of numbers on a scale of 1 – 10. Considering that the origin of the data is information obtained from the interview results; then the validity of the data was tested using triangulation techniques. According to (Alfansyur & Mariyani, 2020), (Bachri, 2010), and (Sa'adah, Rahmayati, & Prasetiyo, 2022) stated that the triangulation technique is the most effective way to test the validity of the data. With the help of this technique, researchers can convince themselves that the data obtained comes from honest statements or answers.

The results of data weighting can be analyzed using statistical tools to find a regression equation model. Through this regression equation, researchers can describe research results and draw conclusions.

3. Result

The results of the correlation analysis below show that high motivation is not supported by competence, innovation and market recognition. This shows that building downstream must start with improving competence, innovation, and providing real provisions to the Papuan nutmeg business community with knowledge of the market.

Table. 1. Correlations

Correlations

		Competence	Innovation	Marketorientation	Motivation
Competence	Pearson Correlation	1	-,036	-,077	,379**
	Sig. (2-tailed)		,705	,423	,000
	N	110	110	110	110
Innovation	Pearson Correlation	-,036	1	-,230*	-,276**

	Sig. (2-tailed)	,705		,016	,004
	N	110	110	110	110
Marketorientation	Pearson Correlation	-,077	-,230*	1	-,403**
	Sig. (2-tailed)	,423	,016		,000
	N	110	110	110	110
Motivation	Pearson Correlation	,379**	-,276**	-,403**	1
	Sig. (2-tailed)	,000	,004	,000	
	N	110	110	110	110

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The results of research during the research show that the real conditions of the work culture of the nutmeg farming community and other nutmeg business actors; just carrying out the same activities for years, even for generations. This resulted in efforts to downstream and increase the scale of production that could already be controlled, basically never happening. The willingness and ability to do business to obtain added value from downstream production of Papuan nutmeg is very low, due to the fear of not knowing the market, and limited access to working capital.

Table 2 also shows that the level of deviation is still high from the R value of 53.3%. This means that there is still 46.7% influence from other factors in efforts to build downstream Papuan nutmeg in Fakfak district.

Table 2. Coefficient of determination

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,533[a]	,284	,257	,533016

a. Predictors: (Constant), Motivation, Innovation, Competence, Marketorientation

The results of the regression analysis in Table 3 below strengthen the argument that the introduction of the Papuan nutmeg market is still limited to direct sales of nutmeg to middlemen as is usually the case. The regression coefficient shows that competence, innovation and motivation in terms of building downstream nutmeg have not been formed and are still not being implemented as they should.

Table 3. Regression

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	10,337	1,154		8,956	,000
	Competence	-,273	,086	-,286	-3,173	,002
	Innovation	-,295	,075	-,370	-3,939	,000
	Marketorientation	,026	,083	,031	,315	,754
	Motivation	-,232	,105	-,238	-2,206	,030

Dependent Variable: Hiliritation

Based on the regression equation:

$Y = 10{,}337 – 0{,}273X_1 – 0{,}295X2 + 0{,}026X3 – 0{,}232X4$

it can be seen that the level of market knowledge is basically still low, even though the value in the model shows a positive notation; However, the significance level is only 75.4%. Meanwhile, the other variables are: competency 99.8%; 100% innovation; and motivation 97%. The level of significance has been empirically proven to show the need for guidance and facilitation from parties to provide access to nutmeg business actors to truly recognize the dynamics of the Papuan nutmeg market correctly.

Table 4. One way ANOVA

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Competence	Between Groups	14,547	6	2,425	7,940	,000
	Within Groups	31,453	103	,305		
	Total	46,000	109			
Innovation	Between Groups	18,511	6	3,085	6,768	,000
	Within Groups	46,953	103	,456		
	Total	65,464	109			
Marketorientation	Between Groups	10,230	6	1,705	3,648	,003
	Within Groups	48,142	103	,467		
	Total	58,373	109			
Motivation	Between Groups	16,390	6	2,732	10,296	,000
	Within Groups	27,328	103	,265		
	Total	43,718	109			

The results of the one way ANOVA analysis show that there are things that are still not 'convincing' regarding the introduction of the nutmeg product market. This market introduction has proven to be weak at the marketing level of nutmeg, as well as marketing of processed nutmeg products. This is shown by the market introduction variable at a significance level of 99.7% compared to other variables at a significance level of 100%. This analysis also strengthens the argument based on the regression results that basically, the community and Papuan nutmeg business actors do not really know the dynamics of the Papuan nutmeg market properly. This is what causes people who have Papuan nutmeg to always be trapped in selling their garden products to middlemen. The middlemen, obviously, will not show the actual market conditions, and at the same time do not want the downstreaming of Papuan nutmeg to develop in the community. This is to provide certainty that the middlemen's business will continue to run, even though it will continue to put the community in a position where they are always bound to market their garden products to middlemen.

4. Discussion

The problem of decreasing productivity is a very serious threat not only to West Papua Province but also to national nutmeg productivity. 2017 BPS data states that Fakfak Regency has a nutmeg plantation area of 16,010 hectares (BPS, 2017) which shows its existence as one

of the largest nutmeg producing centers in Indonesia. Therefore, downstreaming is an option, but it should be balanced with improvements in cultivation and serious efforts to increase productivity. Through downstreaming, nutmeg exports can become the focus of attention of all parties to empower the community, improve welfare, equalize development, and more importantly generate large non-oil and gas foreign exchange for Indonesia in a sustainable manner.

According to (Susanti & Yuliana, 2021), Indonesia's nutmeg production still needs to be improved in quality, from cultivation to post-harvest handling. Indonesia also needs to be more serious in developing downstream processing of nutmeg, so that the added value of nutmeg production can be enjoyed by the community. Research (Awuy, Longdong, & Lengkey, 2021) reports that the competitiveness of the quality of Indonesian nutmeg must be improved so that Indonesian nutmeg can remain as the best nutmeg in the world.

The Agricultural Research and Development Agency has basically released 4 superior nutmeg varieties, namely the Banda variety, Ternate 1 variety, Tidore 1 variety and Tobelo variety. The potential production is between 5,120 – 7,500 grains per tree or 1,000 – 1,500 kg/year (average seed weight 10 grams/grain and plant population 100 plants/ha). The essential oil content in seeds is between 10.80% - 11.85% and in mace between 13.9 - 20%. Ironically, the Government together with the people of Fakfak Regency have never or have not had the initiative to encourage themselves or the Agricultural Research and Development Agency to develop the Papuan nutmeg variety as a superior nutmeg crop. Even though Papuan nutmeg (Myristica argantea) which grows in the district has the advantage of having a large nutmeg shape, it has a fundamental weakness, namely that its nutmeg oil content is only small.

Downstream production of nutmeg and nutmeg productivity are fundamental problems that Indonesia is currently starting to face. The large number of nutmeg trees that have passed their productive age, the decline in production, the small amount of new land, the absence of efforts to improve the variety and genetic characteristics of nutmeg plants, and the slow rejuvenation of nutmeg plants are classic problems faced by the Government in managing the nutmeg business in Indonesia. Nutmeg is an annual that begins to bear fruit more than 6-7 years after planting. The time it takes for farmers to plant and pick nutmeg is a fundamental obstacle to the weak rejuvenation of nutmeg plants. Besides that, the low competence of nutmeg plantation owners in terms of nutmeg agro technology means that the motivation to carry out rejuvenation is almost non-existent; Moreover, down streaming is increasingly far from expectations.

Research (Elizabeth & Anugrah, 2020) reminds us of the importance of mastering the competencies of business actors in the agribusiness chain, from farmers or planters to the next marketing chain, namely collectors, middlemen and traders of agricultural products, to pay attention to product quality. Agricultural products in general are products that have a short shelf life after harvest and are easily damaged. Therefore, building downstream from post-harvest to processing is an important part so that agribusiness products in Indonesia have strong competitiveness in the international market.

In response to this, the efforts that need to be made must begin with providing serious knowledge and understanding so that nutmeg business actors understand the market. The low level of market knowledge is caused by two things, namely: 1) the excessively primordial

attitude of the nutmeg business community in Fakfak Regency, who consider Papuan nutmeg to be the best in the world even though they do not yet understand the empirical conditions of world nutmeg marketing, and 2) weak access to information and skills for creating market-oriented products, especially quality issues. The Papuan nutmeg community seems to find it difficult to accept the fact that Papuan nutmeg has lower oil content than Banda nutmeg. The oil content determines the quality of the nutmeg itself.

According to (Sipahelut & Telussa, 2011), (Suryadi, 2017), and (Safriani & Humaira, 2022) the low level of nutmeg oil can basically still be increased. Efforts to improve the oil content of nutmeg must begin with good cultivation procedures, as well as correct post-harvest and processing techniques. The nutmeg processing technology that is mastered by the community is often still ineffective in obtaining good nutmeg oil.

Downstreaming basically requires paying attention to the characteristics of Papuan nutmeg. All parties must work together to start by improving the quality of nutmeg. This must start from cultivation. Rejuvenation of nutmeg plants has become a requirement, because the majority of nutmeg trees that currently exist are starting to reach a less productive age and are not receiving proper plant care. People only tend to take (pick) nutmeg without paying attention to aspects of fertilization, plant spacing, defoliation, and various aspects of proper plant cultivation. The Papuan nutmeg tree which has been passed down from generation to generation must be repaired and its planting reorganized so that Papuan nutmeg can spread downstream and develop.

5. Conclusion, Implication, and Recommendation

Downstream production of nutmeg and nutmeg productivity are fundamental problems that Indonesia is currently starting to face. The large number of nutmeg trees that have passed their productive age, the decline in production, the small amount of new land, the absence of efforts to improve the variety and genetic characteristics of nutmeg plants, and the slow rejuvenation of nutmeg plants are classic problems faced by the Government in managing the nutmeg business in Indonesia.

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