



Structural model of main problems to developing agribusiness tobacco-based non-smoking diversified products in jember

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Abstract. Agribusiness tobacco has significance in the National economy. One of the tobacco-producing areas is Jember district, East Java. Tobacco agribusiness has driven the economy due in no small amount of labour absorption and the impact on other business sectors. Tobacco farming has cultured and heritage. But there is the fact that the main product of cigarette tobacco has become controversial. The controversy arose as a result of the negative impact of cigarettes on health. Efforts to diversify non-smoking tobacco products are urgent and essential. Diversification efforts will facilitate the sustainability of tobacco agribusiness while creating added value for tobacco farmers. This research aims to structurally analyze and model the main problems in the development of tobacco agribusiness based on non-smoking diversified products. Research methods use library studies and expert judgment to identify the constraints of agribusiness development, as well as use Interpretive Structural Modelling (ISM) analysis to create structural models. The results showed from 10 conditions, the factor of farmers' ability to diversify tobacco products and the high reliance of farmers on tobacco export companies are the main problems. They are critical factors for which must be overcome to develop agribusiness based on non-smoking diversified products.

1. Introduction

Tobacco agribusiness in Jember district has contributed a source of income for most farmers and other businesses. These conditions provide multiply economic effect contributing to the pulse of the welfare of jember people. Tobacco agribusiness shows an essential position for The Jember And encourages to continue to make sustainability efforts in the agribusiness. The sustainability of the business or farming is related to the large number of workers involved in tobacco farming [1].



In addition to these problems, tobacco agribusiness is still faced with the fact that cigarette consumption hurts health. The United Nations and followed by Indonesia stated that cigarettes are the cause of human health problems, so efforts are needed to reduce their production. Jember Regency also made similar efforts through efforts to restrict tobacco land area and tighten supervision of cigarette consumption by the younger generation, and supervision operations on illegal cigarette production. Health issues are raised and become a problem in tobacco farming [2].

For tobacco farmers, especially farmers, restrictions on cigarette production will positively affect tobacco demand and affect the income and welfare of tobacco farmers. The condition of the problem faced by farmers and tobacco farmers needs to be researched to obtain solutions in the form of productive tobacco businesses that can reduce the pressure even replacing farmers' dependence on cigarette factories and the orientation of tobacco leaves for cigarette production. Tobacco agribusiness requires alternative efforts in the form of non-smoking tobacco derivative products so that the sustainability of tobacco agribusiness can continue to be carried out without acute reliance on cigarette manufacturers to produce cigarettes. Thus, efforts are needed to make alternative efforts to deversification of tobacco products. The business is expected to provide added value to farmers [3].

Based on this consideration, this research aims to analyze sub-elements or factors on the main constraints that influence in driving the development of agrotourism based on tobacco agribusiness, formulate structural models based on the main conditions of tobacco agrotourism development, and set critical factors on the main obstacles to dissipated other constraints. Determination of key factors and structural models of the main barriers can be used as a strategy for the development of tobacco agrotourism as an alternative business of non-cigarret tobacco derivative products.

2. Method

This research uses a quantitative and qualitative approach. Quantitative methods for mapping and identifying elements, and sub-elements with geometry mean calculations—qualitative methods of using ISM, determining sub-sub-elements in the development of tobacco agrotourism businesses. The design of agrotourism as an effort to develop PDTNR's business is carried out through mapping the needs, and the structure of the elements that become development. The appropriate method for carrying out such activities is the Interpretative Structural Modelling (ISM) method. The research steps are detailed consist of (i) library studies, and field observes determines elements and sub-elements of agrotourism development, (ii) interviews determine selected elements and sub-elements, (iii) ranking based on geomean (iv) modelling of elements and sub-elements using ISM.

Data on the determination of elements and sub-sub elements of tobacco agrotourism development is obtained from library studies, field observations and in-depth, in-depth interviews with tobacco agribusiness experts, local governments and agrotourism experts. Talks have been conducted with Tobacco researchers, Agricultural Counselors, Agricultural Mantri, Lecturers, and tourism researchers. Geomean measurement and ISM analysis will use intelligence judgment from six experts. The implementation of the research is a tobacco centre covering the sub-districts of Ajung, Balung, Summersari, and Ambulu jember districts.

3. Result and Discussion

3.1. Tobacco Business as a Tourist Attraction

Tobacco farming has distinct characteristics with morphological characteristics of its leaves that are wide green. Its growth period of approximately six months will give rise to and provide a green expanse along the area of the tobacco planting land. The distinctive green colour of this farm becomes an attraction of its own considering the green spectrum of flat plants and can be seen along as far as the eye also provides happiness for those who see it. Shades of green like tapestries will give potential appeal to community groups who have never known tobacco plantations. Such dynamic farming conditions in tobacco businesses can have appeal that can be offered [4].



Agricultural activities carried out in the form of maintenance of tobacco crops will also provide a typical rural attraction. Crowds in the morning with the large workforce of both men and women who carry out work activities also give a distinct rustic feel. It is this typical rural landscape that is an attraction for people who have never seen the expanse of tobacco plantations.

Tobacco planning activities are carried out by the public in the form of public plantations and carried out by private companies as well as government-owned companies. The difference in the implementation of the cultivation business has different characteristics. This difference in organizing patterns also makes the attraction to the expanse, area, and culture techniques. The differences in patterns include the absence of tobacco that is attempted in the form of tobacco under the auspices or abbreviated as TBN. TBN is tobacco cultivation that utilizes waring or net cover to cover tobacco cultivation areas. TBN is one of the attractions and gives a great sense of curiosity to people who have or not known about tobacco cultivation.

Fermentation or drying activities in warehouses, both public warehouses and building owned by private companies and the government are attractions that can be shown to the public. In the drying process, there are different techniques and drying patterns, and this gives an interest that is not yet known by the public. Also, some activities for drying can also provide its appeal because the drying pattern carried out by the community and private companies as well as the plantations of state-owned companies has some differences.

3.2. Influential Elements and Sub Elements in Tobacco Agrotourism Development

To develop an alternative business of a-oogst tobacco farmers into a diversified product other than cigarette products, then the groups that will be affected in this activity and the obstacles faced the need to be considered. Based on literature studies and discussions with limited experts and researchers can be outlined several elements and sub-elements that affect the development of tobacco agrotourism. Elements of constraints in developing tobacco should be a priority to identify.

The obstacles in agrotourism development are the difficulties that may be faced in agrotourism development. In this context, the main constraints of agrotourism development include limitations on the human resources capacity of the perpetrator, the utilization of technology, the role of government or policymakers, and the condition of tobacco agrotourism facilities or infrastructure.

Library search results and expert assessments using geomean-based categorization show that the main constraints in agrotourism development are shown in table 1.

Table 1. Key constraints on agrotourism development

No	Variable	Geomean
1	Farmers' ability to diversify tobacco products remains low.	3.147345
2	Demand for non-smoking tobacco derivative products supporting agrotourism has not been large	3.301927
3	Technology for the conversion of non-smoking tobacco products has not evolved	3.086164
4	Farmer's ability to manage tourism based on farming is still low	3.086164
5	Not least the commitment of the Government and related institutions in facilitating tobacco agribusiness, especially to farmers	2.941683
6	Tourism-based tourism access facilities and infrastructure are inadequate	3.147345
7	Trust between farmers and tobacco entrepreneurs remains low	3.301927
8	Unclear support for agrotourism regulations and policies	3.086164
9	Tourism promotion is not maximal	2.803966
10	High reliance on tobacco companies	3.086164

Based on the expert assessment, that sub-element Demand for non-smoking tobacco derivative products support agrotourism has not been great, and Mutual Trust (Trust) between farmers and tobacco entrepreneurs is still low are obstacles that have an extensive association in the constraints of the development of tobacco agrotourism. Internally the role between actors still needs to be maximized in cooperation; on the other hand, it is necessary efforts to facilitate that non-smoking tobacco derivative



products can be produced. At the same time, people need to educate that tobacco products are not just cigarettes but other ingredients that are beneficial to the needs of daily life.

3.3. *Main Obstacles faced in Tobacco Agrotourism Development*

Based on the results of the analysis using Reachability Matrix (RM), it can be known that the ability of farmers in the business of diversifying tobacco products is still low (E1) and the high reliance of farmers on tobacco companies (E10) has the highest value of power drivers which is 8. The high value of driver power indicates that farmers' ability to diversify tobacco products is still low and that the increased reliance of farmers on tobacco companies is the most vital driving factor in the development efforts of agrotourism in Jember Regency. The ability of farmers to try to show the power of farmers in managing their business to be productive. A productive company will provide top products that can be delivered or marketed to consumers. In the context of farmers' knowledge of diversification of non-smoking tobacco products will give essential value as a starting point in developing agrotourism that does not rest solely on the activities of the cigarette production process.

The high reliance of farmers on tobacco companies also has a high value of power drivers. This leads to the fact that a large number of farmers in other stakeholders will lead to a less healthy trading situation. Where farmers do not have relative bargaining power with the company, this condition certainly complicates efforts to complete the opportunities to increase agriculture in agrotourism. The dependency will decrease self-reliance, and this condition will make it challenging to develop new businesses because it is difficult to see new opportunities.

The variable ability of farmers in managing tourism based on agriculture is still low (E4) and Facilities and infrastructure tourism access based on farming is inadequate (E6) has the lowest value of power drivers which is 1. Both variables indicate that the ability of farmers in managing tourism based on agriculture is still soft and the facilities and infrastructure of tourism access based on agriculture is not adequate is the weakest driving factor in tobacco agrotourism development efforts in Jember Regency. Both variables relatively do not have a considerable impact on the development of tobacco agrotourism business in Jember Regency.

Also, when viewed from the level of dependency (dependence) it can be known that the ability of farmers in managing tourism based on agriculture is still low (E4), The facilities and infrastructure of tourism access based on agriculture are inadequate (E6). The promotion of tourism is not yet maximal (E9) has the highest value of dependence which is 6; this indicates that the third sub-element is a factor that has a high level of dependency. The ability of farmers in managing tourism based on agriculture is still low, the facilities and infrastructure of tourism access based on farming is not adequate, and tourism promotion is not maximal is the three essential elements in tourism development activities., The existence of these three sub-elements depends a lot on other sub-elements in the development. So it is known that these three elements are highly dependent and easily influenced by other elements.

Sub elements demand non-smoking tobacco derivative products support agrotourism has not been large /many (E2) has the lowest value of dependence which is 1, this indicates that both sub-elements are factors that have low dependence rates. Sub element Demand for non-smoking tobacco derivative products support agrotourism has not been massive in the efforts of tobacco agrotourism development in Jember Regency, this element is not dependent on other elements and is not easily influenced by other factors.

3.4. *Matrix of Impact Cross Multiplication Applied to Classification (MICMAC) Quadrant Analysis*

Matrix of Impact Cross Multiplication Applied to Classification (MICMAC) analysis, which is an analysis used to analyze the drive power and dependency power of a variable. MICMAC analysis can be seen in figure 1.

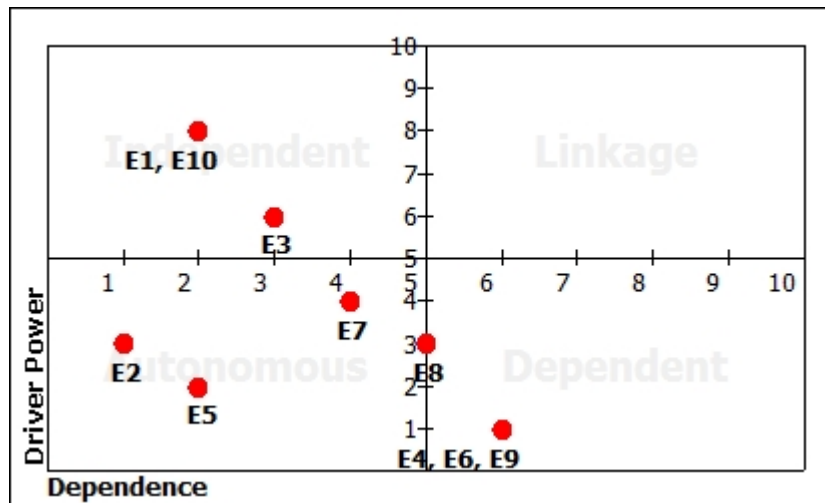


Figure 1. SubElement Sector Graph (MICMAC Analysis)

Based on the power and dependence power drivers, the sub-elements in the study can be classified into four groups, as explained below:

- Autonomous quadrants, sub-sub-elements located in these quadrants do not have high influence power and do not have a high dependency. In the autonomous quadrant of the existing sub-elements is the demand for non-smoking tobacco derivative products supporting agrotourism has not been large/many (E2), Not yet the full commitment of the Government and related institutions in facilitating tobacco agribusiness, especially in farmers (E5), and Mutual Trust (Trust) between farmers and tobacco entrepreneurs is still low (E7).
- Dependent quadrant, quadrant II is variable dependent which has low affect strength and high dependency. In the second quadrant, sub-element of farmer's ability to manage tourism based on agriculture is still low (E4), Facilities and infrastructure of tourism access based on agriculture are inadequate (E6), and tourism promotion is not maximal (E9). In his research, it is included in the category dependent. There is one element that is between quadrant I, which is an autonomous factor and quadrant II which is a dependent factor, that element Sub element Not clear support of regulation and agrotourism policy (E8). This indicates that the Unsanyrity of regulatory approval and agrotourism policy is an element that has low driving power and weak and robust dependence at the same time.
- Linkage quadrants, these sub-elements have both high influence power and increased dependency. The characteristics of the factors in this quadrant are that each action of this sub-sub-element will affect other factors that are above their level as well as the feedback effect on the aspect itself in that quadrant. Quadrant III is a quadrant for variable linkage. The results of this study show that there are no sub-elements categorized in quadrant factor III.
- Independent quadrant, i.e. factor in this quadrant has high influence power and low dependence. This factor represents quadrant IV, the results of the study found there are three sub-elements categorized on independent factors namely: Technology for the conversion of unconscionable non-smoking tobacco products (E3), The Ability of farmers in the business of diversifying tobacco products is still low (E1), The high reliance of farmers on tobacco companies (E10).

Based on the results of Micmac analysis can be known that In the quadrant autonomous sub-elements are demand for non-smoking tobacco derivative products supporting agrotourism has not been large/many (E2), Not least the commitment of the Government and related institutions in facilitating tobacco agribusiness, especially in farmers (E5), and Mutual Trust (Trust) between farmers and tobacco entrepreneurs is still low (E7).this indicates that the three sub-elements have weak driving power and weak dependence. So it can be ascertained that the three sub-elements do not have a direct association



with agrotourism development systems and do not yet have some strong relationships when developed today.

There are three elements that are in quadrant II, namely the dependent factor, namely Sub-elements. The ability of farmers to manage farm-based tourism is still low (E4), the facilities and infrastructure for access to agriculture-based tourism are inadequate (E6), and the promotion of tourism is not optimal (E9). This indicates that these elements are elements that have a weak driving force and strong dependence. The elements in this sector are dependent elements. On the dependent factor, the dynamics and development will be heavily influenced by the sub-elements that become independent sub-elements.

There is one element that is between quadrant I, namely the autonomous factor and quadrant II, namely the dependent aspect, this element is the sub-element. There is no explicit support for regulations and policies on agro-tourism (E8). This indicates that the unclear regulatory and policy support for agro-tourism is an element that has low driving power and dependence on being healthy and weak at the same time. This element needs to be studied carefully because the relationship between elements can be unstable, or it can also be a factor that needs to be considered in the development of a tobacco agro-tourism business in Jember Regency.

The results of this study indicate that there are no sub-elements that are categorized as factor quadrant III. Quadrant III is a linkage factor. Thus there are no sub-elements that cause the potential for an unstable relationship between sub-elements. The characteristics of this factor are the potential to have an impact on other sub-elements, and the feedback on the effect can potentially increase the effect of the development of the tobacco agro-tourism development program.

There are three sub-elements that are categorized on independent factors, namely: The technology for the conversion of non-smoking tobacco products is not yet developed (E3), the ability of farmers to diversify tobacco products is still low (E1), the high dependence of farmers on tobacco companies (E10). This indicates that these elements are elements that have strong driving forces and weak dependence so that these elements are key factors in the development of tobacco agro-tourism in Jember Regency as an effort to diversify non-smoking tobacco products. The involvement of sub-elements in the independent sector will encourage involvement Another sub-element in the tobacco agro-tourism development system. This sub-element is a constraint factor that has a significant influence on other factors. This means that the implementation of the tobacco agro-tourism development system in Jember Regency is essential for the existence of this sub-element, as well as encouraging all obstacles that have the potential to hinder the development of agro-tourism.

3.5. Structural Model of Agrotourism Development Program

Based on the results of the analysis, it can be seen that there are five levels in the Interpretative Structural Modeling (ISM) digraph, as shown in Figure 2. Each of these levels offers a layer of structure which is a hierarchy of relationships that need to be considered in the development of agro-tourism. Through this structural layer, it can be seen what elements need to be considered first in order to be able to influence other aspects.

At level 5, there are two elements that are interconnected, namely:

- The ability of farmers to diversify tobacco products is still low. This is related to the power of farmers to use raw materials for tobacco leaves the need for non-smoking tobacco products. The majority of 90% of the interviewed farmers did not understand whether tobacco could be used as a raw material other than cigarette raw materials.
- The high dependence of farmers on tobacco companies. The dependence of farmers in tobacco agribusiness, especially on companies, makes the value chain in agribusiness still need to be empowered. The dependence of farmers on companies causes farmers to lower their bargaining power. This condition causes the trade and pricing of tobacco from farmers to be generally still low, and it is considered that it is not yet sufficient to provide a fair price.

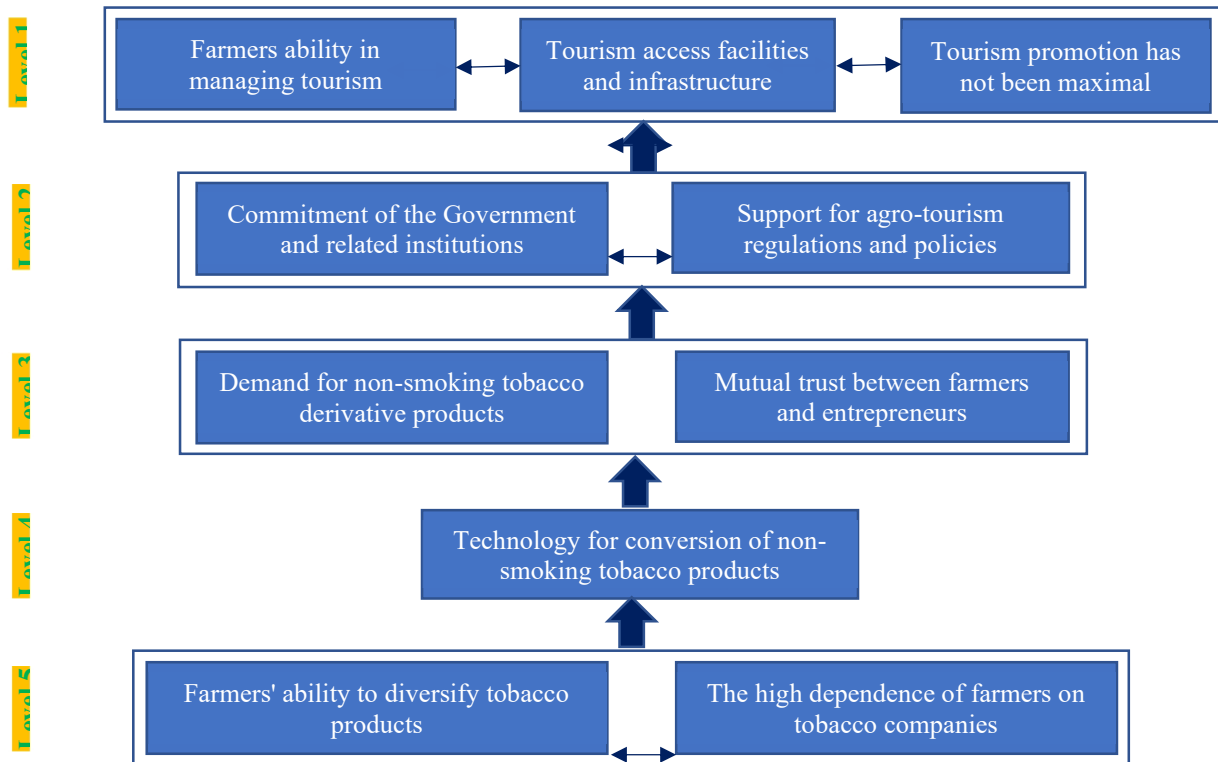


Figure 2. The structural model of agro-tourism-based development diversification of non-smoking tobacco products

Elements at level 5 are key factors in the development of na-oogst tobacco agro-tourism in Jember Regency. These elements are interconnected and affect the elements at the level above, namely the elements at level 4. This means that if the elements at level 5 are considered and optimized first, this will certainly have an effect on the elements above it. So the elements at level 5 are priority elements for improvement in the development of tobacco agro-tourism in Jember Regency.

At level 4, there is one element that can be influenced by the ability of farmers to diversify tobacco products is still low, and the high dependence of farmers on tobacco companies, namely technology for the conversion of non-smoking tobacco products has not yet developed. This means that the problem with the existence of technology for the conversion of non-smoking tobacco products is not yet developed. The dynamics are influenced by the low ability of farmers to diversify tobacco products and the high dependence of farmers on tobacco companies. Technology will be utilized in line with the need for efforts to process and produce tobacco derivative products and the existence of good cooperation between tobacco agribusiness actors.

At level 3, there are two elements that can be influenced by elements of technology for the conversion of non-smoking tobacco products that have not yet developed, namely the demand for non-smoking tobacco derivative products that support agro-tourism is not large/much, and mutual trust between farmers and tobacco entrepreneurs is still low. This means that the barriers associated with the demand for non-smoking tobacco derivative products that support agro-tourism are not large/many and mutual trust between tobacco farmers and entrepreneurs is still low. Most of it is influenced by the existence of technology for the conversion of non-smoking tobacco products has not yet developed. Technology for the conversion of non-smoking tobacco products is not yet developed, which will cause problems of low demand for non-smoking tobacco derivative products, and there is still potential for mutual distrust between farmers and entrepreneurs.



At level 2, there are two elements that can be influenced by elements at level 1, namely the lack of commitment from the Government and related institutions in facilitating tobacco agribusiness, especially for farmers and unclear support for agro-tourism regulations and policies. Government commitment and regulatory clarity mean two main things, namely the government's siding with smallholders in carrying out farming, including facilitating communication policies between farmers and entrepreneurs. Apart from that, another important effort is clear support for efforts to facilitate clear tobacco areas into tourist areas. The demand for non-smoking tobacco derivative products that support agro-tourism is not large/much, and the mutual trust (trust) between tobacco farmers and entrepreneurs is still low, so it will affect how the implementation of the commitment to partiality to the community and regulations to facilitate agro-tourism development can be carried out.

At level 1, there are three elements that are interconnected and able to be influenced by price stability and the previous elements, namely the ability of farmers to manage farm-based tourism is still low, the facilities and infrastructure for access to farm-based tourism are inadequate, and tourism promotion is not optimal. This means that these elements are highly dependent elements and are easily influenced by the elements at the previous level. The elements at this level are the last elements to be improved because there are other elements that have the ability to dynamize other elements.

4. Conclusion

The development of tobacco agro-tourism in the short term needs to consider efforts to overcome the low ability of farmers to diversify tobacco products and the high dependence of farmers on tobacco companies. The second obstacle is related to strengthening the capacity of farmers' human resources as well as the competence and understanding of farmers in doing alternative businesses besides tobacco as raw material for a cigar or cigar cigarettes. The main determinants of key sub-elements in driving the development of agro-tourism based on tobacco agribusiness as a non-smoking tobacco derivative product are (i) the ability of farmers to diversify tobacco products, and (ii) the high dependence of farmers on tobacco companies. The two elements provide information that a maximum effort is needed to understand tobacco which can be used as a raw material other than cigarette raw materials. Furthermore, minimizing the dependence of farmers in tobacco agribusiness, especially on companies to make the value chain in agribusiness, still needs to be empowered.

There are two important aspects in developing strategies and scenarios for policy selection based on the design of a structural model for agro-tourism development for the implementation of a business development strategy for non-smoking tobacco derivative products, namely the dimension of developing strategies for each layer of structure or factor and the dimension of development based on time-based on the consideration of human resource capabilities, management, the design and resources owned by the local government in developing the tobacco agro-tourism system so as to facilitate the sustainability of agribusiness and the welfare of tobacco farmers.

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