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Factors influencing the market requirements fulfillment in small medium enterprise fish processors in East Java

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Abstract. The development of the maritime and fisheries sector is directed to industrialization in order to prevent the dependence of Indonesia's consumption needs on other countries, by utilizing this large local market as a basis for international markets development. However, there are still many obstacles in penetrating the market. The purpose of the research is to examine the effect of legal requirements fulfillment, product quality, agency coordination, human resources and regulation on the market requirements, the certification of a small and medium fish processor (SMFP). This descriptive quantitative research was carried out through survey and interview methods. Data were analyzed using Partial Least Square (PLS) to determine the effect of exogenous variables. The relationship evaluation showed that legal requirements, human resources, and product quality had a significant effect on the market requirements for certification ($p = 0.001, 0.009$ and 0.019 , respectively), while the agency coordination and regulations had no significant effect on market requirements for certification ($p = 0.268$ and 0.678 , respectively). Then the SME empowerment program needs to pay attention to the aspects of fulfilling the legal requirements and increasing the capacity of human resources.

1. Introduction

Small Medium Enterprise (SME) of fish processing in East Java is one of the national fisheries production and industrial bases because there are approximately 130 fish processing units, 63 of which are export-oriented. It indicates that the fisheries products from east Java have high competitiveness in export markets. In 2011, the province of East Java succeeded to export 341,775 tons of 351 types of fisheries products with a total value of 1,307,350,762 USD or 37.1% of fisheries export value [3, 4]. Such a condition exhibits that the fisheries production of east Java have given a significant contribution to the national economy.

Problems of the SME-FP are capital and product marketing. Nevertheless, there are many other aspects that do not support the existence of SME to produce or market the products, such as product standardization, product certification, unit, and marketing system formation in SME groups, brand image formation, businessman capability, permit facilities, and etc. There is also unnecessary constraints in which certification process must go through several different institutions, Provincial Fisheries Services, Health Services, Trade and Industry Services, National Agency of Drug and Food



Control (NA-DFC), and Drug and Food Product Testing Agency of Majelis Ulama Indonesia (LPPOM-MUI) [14]. Such conditions may complicate the operations of the SMEs, particularly when competing with other SMEs in ASEAN countries. There are still few research bridging the fisheries processing SME with the market condition in particular.

This study focused on the effect of legal requirements fulfillment, product quality, institutional coordination, human resources, and regulation on market requirements: fisheries processing small medium enterprise (FPSME) certification that it can be feedback for SME development programs conducted by government or non-government organization (NGO).

2. Method

This study was carried out in 126 FP-SMEs distributed in 10 cities and regencies of East Java province, Surabaya, Sidoarjo, Gresik, Lamongan, Tuban, Probolinggo, Situbondo, Banyuwangi, Malang, and Pacitan. It is descriptive quantitative study using a survey approach in order to systematically and accurately describe the factual condition of a certain area or population. The study was done through direct observation and monitoring using questioners and qualitative data from interviews.

Intervariable relationships are causal. Independent variables were selected based on empirical conditions, FPSME activities in the coastal area, researcher's capability, supporting theory, study site characteristics[15] as follows:

- a) legal requirements fulfillment (X1)
- b) product quality (X2)
- c) institutional coordination (X3)
- d) human resources (X4)
- e) regulations (X5)

The dependent variable is Y1, the fulfillment of market requirements: FPSME certification determined by measuring the fulfillment of legal requirements (X1), product quality (X2), institutional coordination (X3), human resources (X4), and regulation (X5).

2.1 Data collection

The study used 126 respondents of SME owner using non-random sampling of purposive sampling technique from all groups of fish processing communities. The respondents should meet the following requirements: (1) The FPSME is run at a minimum of 2 years; (2) the FPSME owner has minimum selling of IDR 10,000,000.00, maximum selling of IDR. 2,000,000,000.00 per year, and maximum net wealth of IDR. 950,000,000.00; and (3) the owner has a maximum of 19 employees.

Primary data were obtained through direct interviews and questioners. The former was done to clarify if there were respondents misled in questioner filling. The latter is a questioner distribution technique to the selected respondents. The questioners were prepared several directed alternative answers to the subject matter and the research objective using Likert scale (scale 1-5) to determine the score of each question.

2.2 Data analysis

Data analysis applied descriptive and Partial Least Square (PLS) to see the effect of legal requirements, product quality, institutional coordination, human resources, and regulation on market requirements fulfillment.

3. Result and discussion

3.1 Measurement model (outer model) testing

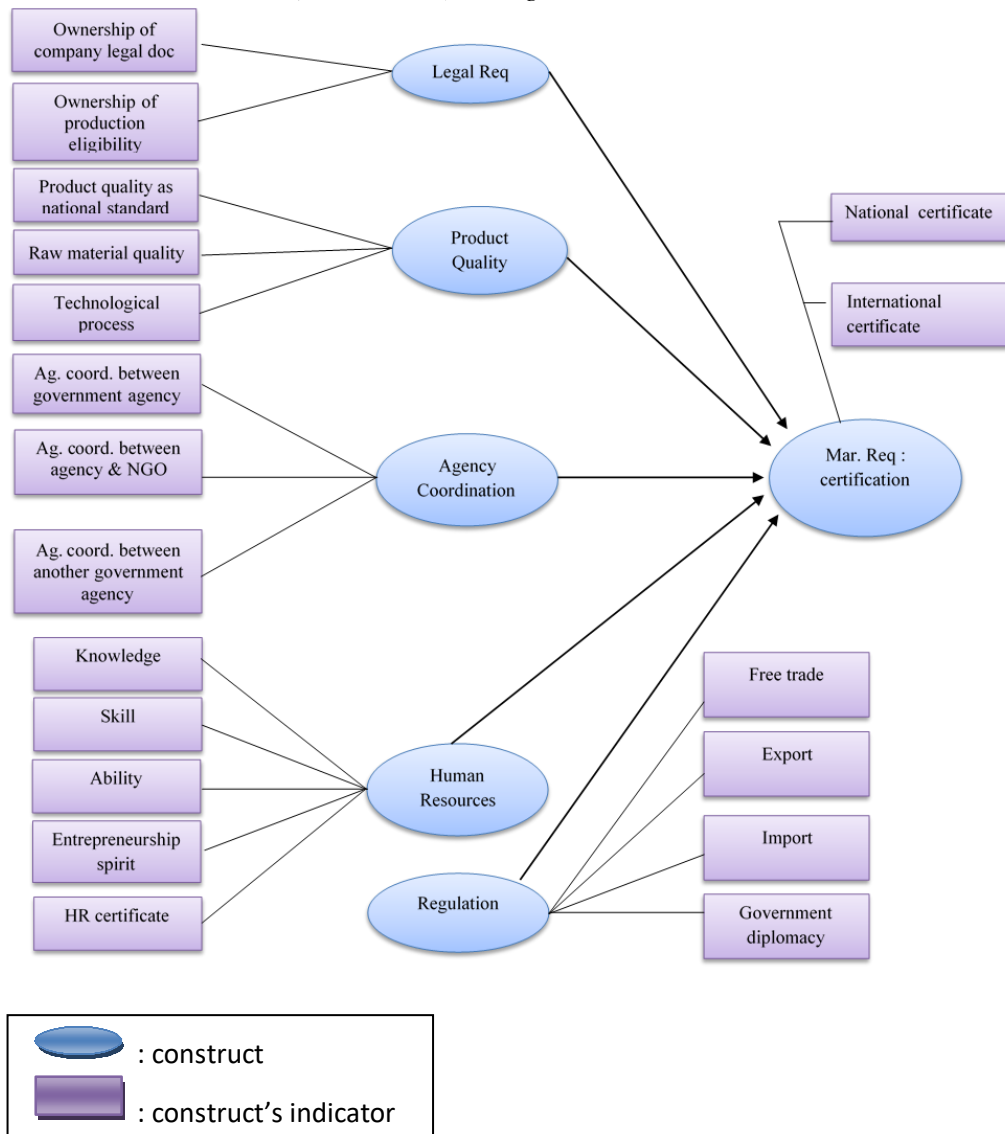


Figure 1. PLS model framework

In the estimation with the outer model, it is found that several indicators had a loading factor below 0.7, indicating that those factors are not valid to measure the construct [7] so that they should be taken out from the model. The indicators belong to the variable of quality product, human resource, and regulation. Then the value of each loading factor of its construct can be seen in Table 1 reflecting that all indicators have loading factor > 0.7, and they are valid to measure its construct so that PLS model has met the convergence validity requirement.

Table 1. Convergence validity with a valid indicator in the measurement model of SME's competitiveness

| | Agency coord. | Product quality | Legal req | Market req: certification | Regulation | Human Res. |
|------|---------------|-----------------|-----------|---------------------------|------------|------------|
| AC 1 | 0.814 | | | | | |
| AC 2 | 0.826 | | | | | |
| AC 3 | 0.838 | | | | | |
| PQ 1 | | 0.796 | | | | |
| PQ 3 | | 0.781 | | | | |
| LR1 | | | 0.872 | | | |
| LR2 | | | 0.736 | | | |
| MRC1 | | | | 0.727 | | |
| MRC2 | | | | 0.911 | | |
| RE 4 | | | | | 1.000 | |
| HR 3 | | | | | | 1.000 |

Note:

AC 1: Ag. Coord.between the agency of government

AC 2: Ag. Coord.between agency & NGO

AC 3: Ag. Coord.between another agency of government

PQ 1: Product quality as a national standard

PQ 3: Proses technology

LR 1: Ownership of company legal doc

LR 2: Ownership of production eligibility doc

MRC 1: ownership of the national certificate

MRC 2: ownership of the international certificate

RE 4: Government diplomacy

HR 3: the ability

Discriminant validity test was then used to ensure that each concept of each latent variable is different from other variables. The model has good discriminant validity if squared AVE value of each exogenous construct exceeds the correlation between the construct and another construct [6]. Table 2 demonstrates that each construct exceeds the correlation value between the construct and other construct meaning that the PLS model has met good discriminant validity requirements.

Table 2. Discriminant validity value of SME's competitiveness model

| | Agency coord. | Product quality | Legal req | Regulation | Human res. |
|-----------------|---------------|-----------------|-----------|------------|------------|
| Agency coord. | 0.826 | | | | |
| Product quality | 0.062 | 0.788 | | | |
| Legal req | 0.228 | 0.286 | 0.807 | | |
| Regulation | 0.321 | 0.346 | 0.446 | 1.000 | |
| Human res. | 0.258 | 0.169 | 0.221 | 0.291 | 1.000 |

Moreover, the construct reliability of *Cronbach's Alpha*, *Composite Reliability* and *Average Variance Extracted* (AVE) values was tested. The construct has high reliability if it has Cronbach's alpha value > 0.7, composite reliability value > 0.70, and AVE value > 0.50 [6]. Several of Cronbach's alpha values were found below 0.7, so that the construct indicator of KP, LR, and MRS with the lowest loading factor needed to be eliminated. The model estimation after KP3, LR2, and MRS1 indicators were taken out from the model are given in Table 3.

Table 3. Construct reliability test of SME's competitiveness model

| | Cronbach's Alpha | Composite Reliability | AVE |
|-----------------|------------------|-----------------------|-------|
| Agency coord. | 0.768 | 0.865 | 0.681 |
| Product quality | 1.000 | 1.000 | 1.000 |
| Legal req | 1.000 | 1.000 | 1.000 |
| MRS | 1.000 | 1.000 | 1.000 |
| Regulation | 1.000 | 1.000 | 1.000 |
| Human Res. | 1.000 | 1.000 | 1.000 |

3.2 Structural (Inner Model) Model Testing

According to [2] and [5], structural model (*inner model*) evaluation in PLS analysis consists of Q square predictive relevance calculation, R Square variable endogen calculation, and model significance test. Q^2 analysis demonstrates the strength of model prediction in which Q^2 of 0.02 or less means that the model has weak predictive relevance, 0.15 as moderate predictive relevance, and 0.35 as strong predictive relevance [5]. Result showed that the model Q^2 value with endogenous variable of market requirements: certification was 0.151 meaning that the model had moderate predictive relevance.

PLS model goodness of fit test can be seen from Standardized Root Mean Square Residual (SRMR) value. The PLS model could fulfill the goodness of fit model criterion if the SRMR value < 0.10 and the model has a perfect fit if the SRMR value < 0.08 [9]. The goodness of fit model test indicates that the SRMR value was 0.083 meaning that this PLS model is fit so that it is worth to use for research hypothesis test. Significance test (partial effect test) of model estimation employed as a reference to test the hypothesis is presented in Figure 2. It is done at a 5% significance level (Table 4).

Table 4. Partial effect test in a structural model of SME's competitiveness

| | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (O/STDEV) | P Values |
|------------|---------------------|-----------------|----------------------------|------------------------|----------|
| KI -> MRS | 0.108 | 0.126 | 0.098 | 1.109 | 0.268 |
| KP -> MRS | 0.183 | 0.183 | 0.078 | 2.346 | 0.019 |
| LR -> MRS | 0.243 | 0.236 | 0.074 | 3.269 | 0.001 |
| REG -> MRS | 0.048 | 0.050 | 0.115 | 0.416 | 0.678 |
| SDM -> MRS | 0.195 | 0.186 | 0.074 | 2.630 | 0.009 |

Results showed that institutional coordination (KI) did not affect the market requirements: certification (MRS) ($P = 0.268$). As mentioned in [11], under SWOT analysis on the competitiveness of SME that the strength of the SME marketing aspects covers (1) product quality, (2) customer interrelationship management, and (3) product innovation. However, the study has not included the institutional coordination variable in SME construction.

However, [12] found that the SME product marketing competitiveness was determined more by packing, design, and labeling. Trademark, packing, and design are a commitment or insurance for the customers, and these reflect a competitive superiority of the business against other competitors. Many government institutions, such as Trade and Industry Services, Fisheries Services, Agriculture Services, and others have carried out SME development program for packing and design.

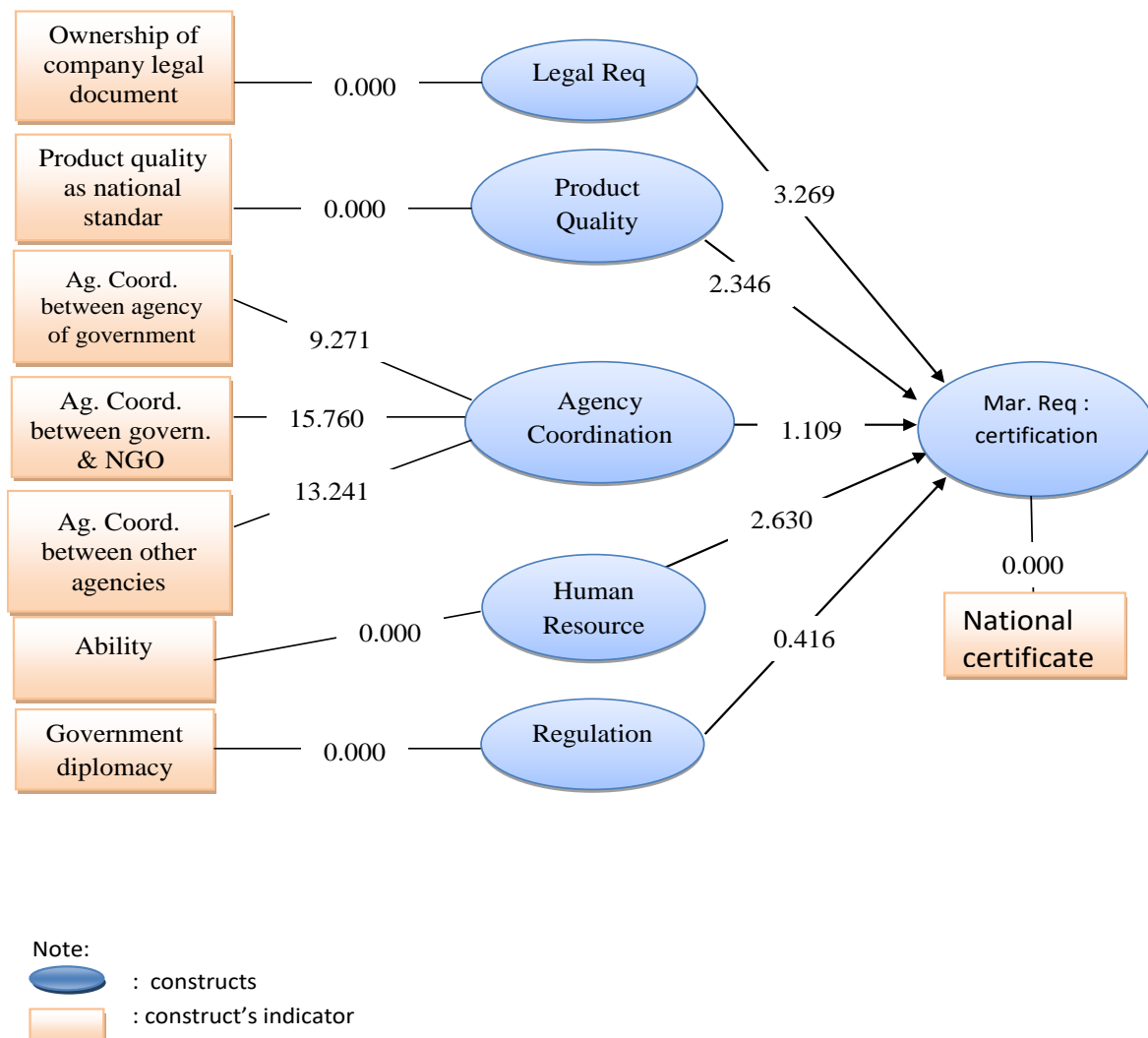


Figure 2.PLS model estimation of factors influencing market requirement certification at $\alpha = 5\%$.

Market requirements that should have been fulfilled by the SMEs are home food industry business certificate, production eligibility certificate, local food-NA-DFC certificate, halal certificate, and Indonesian National Standard certificate (optional), while for export products, the SMEs must have a Hazard Analysis and Critical Points (HACCP) certificate that requires the production eligibility certificate. All these eligibility certificates indicate the ownership of the SME legality certificate, such as business permit license, company registration document, and industry registration document. Also, the production eligibility certificate and local food-NA-DFC certificate require HO and building permit certificates [14]. HO certificate is a certificate to ensure that the company operation will not annoy surrounding society. Thus, the fulfillment of the legal aspects of the SME highly influences the fulfillment of market requirements to market the product.

[1] stated that SME's constraints in the global market are lack of access to the management and the international regulations. The SME must legally build a brand image in the international market to have the recognition. Of course, it can only be done through the fulfillment of product quality and other quality requirements established, including required certificate documents. The requirements sometimes highly vary among the countries, these should not be complicated and expensive. The SMEs may need longer time to get reliable information on market opportunity and new relevant regulations.

Meanwhile, the FPSME-related regulations do not have any effect on the market requirements certification ($p = 0.678$). Several regulations issued by the government as SME empowerment efforts, such as decree No. 9/1995 concerning small business and government regulation No. 44/1997 about a partnership. The latter addresses that partnership is needed to accelerate the achievement of self-support and a strong national economy. There is also President's decree and Minister's regulation, such as Keppres No 127/2001 concerning the type of business reserved to small business and open to medium and large scaled businesses under partnership system, and etc. including loan reconstruction for the SME. Nevertheless, support of those regulations has not been able to significantly encourage the SMEs to obtain the needed market requirements. It is necessary to know whether the regulation socialization is not enough or the regulation has not represented the need of FP-SMEs.

Human resources are measured with their knowledge, skill, ability, spirit entrepreneur, and many other developmental programs followed that give a highly significant and positive effect on the market requirements fulfillment, certification (MRS) ($P = 0.009$). The better the competence of the human resources is, the higher the encouragement to fulfill the market requirements to be able to penetrate the market, and vice versa. In other words, the good competence of the human resources will increase the awareness to arrange the product certification in order for market competition.

It is in line with [16] that major constraint of the SME in regional market requirement is low human resources quality and low entrepreneurship competence. Meanwhile [10] who studied 7,443 SMEs in Malaysia found that effective entrepreneurship and human resources management significantly affect the SME performance. Therefore, based on PLS model estimation, this study found that legal requirements fulfillment, human resource competence, and product quality significantly and positively influence market requirements, the certification. Other variables, institutional coordination, and regulation do not affect the fulfillment of market requirements.

In the free trade era, the trade will highly prioritize the standardization and certification. Product standardization as one of the market requirements can be achieved through the fulfillment of legal requirements, the preparation that should have been planned and applied at the beginning of SME establishment. The present study found that legal requirements always become prerequisite to meet the market requirements. This fulfillment could be able to increase product compatibility in the free trade era. Product standardization and certification is closely related with the continuity of the raw materials and the product quality following Good Manufacturing Practices regulation, the presence of good coordination between government institutions and private sectors, creative and hard-working human resources, and regulations supporting the SME operations.

Based competitive FPSME model presented in Figure 2, it was found that among factors affecting market requirements: certification (MRS), i.e. legal requirements LR, product quality PQ, institutional coordination IC, human resources HR, and regulation RE, legal requirements (LR) give the highest effect, followed by competent human resources, and then SME's quality product. Therefore, LR fulfillment needs to be highly considered through socialization and operational facilities development.

4. Conclusion

Legal requirements, human resources, and product quality were factors that gave a significant effect on the market requirements for certification ($p = 0.001$; 0.009 and 0.019 , respectively), while coordination of agencies and regulations have no significant effect on the market requirements for certification ($p = 0.268$ and 0.678 , respectively). Then the SME empowerment program needs to pay attention to the aspects of fulfilling the legal requirements and increasing the capacity of human resources.

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