



## VALUE ORIENTATION ISSUES AFFECTING ADOPTION BEHAVIOUR OF FOOD CROP FARMERS IN ONDO STATE, NIGERIA

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### ABSTRACT

*The study investigated value orientation issues that affect the adoption behaviour of food crop farmers in Ondo state, Nigeria. A multistage sampling technique was used to identify 120 respondents used for the study. Data for the study was collected using an interview schedule and analyzed using chi-square and Pearson Product Moment Correlation. Value orientation was measured using the Portrait Values Questionnaire (PVQ) scale. The study showed value orientations to be an issue or concept that affects not only agricultural adoption, but which if understood can serve as a tool for the prediction of behaviour among farmers and individuals in society. The results showed that socio-economic characteristics of respondents had a significant relationship with their value orientations and value orientations of the respondents also had a significant relationship with their adoption of agricultural technologies. The predominant value orientations of rural farmers of Ondo state were harmony with nature for man-nature orientation (44.2%), good and evil for human-nature orientation (52.5%), present (40%) closely followed by past (37.5%) for time orientation, collateral for relational orientation (59.2%), and being-in-becoming for activity orientation(37.5%). The percentage average rate of adoption of agricultural technologies studied was (48.7%). The effects of value orientations on adoption of agricultural technologies were noticed in only five of the technologies tested, and were shown to be negative and significant. The affected technologies included: pest control in food crop farm, use of herbicides, insecticides and fungicides, improved fertilizer application methods, row spacing and the use of harvesters. Implications are that further studies by agricultural extension personnel, on value orientations as a tool for predicting or influencing adoption level of farmers, as well as other behaviours will enhance their productivity and effectiveness. Government through the Agricultural Development Project can also run studies to profile regions and states according to value orientations. This will aid in the value re-orientation activities of several development efforts in the country.*

**Keywords:** Value, Orientation, Adoption, Behaviour, Farmers

### INTRODUCTION

Agriculture accounts for 40% of the Gross Domestic Product (GDP) in Nigeria and two-thirds (about 66%) of the labour force (NBS, 2008). This is a large proportion of the population and resulting from this impact of agriculture on the economy, the rural people who are involved in agriculture as an occupation ought to be understood by relevant personnel to enable them achieve required change in farmers' behaviour to improve the productivity

of Nigerian agriculture and achieve rural development. Technological change has been a major factor shaping agriculture in the last century, thus, it is necessary to understand the agrarian community with the aim of being able to influence them to adopt the use of new technologies for an improved agricultural sector.

The following, are implied in rural development: a massive effort to increase production, create and spread employment, and

eradicate fundamental causes of poverty, disease and ignorance. This also implies a modernization, which would not only increase the productive capacity but also change attitudes, replacing the sense of dependence on the natural environment by the desire and ability to manipulate it. All these however hinge on the many factors that pose as challenges to the change among which is possibly, the value the individual holds.

An individual or a social groups' value orientation is defined, as the principles of right and wrong that are acceptable to them. Value orientation patterns all over the world are the most fundamental existential principles to adapt to the environment. The original values theory (Kluckhohn, 1951) defines value as desirable, trans-situational goals, varying in importance that serves as guiding principles in people's lives.

Values have been defined as general and important life goals or standards, which serve as guiding principles in our lives (Rokeach, 1973). There are ranges of influences on the values people hold. A person's stage in life can make a difference. With young, single people more likely to be centered on themselves, family life brings with it commitments to others which focus people more on social values. The sort of work and the ways in which people learn to measure success and failure in their work may also have an impact.

Knowledge of people's motivational drivers and their propensity to embrace change is important because success may be elusive if agricultural extension workers do not understand this concerning the farmers they work with. Understanding underlying values make behaviour predictable and understandable. When these values are no longer suitable or do not promote positive adaptation to current needs and interests of individuals and groups, values and value systems

can be changed in order to accommodate changed demands.

Excellence in extension education will be achievable only with a sound knowledge of rural and individual value systems. This will enable extension management to define the gaps and design development activities.

A major problem facing farmers in Nigeria is the need to transform the agricultural industry from one depending on traditional inputs with low productivity to one based on modern inputs with higher productivity. To increase agricultural production in Nigeria, there must be a change in the technology of agricultural production.

The question of the determinants of the adoption of new technology in agriculture is of central interest to both academics and policy makers. The rural farmers' behaviour needs to be understood and any chance that behaviour can be predicted should be investigated further because it can be a major milestone in research. Any concept that can be used for behaviour prediction or determination should thus be explored. A major goal of research on values has been to relate individual differences in value priorities to differences in attitudes, behaviour and background variables as well as seeking to know if people's value priorities influence their behaviour in systematic and predictable ways.

The general objective of this study was to examine value orientation issues affecting adoption behaviour among food crop farmers in Ondo state, Nigeria. Specifically, the study;

1. ascertained the socio-economic characteristics of food crop farmers in Ondo state;
2. identified the value orientations that are predominant among the food crop farmers;
3. ascertained the agricultural technology adoption characteristics of the farmers;

4. provided a value profile for the population under study; and
5. determined the effect of value orientation on adoption behaviour of the food crop farmers.

#### METHODOLOGY

The study was carried out in Ondo State, Nigeria. It is located in the south western part of Nigeria with a total land mass of 14,793km<sup>2</sup> and population of 3,441,024 (NPC, 2006). Agriculture constitutes the main occupation of the people of the state.

A multi-stage sampling procedure was used to select the population sample. The state is statutorily divided into three Senatorial districts namely Ondo North, Ondo South and Ondo Central Senatorial Districts. In the first stage, one Local Government Area (LGAs) was randomly selected from each of the three senatorial districts. In the second stage, two communities were purposively selected on the basis of their degree of rurality from each LGA, making up six communities for the study. In the third stage, each community was divided into five wards from which two wards were randomly selected for the study resulting in 12 wards. In the fourth stage, ten cassava farmers were purposively selected and interviewed from each of the 12 wards. This gave a total of 120 respondents for the study.

Primary data for this study were collected using interview schedules. Secondary data were obtained from library, previous research documents, journals and internet. The instrument (interview schedule) was designed using open and closed ended questions as appropriate, to generate information under the following sub-themes: socio-economic and farm characteristics of the farmers, value orientation characteristics as well as agricultural technologies adopted. The Value Orientation Patterns were categorized into (1) man-nature orientation: subjugation-to-nature,

compromise-with-nature and mastery-over-nature, (2) human nature orientation: good, good and evil, and evil, (3) time orientation: past, present and future, (4) activity orientation: being, being -in-becoming and doing, and (5) relational orientation: lineal, collateral and individualistic.

Dependent variables are Value Orientations and Adoption. The scale used for measuring the value orientations is a modification of the Portrait Values Questionnaire PVQ scale used by Schwartz (2003), Schwartz, Lehmann & Roccas (1999) and Schwartz, Melech, Lehmann, Burgess & Harris (2001). The PVQ was designed to measure the basic value orientations measured by the Schwartz Value Survey. The PVQ includes short verbal portraits of different people. The verbal portraits capture the person's values without explicitly identifying values as the topic of investigation. For each portrait, respondents answer: "How much like you is this person?" from 'very much like me' to 'not like me at all'. Thus, respondents' own values were inferred from their self-reported similarity to people who were described in terms of particular values. The similarity judgments were transformed into a 6 pt. numerical scale. VMLM: Very much like me (Score – 6), LM: Like me (Score – 5), SLM: Somewhat like me (Score – 4), ALLM: A little like me (Score – 3), NLM: Not like me (Score – 2), NLMAA: Not like me at all (Score – 1).

Scale for Decision: (>5.5: Very much like me, 4.5 – 5.4: Like me, 3.5 – 4.4: Somewhat like me, 2.5 – 3.4: A little like me, 1.5 – 2.4: Not like me, <1.4: Not like me at all)

Adoption: The respondents were asked directly to indicate from a list of agricultural technologies which of them they were aware of, if they had tried them and if they were still using them i.e. if they had adopted the technology. Their responses were scored and the score was used to determine adopters and non-adopters. Nine was the highest

score obtainable. Those that were unaware had a score of zero, non-adopters scored between: 1-6, while adopters scored between: 7-9.

Data collected was analyzed using chi-Square, Pearson Product Moment Correlation, along with descriptive characteristics such as tables, frequencies, means and percentages.

**RESULTS AND DISCUSSION**

**Respondents’ socioeconomic characteristics**

Result of analysis in Table 1 shows that the modal age was 45years and Standard deviation was 16.7, the mean age was 53.5 years implying that most of the farmers in the study area were young adults and thus still actively involved in farming. Age of farmer could have significant relationship with farmers’ value orientations. Above 50 percent of the respondents interviewed were literate enough to read. Education of the respondents was perhaps responsible for their level of adoption of the technologies they had been made aware of, as their highest level of educational attainment was tertiary education. These social economic characteristics agreed with findings of Tiamiyuet *al*, (2009) and Schwartz, (2007) of having a significant relationship with value orientation, implying that it is one of the determinants of respondents’ value orientation. The farmers were found to be small-scaled. Kurpagam (2000) revealed that farm size had positive and significant relationship with the adoption level of the respondents.

Table 1: Distribution of respondents according to some socio-economic characteristics

Variable	Frequency (N=120)	Percentage (100%)
<b>Age</b>		
<40	30	25.0
41-60	54	45.0
> 60	36	30.0
Mean Age: 54, standard deviation:16.16		
<b>Education</b>		
No Formal Education	21	17.6
Primary Education	25	20.8

Secondary Education	46	38.3
Tertiary Education	24	20.0
Adult Education	4	3.3
<b>Marital status</b>		
Married	110	91.7
Single	7	5.8
Widowed	1	0.8
Seperated	2	1.7
<b>Social position (ascribed and achieved)</b>		
Chief	16	13.3
Association Head	9	7.5
Family Head	50	41.7
Elder	13	10.8
Member	28	26.7
<b>Farming experience (years)</b>		
<10	45	37.5
11-20	32	26.7
> 20	43	35.8
<b>Farm size (hectares)</b>		
0-5	91	75.8
6-10	29	24.2
<b>Meeting attendance</b>		
Seldomly	76	63.3
Occasionally	12	10.0
Regularly	32	26.7

Source: Field Survey, 2012.

**Value Orientation Patterns of Respondents**

From Table 2, the mean column show predominant value orientations to be harmony with nature (4.27) for man-nature orientation, good and evil (4.10) for human-nature orientation, present (4.34) closely followed by past (4.01) for time orientation, collateral (4.25) for relational orientation, and being-in-becoming (4.36) for activity orientation. These results imply that farmers will adopt what they personally assess to be compatible with their culture. Therefore if an extension agent, who introduces a technology, is seen to be good, credible and reliable, farmers associate this positive value to the technology and would probably adopt it. The present situation is a product of what happened in the past; hence, since farmers base their adoption decision partly on experiences, what is happening presently will influence their future. It is therefore possible to

register a high rate of adoption of relevant technologies amongst farmers in groups when and where cooperative societies or groups act as

pressure groups, agent, medium and target of change for the farmers.

Table 2: Value Orientation Patterns of Respondents

	NLMAA	NLM	ALLM	SLM	LM	VMLM	Mean	Grand Mean	Remark
<b>Man-nature orientation</b>									
Subjugation To Nature	9	48	11	21	13	18	3.95		
Harmony With Nature	8	29	13	17	21	32	4.70	4.27	LM
Mastery Over Nature	12	43	9	20	6	30	4.15		
<b>Human-nature orientation</b>									
Evil	45	39	8	12	6	10	2.85		
Good & Evil	1	20	12	24	22	41	5.29	4.10	LM
Good	8	51	11	9	8	33	4.17		
<b>Time orientation</b>									
Past	19	7	8	41	15	30	4.76		
Present	12	11	19	30	16	32	4.83	4.34	LM
Future	47	7	29	10	7	20	3.43		
<b>Relational orientation</b>									
Lineal	35	50	20	10	2	3	2.63		
Collateral	0	28	11	10	20	51	5.35	4.01	LM
Individualistic	7	46	17	6	17	27	4.04		
<b>Activity orientation</b>									
Being	15	34	20	14	8	29	4.13		
Being-In-Becoming	7	34	18	16	12	33	4.51	4.25	LM
Doing	13	44	10	15	9	29	4.10		
Grand Mean Score								4.36	LM

Source: Field survey, 2012.

**Technologies adopted by respondents**

Result of analysis in Table 3 showed the distribution of respondents who were unaware of the technologies; those who were aware were also presented as being either adopters or non-adopters of the 17 technologies itemized for the purpose of the study. The average level of adoption of the agricultural technologies studied was 58.5 (48.6%). The table showed clearly the adoption behaviour of

respondents under the study. As can be seen from the means column, only 13 of the technologies tested were relevant in terms of adoption of respondents studied, as all values greater than two (2) implied acceptable level of adoption. Use of mechanical Harvesters and Artificial drying using petroleum fuels fell below the acceptable score for adoption.

Table 3: Respondents' distribution based on technologies adopted\*

Improved Technologies Adopted	Adopters (Avrg = 48.6%)		Non-Adopters		Unaware		Mean
	F	%	F	%	F	%	
Artificial drying using petroleum fuels	32	26.7	16	13.3	72	60.0	1.67
Modernized drying of processed cassava chips for storage	52	43.3	25	20.8	43	35.8	2.08
Pest control in food crop farm	62	51.7	50	41.7	8	6.7	2.45
Use of herbicides, insecticides & fungicides	77	64.2	37	30.8	6	5.0	2.59
Weeding	61	50.8	45	37.5	14	11.7	2.39
Improved Fertilizer application	44	36.7	52	43.3	34	28.3	2.25

methods							
Improved land preparation	56	46.7	31	25.8	33	27.5	2.19
Use of tractor	40	33.3	49	40.8	31	25.8	2.08
Use of plough	40	33.3	52	43.3	28	23.3	2.10
Crop rotation practice	71	59.2	35	29.2	14	11.7	2.46
Mulching of crops	63	52.5	24	20.0	33	27.5	2.25
Planting of early season crops	79	65.8	32	26.7	9	7.5	2.58
Early cassava cultivation	78	65.0	38	31.7	4	3.3	2.62
Planting of improved varieties	74	61.7	38	31.7	8	6.7	2.55
Plant spacing	78	65.0	35	29.2	7	5.8	2.59
Row Spacing	75	62.5	35	29.2	10	8.3	2.54
Use of mechanical Harvesters	22	18.3	36	30.0	62	51.7	1.67

Source: Field Survey, 2012.

\*Multiple Responses.

### Value profile

The value profile for the population studied is as shown in Table 4. The table showed the frequency distribution of respondents under each value orientation in the table is a summarized presentation of the responses obtained from the

study. The variations in the second position of all the five value orientation patterns have the highest frequency at the overall state level, with varying differences from the individual local governments. Delineating each local government's result allows the variations in responses to show.

Table 4: Value Profile for the Study Area

Value Orientation	Owo	Ile-Oluji	Ifedore	Ondo State
Man-nature orientation				
Subjugation To Nature	14	6	11	31
Harmony With Nature	18	18	17	53
Mastery Over Nature	8	16	12	36
Total	40	40	40	120
Human-nature orientation				
Evil	11	0	5	16
Good & Evil	20	21	22	63
Good	9	19	13	41
Total	40	40	40	120
Time orientation				
Past	13	8	24	45
Present	22	14	12	48
Future	5	18	4	27
Total	40	40	40	120
Relational orientation				
Lineal	2	1	2	5
Collateral	31	22	18	71
Individualistic	7	17	20	44
Total	40	40	40	120
Activity orientation				
Being	17	6	14	37
Being-In-Becoming	16	14	15	45
Doing	7	20	11	38
Total	40	40	40	120

Source: Field Survey, 2012.

### Result of Correlation Analysis

As shown in Table 5, value orientation of respondents was negative and had significant

relationship with the adoption of only five of the technologies tested. They were: pest control in food crop farm(r-value of -0.299) implying for instance,

that the more respondents tend away from harmony with nature to subjugation with nature the less they adopt the use of pest control on their farms while the more they tend towards mastery over nature the higher their adoption of the technology; use of herbicides, insecticides and fungicides (r-value of -0.48) implying an inverse relationship between the two. Thus, using time orientation for instance, the more respondents tend towards the past orientation, the less they adopt the use of herbicides while the more they tend towards the future orientation the more they will adopt the technology. Improved fertilizer application methods (r-value of -0.222) this implies that when respondent's relational orientation for instance, changes from collateral to becoming individualistic the adoption of the technology may reduce. Row spacing (r-value of -

0.197) implying that the technology may be adopted less if respondent's activity orientation begins to change from being-in-becoming to doing. The use of harvesters (r-value of -0.209), this implies that the more respondents move towards a past orientation for instance, the less and less they would adopt this technology.

Value orientation had no significant relationship with all the other technologies tested. These findings, point to the fact that the technologies identified to have significant relationship with value orientations need to be disseminated and presented to farmers in the study area, in a way that will not conflict with their specific value tendencies, in order to ensure adoption of the technologies.

Table 6.:Result of correlation analysis showing relationship between Value Orientation and Agricultural Technology Adoption

	R	Remarks
Artificial drying using petroleum fuels	.070	NS
Modernized drying of processed cassava chips for storage	.100	NS
Pest control on food crop farm	-.299**	S
Weeding	-.144	NS
Improved Fertilizer application methods	-.212*	S
Improved land preparation	-.058	NS
Use of herbicides, insecticide and fungicides	-.481**	S
Use of tractor	-.131	NS
Use of plough	.142	NS
Crop rotation practice	-.222*	S
Mulching of crops	-.120	NS
Planting of early season crops	.027	NS
Early cassava cultivation	-.025	NS
Planting of indigenous varieties	-.032	NS
Plant spacing	-.113	NS
Row Spacing	-.197*	S
Use of mechanical Harvesters	-.209*	S

Note: \*\* = significance at 0.01 level  
 \* = significance at 0.05 level  
 NS = Not Significant, S = Significant

**Result of Chi-square Analysis I**

The result of chi-square analysis was as shown in Table 6. All of the agricultural technologies adopted by respondents were seen to have a significant association with value orientations. This implies that value orientations of respondents relate

significantly with their adoption of agricultural technologies. This agrees with findings from previous study by Schwartz, (1996) on cooperative behaviour, voting behaviour and political activism in relation to value orientation.

Table 6: Chi-Square analysis of the relationship between the value orientations of respondents and their adoption of agricultural technologies

Variables	X <sup>2</sup> value	Df	p-value
Artificial Drying Using Petroleum Fuels	316.29	8	*0.004
Modernized Drying Of Processed Cassava Chips For Storage	144.42	9	*0.011
Pest Control In Food Crop Farm	112.91	9	*0.014
Use Of Herbicides, Insecticides & Fungicides	208.33	9	*0.008
Weeding	78.13	9	*0.021
Improved Fertilizer Application Methods	83.14	9	*0.020
Improved Land Preparation	124.27	8	*0.012
Use Of Tractor	69.860	9	*0.024
Use Of Plough	49.09	9	*0.034
Crop Rotation Practice	233.56	10	*0.007
Mulching Of Crops	157.11	8	*0.009
Planting Of Early Season Crops	327.35	9	*0.005
Early Cassava Cultivation	316.04	9	*0.004
Planting Of Indigenous Varieties	195.62	8	*0.007
Plant Spacing	306.13	9	*0.005
Row Spacing	286.13	9	*0.009
Use Of Mechanical Harvesters	236.26	8	*0.006

Source: Field Survey, 2012.

Note: \* Significant at 0.05, df = Degree of freedom

**Result of Chi-square Analysis II**

Table 7 showed that all of the socio-economic characteristics tested were significantly related to value orientations. This implies that stage in life or age would determine a respondent's predominant value orientation. Gender of respondents is also related, this corresponds to the usual finding that sex differences in psychological variables though small, exists. Cross-cultural studies by Schwartz and Rubel (2005) reveal that a pattern of gender

differences in value priorities holds across 70 countries on average. Religion also determines value orientation of respondents and this is in line with Uddin (2009). Education was also determined to have a relationship with value orientations. This is supported by the study of Kohn and Schooler (1983) who said that educational experiences presumably promote the intellectual openness, flexibility, and breadth of perspective essential for self-direction of values.



Table 7: Chi-Square analysis of the association between the socio-economic characteristics of respondents and their value orientations

Socioeconomic Characteristics Versus Value Orientation	Calculated Value	Df	p-value
Age	99.09	40	*0.005
Gender	60.71	1	*0.001
Religion	184.37	3	*0.002
Marital Status	87.49	3	*0.006
Family Type	45.98	1	*0.004
Education	39.28	4	*0.022
Social Status	68.84	5	*0.016
Farming Experience	129.20	31	*0.034
Farm Size	151.71	25	*0.002
Group Membership	26.25	1	*0.014
Group Attendance	8.26	2	*0.007
Extension Service Participation	4.28	1	*0.019

Source: Field Survey, 2012

Note: \* significant at 0.05  
Df = Degree of freedom

### CONCLUSION AND RECOMMENDATIONS

1. The socioeconomic characteristics of respondents was ascertained and found to have significant relationship with their value orientations.
2. The predominant value orientations of rural farmers of Ondo state was seen to be: harmony with nature for the man-nature orientation, good and evil for human-nature orientation, present for the time orientation, collateral for relational orientation, and being-in-becoming for activity orientation.
3. The relationship of value orientations with adoption of agricultural technologies were noticed in only five of the technologies tested, and it was negative and significant.
4. The agricultural technology adoption of the farmers showed that 13 of the 15 technologies tested were being adopted by the respondents.
5. The value profile for the study area showed a trend of Ondo state falling under the second variation of each value orientation pattern.

### RECOMMENDATIONS

1. More programs should be set up by government to encourage educated youths to go into farming, since level of education was

shown to affect value orientations and adoption;

2. Agricultural Extension Personnel should understand the value orientations of farmers as a tool for predicting or influencing adoption behaviour of farmers, as well as other behaviours.
3. Government through the ADPs should run studies to profile regions and states according to value orientations. This will aid in the value re-orientation of people involved in several development efforts in the country.

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