Research Article

Farm Record Keeping Behaviour of Rural Farming Youths in Ekiti State, Nigeria

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Abstract | Poor record keeping among farmers in Nigeria greatly impedes the evaluation of the performance of farms, national planning, budgeting for commercial agricultural development, and control of postharvest losses. The study analysed the record keeping behavior of youth farmers in Ekiti State. Specifically, it assessed the level of record keeping among farmers; examined their attitude towards record keeping; assessed the farmers' knowledge of record keeping; determined their intentions towards keeping farm records; and identified the constraints to farm record keeping. A three-stage random sampling technique was used to select 178 youth farmers on whom a structured interview schedule was administered. Data was analyzed using descriptive statistics and the Multiple Regression Analysis. Results reveal that most of the respondents were male (73.6%), with mean age of 28 years and average of 12 years farming experience. Farmers' level of record keeping was low (Mean=2.26), and their attitude was poor (index=0.43). Farmers' knowledge of record keeping was fair (index=0.66) while they had high intensions towards keeping records (index=0.77). Farmers' overall behavior was fair (index=0.62) and determined by years of schooling (β=0.034) and age (β=0.013) at P<0.05. Poor understanding of the importance of record keeping (Mean= 3.48) and the fragmented nature of land holdings (Mean= 3.31) were the most severe constraints to record keeping. The study recommends increasing young farmers' awareness regarding the benefits of record keeping and regular training particularly in the management of record keeping for multiple farm plots. Literacy programmes should also be organised to address deficiencies of poorly schooled youths.

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Introduction

The African Union Commission (2006) defined youth as individuals within the ages 18 to 35 years. About 40% of the Nigerian population (estimated at 200 million) are in this age group (National Bureau of Statistics, 2016). Omotesho *et al.* (2017) described this group as highly ambitious, inquisitive, energetic, and enthusiastic and eager to try new ideas. Youth farmers are very important resources for developing nations especially in sustaining agricultural productivity (Adesiji *et al.*, 2014). These unique characteristics, the fact that they are on the average more educated than the older generation, and are associated with higher use of information and communication technology are some of the reason for the focus on the youth as the face of commercial agriculture in Nigeria. The Nigerian Government also has a two-fold agenda to

tackle the rising youth unemployment by encouraging their participation in agriculture through several programmes. However, studies show poor attitude of youths towards agriculture hence raising doubts as to their expected behavior towards farm record keeping.

The Nigerian economy is almost totally dependent on the oil and gas sector. The overall national policy of Nigeria reveals the need for its diversification. The agricultural sector has been identified as very significant to the economic growth of the nation. The commercialization of the Nigerian agriculture is therefore the major thrust of the running agricultural policy (FMARD, 2015). This is understandable giving that the sector is dominated by millions of small-scale resource-poor producers, processors and marketers who operate largely at the subsistence level. Their aggregated output has continued to fall below the food demands of the country and hence the poor national food security status and high poverty level especially among the rural farming households. For many, particularly in rural farming communities, farming is a hobby, a way of live, a status symbol, or a part of tradition passed on from generation to generation. Little or no attention is paid to the business side of farming activities. Meaningful progress in the sector therefore requires a movement from the "farming hobby" to the "farming business" (agribusiness or agricultural entrepreneurship) which will create millions of small and medium scale enterprises (SMEs) from farmers. Aside from the positive impact of achieving this on agricultural production and its contribution to the GDP, farmers' income and standards of living will be significantly enhanced. However, the journey of the average Nigerian farmer from subsistence to commercial agriculture requires, among other things, that they learn, imbibe and practice the critical business success factors such as record keeping.

Abayomi and Adegoke (2016) described business record keeping as the systematic documentation of transactions in an orderly manner. While several definitions of record keeping present it as the recordings of only the pecuniary transactions of businesses (income and expenses), other authors have expended their definitions to include activities which are not directly money related. Batte (2008) stated that farm records are systematic records of all activities and transactions regarding all aspects of farm operations. Therefore, in addition to the more common records such as sales and purchases, businesses need to keep records of inventories, human capital, dates of important activities (planting, fertilizer application, etc.). Armstrong (2002) described records as essential economic characters since they are concerned with effective attainment of chosen, accepted objectives through the optimal use of resources. The identification of four broad categories of records offers a model of records which should be kept by farmers, whether crop or livestock. These four broad categories include inventory or store records, production record, financial records and other miscellaneous records such as rainfall data (the amount and dates), and records of flood and draught occurrence termed supplementary records.

Record keeping is important and necessary for operating even the smallest farming enterprise. Without farm records, increasing productivity would be a difficult task for farmers in today's business environment. There are different types of records that can be used to monitor farm operations (Dudafa, 2013). A good record keeping system can assist in making informed business and management decisions. Producers maintain records for several reasons among which are to provide proof of income and expenses to the Internal Revenue Service and Department of Revenue. These concerns use such records as a decision-making tool to demonstrate compliance with environmental regulations, to obtain and maintain financing. Farm record keeping guarantee the farmer help in farm planning, and projection of future profitability of the enterprise, with the overall aim of maximizing farm profit. A record keeping system will not guarantee that business will be a success, but without them farm operations are likely to be distorted (Gitau, 2011). Record keeping has been positively linked to enhanced adoption of innovation as it provides data for with and without comparison (Turner *et al*., 2018). Use of production enhancing strategies such as targeted comparative record keeping and benchmarking in decision making are not possible without farm records.

As important as record keeping is, to many farmers, it is still seen as a necessary evil (Benjamin *et al*., 2020). Rural farmers' poor disposition to record keeping is common to developing countries. This is evidenced by reports from different parts of Africa and Asia (Drafor, 2011). Adisa *et al*. (2017) reported that many farmers in Nigeria do not keep records

because they do not appreciate its use. Many see record keeping as a waste of time, have no interest in it, and fear its use in tax computation. The little proportion who attempt it often forget to do it on a regular basis. Adebayo and Adeola (2005) blamed the subsistent nature of traditional farming and the poor educational background of farmers for the failure to keep farm records. It is therefore safe to expect and work towards better reports of record keeping among farmers giving the on-going campaign for a shift from subsistent to commercial agriculture and also the recent drive to increase youth participation in the Nigerian agriculture. Generally, a higher educational level have been reported among youth farmers and hence the focus of this study on youth farmers.

Behavior has been associated with words such as acts, conduct, mannerism, deportment and comportment. In lay terms, it describes how a person reacts to another, a situation, or a stimulus. Behavior is an attempt on the part of an individual to bring about some state of affairs, either to effect a change from one state of affairs to another, or to maintain a currently existing one (Bergner, 2011). It is the readiness to react to certain objects in the environment as an appreciation of the object (Utami, 2017). A summary of different definitions points to a person's behavior as a measure of his/her attitude towards, knowledge of, and intentions towards another, an object, a concept, or an occasion (Utami, 2017). Therefore, in examining farmers' record keeping behavior, it is important to assess their capability and knowledge of the farm record keeping. Their attitude towards record keeping or their perception of it also needs to be examined. Their willingness or intentions towards farm record keeping is also of importance in determining their behavior. Finally, it is important to identify socio-economic determinants of farm record keeping behavior and challenges that youth farmers face in keeping farm records. The study therefore pursued the following objectives:

- An assessment of the level of record keeping among farming youths;
- An examination of the attitude of youth farmers towards farm record keeping;
- An assessment of youth farmers' knowledge of farm record keeping;
- An assessment of youth farmers' intentions towards keeping farm records;
- A determination of youth farmers' record keeping behavior; and
- An identification of the constraints to farm record keeping among farming youths in the study area.

Hypothesis of the study

The hypothesis of this study was stated in the null form as follows:

$H0_1$: Socio-economic characteristics of rural farming youths do not affect their farm record keeping behavior.

Literature review

The study is premised upon the theory of behaviorism. This theory stems from behavioral psychology. Behaviorism, also called behavioral psychology, is a theory of learning based on the belief that all behaviors are acquired by conditioning, and that conditioning occurs through interaction with the environment (Kendra, 2019). Behaviorists opine that our responses to environmental stimuli shape our actions. In other words, strict behaviorists believe that every behavior is the result of experience. Therefore, regardless of their backgrounds, people can be trained to act in a particular manner, given the right conditioning. This school of thought believes that behavior can be studied in a systematic and observable manner regardless of internal mental states (Kendra, 2019). Fundamentally, only behavior that can be observed should be considered cognitions. Moods and emotions are far too subjective. Strict behaviorists felt that any person could be trained to perform any task despite genetic background,internal thoughts and personality traits. In this vein, youth farmers could be trained on proper record keeping provided the conditions are right. Record keeping behavior may be influenced by farmers' experience and experience, in turn, may shape their thinking, thus bring about positive attitude towards farm record keeping. Regardless of the educational level, proponents of this theory believe that experienced farmers could still be trained to perform any task, provided the conditions are right. The conditions, in this case, could be linked to their willingness and intention of keeping farm records. Two types of conditioning have been identified by Kendra (2019).

Classical conditioning is a tool frequently used in behavioral training. It involves pairing a neutral stimulus with a naturally occurring stimulus. The neutral stimulus evokes the same response as the naturally occurring stimulus, without the naturally occurring stimulus presenting itself. The associated

stimulus becomes the conditioned stimulus and the learned behavior is referred to as the conditioned response.

Operant conditioning (sometimes called instrumental conditioning) is a method of learning that occurs through reinforcements and punishments. An association is made between a behavior and a consequence for that behavior through operant conditioning (Kendra, 2019). When a desirable result accommpanies an action, the behavior is more likely to occur again. Responses followed by adverse outcomes, on the other hand, become less likely to happen again in the future. However, a farmer cannot be punished for wrongful acts or improper record keeping strategies; they could be motivated by the provision of incentives which will, in turn, boost their morale. Farmers' would be motivated if incentives are provided; acquiring new skills such as record-keeping skills would be easier if farmers had the desirable result.

Materials and Methods

The study area

Ekiti State, south west Nigeria was the study area. The state lies in the rain forest zone between longitude 7.667^{0}N 5.250^{0}E and Latitude 7^{0}40^{1}N 5^{0}15^{1}E occupying 2,453m^2. The State has 16 Local Government Areas, classified into three (3) zones by the state Agricultural Development Project (ADP). Many inhabitants of the state rely on agriculture for their livelihood.

Sampling procedure and sample size

The population for the study comprised all youth farmers in Ekiti State. The state is divided into three agricultural zones for administrative purposes by the Agricultural Development Project ADP Office. Each of the zones are further divided into six blocks each and each block is divided into eight cells. A three-stage random sampling technique was used for the study. In the first stage, half (50%) of the six blocks in each of the three (3) ADP zones were randomly selected to give three (3) blocks per zone. This was followed by a random selection of 50% of the cells from the twenty-four (24) cells in each of the selected blocks. Finally, 50% of the youth farmers in the cells were randomly selected. A total sample size of a hundred and seventy-eight (178) was used for the study.

Data collection and analysis

A structured interview schedule was the survey instrument. Descriptive statistics involving the use of frequency counts, percentages and means were used to present the findings from the objectives of the study while the multiple regression analysis was used to identify determinants of farmers' record keeping behaviour.

Measurement of variables

Youth farmers' record keeping behavioral index was calculated using a model developed by Michalos (2009). The model was slightly modified to fit particular characteristics of this study. Three (3) behavioral indicators namely knowledge, intention and attitude were aggregated in deriving the farmers' behavioral index.

The attitude of young farmers to farm record keeping was measured with a four-point Likert scale. Attitudinal statements were posed at respondents and they were required to indicate the extent to which they agreed with the statements. The mean scores of the respondents were converted to percentages.

Knowledge level of farming youths on farm record was measured using the knowledge test or teacher-made-test (Meena *et al.*, 2012). This involved the development of comprehensive lists of twenty (20) questions which when pulled together, adequately depicts knowledge of farm record keeping. The scoring guide was 1 score for each correct answer and 0 score otherwise. The respondents' scores were also converted to percentage.

Intentions to keep farm records were taken as farmers' willingness to keep farm records. A list of all required farm records was drawn and farmers were asked to indicate their willingness or otherwise to keep them. Farmers were scored 1 for each record they were willing to keep and 0 for those they were not willing to keep. The total of marks scored by each respondent was converted to percentages.

Behavioral index was derived by aggregating the score of the three indicators (attitude, knowledge and intention) and converting this to an index which can take values between 0 and 1.

$$BI = Bi_1 + Bi_2 + Bi_3$$

Where;
BI= Behavior index; Bi_1= Attitude index; Bi_2= Knowledge index; Bi_3=Intention index

The behavioral index was taken as an indication of the respondents' positive behavior towards farm record keeping.

Level of record keeping: This was measured using a four-point Likert scale. The list of various record types under each of the four broad categories was generated and respondents were required to indicate the type (s) of record kept and the regularity with which they are kept. Scores were aggregated and converted to mean, which was adopted as the measure of the level of the various records kept by the respondents.

Challenges faced by youth farmers in keeping farm records: This was measured using a four-point Likert-type scale. Lists of possible constraints to keeping farm record was drawn and respondents were required to indicate the level of severity of the constraints on a scale of one to four. The scores were aggregated and converted to means.

Results and Discussion

Socio-economic characteristics of respondents
This section presents the results of the socio-economic characteristics of youth farmers. A summary of the result is presented in Table 1.

Table 1 reveals that the average age of youth farmers in the study area was 28 years, and there were more males (73.6%) than females. The male dominance is due to the fact that females were more involved in agricultural processing in the country (Omotesho *et al.*, 2017). The high percentage of youth that were married (66.3%) is a reflection of early marriage which characterize rural societies in Nigeria. On the average, youth farmers in Ekiti State had 12 years of schooling. The state is one of those with the highest literacy level in Nigeria (UNESCO, 2012). About 62 percent of the respondents had farming as their primary occupation and earned about $109 per month. With a mean household size of five, it is obvious that majority live below the poverty line. This findings is in agreement with the reports of Omotesho *et al.* (2014) that many rural households in Nigeria live below the poverty line. The small-scale/subsistence nature of the youths' farming activities is evidenced

Table 1: *Socio-economic characteristics of respondents (n=178).*

Variables	Frequency	Percentages	Mean	SD
Age (years)				
≤ 24	29	16.30		
25– 30	55	30.90	28.38	4.98
>30	94	52.80		
Sex				
Female	47	26.40		
Male	131	73.60		
Marital status				
Married	94	52.80		
Widowed	6	3.40		
Single	60	33.70		
Divorced	18	10.10		
Years of education				
≤6	40	22.50		
7 – 11	15	8.40	11.56	3.59
12 – 16	114	64.00		
>16	9	5.10		
Primary Occupation				
Farming	110	61.80		
Artisan	30	16.85		
Trading	38	21.35		
Monthly Income (₦)				
≤ 50,000	144	80.90		
50,001 – 100,000	24	13.50	39,365.16	27,964.79
100,001 – 150,000	9	5.00		
>150,000	1	0.60		
Membership of farming association				
Yes	95	53.40		
No	83	46.60		
Household size				
≤2	3	1.70		
3 – 8	168	94.40	4.93	1.73
>8	7	3.90		
Farm size (acre)				
≤2.00	75	42.10		
2.01 – 8.00	78	43.80	4.01	3.26
8.01 – 14.00	23	12.90		
>14.00	2	1.20		
Farming experience (years)				
≤10.00	90	50.50		
10.01 – 15.00	56	31.50	12.08	5.61
.>15.00	32	18.00		
Extension contact				
(in past six months)0	14	7.87		
1–2	141	79.21	1.97	0.99
>2	23	12.92		

Source: *Field Survey (2019) S.D: Standard Deviation (1USD= ₦ 360).*

by their mean farm size (4.01 acres). With mean years of farming experience of over 12 years, many of the youths worked on their family farms even as children. The youths' access to agricultural information may be inadequate as many did not belong to farming groups (47%) and they had an average of two (2) extension visits in six months.

Level of record keeping among rural farming youths

This section presents the result and discussion on the level of record keeping among youth farmers in the study area.

As shown in Table 2, the most kept farm records were the financial records with a mean score of 2.65. Among the various financial records, the cashbook was the most popularly kept record. (Mean= 3.20). It was observed that while farmers kept records of payouts, credit sales and a few other expenses, they did not maintain comprehensive expenditure records. They also did not establish and keep regular records of their income as shown by the mean score of 1.64.

Table 2 also revealed that production records, with a mean score of 2.40 were the second most kept records among youth farmers in the study area. The records comprised quantities of input and other factors of production such as labour. With the highest mean score (2.87) among the production records, harvested produce records was the most kept in this category. In the resource inventory category, youth farmers kept records of their liabilities (Mean score= 2.29) more often than they do their assets (Mean Score = 1.96). With a mean of 2.13, resource inventories were the 3rd most kept in the categories of records. The least kept records were the supplementary records (Mean score = 1.43).

Table 2: *Distribution of respondents according to records kept.*

Types	NK F (%)	RK F (%)	OK F (%)	AK F (%)	M
Resource inventory					
Assets (Land, tools and other equipment)	78(43.80)	54(30.30)	20(11.20)	26(14.60)	1.96
Liabilities (Loans, debts)	48(27.00)	63(35.40)	33(18.50)	34(19.10)	2.29
Production records					
Seeds and seedlings	33(18.50)	38(21.30)	76(42.70)	31(17.40)	2.58
Labour	22(12.40)	47(26.40)	74(41.60)	35(19.70)	2.68
Pesticides	44(24.70)	60(33.70)	50(28.10)	24(13.50)	2.30
Fertilizer records	62(34.80)	60(33.70)	33(18.50)	23(12.90)	2.09
Herbicides	80(44.90)	55(30.90)	19(10.00)	24(13.50)	1.92
Produce/harvest	40(22.50)	20(11.20)	40(22.50)	78(43.80)	2.87
Financial records					
Income	103(57.90)	50(28.10)	11(6.20)	14(7.90)	1.64
Expenditure	88(49.40)	60(33.70)	15(8.40)	15(8.40)	1.75
Maintenance of tools	26(14.60)	45(25.30)	71(39.90)	36(20.20)	2.65
Cash flow projection	16(9.00)	31(17.40)	59(33.10)	72(40.40)	3.05
Credit book	17(9.60)	30(16.90)	52(29.20)	79(44.40)	3.08
Wages to labourers	17(9.60)	29(16.30)	39(21.90)	93(52.20)	3.16
Cash book	13(7.30)	26(14.60)	51(28.70)	88(49.40)	3.20
Supplementary records					
Pest and disease incidence	111(62.40)	50(28.10)	9(5.10)	8(4.50)	1.48
Soil related records	126(70.80)	42(23.60)	9(5.10)	1(0.60)	1.64
Farm layout	111(62.40)	38(21.3)	12(6.70)	17(9.60)	1.36
Legal matters and agreements	118(66.30)	19(10.70)	15(8.40)	26(14.60)	1.28
Climate related records	121(68.00)	23(12.90)	13(7.30)	21(11.80)	1.37

Source: *Field Survey, 2019. Overall Mean= 2.26; NK: Never Kept; RK: Rarely Kept; OK: Often Kept; AK: Always Kept; M: Mean.*

Adedapo and Adekunmi (2019) reported that production records where the most kept records among poultry farmers in Nigeria. This contradiction may be born out of the variations between operations in the poultry and the crop farming sector. These findings are consistent with reports of Okantah *et al*. (2003) and Tham-Agyekum *et al*. (2010), who all reported that the most kept records among farmers were production and financial records. The overall mean score for all farmers on all records was 2.26. This is suggestive of a poor level of record keeping among youth farmers in the study area.

Perceptions of respondents on farm record keeping

This section presents the results and discussion of the perceptions of youth farmers on farm record keeping. As shown in Table 3, the respondents recorded very low scores on the Likert items constructed in the positive form and much higher scores on those constructed in the negative form. The overall mean (1.75/ 43%) reveal a poor attitude on the average for the farmers. A breakdown of the result on the Table 3 to provide information on individual respondents reveal that 135 respondents (75.80%) had mean scores of less than two (50%). Only 43 respondents (24.2%) had means scores above two. The highest mean score obtained by any respondents was 2.96 (74%).

Level of knowledge of rural farming youths on farm record

Rural farming youths' level of knowledge on farm record keeping is reported and discussed in this section. Table 4 shows that the respondents got more of the questions write than wrong. The overall mean score was 66.05%. An analysis of the result in Table 4 regarding individual performances of the farmers in the test reveals that 106 respondents (59.90%) scored less than 50% in the teacher-made-test while the remaining 72 representing 40.10 percent of the sample scored above 50%. About 30% of the respondents scored above 75% hence the overall average of 66.05%. This result shows that the farmers had considerable knowledge of what farm record keeping is about. This can be attributed to their high literacy level as revealed in their socio-economic characteristics (Table 1). Tham-Agyekum *et al*. (2010) opined that education is likely to positively influence farmers' knowledge of record keeping.

Intention of farmers to keep farm record

This section presents findings and discussion on youth farmers' intention or otherwise, to keep farm records. Table 5 shows that the respondents' were most willing to keep financial records (86%). They also expressed 77 percent willingness to keep production records. In addition, 76 percent of the respondents were willing to keep resource inventory while the record category in which respondents expressed the least interest was the supplementary records. On the overall, the respondents expressed 77 percent willingness to keep farm records.

Table 3: *Perception of respondents on farm record keeping.*

Statements	SD F (%)	D F (%)	A F (%)	SA F (%)	M
It enhances good management decisions	135(75.80)	40(22.50)	3(1.70)	0(0.00)	1.25
It helps in planning budget for future farm operations	106(59.60)	65(36.50)	3(1.70)	4(2.20)	1.46
It helps government in planning interventions	83(46.60)	81(45.50)	13(7.30)	1(0.60)	1.61
It helps in determining profits	103(57.90)	48(27.00)	15(8.40)	12(6.70)	1.64
It makes extension work easier	78(43.80)	68(38.20)	25(14.00)	7(3.90)	1.78
It's a waste of time	17(9.60)	23(12.90)	47(26.40)	91(51.20)	1.80
Output not quantifiable	18(10.10)	33(18.50)	62(34.80)	65(36.50)	2.02
It negates cultural belief and norms	33(18.50)	25(14.00)	62(34.80)	58(32.60)	2.18
It's irrelevant	16(9.00)	23(12.90)	55(30.90)	84(47.20)	1.83
Farm operations are time consuming to allow	33(18.50)	42(23.60)	58(32.60)	45(25.30)	2.35
It helps me fix produce price	77(43.30)	78(43.80)	17(9.60)	6(3.40)	1.73
It helps identify strong and weak points in farm management	91(51.10)	63(35.40)	18(10.10)	6(3.30)	1.65
Its best suited for educational purpose	72(40.40)	63(35.40)	32(18.00)	11(6.20)	1.89
It allows for estimation of the farms worth	89(50.00)	67(37.60)	17(9.60)	5(2.80)	1.65
It provides bankers information on farm for credit purposes	89(50.00)	70(39.30)	17(9.60)	2(1.10)	1.61
It preserves information about farm business	89(50.00)	80(45)	6(3.40)	3(1.70)	1.56
It helps in generating research information	96(53.90)	64(36.00)	10(5.60)	8(4.50)	1.60
It helps in determining profitable enterprise.	92(51.70)	63(35.40)	19(10.70)	4(2.20)	1.63

Source: *Field Survey, 2019. S.D: Strongly Disagree; D: Disagree; A: Agree; S.A: Strongly Agree; M: Mean Overall mean = 1.75 (43%).*

Table 4: *Distribution of respondents by their knowledge of record keeping.*

S/N	Questions	CA F (%)	WA F (%)
1	Farm does farm record keeping entail?	84(47.2)	94(52.8)
2	In what ways can record keeping contribute to farm business success?	104(58.4)	74(41.6)
3	Does farm record include farm debt?	133(74.7)	45(25.3)
4	Should family labor used be cost and included in the farm record?	111(62.4)	67(37.6)
5	Should records be kept of the time taken to complete various farm operations?	132(74.2)	46(25.8)
6	What information do farmers refer to farm records for?	150(84.3)	28(15.7)
7	What technical skill id required for farm record keeping?	100(56.2)	78(43.8)
8	Should farm records indicate the performance of various enterprises on the farm	129(72.5)	49(27.5)
9	Describe the system for farm record keeping.	122(68.5)	56(31.5)
10	Do farm record include records of hired labor?	117(65.7)	61(34.3)
11	Do farm records include date of crop planting?	141(79.2)	37(20.8)
12	Do farm records indicate quantity of seed planted?	129(72.5)	49(27.5)
13	Are farm records better kept on papers or memorized?	115(64.6)	63(35.4)
14	Do farmers keep record for performance evaluation purpose?	128(71.9)	50(28.1)
15	What environmental regulation related information can farm records provide?	95(53.4)	83(46.6)
16	What are some of the uses of farm record for government?	108(60.7)	70(39.3)
17	Do farm record include list of farmers?	96(53.9)	82(46.1)
18	Mention the types of farm records.	93(52.2)	85(47.8)
19	Should your production records include produce given out as gift?	119(66.9)	59(33.1)
20	Of what importance are dates in farm records?	110(61.8)	68(38.2)

Source: *Field Survey (2019). M.S: Mean Score; S.D: Standard Deviation; K.L: Knowledge Level; K.S: Knowledge Score; CA: Correct Answers; WA: Wrong Answers.*

Table 5: *Intention of rural youth farmers on farm record keeping.*

Records	Yes F (%)	No F (%)	%	RANK
Financial records	153(86.00)	25(14.00)	0.86	1st
Production records	137(77.00)	41(23.00)	0.77	2nd
Resource inventory	136(76.40)	42(23.60)	0.76	3rd
Supplementary records	123(60.70)	55(39.30)	0.69	4th

Source: *Field Survey (2019). M.S: Mean Score 0.77.*

Record keeping behavior of rural farming youth

This section presents the results and discussion on the farm record keeping behavior of the respondents. Table 6 presents the distribution of youth farmers according to their farm record keeping behavior based on the behavioral index generated.

As shown in Table 6, the farm record keeping behavior of majority (81.5%) of the respondents was fair with behavioral index ranging between 0.51 and 0.74. Only 6.2 percent had index greater than 0.75 and were categorized as good. Twenty two percent of the respondents had index below 0.50 and were categorized as poor. The overall behavioral index (0.62) with standard deviation of 0.09 suggests that in general, rural farming youth at best, had fair farm record keeping behavior. The poor attitude of the farmers to record keeping and their not so high knowledge level are factors in this result.

Table 6: *Record keeping behavior of rural youth farmers.*

Categories	Behavioral index	Frequency	Percentage	Mean	S.D
Poor	<0.50	22	12.4	0.62	0.09
Fair	0.51 – 0.74	145	81.5		
Good	≥0.75	11	6.2		

Source: *Field Survey (2019). S.D: Standard Deviation.*

Challenges faced by youth farmers in keeping farm records

This section present results and discussion on the severity of challenges faced by rural farming youth in keeping farm records. Twelve constraints with varying levels of severity were identified as shown in Table 7. The most severe constraint was the poor level of awareness and knowledge on the importance of farm record keeping towards the success of farming business (Mean = 3.48). Agbebi (2012) also reported

that farmers lacked appropriate information on the importance of record keeping and this accounts for the lack of adequate data on their farming operation. The fact that farmers own multiple plots was the second most severe challenge as farmers find it difficult to keep records from multiple plots (Mean = 3.31). This constraint is closely linked to the 4th most severe challenge which stems from the mixed cropping nature of faming activities in the study area. Farmers are often not able to accurately define profit on the various crops on the same piece of land. The appropriation of the cost of land preparation for the different crops for instance, is a challenge. Also, the respondents reported procrastination and forgetfulness as challenges to proper farm record keeping. The result further shows that non consideration of farming as a business, the thought of records not beneficial to respondents and inability to keep farm records as a result of illiteracy were constraints faced by respondents in farm record keeping. This implies that small-holder farmers in deciding whether or not to adopt formal record keeping, would consider the perceived importance and the ease of its practical application in diversified farms. This corroborates Tham-Agyekum *et al*. (2010) position that respondents did not keep comprehensive farm records claiming that the records were not beneficial to them. The authors also reported time constraint as one of the challenges preventing farmers from keeping farm record.

Result of tested hypothesis

This section reports the results of the test to identify the socio-economic determinants of youth farmers' farm record keeping behavior.

As presented in Table 8, the regression model with seven predicators produced R^2= 0.377, P<0.05. Although the R^2 values is low it is opined that studies in fields that attempt to predict human behavior typically have low R^2 values as humans are harder to predict than physical processes (Martin, 2012). According to Martin (2012) if R^2 values are low but there are statistically significant predictors, it is possible to draw important conclusions about how changes in the predictor values are associated with changes in the response value. As shown in the Table 8, level of education (β=0.052) was the only identified determinant of farm record keeping behavior and it accounts for 37.7% of the variation in farmers' record keeping behavior. The positive coefficient is indicative of a positive relationship between farmers' level of education and their record keeping behavior. The higher the number of years spend schooling by the farmers, the higher their behavioral index. This finding corroborates that of Dudafa (2013) who established a relationship between small-scale farmers' literacy level and farm record keeping. Ibrahim *et al*. (2018) also listed education alongside marital status, flock size, extension contact, primary occupation and experience as significant in determining record keeping in animal husbandry. According to Adedapo and Adekunmi (2019), Flock size, education, experience, access to credit influenced choice of records kept among farmers.

Table 7: *Distribution of respondents by challenges faced in farm records' keeping.*

Constraints	N.C F (%)	N.S F (%)	S F (%)	V.S F (%)	M	RANK
Belief in mental record keeping	72(40.40)	29(16.30)	37(20.00)	40(22.50)	2.25	12th
Poor record keeping skills	13(7.30)	37(20.80)	70(39.30)	58(32.60)	2.97	7th
Poor extension education	34(19.10)	38(21.30)	75(42.10)	31(17.40)	2.91	8th
Farming as hubby, not as a business for profit	25(14.00)	17(9.60)	84(47.20)	52(29.20)	2.91	8th
Poor knowledge of the importance of record keeping	8(4.50)	11(6.20)	86(48.30)	73(41.00)	3.48	1st
Mixed cropping with a wide variety of crops with different records	12(6.70)	21(11.80)	65(36.50)	80(44.90)	3.19	4th
High cost of farm record book	30(16.90)	22(12.40)	80(44.90)	46(25.80)	2.79	10th
Time constraints	17(9.60)	40(22.50)	70(39.30)	51(28.70)	2.87	11th
Fragmented and scattered farm plots/field	7(3.90)	39(21.90)	53(29.80)	79(44.40)	3.31	2nd
Produce difficult to quantified	15(8.40)	35(19.70)	59(33.10)	69(38.80)	3.02	6th
Difficulty in entering data	21(11.80)	23(12.90)	61(34.40)	73(41.00)	3.04	5th
Forgetfulness / Procrastination	22(12.40)	16(9.00)	48(27.00)	91(51.10)	3.28	3rd

Source: *Field Survey (2019). N.C: Not A Constraint; N.S: Not Severe; S: Severe; V.S: Very Severe; M: Mean*

Table 8: *Socioeconomic determinants of youth farmers' farm record keeping behavior.*

Socio-economic characteristics	Coefficients beta	S.E	t-value	sig
Constant	1.281	0.155	8.250	0.000
Age	0.013**	0.007	1.971	0.040
Education	0.034***	0.006	5.265	0.000
Monthly income	-0.006	0.000	1.135	0.258
Household size	-0.004	0.012	-0.306	0.760
Farm size	-0.007	0.008	-0.919	0.359
Farming experience	-0.012	0.007	-1.636	0.104
Extension contacts R^2=0.377	-0.019	0.020	-0.942	0.347

Source: *Field Survey (2019)* ** *P< 0.05 S.E (Standard Error).*

Conclusions and Recommendations

The study concluded that farm record keeping behavior among rural farming youth in Ekiti State was fair and influenced by their level of education. The study further concluded that the level of record keeping among the youth farmers was low, their attitude to record keeping was poor and they had a fair knowledge of record keeping. The youth, however, had high intensions of keeping farm records. Poor understanding of the importance of farm record keeping and the management of records for fragmented and scattered farm plots as well as a wide variety of crops cultivated together in mixed cropping were the major challenges to record keeping among the farmers.

Based on the findings and conclusion reached, the following recommendations are put forward;

- Agricultural extension agents and other stakeholders in agricultural training should create awareness among farmers on the importance and benefits of farm record keeping.
- Extension education organisations should ensure appropriate training of young farmers in record keeping. Particular attention should be placed on the management of record keeping for multiple plots and mixed cropping with a wide variety of crops.
- Finally, the Government should invest in adult literacy programmes to address deficiencies of poorly schooled youth farmers.

Novelty Statement

The study provides empirical evidence of the importance of farmers' intensions, attitude and knowledge to the farm record keeping behavior of rural farming youths.

Author's Contribution

Kemi Funmilayo Omotesho: Conceptualised and Supervised the overall research work
Philip Akintunde Fatodu: Carried out the field survey and report write-up
Toyin Benedict Ajibade: was part of the conceptualization, supervised the field survey and corrected the write up.
All authors read and approved the final manuscript.

Conflict of interest
All authors have declared no conflict of interest.

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