NIGERIAN AGRICULTURAL JOURNAL
ISSN: 0300-368X
Volume 52 Number 3, December 2021 Pg. 77-84
Available online at: http://www.ajol.info/index.php/naj
https://www.naj.asn.org.ng

DETERMINANTS OF AGRICULTURAL PRODUCTS VALUE CHAIN ACTORS' USE OF ELECTRONIC BANKING PLATFORMS IN ACCESSING SAVINGS IN SOUTHEAST NIGERIA

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Abstract
This study focused on analyzing the determinants of agricultural products value chain actors' use of e-banking platforms in accessing savings in Southeast Nigeria. Specifically, the study described the socioeconomic characteristics of the agricultural products value chain actors; ascertained their level of use of e-banking platforms in advancing access to savings; correlated the relationship between the use of e-banking platforms and access to savings by actors in agricultural products value chains, estimated the determinants of use of e-banking platforms in accessing savings by agricultural products value chain actors and examined the motivating factors for the use of -banking platforms in accessing savings by agricultural products value chain actors in the study area. A multistage random sampling technique was adopted in selecting a total of eighty (80) respondents used in the study. Primary source of data was used for the study. Data for the study was obtained using structured questionnaires and personal interviews. Data obtained were analyzed using both descriptive statistics such as frequency distribution, percentages, and means and econometric tools such as Pearson product-moment correlation and probit regression technique. Findings showed that the majority of the agricultural products value chain actors are males (62%), married (55%), had tertiary education (40%), owned certificate of business registration (70%), belonged to a cooperative society (72%), uses social media (63%) and saves their money in the bank (97%). E-banking application platform was identified as the most used platform for accessing savings by these actors. In addition, e-banking apps, Quickteller, and ATM services strongly correlated with access to savings by agricultural products value chain actors at 1%, 1%, and 5% levels of significance. Sex, age, level of education, membership of cooperation, target market, time-saving, easy business transactions, and access to internet facilities significantly determined the use of e-banking platforms by agricultural value chain actors in the study area. The study recommends that agricultural products value chain actors receive training on how to use e-banking platforms to access their saved money, as this will increase their access to other financial services necessary to keep their enterprises sustainable.

Keywords: Electronic, banking, platforms, savings, agricultural products, value chain, Southeast, Nigeria

Introduction

There has been various recent developments in the global business environment, but none has significantly impacted business-like technological innovation efforts. Although technological innovation has impacted every industry, its revolution and impact in the banking industry is particularly concerning (Oteh *et al*., 2017). With an enhanced platform rooted in an electronic system, technology has reengineered bank service delivery to a whole new level (Ayuba and Aliyu, 2015). This reengineering has made it easier for consumers to manage their finances, have access to their accounts without going to the bank, and has sparked digital finance management, resulting in enhanced financial inclusion and customer experience. Furthermore, technology has bolstered agricultural service and financial intermediation through various financial technology companies, allowing many agribusinesses and entrepreneurs to access investment, grow, and satisfy the world's increasing population's desperate need for food. Technology has made it easier for organizations and individuals to take and make financial decisions on complex operations; it has also shifted control to customers, making it impossible for banks to regulate client choices and preferences. One of the most significant outcomes of financial innovation is

the virtually endless convenience it provides clients to access financial data and improve corporate efficiency. In contrast, the development of electronic banking systems has changed and redefined how banks operate, as the need to lower both operational and administrative costs has driven banks to the electronic world; however, cost reduction is only possible if consumer usage increases (Shankar and Rishi, 2020; Ugwuja and Onavwie, 2019, Ugwuja, *et al*., 2017). Electronic banking (e-banking) system undoubtedly provides a more efficient and fastest way to increase access to financial services and other range of value-added services (Shankar and Rishi, 2020, pp.10), given that financial services are not present in many parts of Nigeria due to several factors such as infrastructural facilities and security concerns. However, it is mostly hindered by factors such as financial illiteracy and concerns such as security and protection perceptions among Nigerians. These factors reflects the going realities of agripreneurs in many rural economies. Evidence has shown that many agripreneurs are poor resource farmers and lacks financial literacy. As such recent developments to improve financial inclusions are unknown to them. These developments no doubt reflect the growing consensus that adoption is a function of one's socioeconomic profile. For instance, Oteh *et al*., (2017) established a link between demographic factors and the adoption of e-banking platforms. Besides this, adoption is a function of other factors and have been highlighted by researchers such as Ayuba and Aliyu (2015), Xu, Shi, Rong and Yuan, (2020,), Asongu, Nwachukwu, and Aziz (2018,), Gosavi (2018,), and Shankar and Rishi (2020) to include unreliable electronic communication infrastructure, poor public perception, inadequate facilities, poor internet security, the incidence of fraud, low telecommunication penetration and other infrastructure. Other studies have shown that poor awareness of e-banking transaction platforms, social influences and poor knowledge of technology hinders adoption (Ugwuja and Onavwie, 2019; Abor, Amidu and Issahaku, 2018). These challenges are partly responsible for the exclusion of bankable adults in most developing countries from financial services with several far-reaching economic and social implications.

The foregoing challenges function as both pull and push forces, and they will continue to serve as a basis for assessing success in policies to improve financial access and digital financing. Studies such as Oteh *et al*. (2017) have examined the twin issue of usage and adoption for general bank consumers, but in recent times, there has been development in agricultural financing opportunities through financial technology companies. The impact on business has been alarming and interesting. It is interesting because it opens conversations around new realities in mobilizing resources for agricultural investment and opportunities for farmers to save and invest. This study examines how adopting e-banking platforms by agripreneurs are increasing their investment and other opportunities such as propensity to save. Our interest is to present a narrative and compare how the electronic connection between bank and agripreneurs assists their financial management, especially financial control. According to Ayuba and Aliyu (2015), electronic connection between the bank and the customer to prepare, manage and control financial transactions. Such control and management are necessary if agripreneurs increase their capacity to meet the projected food supply before 2050. Therefore, this study sought to determine the various factors that influenced agricultural products value chain actors' use of e-banking platforms in improving savings in Southeast Nigeria. Specifically, the study described the socioeconomic characteristics of the agricultural products value chain actors; ascertained their level of use of e-banking platforms in advancing access to savings closure; correlated the relationship between the use of e-banking platforms and access to savings by actors in agricultural products value chains, estimated the determinants of use of e-banking platforms in improving access to savings by agricultural products value chain actors and examined the motivating factors for the use of -banking platforms in accessing savings by agricultural products value chain actors in the study area. The study hypothesized no relationship between the use of e-banking platforms and access to savings among agricultural products value chain actors.

Methodology

The study was carried out in Enugu State, Nigeria. A multistage sampling technique was used to sample the respondents. In the first stage, three (3) Local Governments Areas (LGAs) from the state were selected, namely Udi, Igboeze North and Igboeze South LGAs. The second stage involved a random selection of 2 communities each from the LGAs. This gave a total of six (6) communities used for the study. The third stage involved the selection of 2 villages from each of the communities, which gave a total of 12 villages sampled for the study. The last stage involved selecting seven (7) respondents from each of the villages, which gave a total sample of 84 respondents. Data for the study was obtained using structured questionnaires and personal interviews. Data collected included financial inclusion questions on bank account ownership, Bank Verification Number (BVN) registration status, ownership of savings account, the amount saved monthly, household, personal, and farm-level characteristics. Data obtained were analyzed using both descriptive statistics and inferential statistics. socioeconomic characteristics of the agricultural products value chain actors were analyzed using descriptive statistics such as frequency distribution, percentages, and means. The use of e-banking platforms in advancing access to savings closure was analyzed using a mean score. The item statements were rated on a five-point Likert rating scale of very often = 5, Often = 4; low use = 3, very low use = 2 and not use =1. An intermediate (decision cut-point) score of 3.00 was obtained by adding the weighted averages of all five ratings (i.e., 5 + 4 + 3 + 2+1) and then dividing the result by five to arrive at a mean score of 3.00. Mean responses of 3.00 indicated use of a specific e-banking platform, while values of 3.00 indicated non-

use of a specific e-banking platform. The relationship between e-banking platforms and access to savings by actors in agricultural products value chains were correlated using the Pearson product-moment correlation technique. The determinants of the use of e-banking platforms in accessing savings by agricultural products value chain actors were estimated using an ordered probit regression model. The motivating factors for e-banking platforms in improving savings by agricultural products value chain actors in the study area were analyzed using mean score. The item statements were rated on a five-point Likert rating scale of strongly agree =5, Agree = 4; Indifference = 3, Disagree = 2 and Strongly disagree =1. It was decided that a midway (decision cut-point) was needed to arrive at a mean score of 3.00 using a five-point rating scale. The rating scale weights (5+4+3+2+1) were added up and then divided by 5 to arrive at a 15-point total. Mean responses of 3.00 indicated that the respondent was motivated to use the e-banking platform, whereas values of 3.00 indicated that the respondent was not motivated to use the e-banking platform.The ordered probit regression model used to estimate the determinants of use of e-banking platforms in improving access to savings closure by agricultural products value chain actors is specified as:

$$Q_{i=0,1,\ldots,4} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \beta_5X_5 + \beta_6X_6 + \beta_7X_7 + \beta_8X_8 + \beta_9X_9 + \beta_{10}X_{10} + \beta_{11}X_{11} + \beta_{12}X_{12} + \beta_{13}X_{13} + e_i \ldots\ldots\ldots\ldots (1)$$

Where;

Q_i = Use of e-banking platforms by agricultural value chain actors (i is stance for e-banking platforms where Banking codes = 0, Banking apps = 1, Quickteller = 2, ATM services = 3, Point of sale = 4)

X_1= Sex (male = 1, female = 0)
X_2= Age of respondents (years)
X_3= Marital status (Married = 1; Unmarried = 0)
X_4= Level of education (Years)
X_5= Type of business (Crop = 1; Otherwise = 0)
X_6= Co-operative membership (Yes = 1; No = 0)
X_7= Business registration (Yes = 1; No = 0)
X_8= Targeted market location (Rural = 1; Urban = 0)
X_9= Time savings (Yes = 1; No = 0)
X_{10}= Safety to use (Yes = 1; No = 0)
X_{11}= Ease of business transactions (Yes = 1; No = 0)
X_{12}= Facilitate evidence-based payment (Yes = 1; No = 0)
X_{13}= Internet facilities (Access = 1; No access = 0)
β_0 = Intercept
$\beta_1 - \beta_{13}$ = Estimated parameters
e_i = Error term.

The bivariate Pearson Product Moment Correlation (PPMC) Coefficient (r) statistic is given as:

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{n(\sum x^2) - (\sum x)^2}\sqrt{n(\sum y^2) - (\sum y)^2}} \ldots\ldots (2)$$

Where,
r = correlation coefficient;
n = number of pairs of data;
$\sum xy$ = sum of the product of paired scores;
$\sum x$ = sum of the agricultural value chain actors using e- banking;
$\sum y$ = sum of the agricultural value chain actors' access to savings;
$\sum x^2$ = sum of squared of the agricultural value chain actors using e-banking;
$\sum y^2$ = sum of squared of the agricultural value chain actors' access of savings.

Results and Discussion

Socioeconomic characteristics of agricultural value chain actors

The socioeconomic characteristics of the respondents were summarized in Table 1. The majority of the respondents (38.8%) were between the ages of 21 and 30, with only 7.5 percent (7.5%) over 40. The respondents' average age was 48.9 years, indicating that most of them are still in their working years and may economically contribute to the growth of agricultural value chains by using modern saving technologies such as e-banking platforms. This result could be due to their knowledge of use of the internet and other ICT technologies. This finding is in line with Paddachi *et al*. (2005)'s observation that the younger the generation, the more likely they will be accustomed to new technology breakthroughs than the older generation. Arable crop producers were the most common among the respondents, accounting for 57.5 percent, while livestock agripreneurs accounted for 42.5 percent. Males have a somewhat higher ratio than females, according to the findings. The study found that males made up 73.8 percent of the respondents, while females were 26.3 percent. This finding is supported by Abor *et al*. (2018), who found that men use e-banking more than women. With 55.0 percent of the respondents being married and 45.0 percent being single, married people were the most common. Individuals who were members of a cooperative society dominated the poll, accounting for 97.5 percent of all respondents. According to the education statistics, 15.0 percent had received primary education, 57.5 percent had received secondary education, and 27.5 percent had received tertiary education, indicating that the respondents have received formal education and are thus predisposed to understand the use of e-banking platforms and how they operate in advancing savings for the furtherance of their business. The study also found that more than half of respondents (70.0 percent) registered their businesses, with the remaining 30.0 percent not doing so. Respondents who sell their products to urban markets were the most prevalent in the study, accounting for 87.5 percent of the total, while respondents who sell to rural markets accounted for 12.5 percent. The majority of urban market targeting respondents should be required to use e-banking systems effectively to facilitate business financial transactions and savings. The respondents who virtually utilize social media for their business were the most prevalent in the study, accounting for 62.5 percent of the total, while those who do not use social media accounted for 37.5 percent. The respondents' average monthly savings was ₦21,276.38. The respondents who saved less than ₦20,000.00 monthly were the most

prevalent in the survey, accounting for 47.5 percent of the total, followed by 25.0 percent who saved up to ₦40,000.00 monthly and 7.5 percent who saved at least ₦60,000.00 monthly. The amount of saving done by the respondents is not so large monthly and thus encourages the use of e-banking platforms in saving the cash monthly. This is important as most of the respondents do this to avoid the long queue in most banking halls, which may discourage accessing savings. The respondents who used e-banking applications in savings were the most dominant with 47.5%, while 15.0% of the respondents used Quickteller for their savings. Around 58 percent of the respondents had a family size of 4-6, 26.3 percent had a family size of 1-3, and 3.8 percent had a family size of 10-12, indicating that the family size of 4-6 was the most prevalent in the study area and hence had the highest frequency.

Level of use of e-banking platforms in accessing savings

The mean responses of the agricultural value chain actors on their level of use of e-banking platforms in accessing savings is presented in Table 2. The result shows that the grand mean score of the respondents' responses on their use of e-banking platforms for savings was 3.37 and is higher than the decision cut-point mean score of 3.00. This finding implies that, on average, the respondents used e-banking platforms in advancing access to their savings in the study area. Three (3) out of the five (5) items on Table 2 have a mean score that is above 3.00 on a 5-point rating scale. This finding indicates that the respondents accepted items No.1, No.2 and No.5 which borders on agricultural value chain actors' use of e-banking platforms. This result means that agricultural value chain actors in the study area employed e-banking platforms to advance access to their savings, such as Automated Teller Machine (ATM) services, Banking applications, and Quickteller. As a result, respondents' ATM services, banking apps, and Quickteller services are the most commonly used e-banking platforms for preserving their earnings to keep their business going. The respondents' frequent usage of ATM services, Banking apps, and Quickteller services could be due to the ease with which these e-banking platforms are accessible, easy to use, understand, and save time compared to other e-banking platforms. This finding validates Marhana (2012) that consumers view e-banking as better than branch banking because it saves time, reduces transfer costs, and that transactions can be carried out from home.

The level of use of e-banking platforms in accessing savings by agricultural value chain actors, as shown in Table 3, revealed that 62.5 percent of the respondents use e-banking platforms in accessing savings, followed by 25.0 percent who use e-banking platforms moderately, and those who use e-banking platforms inaccessibly accounted for the remaining 22.5 percent. This result indicates that agricultural value chain actors in the study area extensively use e-banking platforms to access savings.

Relationship between use of e-banking platforms and access to savings

The Pearson product moment correlation coefficient of the relationship between the use of e-banking platforms and access to saving by agricultural value chain actors in the study area is presented in Table 4 below. The result in Table 4 showed a positive correlation between the use of banking applications and access to savings by agricultural value chain actors with a correlation coefficient of 0.7586, which is significant at the 1% level. The Pearson correlation coefficients were between the range of 0.70 - 0.90, which is taken to imply the existence of a high (strong) correlation between two variables, as stated by Ekwueme (2018). Therefore, the result indicated that a significantly strong correlation exists between the use of banking applications and access to savings by agricultural value chain actors. This result indicates that increase in the use of banking applications increased the access to savings by agricultural value chain actors. Another thing that helped people who worked in agriculture's value chain get money was the use of Quickteller, ATM services, and Point of Sale. All three had a correlation coefficient of 0.7809, which is significant at the 1% level (with a correlation coefficient of 0.6517, which is significant at 5 percent level). According to Ekwueme (2018), Pearson correlation coefficients ranging from 0.70 to 0.90 imply a high (strong) correlation between two variables, while 0.41 to 0.69 implies a moderate correlation between two variables. As a result, the findings revealed that there is a significant strong correlation between the use of Quickteller and access to savings, as well as ATM services and access to savings by agricultural value chain actors, while the use of Point of Sale (POS) and access to savings by agricultural value chain actors have a moderate correlation. This finding presages that Quickteller, ATM services, and Point of sale (POS) are associated with access to savings among agricultural value chain actors in the study area. Therefore, the null hypothesis that there is no significant relationship with use of e-banking platforms and access to savings by agricultural value chain actors in southeast Nigeria is not upheld instead the alternative hypothesis that there is a significant relationship with the use of e-banking platforms and access to savings by agricultural value chain actors in southeast Nigeria was accepted.

Determinants of use of e-banking platforms by agricultural value chain actors

The result of the ordered probit regression estimate of the determinants of e-banking platforms by agricultural value chain actors is presented in Table 5. The result shows that the log-likelihood value of -179.31 indicates that the explanatory variables used in the ordered probit regression model are appropriate. The Chi-squared of 239.58 was significant at 1% level and shows that at least one of the parameters of the variables included in the ordered probit regression model for estimating the determinants of the use of e-banking platforms by agricultural value chain actors is different from zero.

This finding means that the null hypothesis that all parameters equal to zero in the model is rejected.

Sex, age, level of education, membership of cooperation, target market, time-saving, easy business transactions, and access to internet facilities were the significant determinants of e-banking platforms by agricultural value chain actors in the study area. At a 5% level of significance, there is a negative relationship between respondent sex and e-banking platforms for accessing savings by agricultural value chain actors, indicating that female agricultural value chain actors are more likely to use various e-banking platforms to access their savings. According to the results of the marginal effect, the likelihood of female agricultural value chain actors using banking apps, Quickteller, ATM services, and POS increases by 0.8 percent, 3.4 percent, 1.6 percent, and 2.2 percent, respectively, while the likelihood of them using banking codes decrease by 2.9 percent. There is a negative relationship between age of the respondent and the use of e-banking platforms for accessing savings by agricultural value chain actors at 5% level of significance, indicating that the likelihood of using different e-banking platforms in accessing savings by agricultural value chain actors decreases with increase in age. The marginal effects shows that the likelihood of using ATM services and POS by agricultural value chain actors increases by 1.1% and 1.7%, respectively, while the probability of using banking codes, banking apps, and Quickteller decreases by 2.3%, 1.8%, and 2.9% respectively. There is a positive relationship between level of education of the respondent and the use of e-banking platforms for accessing savings by agricultural value chain actors at 1% level of significance, indicating that the likelihood of using different e-banking platforms in accessing savings by agricultural value chain actors increases with increase in the level of education. The marginal effects result shows that the likelihood of using banking codes, banking applications, Quickteller, ATM services, and POS by agricultural value chain actors increases by 2.7%, 3.9%, 4.2%, 3.1%, and 4.8%, respectively. This finding is validated by that of Xu, *et al*., (2020), who noted that level of education determines the use of e-banking for financial transactions. At 1% level of significance, there is a positive relationship between respondent membership of cooperation and the use of e-banking platforms for accessing savings by agricultural value chain actors, indicating that agricultural value chain actors who are members of a cooperative group are more likely to use various e-banking platforms to access their savings. According to the marginal effects results, the likelihood of agricultural value chain actors who are members of cooperation using banking apps, ATM services, and POS increases by 4.3 percent, 6.1 percent, 2.2 percent, respectively, while the likelihood of them using banking codes and Quickteller decreases by 2.5 percent and 1.4 percent respectively. There is a negative relationship between target market of the respondent and the use of e-banking platforms for accessing savings by agricultural value chain actors at 5% level of significance, indicating that the likelihood of using different e-banking platforms in accessing saving by agricultural value chain actors increases with them targeting the urban market for their business. The marginal effects shows that the likelihood of using banking codes, ATM services, and POS by agricultural value chain actors when they target urban markets increases by 4.4%, 4.2%, and 5.5%, respectively while the likelihood of them using banking applications and Quickteller decreases by 1.5 percent and 2.8 percent respectively. At 1% level of significance, there is a positive relationship between respondent time-saving and use of e-banking platforms for accessing savings by agricultural value chain actors. This indicates that agricultural value chain actors are more likely to use various e-banking platforms to access their savings as it saves their time. The marginal effects show that the likelihood of agricultural value chain actors to use banking codes, banking apps, and Quickteller due to their ability to save time increases by 7.6 percent, 2.9 percent, and 1.9 percent, respectively, while the likelihood of them using ATM services and POS decreases by 1.8 percent and 4.1 percent respectively. This finding is supported by Asongu, Nwachukwu, and Aziz (2018) that time-saving attribute of e-banking platforms influenced their use to a great extent. There is a positive relationship between ease of business transactions of the respondent and use of e-banking platforms for accessing savings by agricultural value chain actors at 1% level of significance, indicating that the likelihood of using different e-banking platforms in accessing saving by agricultural value chain actors increases as they make transactions to be ease. The marginal effects shows that the likelihood of using banking codes, banking applications, Quickteller, and POS by agricultural value chain actors due to ease of transactions increases by 6.6%, 1.8%, 2.5%, and 5.1%, respectively while the likelihood of them using ATM services decreases by 1.5 percent. This finding is supported by Asongu, Nwachukwu, and Aziz (2018); Abor, Amidu, and Issahaku (2018); and Gosavi (2018) ease of undertaking transactions with e-banking influences their use. There is a positive relationship between respondent access to internet facilities and the use of e-banking platforms for accessing savings at the 1% level of significance, indicating that agricultural value chain actors are more likely to use various e-banking platforms to access their savings, especially if they have access to internet facilities. According to the results of the marginal effect, respondents' likelihood of using banking codes, banking apps, and Quickteller increases by 6.8%, 3.3 percent, and 4.9 percent, respectively, as a result of their access to internet facilities, while their likelihood of using ATM services and POS decreases by 5.6 percent and 3.7 percent, respectively.

Motivations to the use of e-banking platforms

The mean responses of the respondents on what motivated them to use e-banking platforms for accessing savings is presented in Table 6 below. The result shows that the grand mean score of the respondents' responses on their motivation to use e-banking platforms for accessing savings was 3.85 and is

higher than the decision cut-point mean score of 3.00. This finding implies that, on average, the respondents were motivated to use e-banking platforms in advancing accessing to savings in the study area. All the ten (10) items on Table 6 have a mean score above 3.00 on a 5-point rating scale. This indicates that the respondents accepted items No.1 through No.10, which borders on motivations to use e-banking platforms by agricultural value chain actors. This finding implies that agricultural value chain actors in the study area employed e-banking platforms in advancing their access to savings due to its efficient tracking system, evidence-based payments (e-transfers), low risk of the transaction, internet facilities, low financial misappropriation due to password security, safety in use, financial discipline, ease of business transactions, easy access to checking account balance and time-saving of the e-banking platforms. This finding is supported by Ugwuja and Onavwie (2019); Issahaku, *et al*., (2018) and Gosavi (2018) that ease of undertaking e-transfers, low risk of transaction, security of e-banking platforms, their safety of use, and time-saving in undertaking transaction were among the many reasons that motivate people to adopt e-banking.

Conclusion

The most widely used platform for agricultural value chain actors to access savings is the e-banking application platform. Agricultural value chain actors in southeast Nigeria used e-banking platforms to facilitate savings, according to the study, agricultural value chain actors in southeast Nigeria used e-banking platforms to facilitate savings closure. Agricultural value chain actors make extensive use of e-banking services. Sex, age, level of education, participation in a cooperative, target market, time savings, ease of business transactions, and access to internet facilities all played a role in agricultural value chain actors' use of e-banking platforms in the study area. The study recommends that agricultural products value chain actors receive ongoing training on how to use e-banking platforms to access their saved money, as this will increase their access to other financial services necessary to keep their enterprises sustainable.

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Table 1: Distribution of agricultural value chain actors' socioeconomic profile (n = 80)

Socioeconomic characteristics	Frequency	Percentage	Mean
Age (years)			**48.9**
21-30	31	38.8	
31-40	6	7.5	
41-50	22	27.5	
51-60	11	13.8	
60 and above	10	12.5	
Type of business			
Livestock production	34	42.5	
Arable crop production	46	57.5	
Sex			
Male	59	73.8	
Female	21	26.3	
Marital Status			
Married	44	55.0	
Single	36	45.0	
Membership of cooperation			
No	2	2.5	
Yes	78	97.5	
Education qualification			
Primary education	12	15.0	
Secondary education	46	57.5	
Tertiary education	22	27.5	
Business registration			
Yes	56	70.0	
No	24	30.0	
Target market			
Urban area	70	87.5	
Rural area	10	12.5	
Use of social media (Virtual)			
Yes	50	62.5	
No	30	37.5	
Monthly saving level			**21,276.38**
≤ 20,000	38	47.5	
20,001-40,000	20	25.0	
40,001-60,000	16	20.0	
≥ 60,000	6	7.5	
Use of e-banking platform			
Yes	80	100.0	
Household size			**5.62**
1-3	21	26.3	
4-6	46	57.5	
7-9	10	12.5	
10 -12	3	3.8	

Source: Field survey data, 2020

Table 2: Mean responses of the agricultural value chain actors on their use of e-banking platforms in accessing savings (n= 80)

S/n	E-banking platform	Use Very often	Use Often	Use rarely	Use very rarely	Not use	Mean	Standard deviation	Remark
1	ATM services	48	25	2	1	4	4.40	1.294	Used
2	Banking apps	17	23	31	1	8	3.50	0.584	Used
3	Banking codes	3	7	31	20	19	2.44	0.396	Not used
4	Point of sale	4	5	12	52	7	2.34	0.483	Not used
5	Quickteller	50	9	12	3	6	4.18	1.114	Used
	Grand mean						3.37	0.770	Used

Source: Field survey data, 2020 ***Decision cut-point mean = 3.00***

Table 3: Level of use of e-banking by agricultural value chain actors

Variables	Frequency	Percentage
High	42	52.5
Moderate	20	25.0
Low	18	22.5
Total	80	100.0

Source: Field survey data, 2020

Table 4: Pearson correlation coefficient of the relationship between use of e-banking platforms and access to saving by agricultural value chain actors

Variables	N	r	P-value	Sign
Banking codes	80	0.0397	0.7713	Ns
Banking apps	80	0.7586	0.0004	***
Quickteller	80	0.7054	0.0019	***
ATM services	80	0.7809	0.0010	***
Point of sale (POS)	80	0.6517	0.0243	**

Source: Field survey data, 2020
****** = Correlation is significant at the 0.01 level (2-tailed); ** = Correlation is significant at the 0.05 level (2-tailed); ns = not significant***

Table 5: Ordered probit regression result of the determinants of use of e-banking platforms by agricultural value chain actors in the study area

Variables	Coefficient	z-ratio	Marginal effects				
			Prob. (Q = 0)	Prob. (Q = 1)	Prob. (Q = 2)	Prob. (Q = 3)	Prob. (Q = 4)
Sex	-0.37	-2.571**	-0.029	0.008	0.034	0.016	0.022
Age	-0.54	-2.488**	-0.023	-0.018	-0.029	0.011	0.017
Marital status	0.74	0.350	0.038	0.061	0.020	0.017	0.029
Level of Education	0.88	3.527***	0.027	0.039	0.042	0.031	0.048
Type of business	0.15	-0.762	0.063	-0.021	-0.029	-0.014	0.016
Membership of co-operation	0.23	2.897***	-0.025	0.043	-0.014	0.061	0.022
Business registration	0.14	-1.175	-0.012	-0.038	-0.041	0.027	-0.011
Target market	0.48	2.629**	0.044	-0.015	-0.028	0.042	0.055
Time saving	1.73	3.682***	0.076	0.029	0.019	-0.018	-0.041
Safety of use	0.13	-0.528	-0.024	0.016	-0.011	0.032	-0.013
Easy business transactions	1.03	4.624***	0.066	0.018	0.025	-0.015	0.051
Facilitate evidence-based payment	0.34	1.665	-0.033	-0.055	0.043	0.012	-0.046
Access to Internet facilities	0.69	3.414***	0.068	0.033	0.049	-0.056	-0.037
Constant	1.40	6.083***					
Pseudo R^2	0.76						
LR $Chi^2(13)$	239.58***						
No of observation	80						
Log likelihood	-179.31						

Source: Field survey data, 2020
***** Significant at 5% level; *** Significant at 1% level***

Table 6: Motivations to the use of e-banking platforms by agricultural value chain actors

S/n	Motivation to the use of e-banking	SA	A	UN	D	SD	Mean	Std	Rmk
1.	Efficient tracking system	10	30	18	15	7	3.26	0.53	Motivated
2.	Evidence-based payments (e-transfers)	16	26	14	17	7	3.34	0.48	Motivated
3.	Low Risk of transaction	7	46	15	7	5	3.54	0.91	Motivated
4.	Internet facilities	29	17	12	14	8	3.56	0.67	Motivated
5.	Low financial misappropriation due to password security	10	49	9	8	4	3.66	0.98	Motivated
6.	Safety	27	38	7	4	4	4.00	0.91	Motivated
7	Financial discipline	28	40	4	4	4	4.05	0.98	Motivated
.8.	Ease of business transactions	49	19	4	4	4	4.31	1.28	Motivated
9.	Easy access in checking account balance	51	17	4	4	4	4.34	1.34	Motivated
10.	Time saving	55	13	4	4	4	4.39	1.45	Motivated
	Grand mean score						3.85	0.95	Motivated

Source: Field survey data, 2020
SA = Strongly agree; A= Agree; UN = Undecided; D = Disagree; SD = Strongly disagree; Std = Standard deviation; Rmk = Remark