INSTITUTIONAL MODEL DESIGN FOR THE DEVELOPMENT OF A FISHERY PRODUCT PROCESSING BUSINESS AT PESANTREN USING INTERPRETATIVE STRUCTURAL MODELING (ISM)

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ABSTRACT

Numerous factors influence the successfulness for fishery product processing businesses development, a model is considered useful if it designed in a real system. The objective of this study is to develop an institutional model for the development of a fishery product processing business at pesantren. The model design using Interpretative Structural Modeling (ISM). The results demonstrate that there are six elements of the system for model design, each with crucial sub-elements. (1) the affected community sector (management of fishery product), (2) needs of the program (availability of market, fish, auxiliary raw and other materials, access money resources, human resources, technology, and access information), (3) main constraints program (availability to access money resources, and dependence from other parties), (4) the objective of the program, (5) planning action activities (supporting policy regarding to development of program) and (6) institutions involved in implementing the program.

Keyword: fishery product processing business, institutional model design, intepretative Structural Modeling, pesantren

1.INTRODUCTION

Situbondo Regency in East Java, Indonesia is a region with considerable potential in the marine and fisheries sector, including a total beach length of ±155 km. Capture, aquaculture, and processed fisheries mainly constitute the fisheries sector. In 2017, fishery production in Situbondo Regency amounted to 13,831 tons, aquaculture production amounted to 8,552 tons, and the number of processed fisheries production amounted to 8,224 tons (Dinas Perikanan, 2018). The tremendous potential of the fisheries sector must be realized into the energy of motion to achieve national development goals, such as fishery products processing business activities (Dahuri, 2012). The fishery products processing business currently faces several complex problems, including developing fishery processing, diversification and the distribution of fishery products. It requires the selection of priority commodities, development locations and processed patterns of fishery products (Salampessy et al., 2012). Moreover, the development model of each business cannot be generalized, but instead must be adjusted to the type of business and location where the business is developing (Poernomo dan Heruwati, 2011). Thus, in the development of the fishery products processing business at Situbondo Regency, it is necessary to attend to the characteristics of the Situbondo Regency itself. The growth of the fishery products processing business at Situbondo Regency can be achieved based on pesantren, 180 of which are spread across Situbondo Regency according to the pesantren database in the office of the Ministry of Religion of the Situbondo Regency. Pesantren are unique religious education and social institutions. Therefore, the development of fishery product processing businesses in the pesantren must adjust to the peculiarities and uniqueness of these establishments. Islamic boarding schools possess considerable social capital that can be converted into economic activities, given that according to (Cristian & Hehir ,2008), social capital has an essential role in building trust, cooperation, and value to achieve goals. However, according to (Siswanto et al. ,2013), to strengthen the social capital of pesantren, synergy with the community is required. Considering the social capital owned by pesantren, it is believed that the development of the fishery product processing business in pesantren has good potential.

The development of the fishery product processing business at pesantren not only seeks to enhance the regional fisheries sector at Situbondo Regency but also to enable pesantren to increase their income so that they can be economically independent. According to Faozan (2006), at present the economic development of some pesantren is weakening due to low levels of independence; indeed, some pesantren require funds from the government or other parties. (Purnomo et al. ,2015) express that pesantren cannot depend on social fund assistance to meet their needs forever. Therefore, the development of business at pesantren has become a necessity so that they may achieve economic independence. Pesantren as religious education and the social institution does have social capital as the primary capital in developing fishery products processing business at pesantren. However, they also have constraints that can hamper the development of a fishery product processing business. According to Faozan (2006), these include 1) human resources are more oriented to thinkers than practitioners, 2) organizations and institutions that have not gone well 3) they remain dependent on one figure: the leader of the pesantren (Kyai), 4) lack of courage to make

breakthroughs or networks, whether with other pesantren or alternative institutions. It is, therefore, necessary to design an institutional model based on strengthening the potential of pesantren and finding solutions to their constraints regarding the development of a fishery product processing business. By 'institution' we mean a form, container or organization, as well as the norms, rules, method or procedures that govern relations between people. Indeed, institutions are complex and abstract systems (Budi et al., 2009). Considerable research has been conducted regarding the role of institutions in the fisheries sector (for example, Salampessy et al., 2012; Irnawati et al., 2012; Sakti et al., 2015; Yuliasari et al., 2013; Zaky et al., 2015; Purnomo, 2013; Liesbet et al., 2012; Kumar et al., 2010; Rizal et al., 2016; Septalina et al., 2017). Also, research on the role of institutions in pesantren economics has also been undertaken (e.g., Syahyuti, 1999; Chusmeru et al., 2017; Azizah, 2014; Lugina, 2017 dan Azizah, 2016). The results of these studies were used as an original illustration to design the institutional model for the development of fishery products processing business at pesantren. This research was conducted with the aim of designing an institutional model for the development of fishery products processing businesses at pesantren by using Interpretative Structural Modeling (ISM). Thus, this research is focused on attaining an institutional model design that can support the development activities of the fishery product processing business at pesantren. This research is critical because pesantren do not represent business institutions but rather religious education and social institutions, hence research must be undertaken to design an institutional model of pesantren that is appropriate and that supports the development activities of a fishery product processing business therein. The institutional model developed in this study was limited to the development activities of fishery product processing business at the pesantren of Situbondo Regency. From the results of this study, it is expected to produce an institutional model design that can support the development activities of fishery product processing business in this location.

2.MATERIALS AND METHODS

Interpretative Structural Modeling (ISM) is a system modeling technique used for dealing with habits that are difficult to change from long-term planning. It often applies to operational research techniques and applied descriptive. ISM can be used to undertake program analysis by a vision or mission as soon as the ISM outline is divided into two parts, namely element classification and hierarchical arrangement (Eriyatno, 2003). There are nine indicator elements in the ISM analysis, namely (1) affected community sectors, (2) needs of the program, (3) main program constraints, (4) possible changes to the program, (5) objectives of the program, (6) guideline measures to assess each goal, (7) activities required for action planning, (8) activity size to evaluate the results achieved by each activity, and (9) institutions involved in implementing the program (Saxena, 1992). In this study, ISM was used to design institutional models for fishery products processing businesses at pesantren. The study was conducted at pesantren in Situbondo Regency, East Java, from January to April 2018, and uses quantitative descriptive research to describe the conditions that occur at this time systematically and factually with the aim of explaining and resolving the problem under investigation. Data collection methods were conducted in several ways:

(1) literature study, (2) field observations to directly view the potential of fisheries and the condition of pesantren at Situbondo Regency, and (3) in-depth interviews with experts in order to obtain more information regarding the development of fishery products processing business at pesantren at Situbondo Regency via a questionnaire guide . Relevant experts in the research on the development of the fishery products processing business at pesantren at Situbondo Regency with consideration of the existence, affordability, reputation, competence, and experience in their fields as many as 25 respondent.

The research steps in using ISM are as follows (Eriyatno 2003; Marimin 2004):

1. Mapping the design structure of the development of the fishery products processing business at pesantren. Based on field observations, an overview of the design of the structure of the development of fishery products processing business at pesantren was obtained.

Identification of institutional elements of the development of the fishery products processing

2. Businesses at pesantren through expert opinions which are people who have experience in developing fishery products processing businesses and understand the characteristics of pesantren with expert selection methods in this research are purposive sampling and through a literature study.

Analysis of the institutional structure of the development of fishery products processing business at pesantren based on elements that have been identified using ISM.

According to Saxena et al. (1992), the analysis steps using ISM are as follows:

- Preparation of sub-elements in each element of the development of the fishery products processing business at pesantren. Subsequently, analyze the contextual relationship that one sub-element (sub-element i) supports the existence of another sub-element (sub-element j). The contextual relationship between these sub-elements is derived from the opinions of experts who offered their views by filling out the questionnaire.
- Information from the system under study is then structured in the form of a Structural Self-interaction Matrix (SSIM) that indicates the contextual relationship among the sub-element in the element system., which describes contextual relationships between sub-elements in system elements. SSIM compilation uses symbols V, A, X, and O. The meaning of these symbols is:

  V : constraints (1) affect constraints (2), but not vice versa
  V: eij = 1 and eij = 0
  A : constraints (2) affect constraints (1), but not vice versa
  A: eij = 0 and eij = 1
  X : constraints (1) and constraints (2) are interconnected
  X: eij = 1 and eij = 1
  O : constraints (1) constraints (2), do not influence each other
  O: eij = 0 and eij = 0

Symbol 1 is used where there is a contextual relationship, and symbol 0 where there is no contextual relationship between elements i and j and vice versa. After SSIM is

formed, the Reachability Matrix (RM) table is created by replacing the symbols V, A, X, and O into numbers 1 or 0.

- An RM table that has fulfilled the transitivity rules is then processed to set the partition level. The results can be described in the form of schemes for each sub-element according to vertical and horizontal levels. Based on RM, sub-elements in one element can be arranged according to Driver-Power (DP) values and Dependence (D) values to determine sub-element classification.
- Outline of the classification of sub-elements is grouped into four sectors as follows:
- Sector 1; weak driver-weak dependence variables (Autonomous). Sub-elements included in this sector are generally not related to the system and may have a little relationship, although the relationship can be strong. Sub-elements that enter sector 1; if DP ≤ 0.5X and D≤ 0.5X. X is the number of sub-elements.
- Sector 2; weak driver-strongly dependence variables (Dependence). Generally, the sub-elements that enter this sector are independent sub-elements. Sub-elements entering sector 2; if DP ≤ 0,5X and D > 0,5X. X is the number of sub-elements.
- Sector 3; strong driver-strongly dependent variables (Linkage). Sub-elements included in this sector must be carefully examined because the relationship between sub-elements is unstable. Every action on the sub-elements will have an impact on the other sub-elements, and the influence of the feedback can increase the impact. Sub-elements entering sector 3; if DP > 0,5X and D>0,5X. X is the number of sub-elements.
- Sector 4; strong driver-weak dependence variables (Independent). Sub-elements included in this sector are the remaining parts of the system and are called independent variables. Sub-elements entering sector 4; if DP > 0,5X and D ≤ 0,5X. X is the number of sub-elements in this study. ISM analysis uses the help of a computer application.

3.RESULTS AND DISCUSSION

To design an institutional model for the development of the fishery products processing business in pesantren, elements that play a central role in determining the success of the development of the fishery products processing business in pesantren are chosen. Of the 9 elements developed by Saxena (1992), and based on the results of discussions with experts, six elements with predominant influence were selected: (1) affected community sectors, (2) needs of the program, (3) main constraints of the program, (4) objective of the program, (5) required activities for action planning, and (6) institutions involved in program implementation. The success of the development of the fishery products processing business at pesantren must prioritize the key sub-elements of each system element. The key sub-elements will be able to move the other sub-elements to support the success of the fishery product's processing business development program at the pesantren. The position between different sub-elements in the quadrant, making the relationship between sub-elements very dynamic and interrelated so that it needs to be carefully examined in designing it.

3.1.The Element of Affected Community Sector

The element of the affected community sector on the development of fishery processing business activities at pesantren consists of 12 sub-elements, which are presented in the form of a hierarchy in Figure 1. Level 1 of the affected public sector elements is students (Santri) (A4), graduates of pesantren (A5), pesantren sympathizers (A6) and communities at the pesantren environment (A7). At level 2 there are Kyai (pesantren leaders) (A1) and pesantren families (A2). At level 3 are labor (A11) and product sellers (A12). At level 4 are fishermen (A8), suppliers of primary raw materials (fish) (A9) and suppliers of auxiliary raw materials and other production materials (A10). At level 5 is a manager of the fishery products processing business (A3). A key sub-element of the affected community sector is the manager of the fishery products processing business (A3). It means that the manager of the fishery products processing business (A3) is the most affected community sector from the development of the fishery products processing business at pesantren. The manager of the fishery products processing business (A3) is a critical sub-element that will be able to influence or mobilize the sub-elements of the other community sector affected (Figure 1). Production activities in the fishery products processing business require primary raw materials, auxiliary raw materials, and other production materials.

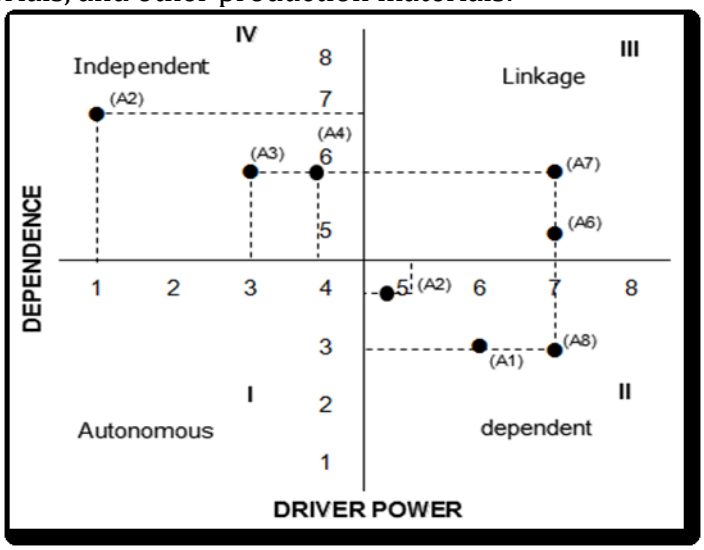

Figure 1: Structural model of the affected community elements

Production activities in the fishery production business require primary raw materials, supporting raw materials and other production materials. Therefore, for production to run continuously, it is necessary to supply the primary raw material (fish) from the catch of fishers (A8), which will be provided to the production site by the leading raw material supplier (Fish) (A9). Also, a supply of auxiliary raw materials and other production materials is required from the supplier of supplemental raw materials and other production materials (A10). The fishery product's processing business activities need labor (A11) to carry out production and other activities. Also, sellers of products (A12) are also required to sell their products. The support of Kyai (pesantren leaders) (A1) as central figures at pesantren and pesantren families (A2) as influential and respected parties in Pesantren are required to encourage the development of the

fishery products processing businesses here. The participation of students (Santri) (A4), graduates (A5), sympathizers (A6) and communities (A7) are also required to assist in the development of the fishery product processing business at pesantren. In-depth analysis of the driver power-dependence matrix (Figure 2) sub-elements are distributed into two sectors, namely sector III and sector IV. The manager of the fishery product processing business (A3), fishermen (A8), suppliers of the primary raw material (fish) (A9), suppliers of auxiliary raw materials and other production materials (A10), labor (A11) and sellers of products (A12) are located in sector IV (independent), which means they have considerable driving force but little dependence on the system. In contrast, other sub-elements such as Kyai (pesantren leaders) (A1), pesantren families (A2), students (Santri) (A4), pesantren graduates (A5), pesantren sympathizers (A6) and the communities at the pesantren environment (A7) are in sector III (linkage), implying mutual influence with other sub-elements. The sub-elements in division III are unstable. Lack of attention to the sub-elements will constitute an obstacle to the successful development of the fishery products processing business at pesantren.

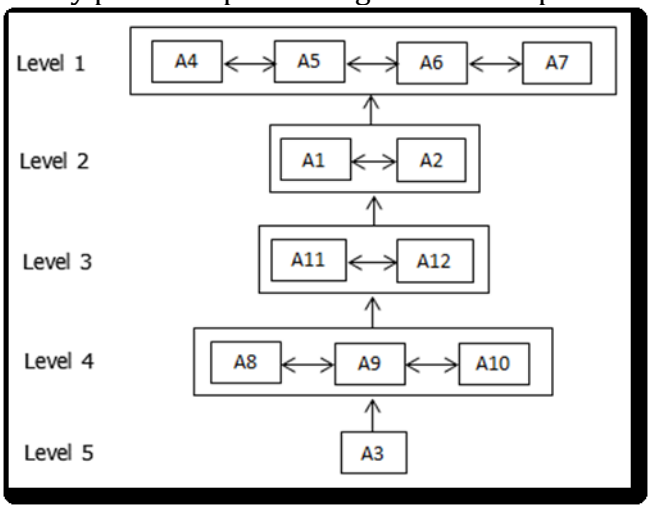

Figure 2: Matrix driver power-dependence for affected community elements

3.2.The Elements of the program's need

The sectoral element of the needs of the program in the development of the fishery product's processing business activities at pesantren consists of 16 sub-elements, presented in the form of a hierarchy in Figure 3. Level 1 in the elements of the needs sector of the program includes government support (A3), community figure support (A4) and investor support (A10). At level 2 is the participation of the community in the pesantren environment (A6), the involvement of Santri (students) (A7), the participation of pesantren graduates (A8) and involvement of pesantren sympathizers (A9). At level 3 is the support of the Kyai (pesantren leaders) (A1), support of the pesantren family (A2) and the institutional strengthening of the pesantren (A5). At level 4 is the availability of the market (A11), availability of primary raw materials, auxiliary raw materials and other production materials (A12), availability of capital (money) and ability to access capital (money) (A13), availability of human resources (A14), availability of technology (A15), and availability of access to information (A16).

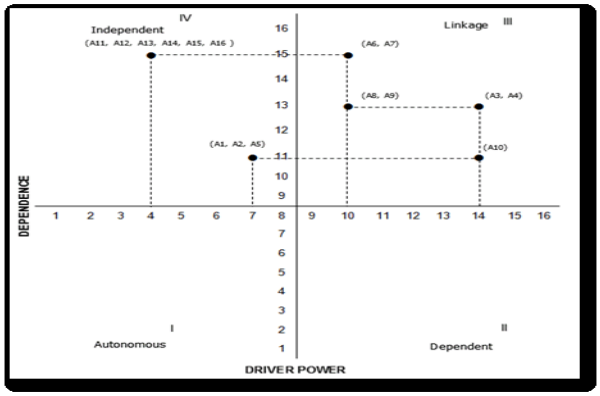

Figure 3: Structural model of the program's need

The key sub-elements in the needs sector of the program comprise availability of the market (A11), availability of primary raw materials, auxiliary raw materials and other production materials (A12), availability of capital (money) and ability to access capital (money) (A13), availability of human resources (A14), availability of technology (A15) and availability of access to information (A16). These sub-elements are vital to influencing or moving the sub-elements of the elements of the sector needs from other programs in the development of the fisheries product processing business at pesantren. The support of the kyai (pesantren leader) (A1) and the pesantren family (A2) as the most influential parties in the pesantren will significantly assist in the development of the fisheries product processing business here. The institutional strengthening of the pesantren (A5) will encourage the management of the fisheries product processing business at pesantren to become more professional. The participation of the community in the pesantren environment (A6), involvement of Santri (students) (A7), involvement of pesantren graduates (A8) and participation of pesantren sympathizers (A9) as part of the pesantren is required in order to assist in the development of the fisheries product processing business at pesantren. Also, in the event of the fisheries product processing business, community figure support (A4) is also required because pesantren are social as well as religious institutions. Furthermore, government support (A3) is needed to help encourage a conducive business climate. Investor support (A10) is required as well because pesantren are often constrained by capital (money).

In-depth analysis of the driver power-dependence matrix (Figure 4) sub-elements are distributed into two sectors, namely sector III and sector IV. The availability of the market (A11), availability of primary raw materials, auxiliary raw materials and other production materials (A12), availability of capital (money) and ability to access capital (money) (A13), availability of human resources (A14), availability of technology (A15) and availability of access to information (A16), the support of the kyai (pesantren leader) (A1), the support of the pesantren family (A2) and the institutional strengthening of the pesantren (A5) are all in sector IV (independent), which means the driving force or driving power is large, but it has little dependence on the system. Other sub-elements such as participation of the community in the pesantren environment (A6), involvement of santri (students) (A7), involvement of pesantren graduates (A8), participation of pesantren sympathizers (A9), government support (A3), community figure support (A4) and investor support (A10) are all found in sector III (linkage), implying mutual influence with other sub-elements. Therefore, the

sub-elements in division III must receive attention so as not to become an obstacle to the development of the fishery products processing business at pesantren.

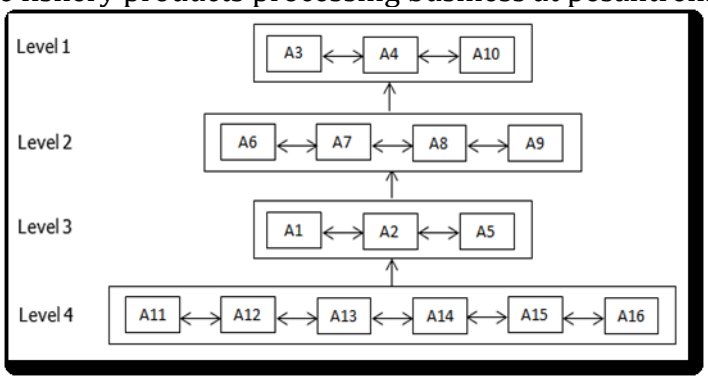

Figure4: Matrix of driver power-dependence for the element needs of the program

3.3.The Elements of the Program's main constraints

The sector elements of the main constraints of the program on the development of the fishery product's processing business activities at pesantren consist of 12 sub-elements, presented in the form of a hierarchy in Figure 5. Level 1 in the primary element of the program constraints there is an emotional relationship between pesantren and graduates, pesantren sympathizers and the community in the pesantren environment have not been maximized in economic activities (A8), and cooperation with other pesantren in the economic field is poorly established (A9). At level 2 there is no experience in managing business units in the area of agro-business (A7), knowledge and expertise regarding business unit management remain low (A10), and market competition is tight (A12). At level 2 there is no experience in managing business units in the field of agribusiness (A7), knowledge and expertise of business unit management is still low (A10), and market competition is tight (A12). At Level 3 there is a lack of support from kyai (pesantren leaders) (A1) and pesantren families (A2). At level 4 there is limited availability of quality human resources (A3), and access to technology and information is still limited (A4); moreover, the availability of primary raw materials (fish) is seasonal and depends on natural conditions (A5). At level 5 there is the availability of capital (money) but access to capital (money) is still low (A6), and dependence on assistance from other parties is relatively high (A11).

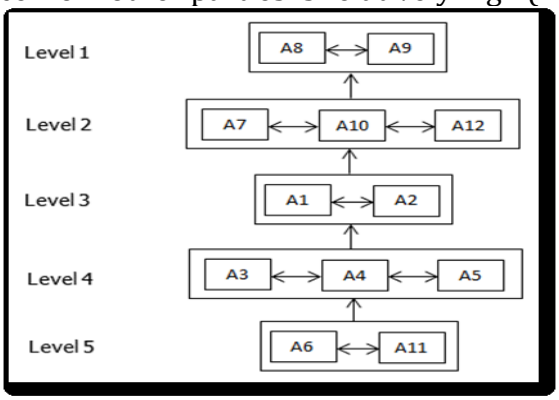

Figure 5: Structural model of the element programs main constraints

The availability of capital (money) and access to capital (money) is still low (A6), and dependence on assistance from other parties is still relatively high (A11) represent key sub-elements of the main constraints on the development of the fishery product processing business. These constraints must be overcome first. The following obstacles that must be addressed are the limited availability of quality human resources (A3), limited access to technology and information (A4), and availability. The primary raw material (fish) is seasonal and depends on natural conditions (A5). The next constraints to be overcome are lack of support from kyai (pesantren leaders) (A1) and pesantren families (A2), as parties who have a central role in the sustainability of pesantren life. The top of these constraints will be able to overcome the following restrictions, namely no experience in managing business units in the field of agribusiness (A7), knowledge and expertise of business unit management is still low (A10), and market competition is tight (A12). The final constraints to be overcome are the emotional relationship between pesantren and graduates, pesantren sympathizers and the community in the pesantren environment have not been maximized in economic activities (A8), and cooperation with other pesantren in the economic field is not well-established (A9). Handling these constraints in proper will make the development of the fishery products processing business at pesantren run well and sustainably. The driver power-dependence matrix (Figure 6) shows five sub-elements in sector IV, namely The availability of capital (money), access to capital (money) is still low (A6), and dependence on assistance from other parties is still relatively high (A11), limited availability of quality human resources (A3), limited access to technology and information (A4), and availability. The primary raw material (fish) is seasonal and depends on natural conditions (A5), which means the five sub-elements have a sharp thrust, but little dependence on the system. The sub-elements of constraints that have a strong driving force and influence one another are composed of seven other sub-elements. The other sub-elements are the lack of support from kyai (pesantren leaders) (A1), lack of support from pesantren families (A2), emotional relationship between pesantren and graduates, pesantren sympathizers and community in the pesantren environment have not been maximized in economic activities (A8). Next, The cooperation with other pesantren in the economic field is not well-established (A9), no experience in managing business units in the area of agribusiness (A7), knowledge and expertise on business unit management is still low (A10), and market competition is tight (A12). Those in sector III (linkage), so caution is needed in handling these constraints.

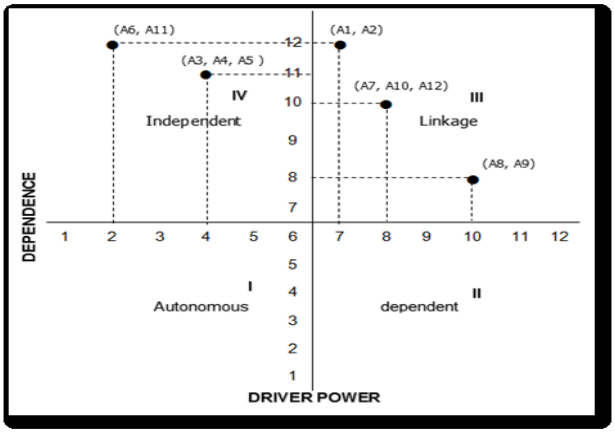

Figure6: Matrix of driver power-dependence for element programs main constraints

3.4.The Element of Program's objective

The sector element of the objective of the program on the development of the fishery product's processing business activities at pesantren consists of eight sub-elements, presented in the form of a hierarchy in Figure 7. At Level 1 in the element of the objective sector of the program is a growing spirit of entrepreneurship of the students (santri) (A1). At level 2 is the employment opening (A5). At level 3 is the use of sustainable fishery resources (A6), increasing the added value of fishery products (A7) and increasing the consumption of fishery products (A8). At level 4 is improving the economic independence of pesantren (A4). At level 5 is an increase in pesantren income (A3). At level 6 is developing a fishery product processing business at the pesantren (A2).

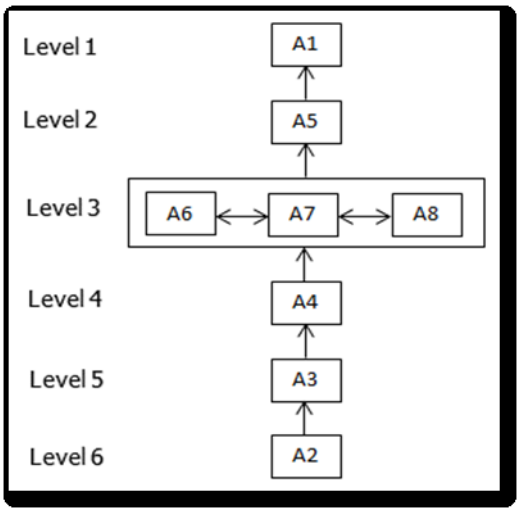

Figure 7: Structural model of the element of program's objective

Developing a fishery product processing business at pesantren (A2) is a crucial sub-element of the objective element in the development of the fishery products processing business at pesantren. These key sub-elements are of the development objectives of the fishery product processing business at pesantren that will influence or mobilize sub-elements of the element of the objective sector in the development of the fishery products processing business. The next objective is to increase the incomes (A3) and economic independence of pesantren (A4), followed by the use of sustainable fishery resources (A6), increasing the added value of fishery products (A7) and boosting the consumption of fishery products (A8). After that, the objective is employment opening (A5) and a growing spirit of entrepreneurship of the students (santri) (A1). Driver power-dependence matrix (Figure 8) shows three sub-elements that occupy sector IV (independent) that: developing a fishery product processing business at the pesantren (A2), increasing pesantren income (A3), and increasing the economic independence of pesantren (A4). It means that the three sub-units have a sharp thrust, but little dependence on the system. Sub-elements that have a strong driving force and influence each other are composed of two sub-elements, namely the use of sustainable fishery resources (A6) and increasing the added value of fishery products (A7), these being in sector III (linkage) and hence requiring attention. The other three sub-elements

are distributed in sector II (dependent), which means that they have a weak or small thrust to the successful development of the fishery products processing business at pesantren, but a strong linkage with other sub-elements such as increasing the consumption of fishery products (A8), employment opening (A5) and the growing spirit of entrepreneurship of the students (santri) (A1).

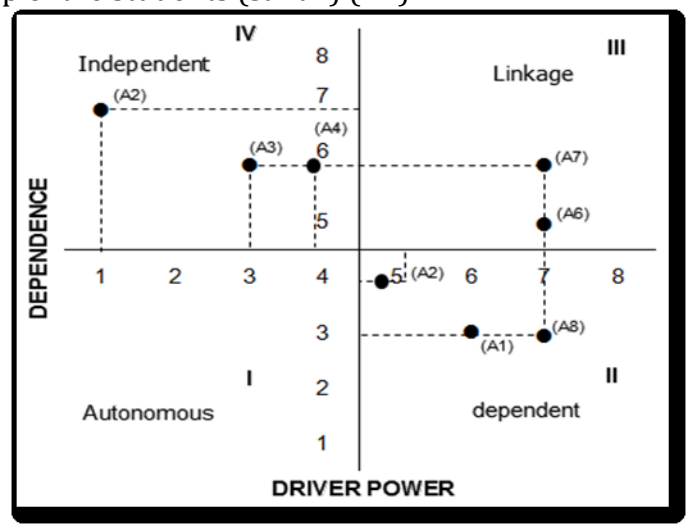

Figure 8: Matrix of driver power-dependence for element of the program's objective

3.5.The element of the activities required for planning action

The elements of the activities required for the fishery products processing business at pesantren comprise 12 sub-elements divided into five levels (Figure 9). The key sub-elements of the active element that will encourage other activities constitute kyai (pesantren leaders), who make policies regarding alignments and offer full support for the development of the fishery products processing businesses at pesantren (A1). The activity of the key sub-elements must exist before the other events, which are at the level above. The next action was the preparation of pesantren regulations regarding support for the development of the fishery products processing businesses at pesantren (A2) and the establishment of a work plan for the development of such businesses (A6). The subsequent activity is education and the training of human resources (A7), designing and developing access to technology and information (A9), designing and developing effective and efficient production systems (A10), creating and improving market access (A11), and planning and expanding access to source of capital (money) (A12). The next step is to create a conducive business climate and culture in the development of the fishery product processing business at pesantren (A8). Then are emotional relationships established between pesantren with graduates, pesantren sympathizers and the community in the pesantren environment, manifested in mutually beneficial economic activities (A3), building cooperation with other pesantren (A4), and building cross-sector collaboration in the development of fishery product processing businesses (A5).

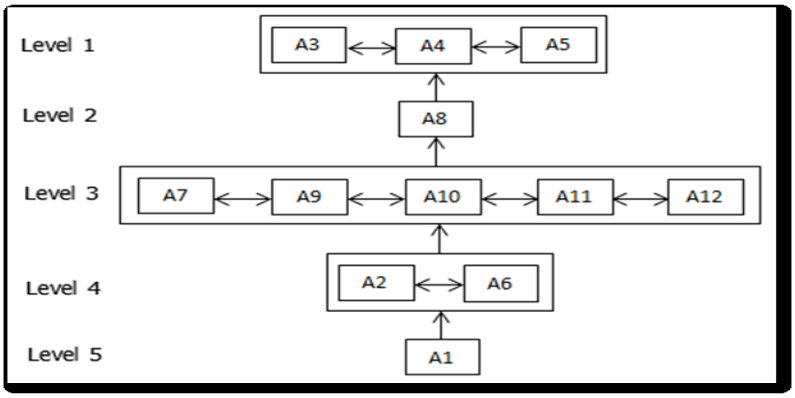

Figure 9: Structural model of the element of the activities required for

The driver power-dependence matrix (Figure 10) illustrates three sub-elements in sector IV (independent). The sub-elements are kyai (pesantren leaders), who make policies regarding alignments and provide full support for the development of fishery products processing businesses at pesantren (A1), preparation of pesantren regulations regarding support for the development of fishery products processing businesses at pesantren (A2), and the establishment of a work plan for the development of fisheries processing businesses here (A6). Therefore, the three sub-elements have a strong thrust but little dependence on the system. In contrast, the other sub-elements are in sector III (linkage), which means that they have a strong push and are bonded to one another, including education and the training of human resources (A7), designing and developing access to technology and information (A9), designing and developing effective and efficient production systems (A10), planning and improving market access (A11), and designing and developing access to sources of capital (money) (A12). create a conducive business climate and culture in the development of fishery product processing business at pesantren (A8), emotional relationships that have been established between pesantren with graduates, pesantren sympathizers and community in the pesantren environment, manifested in mutually beneficial economic activities (A3), building cooperation with other pesantren (A4), and building cross-sector collaboration in the development of fishery product processing businesses (A5).

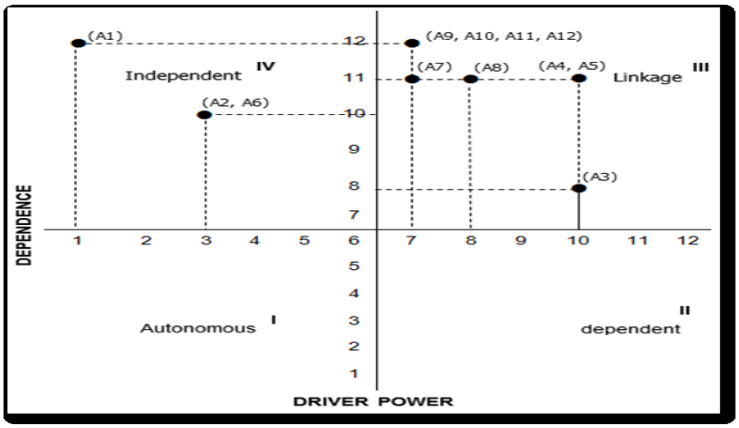

Figure 10: Matrix of driver power-dependence for element of the activities required for planning action

3.6.The Elements of the institutions involved in implementing the program

Elements of the institutions involved in the development of fishery product processing businesses consist of 12 sub-elements divided into six levels (Figure 11). Level 1 of the institutional elements includes research institutions and universities (A10), education and training institutions (A11), and financial institutions (A12). The government (A3) occupies level 2. Level 3 consists of associations of processing and the marketing of fishery products (A6), Indonesian fishermen associations (A7), production material supplier associations (A8), and fish supplier associations (A9). At level 4 can be found other pesantren (A2). At level 5 are organizations of students (santri) and graduates of pesantren (A4) as well as community organizations (A5). Pesantren (internal) (A1) occupy level 6. Key sub-elements of the institutional elements involved in the development of the fishery products processing business include pesantren (internal) (A1), Hence the key sub-elements can move others at the top level for the success of the development program for fishery products processing at pesantren.

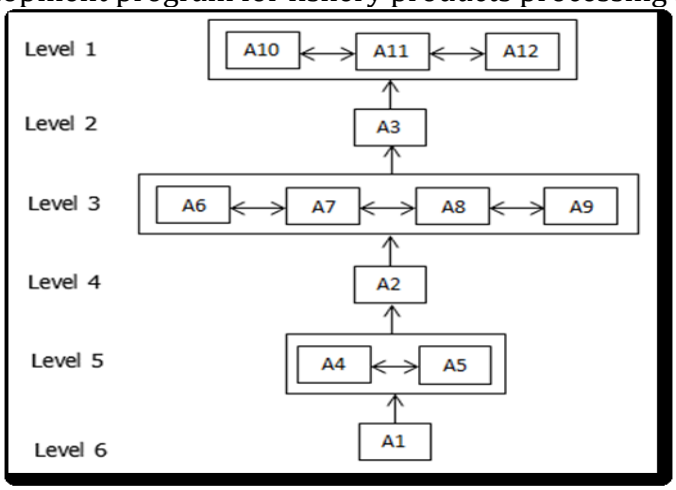

Figure 11: Structural model of the elements of institutions involved in implementing the program

Further analysis of the driver power-dependence matrix, as shown in Figure 12, shows that the sub-elements of the institutions involved in the development of the fishery product processing business at pesantren are divided into three sectors. In sector II are community organizations (A5), hence their driver is insufficient for the success of the system, yet they have strong links with other sub-elements. In sector III are research institutions and universities (A10), education and training institutions (A11) and financial institutions (A12), the government (A3), associations of processing and marketing of fishery products (A6), Indonesian fishermen associations (A7), production material supplier associations (A8), fish supplier associations (A9), other pesantren (A2), and organizations of students (santri) and graduates of pesantren (A4). Therefore, these sub-elements have strong thrust and a strong relationship with other sub-elements for the success of the system. In sector 6 are sub-elements of pesantren (internal) (A1), which means the pesantren (internal) have a strong driving force for the success of the system, but a weak relationship with other sub-elements.

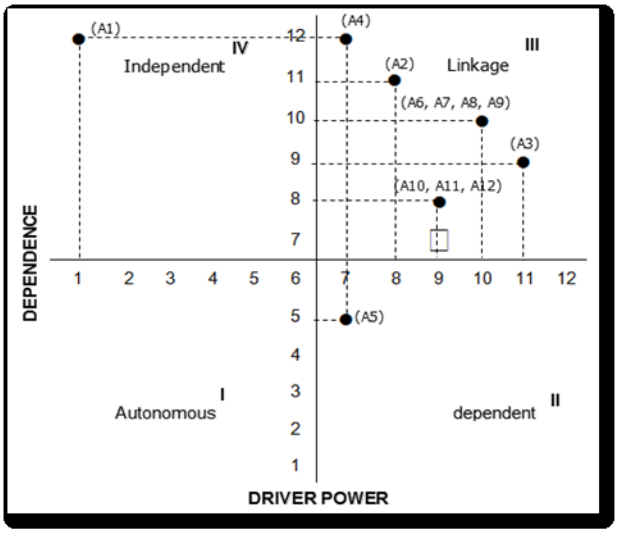

Figure 12: Matrix of driver power-dependence for elements of the institutions involved in implementing the program

The results of structuring all elements in the development of the fishery product processing business in the pesantren yield key sub-elements as shown in the following diagram:

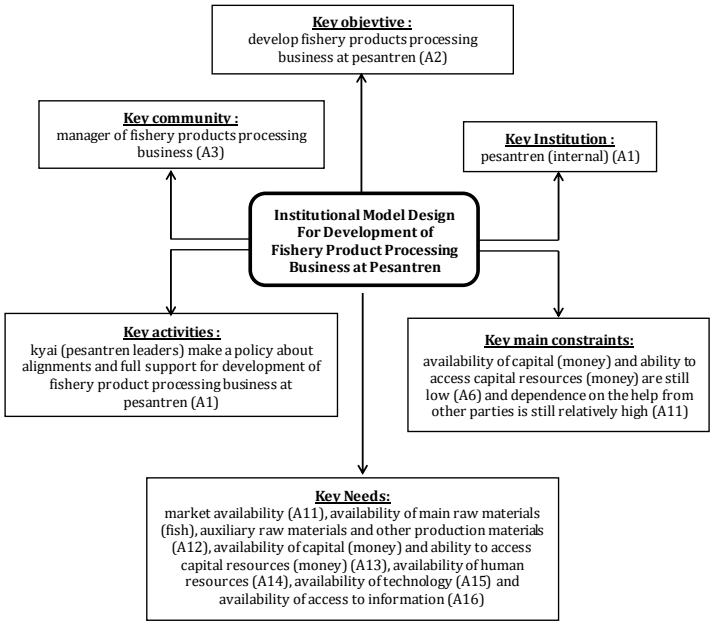

Figure 13: Results of structuring all elements in the development of the fishery products processing business at pesantren

From the element structure in Figure 13, it can be seen that in order to achieve the goal of realizing an influential institution in developing a fishery products processing business in pesantren, it is necessary to establish policies from the kyai (pesantren leaders) regarding partiality, as they are central to determining the conditions of pesantren life. Also, the degree of social capital of pesantren is determined by the social capital of the kyai (pesantren leaders) (Rudi and Haikal, 2014), and social capital can be

transformed into excellence to attain economic benefits (Yustika, 2008). In order to ensure the production process runs effectively in the development of the fisheries processing business in the pesantren, market availability, the availability of critical raw materials (fish), auxiliary raw materials and other production materials, capital availability and capital access capabilities, availability of human resources, availability of technology and availability of access to information are all required. On the other hand, the low availability of capital represents an obstacle and solutions must be found by reducing dependence on the help of other parties. Pesantren must work to realize their economic independence, vision, and mission in the field of religious and social education (Pradini et al., 2017). The key institutions in this regard are the pesantren themselves (internal). At present, the organization and institution of pesantren have not gone well and remain dependent on one figure: the kyai (pesantren leaders). Indeed, pesantren continue to lack the courage to make breakthroughs or create networks, whether with other pesantren or alternative institutions (Faozan, 2006). For the development of a fishery product processing business at the pesantren to run as expected, it must be led by a manager who is professional, honest and responsible.

In general, the current institutional conditions of pesantren at Situbondo Regency are too weak to support the development activities of a fishery product processing business. Therefore, without a change in the institutional model of the existing pesantren, the development activities of fishery product processing business at the pesantren of Situbondo Regency will run slowly or not work at all.

4.CONCLUSIONS AND RECOMMENDATIONS

There are six elements of the system with critical sub-elements that play an essential role in the successful design of institutional models that require attention. There are known as 1) the affected community sector (manager of fishery products processing business), (2) needs of the program (market availability, availability of primary raw materials (fish), auxiliary raw materials and other production materials, availability of capital (money) and ability to access capital resources (money), availability of human resources, availability of technology and availability of access to information), (3) main constraints of the program (availability of capital (money) and the ability to access capital resources (money) remain low, and dependence on the support of other parties is still relatively high), (4) the objective of the program (develop fishery products processing business at pesantren), (5) activities required for planning action (kyai (pesantren leaders) to create a policy about alignments and provide full support for the development of a fishery product processing business at pesantren), and (6) institutions involved in implementing the program (pesantren (internal)).

We suggest that for the successful development of fishery product processing businesses at pesantren, we must pay attention to the unique culture of pesantren, with the principle of both maintaining old traditions and improving new traditions.

5.ACKNOWLEDGEMENTS

The author would like to thank KHR. Azaim Ibrahimy as the Head of Pesantren Salafiyah Syafi'iyah Situbondo Indonesia for moral support for this research.

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