Journal of International Trade, Logistics and Law, Vol. 8, Num. 1, 2022, 1-10

FACTORS AFFECTING AGRICULTURAL INPUT LOAN REPAYMENT IN SOUTHERN ETHIOPIA: EVIDENCE FROM SORO DISTRICT

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Received: Nov 13, 2021 Accepted: March 18, 2022 Published: June 01, 2022

Abstract:
This study was conducted to assess determinants that influencing smallholder farmers loan repayment in Soro district. Agricultural sector plays a key role in alleviating poverty. This study was aimed at investigating the determinants of input loan repayment in the Soro district using cross-sectional survey data gathered in 2018/19. A primary and secondary source of information through structured questionnaires, key informant interviews and focus group discussions were used. Descriptive analysis and econometric methods such as probit regression were employed for the data analysis. The probit regression result revealed that variables such as educational level, landholding, expenditure of household, crop income of household, credit borrowed to input, and owned oxen significantly influences smallholder agricultural input loan repayment. Hence, emphasis should be given to enhance loan repayment in the sector through by enhancing the practices of relatively agricultural input loan repayment in Soro district. Hence, enhanced loan repayment that will be a key to achieve alleviated poverty.

Keywords:
Agriculture Input, Loan Repayment, Probit Model, Soro District, Southern Ethiopia

1. Introduction
Agricultural sector is key in alleviating poverty less developed country, especially in sub-Saharan African countries. In Ethiopia Agriculture is a basic tool in achieving millennium development goal (MDG), and basis to achieve food security (World Bank, 2008). The sector in Ethiopia accounts 45% of GDP of the country; provides 85% of employment opportunity; 90% of export revenue, and 70% of raw materials for country's industrial sectors. However, the sector faces low yield with high potential due to low adoption and practices of improved agricultural technologies (Bekele and Kasse, 2005). The development of agriculture sector is important to enhance agricultural production and yield improving techniques. Therefore, enhanced technology, improved finance, increase farm investment, better rural credits, decrease expenditure and high income were important sources to enhance yield (Singih et al., 2008).

Farm sector controls overall economy in southern Ethiopia. The sector also faces low saving, and yield due to backward yield enhancing techniques. Short – term and medium – term credits are crucial to employ yield enhancing fertilizer, and seeds. Hence, off – farm income, and farm income is important enhancing productivity in agricultural sector. In Ethiopia agricultural sector faces limited financial resources due to decreased in land fertility, and increased in demand for agricultural inputs. The sector is resulted very large sustainable credit utilizations (Zemen, 2005). The sector in the district was featured by subsistence farming system, and over degraded cultivated lands. Majority of farmers in Soro district lack of cash to purchase fertilizers, and seeds. Therefore, it is better that government and concerned private sector provide agricultural input loan, that inturn important to improve yield (Bekele and kasse, 2005).

Limited information, fail cooperative work, and fail in repay their loan increases problem in agricultural loan repayment cooperatively. However, there was limited empirical evidence on the factors that affecting agricultural input loan repayment in Soro district. Consequently, it is important to describe the existing level, identify the factors

that determine agricultural input loan repayment. Unlike the other studies, this study assesses the determinants of agricultural input loan repayment in the study area. This study, enhance agricultural input loan repayment on productivity thereby providing useful information, bridge the existing knowledge and helps to enhance the success of agricultural crop production. Therefore, the main focus of this study was to assess the agricultural input loan repayment in Soro district. Specifically, the study was to assess determinants that influencing agricultural input loan repayment in the study area.

Credit plays very key role in agriculture, and entrepreneurships (Rashid, 2010; Shultz, 1964). Accumulated savings, and capital market is crucial to adopt modern agricultural techniques (Rashid, 2010). A recent study conducted in the country work inefficiency due to market imperfections (Jermay, 2004). Due to limited finance, it is difficult employ enhanced fertilizers and seed (Tenaye, 2007). In the sector inputs are expensive, farmers can not buy enough inputs by their own cash. Agricultural input loan facilitated for production and consumption (Mark and Khandker, 2001). Agricultural loan has effect on enhancing production, consumption, investment, income, equilibrium, and wage (Joseph and Robert, 2009). Use of credit boost yield through enhancing fertilzer, and seed. Credit employed as a key market stability (IFAD, 2001). It also an important role in alleviating consumption deficits. Credit increase saving, saving will in turn increase yield. Agricultural loan enhances employment opportunities (Wolday, 2003; Assefa, 2004; Bekele, 2001; Zemen, 2005).

Credit plays a surprised role agriculture in Nigeria employed Tobit model (Arene, 1992). Results presented that higher credit use increases maize yield impressive. (Singih et al., 2008), a study conducted loan default higher at large farmers than counterparts in Punjab. Size of family, asset, and expenditure affects agricultural input loan repayment of defaulters than non-defaulters. Determinants that influencing performance of inputs loan in Ethiopia by employed Tobit model (Million, 2004). The results presented that agricultural inputs loan significantly determined by credit, income, social ceremonies, and extension. Land, labor, membership, and credit determine borrower repayment their debt (Belay, 2005; Zemen, 2005). By applied logit regression larger loan better in terms of performances than counterparts (Bekele, 2001). Appropriate evaluation of loan repayment is crucial to encouraged minimum standard loan applications (Belay, 1998).

2. Methods

2.1. Description of the Study Area

This study was developed in Soro districted. It is suited in southern Ethiopia and lying between 7023'00" and 7046'00" North Latitude and 37018'00" and 37023'00" East Longitudes. The altitude that lies from 840 to 2850 m asl. Gimbichu capital of the district is about 260km away from Addis Ababa and 32km southwest from hosanna. The district comprises 46 rural kebeles, 3 rural towns and has total population of 229,617 of which 114,489 (48.86%) are men and 115,128 (50.18%) are women. From given total population, 14% dwellers are found in urban. The district has a population density of 222km2 and average landholding farm family is 0.4ha and has a total area of 58,061ha. As the SWADO reports 2015/16 the Soro district faces three basic agro – ecological zone: namely; Dega (14.2%); Woynadega (53.1%) and Kola (32.7%). The average yearly rainfall of 1260mm and mean temperature 190c. The cultivating system of Soro district is subsistence mixed crop and livestock cultivating. The major types of cereals grown in the Soro district are wheat, teff, barley, maize, and sorghum. Thus, both crop and livestock contribute their share to the farmers' agricultural income. Hence, assessing smallholder farm agricultural input loan repayment to improve agricultural productivity. Soro district is one of the main surplus grain producing area of the Hadiya Zone and wheat and teff are the main cash crop too.

2.2. Sampling Techniques

A multi stage sampling techniques was applied to select the sample kebeles, and respondents. This research developed non-probability and probability sampling methods to select the respondents from a given population in the district. First stage: From given total of Hadiya Zone 11 district, Soro district was purposively selected, based on its amount and volume of production, accessibility and communication. In the second stage, take into account the resource available, five kebeles (Kecha, Bure, Sundusa, Kosha and Danetora) were selected based on their agro ecological zone. Third stage: smallholder cultivator was presented for each selected Keble and Respondents were selected by simple random sampling method, and respondent was developed, and allocated to each selected kebele through proportionately. The cross-sectional survey was developed in the months of May and June 2019. The

sample size from given total population was developed based on the simplified formula given by (Yamane, 1967). Where n is the sample size, N is the population size, and e is the level of precision. N is the total number of cultivators in the selected Kebeles (20,500 hhs), and e is acceptable error margin 9%. It could be calculated by employing below given formula:

$$n = \frac{N}{1+N(e)2} = \frac{20{,}500}{1+20{,}500(0.1)2} = 100$$

2.3. Data Collection

In this study, descriptive and econometric data analyses were developed. Primary and secondary data sets as well as both qualitative and quantitative primary data were developed for the study. The primary data sets were collected from farmers through questionnaires, interviews, and discussion. Both open and close-ended questionnaires were conducted to achieve all objectives of the study. Primary data was prepared from February to June 2018/19 farming seasons. The supplementary data such as secondary data sets were collected from published and unpublished sources, agricultural and rural development administrative offices, omo microfinance institutions, banks, internets, and empirical literature.

2.4. Method of Data Analysis

After all necessary data were collected; it was analyzed through descriptive and econometric models by the study. Econometric models were developed in order to assess determinants influencing the input loan repayment. Probit model was developed to analyze determinants influencing agricultural input loan repayment (agricultural input loan repayment takes a dummy variable 1 if the repayment, 0 otherwise) by using data that was collected through structured and semi-structured questionnaire from smallholder farmers. STATA Software version (13) was employed for the analysis of the data.

Some empirical studies applied multiple regression (OLS) to analyze the factors of smallholder saving (Gedela, 2012). However, multiple regression has its own drawbacks; the use of OLS techniques in censored sample data sets make OLS estimates biased and inefficient, thus influencing the basic tenets of Best Linear Unbiased Estimator (BLUE) conditions. However, OLS estimates become biased and inefficient depending on the number of zeros in relation to the number of samples in the data set. The greater is the number of zeros in relation to the sample, the greater is the instability of the OLS estimates and vice versa. OLS regression indicates to inconsistent parameter estimates because the sample is not represented of the population.

The employ of a Tobit model is presented on theoretical grounds in preference to OLS methods for data sets with censored samples (Gujarati, 2003). To investigate the determinants of households' s agricultural input loan repayment the study intended to employ Tobit model. In order to estimate the effect of main determinants of household agricultural input loan repayment and to assess the determinants that agricultural input loan repayment. The dependent variable in this study is household agricultural input loan repayment. Thus, complete regression model, that is, Tobit model is better for such types of dependent variables. The Tobit model that the study employed is censored from below:

$$A* = Xi\beta + \mu i \quad \ldots\ldots 1$$

$$i = 1,2,3,4,5 \ldots\ldots \text{n}$$

$$Ai = 0 \quad If \quad Ai* = Xi\beta + \mu i = 0 \ or \ Ai* = 0$$

$$Ai = Xi\beta + \mu i \quad If \quad Ai* = Xi\beta + \mu i > 0 \ or \ Ai* > 0$$

Where: Ai is agricultural input loan repayment of the i^{th} household head which is observable; Ai * is the latent variable; βiX is the independent or explanatory variables; μ_i = is the error term and where, μ_i N (0, σ2)

$$Xi\beta = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \cdots \beta K + XK \quad \ldots\ldots 2$$

The dependent variable in this model is Ai is the household agricultural input loan repayment, calculated as:

$$Ai = f(HHAGi,\ HHFSi, HHEDUi, HHLHi, HHESCi, HHCIi, HHCBi, HHFIi, HHNOi, \text{HHSXi} \quad \ldots. 3$$

$$Ai = \alpha + \beta 1 lnAGi + \beta 2 lnAFSi + \beta 3 lnAEDUi + \beta 4 lnALHi + \beta 5 lnAESCi + \beta 6 lnACIi + \beta 7 lnACBi + \beta 8 lnAFIi + \beta 9 lnANOi + \beta 10 \text{HHSXi} + \mu i$$

Where, α is a constant term, μi is the error term and variance σ2

Where, Ai is agricultural input loan repayment; α is a constant term; AGi is the age of household head; HFSi is the family size; HHEDUi is the educational level household head; HHLHi is the landholding of household in hectare; HHESCi is expenditure in the celebration of social ceremonies; HHCIi is crop income in birr; HHCBi is the credit borrowed to input; HHFIi is the off – farm and non – farm income; HHNOi is the number of oxen owned, HHSXi is Sex of household head and μi is error term.

Table 1: Definition of the variables used for the analysis

Definition	Type	Expected sign
Age of household head (HHAGi)	Continuous	+
Family size household head (HHFSi)	Continuous	-
Educational level household head (HHEDUi)	Continuous	+
Landholding household head (HHLHi)	Continuous	+
Expenditure of household head (HHESCi)	Continuous	-
Crop income of household head (HHCIi)	Continuous	+
Credit borrowed to input of household head (HHCBi)	Continuous	+
Off farm and non-farm income of household head (HHFIi)	Continuous	-
Number of oxen of household head (HHNOi)	Dummy	+
Sex of household head (HHSXi)	Dummy	+

Source: Own construct 2018/19

3. Results and Discussion

3.1. Respondents Background

The survey data results in the (Table 2) below indicated that, from the total non-defaulter respondent's 76.2% are men and the rest 23.8% are women. While from the total defaulter respondent's 63.6% are female and the remaining 36.4% are male. This result indicated that majority of male farmers are non-defaulter and where female farmers are defaulter. This difference is happened due to difference in ability and willingness to purchase agricultural input and lack of information about the use of agricultural input like fertilizer, improved seed, chemicals and insecticide, and female headed household was less ability and willingness in work of agricultural activities then the production will be decreased in the study area. Out of total non-defaulter farmers 76% are married, 15% windowed, 7.5% divorced and 1.5% single respectively. Farmers those who are married have a potential to repay agricultural input loan than that of others. This difference is happened due to that, the farmers those who are married generate more income than the others so that they have better repaying capacity and highly motivated to use agricultural input loan. From the total non-defaulter respondent's 40.25% of farmers have between 3-5 family size, 32.8% of farmers having 6-8 family size, 18% of farmers having between 0-2 family size and remaining 8.95% farmers have above 8 family sizes. While from the total defaulter respondent's 39.4% of farmers having above 8 family sizes, 27.3% of farmers are having between 0-2 family size, 18.5% of farmers having between 3-5 family size and remaining 14.8% of farmers have 6-8 family size. This implies that, the farmers which have more family size are more default than those with small size of family, because the household consumption expenditure of large family size is higher than that of low family size. As the results of survey data, from the total non-defaulter respondent's majority was aged between 35-50 (53.7%) followed by 51-76 (29.8%) and 19-34 (16.5%). From the total defaulter farmer's majority was aged between 51-76 (39.4%) followed by 35-50 (33.4%) and remaining was aged between19-34 (27.2%). Farmers acquire more experience to use agricultural input loan as age number increase. Age of farmers become older and older the ability and willingness to

work and invest of farmer become lower so as a result their income also become lower and lower. Therefore, input loan repayment is influenced negatively when the cultivator's age become older and older.

Total non-defaulter respondents about 36 (53.7%) of farmers owned between 3.6-5 ha of lands, (32.85%) own between 2.1-3.5 ha of lands, 6 (8.95%) own above 5 ha of lands and remaining 3(4.5%) owned 0.5-2 ha of lands. Total defaulter respondents about 23 (69.7%) of farmers owned between 0.5-2 ha of lands, 5 (15.15%) owned 2.1-3.5 ha of lands, 4(12.15%) owned 3.6-5 ha of land and remaining 1(3%) owned above 5 ha of land. Therefore, based on the above results, those farmers who own more farm size have potential to repay the loan and to use agricultural input loan than that of farmers who have less farm size. According to income of respondent's, out of total non-defaulter respondents about 23.8% of farmers earns income (40000-50000) Birr from both from off and on farming income. From defaulter respondent's majority of farmers earn income (<10000) Birr from both off and on farming income. This shows that the farmers who are non-defaulter get higher income than that of defaulter one from both on farm and off farm income. Out of total non-defaulter respondents 46 (68.65%) of respondent get enough credit service from different governmental and non-governmental organization especially from cooperative; remaining 21(31.35%) of respondents does not have enough credit access from those organizations. From the total defaulter respondent's 21(63.64%) of respondents does not have enough credit access and the remaining 12(36.36%) respondents get enough credit service from different organization. Therefore, based on this result. Those farmers who have got credit from different organization have confidence to repay their agricultural input loan for the government and private cooperative organization than those who does not have enough credit access. From the total non-defaulter respondents about 24 (35.8%) farmers own 4 oxen, 23 (34.3%) farmers have owned 5 oxen, 10 (15%) own 3 oxen and remaining 7 (10.4%) and 3(4.5%) own 2 and 1 oxen respectively. From the defaulter respondent's, 14(42.4%) of farmers have no oxen for farming activities. Therefore, based on the result of this survey the study, farmers those who have more oxen use more agricultural input in combination with their oxen and are more productive in agricultural activity. As a result, they have better potential to repay the agricultural input loan than those farmers who own few numbers of oxen. The survey data results indicated that from the total non-defaulter respondents, 29 (43.3%) of farmers attend primary school 1-4 and 27(40.3%) also primary school education from grade 5-8, farmers about 8(11.9%) are illiterate that means those farmers are not attend education and the remaining 4 (5.5%) farmers attend high school. From the total defaulter farmers around 20(60.6%) are illiterate, 9 (27.3%) farmers attend primary school education 1-4 and the remaining 3(9.1%) farmers are attending 5-8 class. Therefore, based on the result of this survey data, on the side of agricultural input loan non-defaulter the majority of farmers attend primary school but on the side of defaulter farmers' majority of them are illiterate. This difference in education level between the two creates difference in awareness about agricultural input loan repayment. Therefore, more the educated the more knowledge about agricultural input and also agricultural input loan repayment. Hence, education is key variable in enhancing repay loan debts.

Social ceremonies such as different holiday, wedding, mahiber, and birth day (Kristina) were celebrated in the study area. According to the cross – sectional survey data result, 58 (58%) of farmers celebrated one or more of these occasional ceremonies and 42 (42%) of farmers does not celebrated any of the ceremonies. While from the total non-defaulter farmers, 36 (53.7%) of farmers celebrated different social ceremonies and 31(46.3%) of farmers does not celebrated social ceremonies and the total defaulter farmers 22(66.6%) farmers celebrated different social ceremonies and 11(34.4%) of farmers had not celebrate different social ceremonies. These social ceremonies have their own negative effect on the performance of borrower's inputs loan repayment and force the farmer to apply the borrowed money for consumption. The result of this survey data indicated that from the total non-defaulter farmers 58(86.5%) use agricultural input like improved seed and fertilizer and the remaining 9(13.5%) of the farmers did not get agricultural input. While from the total defaulter 26 (78.8%) farmers did not get agricultural input and the remaining 7(21.2%) of farmers get improved seed and fertilizer. This presents that the defaulter group employed less input than non-defaulter group. This would be one main reason for their defaulting and as it has an effect on their production. Out of total non-defaulter farmers 55(82%) of farmers are supervised by loan developmental agents in cropping season and remaining 12(18%) of farmers they did not supervised by any developmental agents. While from the total defaulter farmers 19(57.5%) of farmers are committee from member of loan and remaining 14(42.5%) of farmers are not supervised by any loan developmental agents. This supervision prevents the misemploy of credit for non-productive activities and hence facilitate regular repayment of loan. According to cross – sectional survey

data result, supervision of borrowers by the developmental agents before the due date of loan repayment was found to be important.

Table 2: Respondents background by determinant variables

Variables	Non-defaulter		Defaulter		Total	
Sex	Frequency	%	Frequency	%	Frequency	%
Male	51	76.2	12	36.4	63	63
Female	16	23.8	21	63.6	37	37
Total	67	100	33	100	100	100
Marital status						
Married	51	76	3	9	54	54
Single	1	1.5	17	52	18	18
Divorced	5	7.5	5	15	10	10
Windowed	10	15	8	24	18	18
Total	67	100	33	100	100	100
Family size						
0 – 2	12	18	9	27.3	21	21
3 – 5	27	40.25	6	18.2	33	33
6 – 8	22	32.8	5	15.1	27	27
>8	6	8.95	13	39.4	19	19
Total	67	100	33	100	100	100
Age						
19 – 34	11	16.5	9	27.2	20	20
35 – 50	36	53.7	11	33.4	47	47
51 – 76	20	29.8	13	39.4	33	33
Total	67	100	33	100	100	100
Farm size						
0.5 – 2	3	4.5	23	69.7	26	26
2.1 – 3.5	22	32.85	5	15.15	27	27
3.6 – 5	36	53.7	4	12.15	40	40
>5	6	8.95	1	3	7	7
Total	67	100	33	100	100	100
Off and on farming income						
<10,000	4	6	11	33.3	15	15
10,001 – 20,000	7	10.5	9	22.3	16	16
20,001 – 30,000	11	16.5	5	15.2	16	16
30,001 – 40,000	15	22.5	4	12.2	19	19
40,001 – 50,000	16	23.8	2	6	18	18
>50,000	14	20.8	2	6	16	16
Total	67	100	33	100	100	100
Access of credit						
Yes	46	68.65	12	36.36	58	58
No	21	31.35	21	63.64	42	42

Total	67	100	33	100	100	100
Number of oxen						
0	0	0	14	42.4	14	14
1 – 4	44	65.7	19	57.6	63	63
>5	23	34.3	0	0	23	23
Total	67	100	33	100	100	100
Educational level						
Illiterate	8	11.9	20	60.6	28	28
Grade 1 – 4	29	43.3	9	37.3	38	38
Grade 5 – 8	27	40.3	3	9.1	30	30
Grade 9 – 12	3	4.3	1	3	4	4
Total	67	100	33	100	100	100
Celebrate social ceremonies						
Does not celebrate	31	46.3	11	34.3	42	42
Celebrate	36	53.7	22	66.6	58	58
Total	67	100	33	100	100	100

Source: own survey, 2018

3.2. Test for Multicollinearity and Heteroscedasticity

The adequacies of the model have to be supported by diagnostic tests before proceeding to interpret the econometrics result. Hence, generally the diagnostic tests depict, the model have good statistical properties. Since the value of the variance inflation factor (VIF) is equal to 1.62 multicolinearity is not a treat any more. The Breusch-Pagan test also failed to reject null of constant variance against the alternative hypothesis of heteroscedasticity variance because, the estimated result Chi-square (1) = 0.00 and Prob>=0.9947. Though there is slight indication of heteroscedasticity problem, the result is in favour of no heteroscedasticity problem at 5% level of significance.

3.3. Estimation Results of probit Model

According to the Table 3, educational status positively influences agricultural inputs loan repayment at 0.08 marginal effect. This presented that higher year schooling increases agricultural inputs loan repayment, cetris paribus. Education enhances probability of loan repayments through creating awareness and information on income, technology, and efficiency. Hence, educational status creates better way to repay agricultural loan than illiterate one. The study Similar with (Gebrehiwot, 2007), presented a significant positive correlation between loan inputs repayment, and educational status of farmers. Credit use similarly as educational status positive correlation with agricultural inputs loan repayment at 3.00 odds ratio. Credit is a key source of income to farmers, that in turn increase expenditure of smallholders. Household who has got credit have more adopt to repay loan than counterparts in Table 3.

Landholding household head: this variable is positively correlated with agricultural loan repayment, and significant at 5% probability level. As stated, (Table 3), marginal effect is 0.21. The positive relationship implies that cultivators, who have more farm size, are most likely to repay agricultural loan, cetris paribus. That means households' farm size increases, the probability of repaying agricultural loan increases, ceteris paribus. As the cultivated land size increases, the household becomes able to increase agricultural loan repayment on the cultivated land; this may, in turn, imply enhance agricultural crop production and cultivator income. The possible explanation is that household' cultivated land size increases, the probability of repaying agricultural debts crop increases. The study by (Daniel, 2006), suggests that land is an important factor in influencing farmer 's decision to repay agricultural debts.

Oxen and repay of loan are positively significant at 0.14 marginal effect Table 3. The oxen number increases by 1 TLU, the repay inputs loan decreases by 14%, cetris paribus. Large number oxen will increase or make more repay debts. This presented that repay loan debts through sell oxen employed to buy fertilizer, seed, and to minimize risk. Large number oxen mean there is large product, income, and repay loan debts. The study which is similar with the

study of (Wolday, 2003), showed that number of oxen of household positively influences agricultural loan repayment.

Expenditure of household head negatively influence repay of inputs loan debts at – 0.24 marginal effect Table 3. Enhancing expenditure of household head by 1, decrease repay debts by 14%. With opposite relation agricultural inputs loan repayment, lower expenditure enhances production and farmers income, which in turn enhances repay loan debts. Crop income of household head: this variable is positively influence agricultural loan repayment and significant at 10% probability level. As presented Table 3, marginal effect is 0.17 for crop income reveals that, cetris paribus, as agricultural crop income enhances by 1, the repay agricultural debts increase 17%. That means increase crop income make them possible to repay agricultural debts. It would also imply that repay agricultural debts have good access to financial source through increasing crop income which would be employed to buy farm inputs to increase agricultural productivity and income. The main reasons are household head that has high agricultural crop income will have high agricultural production and productivity, and they will use thier income for plowing so it is easy for them to repay agricultural debts.

Table 3: Estimation result of agricultural input loan repayment probit model

Variable	Robust Coefficient	Odds. Ratio.	P>|z|	Std. Err	Marginal Effect (dy/dx)
HHAGi	0.0134543	1.706479	0.144	0.0339506	0.132073
HHFSi	- 0.0618124	0.9894035	0.698	0.1655347	- 0.0026498
HHEDUi	0.2997398	1.383871	0.003***	0.1140787	0.080799
HHLHi	0.4675242	2.554673	0.017**	0.2164611	0.2101116
HHESCi	- 0.0004938	2.689239	0.009***	0.0003478	- 0.2401024
HHCIi	0.0000221	1.994709	0.087*	0.0000662	0.17093
HHCBi	0.0006671	2.9997181	0.004***	0.0003224	0.2105701
HHFIi	- 0.000036	0.679427	0.607	0.0000816	- 0.0949038
HHNOi	0.3569699	1.28934	0.027**	0.1609851	0.14142390
HHSXi	0.453894	2.1734	0.452	0.2160158	0.1099782
Cons	4.115852	0.0064	0.000***	1.497012	
LR chi2 (9)		74.26	Pseudo R2		0.5855
Prob > chi2		0.0000	Log likelihood		-26.286512
Number of obs = 100		*** P < 0.01,	** P < 0.05 and * P <0.10		

Source: own survey, 2018. Inferential statistics (such as chi-square and t-tests) were employed to provide further insights on factors affecting households' adoption decisions.

4. Conclusion and Recommendations

4.1. Conclusion

This research was designed to investigate determinants that influencing agricultural input loan repayment of the smallholder households in the study area. A primary and secondary source of information through structured questionnaires, key informant interviews and focus group discussions were used. Descriptive analysis and econometric methods such as probit methods, and field survey data were developed to achieve the objective of the study. This research employed field survey data collected in 2018/2019 cultivating season from 100 samples respondents. The study in the descriptive part presented that economically non-defaulter better than counterparts. In addition to this the descriptive result shows some socio-economic, institutional and demographic characteristics of respondent's by using percentage. The main factors affecting agricultural loan repayments are the educational level of household level, landholding of household head, expenditure household head, crop income of household head, credit borrowed to input of household head and owned oxen were found to be important variables to affect cultivators' tendency to repay agricultural debts. Therefore, it is employed to boost up the best way and practices to repay agricultural debts enhance agricultural repay of agricultural debts and productivity.

4.2. Recommendations

Education influence repay inputs loan debts positively. Hence, enhancing adults, and youngster's education through formal and informal way is a key to promote income and repay loan debts. Therefore, boost up education of cultivator is one of the options to enhance production, income, and repay loan debts. Oxen are farm assets that enhance farm security, income, repay loan debts, and food security. The research recommended that it is impressive to increase oxen, that increases repay loan debts. Credit is another policy implication variable in this study. Cultivators who have got higher credit have better repay loan debts, and performance of inputs loan. Therefore, concerned body facilitate better environment to cultivating credit at competitive market price promote agricultural yield. The study also showed that as land holding increase the default rate decreased. Farm size increase the output increase and enables that farmers to repay its loan on time. Therefore, the farmers should increase farm size and government should give uncultivated land to the farmers to increase their production and farm size, the people can prevent those land from erosion and other land fertility problems, then efficiently use land for production. Even though expenditure in the social ceremonies can affect the performances of loan repayment negatively. The study recommends that thus, concerned bodies especially the religion community leaders are to teach the community to minimize the practices.

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