

EXTENDED ABSTRACT

THE FACTORS INFLUENCING THE ORGANIC PADDY PRODUCTION: CASE OF THE VAVUNIYA DISTRICT, SRI LANKA

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Abstract

The objective of the study is to examine the determinants of organic paddy farming in Vavuniya district of Sri Lanka. For this purpose, primary data were collected among two hundred and twenty farmers during the period of 2019/2020. The sample were selected based on the purposive random sampling techniques. The collected quantitative data were analysed by using descriptive statistics and binary Probit regression. Among the total respondents 100 farmers are engaged in organic paddy farming and rest 120 are inorganic paddy farmers. The results of the Probit regression reveals that farmer's education level, age of the farmer, land type, size of cultivation and awareness about farming are the important determinant on organic farming. Finally, overall finding reveals the importance of the awareness of organic farming, because which will help to create a healthy society with traditional values and to support to the economic development by the way of expanding the agricultural sector.

Keywords: Binary probit regression, irrigation facility, organic farming, size of cultivation

1. Introduction

Sri Lanka is an agricultural background country, where paddy is the major crop of cultivation. The paddy cultivation helps achieve economic development in order to fulfill nations' demand for food, generating employment, and also providing raw materials for some other industries (Nemes, N. 2009). At present the demand for paddy is increasing even though, the quantity of supply is very less (SAEA-Sri Lanka Agricultural Economic Association). Most of the farmers are now practicing the inorganic farming to get the quick output, and the society also become unhealthy (Luttikholt, L. W. 2007). To build the health society organic foods are very important (WHO). The organic agriculture is a productive system that sustains & protect the health of the people, soils and ecosystems" (International Federation of Organic Agricultural Movements, 2005). Therefore, researcher focuses to research the determinate of the organic paddy cultivation.

1.1 Objectives of the study

- To identify the factors which affects the organic paddy farming.
- To examine the impact of the selected factors on organic paddy farming.

2. Methods of analytical tools

The research is based on the primary data. The population of this study covered the farmers those who are living in Vavuniya district in Sri Lanka during the period of 2019 to 2020 and sample was 220 farmers from Marukarampalai GS Division was selected based on the Purposive random sampling technique by issuing structured questionnaires. The relevant primary data were tested based on the descriptive statistics, Binary Probit regression. The type of farming is the dependent variable and which was denoted as 1 for Organic Farming and 0 for not. The influencing variables are given below, The researcher has selected eight independent variables based on the literature reviews.

| | | |
|----|-----------------------------|--|
| X1 | Land Ownership | Which say the land is belongs to whom? 0 Tannen Land, 1 for Own |
| X2 | Age of the farmers | in number of years |
| X3 | Irrigation facility | 0 Bad, 1 for Good |
| X4 | Education of respondents | in number of years |
| X5 | Size of Cultivation | 1 within Few ackers, 0 More ackers |
| X6 | Type of land | 0-Field land (near to tanks/ suitable land for paddy) 1-Upland land (Near to the house, suitable for the crop cultivation) |
| X7 | Availability of seed | 0-At all place, 1-Certain places |
| X8 | Awareness about the farming | 0-No, 1- Yes |
| X9 | External support | 0-No, 1-Yes |

3. Results and Discussions

3.1 Results of Descriptive Statistics

In this section, out of 220 respondents 100 are organic paddy farmers and rest 120 are inorganic paddy farmers. Out of the total respondents 63.7% were male while the rest were female respondents. In the research area most of the female respondents also involve in farming activities because of their family situation and most of them were female headed families. Among the total respondents 75.0% are married and others are unmarried, which reflect the family responsibility of married person is higher than the unmarried therefore, they like to earn more by engaging farming activities.

Table 1. Descriptive statistics for categorical variable

| Variables | | Organic Farming | Inorganic Farming |
|-----------------|-----------|-----------------|-------------------|
| 2* Gender | Male | 38.43% | 61.57% |
| | Female | 65.50% | 34.50% |
| 2* Civil status | Married | 42.39% | 57.61% |
| | Unmarried | 31.15% | 68.85% |

Source: Researcher compiled

The above results reveal that nearly 38% of the male respondents are engaging in the organic farming than inorganic methods, they are slightly concern more about the health than the profit. As like more than half of the female farmers are engaging in the organic farming with the traditional raw materials which are available to them from their areas. Based on the civil status there is not that much deviation in type of farming.

Based on the findings 30.7% of the organic farmers were accessed the farming loan facilities to practice the farming, where rest of the 69.3% of the respondents are only engaging in organic farming with their own finance, as like the modern farming skill include the farming equipment's, advanced facilities in farming with the support of machines, in case of that nearly half of they are

Table 2. Influence of Farming loan, Modern farming skills and supportive income source among the Organic farmers

| | Yes | No |
|------------------------------|-------|-------|
| Farming loan | 30.7% | 69.3% |
| Modern farming skills | 42% | 58% |
| Full time farmers | 37% | 63% |

Source: Researcher compiled

following the traditional way of farming. Among them nearly 63% of them are not a full-time farmer, it means based on the health concern most of the employers are engaging in the organic farming.

3.2 Results of Binary Probit regression analysis and the Marginal Effect

Table 3. Estimated Results of Probit model and the Marginal effects for the selected variables

| Variable | Coefficient | Std.Err | Z | P-value | Marginal Effect | |
|-------------------------|-------------|---------|--------|---------|-----------------|-------|
| (Intercept) | 0.760 | 0.436 | 0.946 | 0.344 | 0.178 | 17% |
| Family Members | 0.169 | 0.057 | 0.875 | 0.458 | 0.053 | 5.3% |
| Land Ownership | 0.173 | 0.011 | 2.243 | 0.003** | 0.064 | 6.4% |
| Age | 0.240 | 0.098 | 3.247 | 0.000** | 0.093 | 9.3% |
| Irrigation facility | -0.656 | 0.023 | 2.343 | 0.219 | -0.141 | 14.1% |
| Education | 0.063 | 0.732 | 0.143 | 0.041* | 0.031 | 3.1% |
| Size of Cultivation | -0.012 | 0.705 | -0.058 | 0.036* | -0.020 | 2.0% |
| Type of land | -0.013 | 0.946 | -0.897 | 0.045* | -0.21 | 2.1% |
| Availability of seed | 0.659 | 0.897 | 0.587 | 0.896 | 0.145 | 14.5% |
| Awareness about farming | 0.186 | 0.079 | 2.345 | 0.000** | 0.071 | 7.1% |
| External support | 0.968 | 0.879 | 0.564 | 0.689 | 0.184 | 18% |

Significance Codes: at ** 0.001, * 0.05 Source: Researcher compiled

According to the results of probit regression all explanatory variables are statistically significant at 5% of the significant level except the family members, irrigation facility, availability of seed, external support. Based on the significant value of the variables land ownership and the awareness about farming, age, education, size of cultivation, type of land are the important determinants on the organic paddy production. The impacts of the variables were analysed by using the marginal effect. According to the results of marginal effect the farmers those who are farming in their own land has 6.4% more probability to engage in organic paddy production. As like the elder farmers with more experience have 9.3% high probability to engage with organic paddy. When farmer has higher education there will be 3.1% higher chance to become organic farmer and also the awareness about farming has 7.1% more probability on it. Because of education, and awareness they can understand the importance of organic farming and its benefits to their health and for the well being of society. Finally, the size of cultivation and the type of land have 2%,2.1% higher probability respectively to the willingness to take part in organic paddy farming.

4. Conclusion

This study intended to examine the factors which influence the organic farming. Based on the results of the descriptive statistics the female respondents are more likely to produce organic paddy

than the male farmers and unmarried young farmers show the negative preference to the organic farming. The results of the Probit regression reveals that education level of the farmers, age of the farmers, land type, size of cultivation, awareness about farming, are the significant determinants of organic paddy farming. And based on the marginal effect awareness show the more probability at the engagement of organic farming. Considering the above findings, the researcher found it is important to propose the following recommendations.

- Awareness programs regarding the advantages and importance of organic products should be promoted among the farmers.
- Improve the educational facilities to the farmers.
- The Government can supply equipment for farmers to produce organic fertilizer and have to provide support to expand their farming.
- Agricultural officer's support and their guide to maximize the results from all type of lands. Have to test their land types before farming.
- Have to introduce some motivational policies or monitor supports to the farmers those who are farming in their own land. It may encourage them to produce more.
- Policy makers can make policies to introduce high prices for organic products and government can establish different markets for organic products. By the way they can stimulate the organic farmers.

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