Design of the Needs Model for the Development of Young Generation Interests in the Agricultural Sector in Banyuwangi Regency.pdf

by

Submission date: 05-Dec-2022 07:10AM (UTC+0700)

Submission ID: 1971198202

File name: Design of the Needs Model for the Development of Young Generation Interests in the Agricultural Sector in Banyuwangi Regency.pdf (611.44K)

Word count: 3620

Character count: 19570

Design of the Needs Model for the Development of Young Generation Interests in the Agricultural Sector in Banyuwangi Regency

Design of the Needs Model for the Development of Young Generation Interests in the Agricultural Sector in Banyuwangi Regency

Muksin [1*], I Juanda [1], N D Wahyono [1], E Eliyatiningsih [2], I Harlianingtyas [2], D Purwoko [3]

[1] Agribusiness Departement, Politeknik Negeri Jember, Indonesia
[2] Department of Agriculture Production, Politeknik Negeri Jember, Indonesia
[3] The Indonesian Institute of Science (LIPI)

[*] muksin@polije.ac.id

Abstract. The agricultural sector is the leading sector of the Banyuwangi Regency. However, the contribution of the farming sector to the Gross Regional Domestic Product (GRDP) of Banyuwangi Regency continues to decline by up to 30% in 2019. The decline in the agricultural sector's contribution to the GRDP of Banyuwangi Regency is partly due to the declining interest of the younger generation in the farming industry so that the regeneration of agricultural, human resources continues very slow. This study aims to analyze the strategy of developing the younger generation's interest in the Banyuwangi Regency. The analytical method used is Interpretative Structural Modeling (ISM) to produce designs according to conditions. The results of the analysis show that the agricultural preference of the younger generation is digital-based agricultural cultivation. The strategy that needs to be developed is local government policy. Local Government policy is a critical factor in developing young people's interest in the agricultural sector in Banyuwangi Regency.

1. Introduction

The Indonesian agricultural sector is the sector that ranks third as the sector with the most considerable contribution to the increase in the National Gross Domestic Product (GDP) with a contribution value of 12.7% [1]. Thus, this condition causes the agricultural sector to become a superior sector in several regions in Indonesia, one of which is in Banyuwangi Regency.

The agricultural sector was able to rank first in the increase in the Gross Regional Domestic Product (GRDP) of Banyuwangi Regency until 2019, with a contribution rate of 30%. However, this figure is a decrease from the previous year. The contribution of the agricultural sector decreased by 1.84% from 2018 [2].

Youth's interest in the agricultural sector is one of the problems that need special attention [3,4]. This condition can lead to non-optimal regeneration of farmers, especially young farmers, to the threat of agricultural sustainability due to the absence of rural youth who will continue the agricultural sector. According to BPS data (2020), in 2019, the number of workers in the agricultural sector fell from 33% to 29% in the last five years [1]

Unfavorable demographic structures include older farmers (over 55 years old) whose number is increasing while the younger workforce is decreasing [5]. The declining interest of youth to work in the agricultural sector is one of the critical problems being faced in developing the agricultural sector in

Indonesia, causing the regeneration of agricultural human resources not to work well [6]. The research revealed that the lack of youth participation in agricultural activities was caused by a lack of technical knowledge and experience in agriculture [7]. Whereas the sustainability of the farm requires the role of all parties and integrase between agricultural lines both on-farm and off-farm [8].

Traditional agricultural management, however, affects the lives of rural communities [9]. Traditional agricultural management is also one of the things that makes the younger generation not want to do activities in the field of agriculture; this was conveyed in a webinar held by the Ministry of National Development Planning. According to the National Development Planning Agency (Bappenas), the reduced number of farmers use traditional farming systems and have not switched to modern or digital farming systems, which are currently becoming a trend and potential for the young millennial generation.

The model of developing the interest of young farmers needs to be done to realize the regeneration of agricultural actors and maximize the role of youth in supporting the farm sector, especially in the Banyuwangi Regency. The analysis of the factors needed to develop the interest of the younger generation in the agricultural industry is carried out by identifying all the aspects required and selecting the factors that correlate with the needs of the youth interest development program in the farm sector Banyuwangi Regency. This analysis is carried out by comparing the opinions of experts (experts) using the geometric mean (geomean). After obtaining the factors that correlate with the program's needs, then analysis using Interpretative Structural Modeling (ISM) is carried out to structure these factors to find out which factors are most needed and have high power drivers, so their existence needs to be maximized.

2. Method

This research was conducted in Banyuwangi Regency for approximately 3 (three) months, starting from May 2021 to July 2021. The data used in this study were primary and secondary. The preliminary data in this study came from interviews with experts, field observations, and distributing questionnaires to experts. The secondary data in this study were sourced from the literature taken from various sources.

Respondents in the study are experts (experts) who can assess development factors. The respondents in this study were the Head of the Banyuwangi Regency Agriculture Office as the highest policyholder in the agricultural sector in Banyuwangi Regency, the Head of the Food Sector and other Heads of Division in charge of developing the interest of the younger generation towards agriculture as one of its activities, agricultural extension workers, agricultural observers, academics who have the capacity and capability in the farming sector and the development of the farm sector in Banyuwangi Regency.

Processing and analysis of research data were carried out using Interpretative Structural Modeling (ISM) analysis. The ISM method is used to formulate alternative strategies generated from the highest preferences for the younger generation. Analysis with ISM using DSS V.1 PRE-NET (Policy Research Expert Network) software (PRE-NET, 2010) to develop alternative decision models for improvement and design a structural model of the factors needed in the interest development program young people in Indonesia. Banyuwangi Regency.

Before carrying out the analysis using ISM, a multiparticipant comparison assessment needs to be carried out to determine the sub-elements that correlate with program needs. There are 18 sub-elements of program needs that have previously been determined based on interviews with experts (experts).

Assessment of the sub-elements: Interpretative Structural Modeling was carried out using a Likert scale with a range of 1 – 4, with the information: 1) Very unimportant (score = 1). 2) Not important (score = 2). Important (score = 3). Very Important (score = 4). The mean value taken from the calculation of the geo-mean is 2.75 out of a scale of 4. This rating is substantial enough to maintain the criteria below. Consideration of the median and mode values of 3 or 4 validates the importance of the selected criteria. Sub-elements with a value of 2.75 from a scale of 1-4 or above can be categorized as sub-elements considered important [10].

3. Result and Discussion

Multiparticipant Comparative Assessment was conducted to determine the participation value of the participants involved in assessing the sub-elements of each ISM element. The geomean analysis results show two invalid sub-elements, namely political and monetary stability and the participation of regional operators. Invalid sub-elements are sub-elements with geometric average values below 2.75. Invalid sub-elements have a low relevance and level of influence on the needs of such development programs. Thus, the analysis of the needs of the younger generation development program to the agricultural sector in Banyuwangi Regency does not use both sub-elements.

The 16 valid sub-elements, namely elements that have a geometric mean value above 2.75, are identified and used in the ISM analysis, namely Human Resources for Young Generation Farmers (4.00), Infrastructure (3.18), Agricultural Production Facilities (2 .93), Cultivation Technology (3.78), Technology Industry (3.78), Capital (3.37), Business Management (3.10), Financial Management (2.93), Counseling (3.78), Market Information System (3.37), Agricultural Information System (2.93), Local Government Policies (3.78), Industries Engaged in the Agricultural Sector (3.18), Assessment and Technology Transfer (3.57), Institutional Support (3.10), and Availability of Agricultural Data and Information (3.78). Table 1. shows the valid sub-elements used in ISM analysis.

Table 1. Identification of the Sub Elements of the Needs of the Program

Sub Element Code	Sub Element
E1	Human Resources of Young Generation Farmers
E2	Infrastructure
E3	Agricultural Production Facilities
E4	Cultivation Technology
E5	Industrial Technology
E6	Capital
E7	Business management
E8	Financial management
E9	Agricultural Extension
E10	Market Information System
E11	Agricultural Information System
E12	Local Government Policy
E13	Industries Engaged in the Agricultural Sector
E14	Assessment and Technology Transfer
E15	Institutional support
E16	Availability of Agricultural Data and Information

Based on identifying sub-elements, formulate contextual relationships between the elements set using the Structural Self Interaction Matrix (SSIM). The next stage is to convert the SSIM into a Reachability Matrix (RM). RM is a binary matrix. The purpose of converting SSIM into a binary matrix is to know which sub-elements have the highest and lowest driving power. In addition to knowing the sub-elements that have the highest and lowest dependence levels. Table 2. shows the Structural Self Interaction Matrix (SSIM).

The sub-element with the highest driving power (driver power) is the Local Government Policy (E12), with a driver power value of 16. The sub-element with the lowest driving power is Financial

Management, with a power driver value of 1. The sub-elements that have the highest level of dependence are Agricultural Production Facilities (E3), Business Management (E7), and Financial Management (E8). The sub-elements that have the lowest level of dependence are Local Government Policy (E12). Further formulating the Matrix of Impact Cross Multiplication Applied to Classification (MICMAC) to analyze a variable's driving power and dependency. Figure 1 describes the MICMAC Analysis.

Table 2. Matrix of SSIM

	E1	E2	E3	E4	E5	E6	E7	E8	E9	E10	E11	E12	E13	E14	E15	E16
E1		V	V	V	V	O	V	V	V	X	X	A	X	X	X	X
E2			V	V	V	A	V	O	A	A	A	A	A	A	A	A
E3				X	X	A	V	V	A	O	A	A	A	A	A	O
E4					X	A	V	V	A	O	A	A	A	A	O	O
E5						A	V	V	A	A	A	A	A	A	A	O
E6							V	V	O	O	O	A	A	A	O	O
E7								V	O	A	A	A	A	A	O	O
E8									O	A	A	A	A	A	O	O
E9										X	X	A	X	X	O	O
E10											X	A	X	A	O	O
E11												A	V	X	X	X
E12													V	V	V	V
E13														A	O	O
E14															X	X
E15																O
E16																

The results of MICMAC analysis showed that there are no sub-elements in quadrant I or quadrant of autonomous factors. This condition indicates that no element has weak driving power and dependence. Thus all parts have a relationship and can affect the development of the younger generation towards the agricultural sector in Banyuwangi Regency.

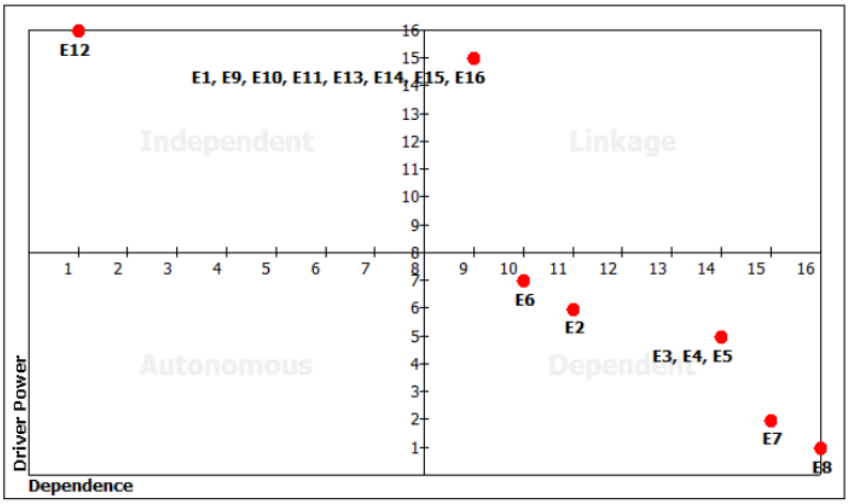

Figure 1. Analysis of MICMAC

There is a sub-element that is in an independent quadrant. This quadrant is a factor with high driving power and low dependence. Local Government Policy (E12) is in the position of a separate quadrant. This condition means that government policy is an element that has high driving power and weak dependency. Thus, government policy is a critical factor in developing the younger generation's interest in the agricultural sector in Banyuwangi Regency

There are eight sub-elements in the linkage quadrant. These quadrants are factors that are interconnected and influence each other. The eight sub-elements are the human resources of young generation farmers, agricultural extension, market information systems, agricultural information systems, industries engaged in the farming sector, assessment and transfer of technology, institutional support, and availability of farm data and information.

Seven sub-elements are in the dependent quadrant. Dependent quadrants are factors with low driving power and high dependence. Other factors very easily influence the elements in this quadrant. The factors in this quadrant are Infrastructure, Agricultural Production Facilities, Cultivation Technology, Industrial Technology, Financier, Business Management, Financial Management.

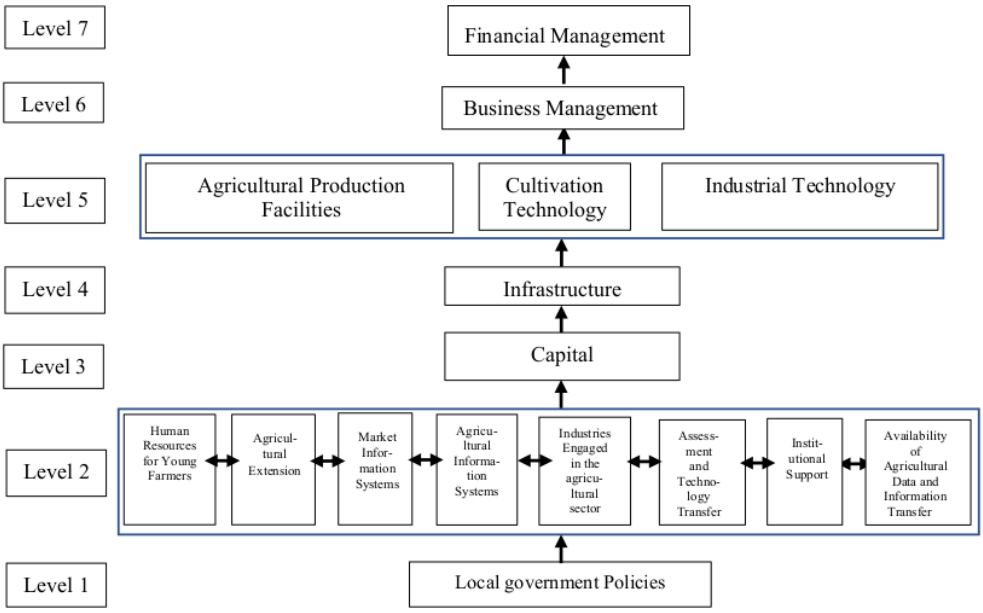

Figure 2. Digraph Program Development Objectives

Based on the analysis results, it can be seen that there are seven levels in the digraph Interpretative Structural Modeling (ISM). This level shows the strategic priority structure so that through this structure, it can be seen what elements need to be considered first to be able to influence other aspects.

At level 1 of the graph, there is one need from the program, namely business management. These needs include planning, organizing, leading, and controlling the financial cycles in an agricultural enterprise. Business management is important and influences business [11]. Conditions at this level can affect other requirements above them but can also be influenced by the needs in the level below. Thus, the fulfillment of the markets at level 1 can be met when the needs at level 7, level 6, level 5, level 4, level 3, and level 2 have been met.

At level 2 digraph, there is one need from the program: business management; this need includes planning, organizing, leading, and controlling a business in the agricultural sector. Needs at this level can affect other conditions above it but can also be influenced by requirements at the level below it. Thus, the fulfillment of the markets at level 2 can be met when the needs at level 7, level 6, level 5, level 4, and level 3 have been met.

At level 3 digraph, there are three needs of the program interconnected and mutually influence one another, namely agricultural production facilities, cultivation technology, and industrial technology. Conditions at this level can affect other needs that are above it but can also be influenced by those at the level below it. The fulfillment of the requirements at level 3 can be met when the needs at level 7, level 6, and level 5 and 4 have been met.

At level 4 digraph, there is one need from the program, namely infrastructure. This need includes the development of adequate infrastructure in the agricultural sector, such as easy road access to agricultural land, adequate lighting, good irrigation networks, etc. Needs at this level can affect other conditions that are above it but can also be influenced by requirements at the level below. Thus, the fulfillment of the needs at level 5 can be met when the needs at level 7, level 6, and level 5 have been met.

At level 5 digraph, there is one need from the program, namely capital. This need includes sources of capital for businesses in the agricultural sector. Conditions at this level can affect other elements of conditions above it but can also be influenced by aspects of needs at the level below it. Thus, the fulfillment of the requirements at level 5 can be met when the needs at levels 7 and 6 have been met.

At level 6 digraph, there are eight needs from related programs mutually influencing one another: human resources for young farmers, agricultural extension, market information systems, agricultural information systems, industries engaged in the farming sector, assessment and development technology transfer, institutional support, availability of farm data and information. A clear program is needed to influence the perception of young groups [12]. These needs can affect the conditions at the level above. However, this need can be influenced by local government policies. Thus, the fulfillment of the requirements at level 6 can be met when the needs at level 7 have been met.

At level 7 digraph, there is one need for an independent program, namely local government policies. This local government policy includes Banyuwangi Regency government policies in responding to the lack of interest of the younger generation in agriculture in Banyuwangi Regency. In this case, proposed by the Department of Agriculture and Food Crops, local government policies related to the agricultural sector must be able to take sides with farmers so that farmers and new agricultural business actors are motivated to continue doing business in agriculture.

4. Conclusion

Government policy is a sub-element of the program's needs that has the highest driving factor (driver power) in the development of young people's interest in the agricultural sector in the Banyuwangi Regency. Efforts to attract the younger generation's interest require a draft of local government policies related to the development of the farm sector. Government policies related to the agricultural industry can include agricultural and water land, agricultural and other integration especially tourism, fertilizer, seed, human resource policies, technology-related policies, post-harvest-related policies, and other policies that support regional farmers. The draft policies based on the appropriate needs sub-element will impact changing the perspective of the younger generation towards the agricultural sector to be more positive, especially in Banyuwangi Regency.

5. Acknowledgments

Acknowledgments for the completion of this research, which is annual research. Special thanks to the Ministry of Research and Technology, Politeknik Negeri Jember, and the Banyuwangi Regency Agriculture and Food Service, as institutions that have supported completing the learning process contained in this research. We also thank the younger generation, farmers, agricultural business actors, and all parties involved in Banyuwangi Regency who have helped smooth research activities. Hopefully, this research can contribute to the development of agribusiness in the Banyuwangi Regency.

References

[1] BPS 2020 Badan Pusat Statistik. PDB Indonesia Triwulanan 2016-2020 98
[2] Banyuwangi B K 2020 *Kabupaten banyuwangi dalam angka 2020* (Banyuwangi: BPS Kabupaten Banyuwangi)
[3] Muksin, Hari R, Tanti K and Titik I 2018 The main problems of na-oogst tobacco agribusiness in Jember *IOP Conf. Ser. Earth Environ. Sci.* **207** 012012
[4] Ng'atigwa A A, Hepelwa A, Yami M and Manyong V 2020 Assessment of Factors Influencing Youth Involvement in Horticulture Agribusiness in Tanzania: A Case Study of Njombe Region *Agriculture* **10** 287
[5] Insani F R, Setiawan I and Rasiska S 2018 Determinan Partisipasi Dan Peran Petani Muda Dalam Pengembangan Pertanian Ramah Lingkungan Di Desa Cisondari, Kecamatan Ciwidey, Kabupaten Bandung, Jawa Barat *Mimb. AGRIBISNIS J. Pemikir. Masy. Ilm. Berwawasan Agribisnis* **4** 153
[6] Detia Tri Yunandar, Sunarru Samsi Hariadi and Alia Bihrajihat Raya 2020 Nilai Keyakinan Diri dan Sikap Pemuda Terdidik terhadap Wirausaha Pertanian *Pros. Semin. Nas. Pembang. dan Pendidik. Vokasi Pertan.* **1** 282–9
[7] Effendy L, Maryani A and Azie A Y 2020 Faktor-Faktor yang Mempengaruhi Minat Pemuda Perdesaan pada Pertanian di Kecamatan Sindangkasih Ciamis *J. Penyul.* **16** 277–88
[8] Muksin, Rizal and Iskandar R 2021 Analysis of the Sustainable Status of Post Disaster Crop Production in Sigi Regency, Central Sulawesi Province *IOP Conf. Ser. Earth Environ. Sci.* **672** 012031
[9] Bjørkhaug H and Knickel K 2018 Rethinking the links between farm modernisation, rural development and resilience *J. Rural Stud.* **59** 194–6
[10] Mohapatra R K, Yavar A, Marg J, East B, Mohanty R P and Dhalla R S 2010 Reengineering of Logistics Value Chain of a Petroleum Products Marketing Company – Formulation of a Performance Measurement System *Int. Conf. Ind. Eng. Oper. Manag.* 190–6
[11] Cahill H and Dadvand B 2018 Re-conceptualising youth participation: A framework to inform action *Child. Youth Serv. Rev.* **95** 243–53
[12] Simões F and Brito do Rio N 2020 How to increase rural NEETs professional involvement in agriculture? The roles of youth representations and vocational training packages improvement *J. Rural Stud.* **75** 9–19

Design of the Needs Model for the Development of Young Generation Interests in the Agricultural Sector in Banyuwangi Regency.pdf

ORIGINALITY REPORT

22%	22%	15%	11%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

11%

★ iopscience.iop.org

Internet Source

Exclude quotes	On	Exclude matches	Off
Exclude bibliography	On		