

Farmers' attitudes towards sustainable agriculture practices in Lublin Province

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Abstract: This study was conducted to determine the socio-economic characteristics for farmers, determine farmers' attitudes towards sustainable agriculture practices in Lublin province. Data for the study were collected through by interview using a questionnaire method from a randomly selected sample of 85 farmers. The questionnaire, consisted of two parts. The first part included the independent variables, while the second part included scale to measure. The attitude of the farmers, towards sustainable agriculture practices. Mean, frequencies, weighted percentage and person correlation, were used to analyze the data by interview using a questionnaire method. Cronbach's alpha coefficient value was 0.90 indicating the high reliability of the questionnaire. The findings indicated that majority 69.41% of the respondents showed neutral attitudes towards sustainable agriculture practices.

Keywords: attitude; sustainable agriculture; farmers.

1. Introduction

Sustainable agriculture is considered by some researchers to mean environmental, economic and social sustainability, and is used to describe a wide variety of practices [1, 2, 3, 4]. Sustainable agriculture, as a managerial philosophy and a system that provides agricultural needs of both present and future generations has raised as a major challenge of the 21st century to meet these complications and natural and human difficulties; that is, agriculture should be consume less and be sustainable more [5, 6, 3, 7, 8]. The definition of sustainable agriculture in the literature has not achieve consensus among various researchers, thus, there is no unique definition for sustainable agriculture [9, 10]. Rao and Rogers [11] defined sustainable agriculture as a practice that meets current and long term needs for food, fiber and other related needs of society while maximizing net benefits through conservation of resources to maintain other ecosystem services and function and long term human development. On the other hand, the concept of sustainable agriculture according to [12] encompasses a set of dynamic practices with the usage of technology that brings minimum damage to the environment and simultaneously is able to provide a long-term income for the farmers. Although not all farmers are exposed to the concept of sustainable agriculture; thus, adequate support from pertinent agencies is needed [13]. Wheeler [14] accentuate the role of government in emboldening farmers to accept sustainable farming practices [15]. Further the success of sustainable agriculture should not be the responsibility of the government alone. It should be equally placed in the hands of the direct and main beneficiaries of agriculture – the farmers [16]. Doubtlessly, the success of sustainable agriculture relies in part on farmers' attitudes towards such practices [17, 18]. To encourage their favourable attitudes [18] has illustrated the importance of creating agricultural policies that correspond with farmers' needs and convictions. The findings of empirical studies on attitude towards sustainable agriculture are found in the works of researchers such as [10, 14, 19]. There are many definitions of attitude concept in debate, for example [20] defined attitude as the "As table system of positive and negative evaluations, emotional feelings and positive and negative tendencies toward social goals". Attitude has been defined as the predisposition to feel, think or act in a particular way [21]. Hogg and Vaughan [22] define an attitude as "a relatively enduring organization of beliefs, feelings, and behavioural tendencies towards socially significant objects, groups, events or symbols. Thus for Siebert et al [23] 'attitude' is understood to be a combination of subjectively perceived factors that influence the farmer such as interests, values, norms, problem awareness and self-perception – as these collectively can explain willingness to undertake environmental activities. Evidence suggests that individuals can hold multiple situational dependent attitudes towards a given object.

This paper aimed to identify the attitudes of the farmers towards sustainable agriculture practices in Lublin province, identify the personal, social and economic characteristics of the farmers, and explore the relationship of some of the personal, social and economic characteristics of the farmers with their attitudes towards sustainable agriculture practices.

2. Materials and methods

The study was carried in Lublin region in Poland. The population of this study consisted of 85 farmers. Data were collected through questionnaire, which consisted of two parts. The first part included the independent variables (farm size, farming experience and age) measured by number of years, and level of education included 5 levels the following: graduate of an elementary education (1), graduate of a secondary (2), graduate of School of Vocational Education (3), graduate of college (4) certificate highest (5). Marital status had four categories: single, married, divorced and widowed; and family size by number of persons. While the second part included scale to measure. The attitude of the farmers, towards sustainable agriculture practices by summing up the reaction of positive, negative and neutral responses to a list of questions that seek attitude of the farmers towards sustainable agriculture practices. To achieve this, a five point Likert scale containing items with response categories ranging from Strongly Agree (SA) with a score of five points to Strongly Disagree (SD) with a score of one point for statements was developed, while the scoring was reversed for unfavourable statements. The respondents were asked to indicate which option the total of 20 questions were asked for the attitude analysis, the maximum and minimum scores were 100 and 20, respectively. Cronbach's Alpha coefficient value was 0.90 indicating the high reliability of the questionnaire Data were analyzed using the SPSS program appropriate descriptive statistics such as frequencies, percentage, mean, standard deviations and correlation.

3. Results and discussions

1) The attitudes of the farmers towards sustainable agriculture practices in Lublin province.

As shown in Table 1, the farmers were divided into three categories according to the attitudes towards sustainable agriculture practices, with an average of (68.32) with a standard deviation of (5.44). Only 11.76% farmers were with Favourable attitudes towards sustainable agriculture practices, obtaining numerical values ranging (72-100). The study revealed that the farmers with neutral trends make up 69.44% of the population, obtaining numerical values ranging (43-71). While 18.83% farmers (14-42) are with the Unfavourable attitudes and placed in the third category. The study indicates that the majority of the respondents (69.44%) are with Neutral attitudes and about 30.59 % are with Favourable and Unfavourable attitudes towards sustainable agriculture practices. This agree with [24, 25, 26, 19, 17, 27] and disagree with [28, 15, 29, 30, 16]. This reflects their awareness the importance of sustainable agriculture practices to maintain a proper environment for agricultural production.

Table 1. Farmers' attitudes towards sustainable agriculture practices

Attitude levels	Frequency	Percentage	Mean	S.D
Favourable (72-100)	10	11.76	68.32	5.44
Neutral (43-71)	59	69.41		
Unfavourable (14-42)	16	18.83		
Total	85	100%		

Source: own research

2) The personal, social and economic characteristics of the farmers. Table 2 represents six demographic information of the respondents including age, education level, marital status, farming experience, farm size and family size. Table 2 shows categories, frequencies and percentage for all these demographic variables. According to the data presented in Table 2, reveal that the mean score for the respondents' ages was (40.3) years, most percentage of farmers (41.17%) were between 30 to 43 years of age as compared to (32.94%) who were between 44 to 56 years of age followed by 17 to 29 years of age (25.8%). The distribution of respondents into categories based on their education level is shown in table 2. The percentage graduates of primary reached (11.76%), secondary was (11.76%). The percentage of respondents who have a certificate of the School of Vocational Education and College was (36.49%) and (29.41%) respectively. While percentage of who have high certificate was (10.58%). Most of the respondents (44.70%) were married. The percentage of respondents who were single was (37.64%). The percentage of respondents who were Divorced and Widowed was (10.61%) and (7.05%) respectively. The years of experience of respondents ranged from (7 to 33) years and the mean of their experience was 18.5 years. Table 2 shows that years of experience of respondents ranged from 7 to 33 years and the mean of their experience was (18.5) years.

Table 2. Categories of the selected characteristics of the farmers

Mean	%	Frequency	Categories
Age			
40.3	25.80	22	Year (17-29)
	41.26	35	Year (30-43)
	32.94	28	Year (44-56)
Education Level			
	11.76	10	Primary school
	11.76	10	Secondary school
	36.49	31	School of Vocational Education
	29.41	25	College
	10.58	9	High certificate
Marital status			
	37.64	32	Single
	44.70	38	Married
	10.61	9	Divorced
	7.05	6	Widowed
Farming experience			
18.5	25.89	22	year (7-15)
	44.70	38	year (16-24)
	29.41	25	year (25-33)
Farm size			
21.6	48.23	41	Ha (11-22)
	18.82	16	Ha (23-34)
	32.95	28	Ha (35-46)
Family size			
5.2	28.23	24	≤ 3
	56.47	48	4-6
	14.11	12	7-9
	1.19	1	9 >

Source: own research

* Significant at 0.05 level of probability, ** Significant at 0.01 level of probability.

The percentage of respondents who have a number of years of work in agriculture between (7-15 years) was (25.89%) and the percentage of respondents who work for (16-24 years) was (44.70%), while the percentage of respondents who work in agriculture for (25-33 years) was (29.41%), This is mean that three-quarters of the respondents were working in agriculture for long period of time. Farm size of the farmers ranged from (11 to 46 ha) with an average was (21.6). The highest proportion (48.23%) of the farmer had (11-22 ha). The percentage of respondents who have farm size between (23-34 ha) was (18.82%), while the percentage of respondents who have farm size between (35-46 ha) was (32.95%). Number of family members of the farmers ranged from (2 to 10) with an average was (5.2). The highest proportion (56.47%) of the farmer had number of family (4-6). The percentage of respondents who have family size between (≤ 3), 7-9 - was (28.23%), 14.11% respectively. While the percentage of respondents who have family size between >9 – was (1.19%).

3) Relationship between selected characteristics of the farmers and their attitude towards sustainable agricultural practices.

Coefficient of correlation was computed in order to explore the relationships between the selected characteristics of the farmers and their attitude towards sustainable agricultural practices. The null hypothesis was “there was no statistically significant relationship exists between the selected characteristics of the farmers and their attitude towards sustainable agricultural practices”. Relationships between the selected characteristics of the farmers and their attitude towards sustainable agricultural practices have been presented in Table 3. The age had significant relationship with the farmers attitude towards sustainable agricultural practices when ‘r’ value was (0.179*) at 5% level of significance. This agree with [16, 29] and disagree with [19, 25, 24]. This is indicating that young farmers are more likely to have favourable attitudes towards sustainable agriculture and that elderly farmers have less favourable attitudes towards sustainable agriculture. The education level had significant relationship with the farmers attitude towards sustainable agricultural practices when ‘r’ value was (0.434**) at 1% level of significance. This agree with [29, 27] and disagree with [24]. It means that the higher the level of education of the farmers, the higher their attitude towards sustainable agricultural practices. Marital

status hadn't significant positive relationship with the farmer's attitude towards sustainable agricultural practices. Which indicates that marital status has no effective on their attitude towards sustainable agricultural practices. Farming experience had significant relationship with the farmers attitude towards sustainable agricultural practices when 'r' value was (0.370**) at 1% level of significance. This agree with [26, 29].and disagree with [25, 16].This is indicating that the increase in the number of years of work in agriculture have a significant impact on the accumulation of experience related to the sustainable agricultural practices and raised their favourable attitudes. There was significant relationship between farm size and farmers' attitude on sustainable agriculture practices as 'r' value was (0.286*) at 5% level of significance. So the null hypothesis was rejected. It indicates that the higher the farm size, the higher the response on sustainable agricultural practices, this agree with [25, 26].and disagree with [27]. Family size had no significant relationship with the farmers attitude towards sustainable agricultural practices this is agree with [25].and Disagree with [27]. Table 4 shows the mean and standard deviations of statements used to evaluate the attitude of farmers in sustainable agriculture and in order to give priority to the statements related to attitude of researchers, coefficient of variation (CV) was used. Based on the results given in Table 4 the statements "I add animal fertilizers to improve structure and fertility of soil", "I Use of green manures to Preventing soil erosion", "I think that Sustainable agricultural is reduction in the use of chemicals pesticides and fertilizers", were given a ranking of 1, 2 and 3, respectively. From the first three statements it can be said that most of the respondents were agreed to the use of animal fertilizers and green manure in their farm and reducing use the artificial materials such as pesticides and fertilizers. These results are in line with a study conducted by [25]. From some other statements it can be said that the respondents were agreed to the importance of sustainable agriculture to the environment, use of crop rotation, long term productivity.

Table 3. Relationship between selected characteristics of the farmers and their attitudes towards sustainable agricultural practices

Variables	Coefficient of correlation (r)
Age	0.179*
education Level	0.434**
Marital status	0.061
Farming experience	0.370**
Farm size	0.286*
Family size	0.081

Source: own research

4. Conclusions

The neutral attitude is evidenced in their responses towards sustainable agriculture practices. May be due to the lack of extension activities in this region in subject the sustainable agriculture practices. There was a significant relationship between farmers Attitudes towards sustainable agriculture practices with some variables farm size, farming experience, age , education level, while there was no significant relationship with family size and Marital status.

5. Recommendations

Considering the importance of developing more sustainable behaviors aiming long-term agriculture and food production for the world population safely and in harmony with the environment, therefore the agriculture extension must Work to intensify efforts in order to increase of farmers' information and their knowledge in the sustainable agriculture through the extension activities such as agricultural programs in various media (video and audio) and by training courses related to sustainable agriculture.

Table 4. Rank order of the statements according to their attitude index

Rank	Attitude statements	Mean	S.D	C.V
1	I add animal fertilizers to improve structure and fertility of soil	3.45	1.019	0.233
2	I Use of green manures to Preventing soil erosion	3.39	1.070	0.239
3	I think that sustainable agricultural is reduction in the use of chemicals (pesticides and fertilizers)	3.05	1.020	0.257
4	I use minimum tillage to conserves the chemical and physical qualities of the soil	2.87	1.067	0.294
5	I use of green manures to soil aeration	2.78	1.266	0.305
6	I don't think that mulching lead to increase the number of micro-organisms in the soil *	2.69	1.190	0.388
7	I use mulching to reduce weed growth	2.57	1.080	0.391
8	I use the drip irrigation to improved water efficiency	2.52	1.177	0.399
9	I don't think the wind breaks reducing soil erosion	2.49	1.289	0.411
10	I use of resistant cultivars	2.33	1.055	0.424
11	I expect reduce tillage lead to reduce beneficial organisms *	2.28	1.034	0.486
12	I encouraging useful predators that eat farm pests	2.21	1.210	0.511
13	I think the crop rotation reduces costs of production *	2.14	1.234	0.518
14	I use green manures to Increase and recycle plant nutrients and organic matter	2.09	1.055	0.566
15	I don't prefer earliness in timely planting of crops *	2.01	1.067	0.574
16	I don't expect consumption of animal fertilizers can increase income.*	1.94	1.087	0.581
17	I use crop rotation to reduce of variety of natural predators to survive on the farm *	1.88	1.099	0.589
18	I don't expect crop rotations provide alternative sources of soil nitrogen *	1.79	1.540	0.590
19	I use crop rotation because it reduce of soil erosion.	1.74	1.465	0.594
20	I think crop rotations that mitigate weeds, disease, insect	1.71	1.067	0.598

Source: own research; * negative statements

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