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Lender Behavioural Characteristics Affecting Agribusiness Loans Default Rate in Agricultural Finance Corporation, Mount Kenya Region

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Abstract: Farming communities who borrow agribusiness credit from Agricultural Finance Corporation (AFC) require efficient access to credit. Lender behaviour and decisions exhibited in credit supply dynamics influence agribusiness loan default rate. Mount Kenya region has registered a high default rate of 20.33% compared to a standard of 10% for all types of loans in Kenya. Using descriptive research design this, study sought to assess the effect of lender behavioural characteristics on agribusiness loans default rate in the region's 11 branches and a population of 3,002 agribusiness borrowers. Systematic random sampling technique with an interval of 10 was used to sample 300 respondents. Primary data on lender behavioural characteristics was collected using a structured questionnaire. Statistical Packages for Social Sciences (SPSS V.27) and Stata version 15 were used to analyse data. To estimate the effect of variables in predicting default rate, regression analysis was used. In obtainment of the F-statistic for measuring the adequacy of the regression model, ANOVA was performed. Probit regression model was used to specify the statistical relationship between the variables. The four indicators used in the model explicated 48.80% of the dependent variable. Lender behavioural characteristics that were considered in the study had significantly affected AFC loan default rate at 1% level. The p-values of the pointers of lender behavioural characteristics for farm visit, disbursement timeliness, political lending and adequate funding (0.003,0.000,0.000,0.000) respectively were less than the p-value of 0.01. The negative coefficient (-0.355) of farm visit meant that lenders effort in visiting farmers would reduce default rate in AFC loans. However, the coefficient of disbursement timeliness, political lending and adequate funding had a positive coefficient implying a negative effect that increased AFC loans default rate. To mitigate default, credit officers need to disburse adequate loan expeditiously, refuse to yield to political interference and adhere to stipulations of lending policy. The study recommends that AFC should adequately and timely fund supervised borrower projects and own those projects by extending advisory and training inputs even as they embrace a neutral working environment that is free from political manipulation, compromise and influence.

Keywords: AFC Loan, Lender, Behavioural Characteristics, Repayment, Default Rate

1. Introduction

Attainment of social objectives which empower borrowers through public policy intervention of enhancing access to affordable government farm loans is actualized through efficiency in lending [1]. The response mechanism is influenced by action and inaction of the financial institution's staff; this describes the lender behavioural characteristics which determines the performance of agri finance in relation to access and repayment [2]. The conduct of loan officers and lending institution management is characterized by

efficiencies where policy directions are followed and serious deficiencies where there are behavioural gaps [3]. The lender side challenges embrace deficit in credit management and information asymmetry especially on the basis of rating [4]. The reason why lender problems occur is because it is hard for lending officials to detect the behaviours of customers regarding their integrity [5]. The other cause of lending problems emanates from lending institution's gaps and government intervention in operations of agribusiness loans [6]. Behaviour is perceived through the consequences of compliance or default in loan servicing [7].

Existing studies have linked lender behavioural characteristics to default in agribusiness loans. For example, Sivatharshika [8] established that loan default creates problems to both lenders and borrowers and advised that lenders should take remedial actions before credit disbursement so as to overcome default. Kiros [9] observed that lender characteristics in regard to behaviour are latent and that the outcome is seen in default and compliance in loan repayment. The problems on the bank side that exacerbate loan default include administrative constraints, deficit in market intelligence and challenge in enforcement of covenants. Musyoki [10] revealed that sharing of information and monitoring of loan risk can help agricultural institutions like AFC to fix loan default. These studies had conceptual, contextual and methodological gaps. This study fixed the gaps by drawing a sample of 300 respondents, widening the study area and the methods of data analysis.

The behaviour of bank officials determines the growth and sustainability based on their action in instituting control measures to credit risk so as to avert loan default [11]. Lender behaviour for government-sponsored financial institutions deals with political relationship and connections with loan committees and appointment visits as main influencers to loan performance [12]. To achieve government mandate while dealing with challenges of poverty alleviation and food production, disbursement timeliness of credits and adequate funding should be the practice of lending institutions [13]. Besides, allocation for agricultural finance is characterized by inadequate allocation, late disbursements and political influences [14]. Concomitant to these studies, this study adopted four indicators of lender behavioural characteristics subsuming: farm visit, disbursement timeliness, political lending and adequate funding.

Farm visit is a critical factor in agricultural lending model because it justifies supervised lending [15]. Visit ensures that supervision is done so that borrowed funds can be applied in projects for the agreed purpose [16]. Tracking of progress is achieved by regularly visiting the borrowers [17]. Free advice and awareness programs by banks provide the relevant guidance on how to optimize their operations using borrowed funds [18]. Training goals are also achieved through field visits so as to impart knowledge on record keeping, doing calculations and sources of funds [19]. Post-disbursement visit is also important so as monitor the progress and train the farmers [20]. Intensifying farm visits decreases the probability of loan default [21]. Disbursement timeliness ensures that funds are availed at the right time, thus ensuring non-diversion and effective utilization of loan into the project [22]. This is because credit access in a timely fashion enables the farmers to achieve effectiveness in their farming [23]. Liquidity buffer is guaranteed when loan funds are disbursed without delay [24]. This enables the farmer to manage farm processes effectively resulting to good timings in production and marketing [25]. Penultimately, this heightens efficient production which translates into sustainable streams of revenue [26]. Ultimately, it leads to timely repayment of loan funds [27].

Politics and legal matters pointedly influence the performance of agribusiness enterprises financed using government-sponsored loans [28]. Despite the government-sponsored agricultural lending being obligatory lending in sense of supporting priority sectors [29], political class has sabotaged the entire process even before the achievement of goals [30]. In light of this, the rural people and farming borrowers have been exploited for political benefits [31]. The politically-connected lenders are influenced behaviourally due to political exposure [32]. Politicians wield their political power to compromise the procedures of government-sponsored loans to confer benefits to individuals who pledge followership [33]. Hossein [34] found that political interference with lending institution brought about default in loan.

Sufficient funding due to efficient access to loan is necessary to bridge capital gaps so as to avert low investment [35]. Besides, lenders should finance borrowers adequately in order to satisfy their basic farming practices [36]. Adequate loan amount enables the farmer to purchase all the necessary inputs to increase productivity [37]. Consequently, this increases earnings which can be used to repay loan without default [38]. Enough loan funds enable farmers to implement the proposal requirements thus ameliorating on-farm productivity to enable loan repayment [39]. This study's objective was to assess the effect of lender behavioural characteristics on agribusiness loans default rate. Loan default remains a great encumbrance to institutional mandate of intervention in facilitating access to affordable farming credit to operators in agribusiness. If credit supply dynamics are not ameliorated through review of internal controls of AFC, there is an imminent possibility of credit supply shocks and deterioration of livelihood-enhancement drivers exhibited in agrifinancing whose eventuality is dysfunctional credit markets and vicious cycle of poverty.

2. Research Methodology

2.1. Study Area

The study was conducted between June 2022 and December 2022 in Mount Kenya region, which is one of the AFC catchment areas within the country. This region was selected through convenience sampling because of good branch network, variety of agribusiness activities and agroclimatic zones. The branch network of this region

comprises of 11 branches.

2.2. Research Design

The study used descriptive research design. This design was deemed accurate and systematic thus enabling the possibility of accommodating diversity of research methods in examination, observation and measurement of variables which concern default in AFC agribusiness loans in Mount Kenya Region.

2.3. Population, Sampling Procedures and Sample Size Determination

2.3.1. Study Population

The population of study was 3,002 farmers who had borrowed agribusiness loans from the 11 branches of Mount Kenya region for the period 2018/2022. These borrowers comprise of all current beneficiaries without regard to their loan level and repayment performance.

2.3.2. Sampling Procedures

Using systematic random sampling method with a 'skip' of ten, a sample of 300 borrowers was retrieved and reviewed. By "skipping" at the interval of 10, overconcentration in one branch was eliminated, thus fair distribution which guaranteed representativeness.

2.3.3. Sample Size Determination

To calculate the size of the sample, Daniel [40] formula was used as follows:

$$n = \frac{Z^2 P\,(1-P)}{d^2}$$

where;

n = sample size; Z = Z statistic for a level of confidence; P = expected default or proportion (in proportion of one; if 20%, P = 0.2), and d = precision (in proportion of one; if 5%, d = 0.05). For the level of confidence of 95%, which is conventional, Z value is 1.96. In our case, defaulters represented 24.15% of the total beneficiaries. To establish the sample size the following calculation was done:

$$n = \frac{1.962 \times 0.2415(1-0.2415)}{(0.04843)^2} = \frac{0.7036956444}{0.7036956444} = 300$$

Z=confidence level =1.96; *P*= Default =0.2415; *d* = precision =0.04843; *n* = 300

2.4. Pilot Study

Pilot testing was done in Central Rift region where respondents were drawn from 4 branches namely Nakuru, Naivasha, Molo and Kericho using 30 respondents who are agribusiness borrowers. Central rift is more similar to Mount Kenya due to its weather conditions and diversity of agribusiness projects.

2.5. Validity

The study employed a questionnaire which was tailored keenly and thoroughly to ensure that all relevant material facts were captured. This established its relevance to the study by producing accurate results.

2.6. Reliability

Cronbach's alpha was used to evaluate questionnaire since it is appropriate for dichotomous variables coded as 0 or 1 meaning no internal consistency or consistency is perfect between items in the questionnaire respectively [41]. Results from this study indicated that the questionnaire was reliable since the scale reliability coefficient was 0.7318>0.7 which is the acceptable scale. This value of more than 0.7 means that the data taken was sufficiently reliable and consistent (Table 1).

Table 1. *Reliability Test Using Cronbach Alpha.*

Variable	Value
Average interim covariance	2.365
Number of items in the scale	15
Scale reliability coefficient	0.7318

2.7. Data Collection

Structured questionnaire was used to collect quantitative data where the 300 respondents provided answers regarding lender behavioural characteristics.

2.8. Data Analysis

2.8.1. Data Analysis Techniques and Tools

The software for analysis was Statistical Packages for Social Sciences (SPSS V. 27.0) and Stata version 15. The output from quantitative data was given in descriptive statistics and regression analysis. Regression analysis was used to describe the relationship between independent and dependent variables. The econometric model that was used was Logit. Correlation analysis was used to evaluate the strength of a relationship between the variables. ANOVA was performed to get the F-statistic so as to test for the adequacy of the regression model.

2.8.2. Model Specification

To Assess the Effect of Lender Behavioural Characteristics on AFC Loan Default Rate

In this case, probit regression model was used since it is appropriate for determining the probability. When the dependent variable Y is binary, with values 0 and 1, the probit equation is modelled thus:

$$P = (Y = 0) = C + (1 - C)\, F\ (X'\beta) \qquad (1)$$

where;

β is a vector of parameter estimates; F is a cumulative distribution function (the normal, logistic, or extreme value); X is a vector of independent variables; P is the probability of a response; C is the natural (threshold) response rate. The dependent variable is an unobserved latent variable that is linearly related to yi by the equation:

$$y\,i\ \ iX\,i + \mu_i \qquad (2)$$

where;

μ_i is a random disturbance term. The observed dependent variable is determined by whether yi exceeds a threshold value or not. In this study, the probit model is drawn thus:

$$Y\,i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu_i \quad (3)$$

where;

$Y\,i$ = AFC default rate, categorized as 1 for a defaulter or 0 if the borrower is a non – defaulter; β_0 = Constant term; $\beta_1, \beta_2, \beta_3, \ldots \beta_4$ are coefficients of independent variable; X_1 = farm visit; X_2 = Disbursement timeliness; X_3 = Political lending; X_4 = adequate funding and μ_i is the disturbance error term.

3. Results and Discussion

3.1. Effect of Lender Behavioural Characteristics on AFC Loan Default Rate

3.1.1. Farm Visit

(i). Loan Repayment Status Based on Farm Visit

Results on distribution of borrowers based on farm visit show that 11% of the borrowers were visited once; 42.67% of the borrowers twice; 32.67% of the borrowers thrice and 13.67% of the borrowers were visited four and above times. The second category were defaulters who were visited severally with aim of collecting loan. Cumulatively, borrowers visited two to three times constituted 75.34% of the borrowers which is indicative of good gesture in implementing farm visits. This means that most of the borrowers in the study area were visited as required. As a whole, one visit or 4 and above times constituted 24.66% of the regional borrowers (Table 2).

Table 2. *Loan repayment status of borrowers based on farm visit.*

Number of visits	Loan repayment status		Borrowers' distribution
	Compliance	Default	
One visit	2.93	42.62	11
Two visits	43.10	40.98	42.67
Three visits	39.33	6.56	32.67
Four visits and above	14.64	9.84	13.66
Totals	100	100	100

Pearson chi2(3) = 86.4605 Pr = 0.000

Based on loan repayment status, the result established that the highest default rate was registered among borrowers who were visited only once by AFC officials at 42.62%. Borrowers who were visited two times defaulted by 40.98%, those visited 3 times defaulted by 6.56% while those visited 4 times and above defaulted by 9.84%. Cumulatively, those visited at officially recommended two to three times defaulted by 47.54% while those visited once and 4 times and above registered a default rate of 52.46%. This implies increase in farm visited reduced loan default. It also means that visits deviating from the recommended number either lower or higher had a latent implication.

This study established that visiting the farm once depicts lethargy by the credit officer and presents the risk of default. However, there were few instances where borrowers located very close to the office (about 1km) were officially visited once because officers spent most of the time with them or officers make casual visits to their farms. Visiting four and above times has dual implication: Firstly, it was probable that the client could be a loyal borrower enjoying very good relationship with lending office. As such, the farm could be used as a demonstration farm. Agricultural stakeholders who visited the branch could be directed to such ideal farms to offer advice, training or even grant materials to the farmer. Most of such borrowers were not very far from office. In such instances, there was minimal chances of default.

The other finding is that default reduces by addition of each successive visit perhaps due to supervision, training and advisory services that are offered by AFC officials who make appointments at the farm. Appointments translate into contacts which creates the dynamic incentives since borrowers can be guaranteed of availability of loan officials to graduate them in future. However, default increases at fourth and above visits because of other purposes farm of visit such as loan collection, recovery or inspection visit. These other purposes may not enhance productivity, boost yields and loan repayment capacity [17]. Studies that concur with observations of this study embrace: Dey [42] who observed that visit monitors the disbursed loan; offers an opportunity for early detection of repayment lapses. Also, Abdullah [15] noted that visits were done to monitor loan use and servicing. Etukumoh [43] observed that visit was important to eliminate wastefulness in project funds. Carlson [44] observed that attention by the lender created the effect of dynamic incentive which influenced loan repayment due to encouragement that future loans would be forthcoming.

Okpukpara [19] observed that default in decreased as the number of visits by supervisor's increases. This is so because visits help in project monitoring and evaluation which is effective in loan repayment. Katz [20] noted that farm visit offered an opportunity for supervision which had a positive effect on the credit supplied, indicating that an increase in supervision resulted to more conformity in loan repayment [45]. Accordingly, routine visits help put farmers on track and monitor the proper use of the loan [46]. Adequate loan supervision, increased the probability of using loan funds for non-intended purposes decreased [47]. As such, borrowers observed their obligations and improved credit utilization, thereby improving repayment performance [48].

(ii). Loan Repayment Status Based on Sum of Farm Visit

The distribution of loan repayment status based on sum of farm visit depicted that the maximum visits were six for the total, compliance and default. The minimum visit was one for total, compliance and default. The mean number of visits for all the sampled borrowers was 2.527 visits. This means that compliance would be achieved if borrowers were visited at least 2.527 visits by AFC staffers. The mean number of visits for defaulters is 1.951 visits while that of non-defaulters is 2.674 visits. This implies the more visits reduce default rate

in loan repayment (Table 3).

Table 3. *Distribution of loan repayment status based on sum of farm visit.*

Farm visits	Observations	Mean	Std. Dev.	Min	Max
Compliance	239	2.674	1.203	1	6
Default	61	1.951	0.806	1	6
Total	300	2.527	0.945	1	6

The findings of this study showed that borrowers who are visited are psychologically prepared to remain in partnership with AFC officials who they turn to whenever they need any advice. This is concomitant to the findings of Mastercard [49] that farm visits were done for several reasons, but the net effect culminated in compliance in debt servicing. Balchin [18] reported that increase in supervisory visits, increased repayment compliance. The implication is that visit by credit officers possibly avert loan diversion and default [50]. Consistently, Addae-Korankye [21] agreed that the main purpose of farm visit was supervision pointing that visits were done before and after loan disbursement and they reduced loan repayment problems.

3.1.2. Disbursement Timeliness

The study sought to determine the disbursement timeliness for borrowers of agribusiness loans. Results indicated that 29.67% of borrowers received their loan funds by four weeks; borrowers constituting 34% had their accounts credited by time above four weeks up to six weeks; of the total borrowers, 20.67% received their disbursed amount by time above six weeks to 8 weeks; crediting of accounts for 9.67% took above eight weeks to 12 weeks and lastly 6% of borrowers had their accounts credited after 12 weeks. As a whole, 63.67% had their loans disbursed by one and half months, which is considered a reasonable period in terms disbursement timeliness. Cumulatively borrowers whose accounts were credited after six weeks was 36.33%. This means that more borrowers (63.67%) had received their loans timely while there was disbursement lag for fewer borrowers constituting 36.33% (Table 4).

Table 4. *Borrowers' loan servicing on the basis of disbursement timeliness.*

Repayment timeliness	Loan repayment status		Borrowers' distribution
	Compliance	Default	
By four weeks	35.15	8.20	29.67
Above 4 by 6 weeks	39.33	13.11	34
Above 6 by 8 weeks	20.08	22.95	20.66
Above 8 by 12 weeks	4.60	29.51	9.67
More than 12 weeks	0.84	26.23	6
Totals	100	100	100

Pearson chi2(4) = 105.3217 Pr = 0.000

Results obtained on loan repayment status showed that default rate of 8.20% was least for borrowers whose disbursements were most timely by 4 weeks; default rate for borrowers who got loan funds by a period more than 4 weeks up to 6 weeks was 13.11%. Borrowers whose AFC funds disbursement took more than 6 weeks to 8 weeks defaulted by 22.95%; those whose disbursement was 8 to 12 weeks recorded highest default of 29.51%. Default rate for borrowers with disbursement more than 12 weeks accounted for 26.23%. Cumulative default rate for borrowers considered to have had disbursement timeliness (by 6 weeks) was 21.31%, while those whose disbursements lagged (after 6 weeks) defaulted by 78.69%. This shows that disbursement lag has a bearing on loan repayment with those who took long to receive their disbursed funds also defaulting more while those whose disbursement was timely took less. The likely reason: delay in disbursement inconveniences the borrower by disrupting the timings of production and marketing. Besides, such funds can easily be diverted to non-productive avenues thus misuse (Table 4).

It was observed that the relationship between disbursement timeliness and loan default was linear up to 12 weeks beyond which there was a slight drop. This implies that with every corresponding increase in the time the loan took to be disbursed, there is an increase in default rate reaching apex by 12 weeks. The likely reason for drop in default for borrowers whose disbursements lagged beyond 12 weeks was arrangements instituted by the borrowers themselves: some borrowers may appeal for loan increase; request AFC to disburse at a particular time according to their preferred timings; other borrowers may cancel applications, but later change their minds. As such, delay beyond 12 weeks cannot be entirely attached to the responsibility of AFC alone, but somehow borrowers are also responsible for this lag.

The findings of this study showed that timeliness in disbursement is positively correlated with compliance in loan servicing. This is because meaningful agribusiness investments are finance capital-dependent and timings are sacrosanct. Agricultural production requires funds in good time to allow for preparation of the farm operations so as to yield reasonable returns [51]. Therefore, the difference in time from application to disbursement affects loan performance [52]. Early disbursement encourages use of loans increase in output and loan repayment [53]. On the same breath, Bhat [22] argued that delay in disbursement is associated with default in loan repayment while efficiency in loan repayment is positively correlated with disbursement timeliness.

The findings of this study show that unnecessary procedures caused disbursement lag which caused loan diversion and default. Timeliness helped borrowers to use loan in intended ways [23]. Besides, Teixeira [54] noted that disbursement untimeliness caused loan diversion. The findings of this study established that seasonality of agribusiness is sensitive. As a result, disbursement lag gives wrong timings in every aspect. Lateness may imply missing opportunities to produce and market the output when conditions are ideal and optimum. The implication is wrong coincidences with undesired and unforeseen circumstances like hike of inputs prices, dry season, lack of market, producing alone in off-season when crops are prone to pests and disease and macroeconomic shocks such inflation and high tax regime. These are some of the reasons that make AFC farmers opt to cancel delayed loan. This study also found that timely disbursement created the dynamic

incentives because borrowers were encouraged to repay well so that they would access such convenient facilities in future borrowings.

It is possible that late disbursement results to diversion of loan funds in agriculture and the problem may be compounded when the loan delayed is also less than the amount applied. Lateness may result to misapplication of funds to unplanned and unintended uses which may be hard to generate revenue enough to repay the loan [55]. However, it is likely that farmers who are diversified or have off-farm opportunities may not be affected much by time lag in disbursement. These findings are consistent with those of Nyamu [56] who agreed that timing was important so as to buy inputs and produce optimally. This means that finances should be released in good time so as to achieve the desired returns and facilitate timely repayment of loans [57]. Ghosh [58] observed that dynamic incentives prevented opportunism by borrowers since there were conducive circumstances which guaranteed sustainable relationships.

3.1.3. Political Lending

The study sought to identify the existence of political lending on agribusiness loans disbursed by AFC. Results revealed that borrowers who admitted that they had not experienced political interference concerning AFC loan in their localities constituted 55.33% while 44.67% felt that there was political intrusion into lending. This means that more borrowers did not experience the instances of political meddling with lending in AFC loan facilities (Table 5). Results of loan repayment performance showed that respondent who felt that there was political interference defaulted by 80.33% while those not affected, defaulted by 19.67%. In terms of compliance, those not affected by politics complied more (64.44%) compared with their counterparts who registered a compliance rate of 35.56% (Table 5).

Table 5. *Borrowers' loan repayment distributed on basis of political lending.*

Political interference	Loan repayment status		Borrowers' distribution
	Compliance	Default	
Non-interference in lending	64.44	19.67	55.33
Interference in lending	35.56	80.33	44.67
Totals	100	100	100

Pearson chi2(1) = 39.3981 Pr = 0.000

The likely reason is that politics contributes to political patronage which leads to strategic default. Politics brings compromise to both the lender and the borrower meaning there are no incentives to service loans which affects loan performance negatively causing default. This study revealed that political interference correlates negatively with debt servicing thus hindering the intention to pay loans even when borrowers have ability to repay. This occurs because political lending is driven by rent-seeking behaviour which causes moral hazard and the resultant strategic default [34].

Due to prevalence of the gift economy, some borrowers may feel that they are getting rewarded which is a disincentivizing to loan repayment. In agreement with this finding of this study, Narayanan [28] observed that politically connected individuals took loan funds without any intention of repaying. This is in line with the idea of rent-seeking, which results to strategic default [59]. This possibly means that government-sponsored banks may receive more disbursements from exchequer for extending the political lending especially during electioneering period and also to the local branches in the chairman's locality [10].

Credit waiving results to strategic default, because borrowers deliberately refuse to repay loans in their branches due to expectation of imminent write off [59]. Expectation of future loan waivers reduces loan repayments [60]. Government may announce waivers due to escalating challenges associated with shocks which hit agribusiness sector or due to electoral strategy aimed at wooing rural voters [30].

Government-sponsored institutions require protection from political interferences so that they may sustain their operations [61]. This is because politics meddle with rural finance which is well established and functional [62]. These government interferences result to strategic default [63]. Lastly, Reid [64] agreed that farmers were becoming reluctant to repay the loans hoping that their politicians will ask the government to write them off. This political interference of imposing waivers and write-offs to agricultural loans caused strategic default in AFC which recurs during election cycles [32].

The findings of this study indicated that agricultural sector is highly regarded especially in developing countries like Kenya. As such, the government intervenes by providing affordable credit so as to stimulate the production potential. Government interventionist policies are later met by political interferences because of rent seeking by politicians and their followers [65]. As such, government-sponsored loans disbursed by AFC are not free from political meddling. For example, they promise politically-motivated waivers, write-offs and loan rescheduling; they also promise to inject more loan money that is better structured and opening of more branches. This makes default rate to ever remain high since these events are cyclic, albeit the effects are lifelong [30].

The knowledge on political lending enables borrowers and lenders to learn to exercise neutrality and choose their way as stipulated in credit policies of lenders and terms of offer for borrowers. Those who have made this choice have stood out in loan repayment. This is in agreement with the observation by Mertens [31] that political economy of 'non-performing' loans (NPLs) was predominant in government loans, thus increasing default rate. This study revealed that politics correlate negatively with debt servicing efficiency due to element of moral hazard and rent seeking.

3.1.4. Adequate Funding

Results of distribution of loan repayment based on adequate funding show that 78.67% of the borrowers got adequate loans while 21.33% got inadequate funds from AFC. This means that more borrowers were funded adequately (78.67%) in the study area meaning that they received the

amount they had applied or amount sufficient to implement their projects even if it was lower than the applied amount. For the minority of the borrowers who were funded inadequately (21.33%) it implies that AFC disbursed to them amounts less than what they had applied for or the same amount as applied though it was not adequate for project implementation since they had to top up from other sources of contribution (Table 6).

Table 6. *Borrowers' loan repayment status based on adequate funding.*

Loan adequacy	Loan repayment status		Borrowers' distribution
	Compliance	Default	
Adequately disbursed	89.54	36.07	78.67
Inadequate disbursement	10.46	63.93	21.33
Totals	100	100	100

Pearson chi2(1) = 82.8028 Pr = 0.000

The tabulation of performance results demonstrated that funding that was not sufficient caused 63.93% default, while the respondents who were funded sufficiently also defaulted by 36.07%. This implies that adequately loaned borrowers are able to purchase inputs and improve levels of management in their enterprises. In terms of compliance, 89.54% rate was registered among the borrowers who were funded adequately while their counterparts who were not adequately funded reported a lower compliance of 10.46%. This means that loan performance in both compliance and default depicted a linear relationship between with loan adequacy.

Adequacy of loan funds, as in conformance with priori expectations, reduces loan default while inadequacy in project funding causes default to increase [66]. The likely reason is based on the role that adequate financing plays in covering all the budgeted project costs and catering for provisions for contingencies. Inadequate financing of projects is associated with stalled projects, diversion of funds or multiple borrowing which hinders loan servicing capacity of the borrower [67]. These findings are supported by Shankar [37] who established that lenders should understand what borrowers considered as adequate loans based on their productive capacities. This is because any deviation from optimal loan size cause default in loans. Also, Phan [39] concluded that adequately-sized credit enhanced compliance in loan repayment thus getting rid of or minimizing default risk.

In addition, Farhan [35] reported that loan that was reasonable in size helped the borrowers to step up in productivity thus reducing loan default. Also, Mwembezi [68] established that smaller amounts of funding were linked higher instances of default. It is possible that larger loan sizes enhanced farm productivity thus generating income to repay the loan [38]. Thus, that lenders should advance adequate disbursements to enable borrowers to carry through their operations satisfactorily [69]. The probable reason is because efficient agribusinesses needed to be sufficiently funded so as to procure high-yielding inputs which improved revenue base and subsequent compliance in repayment performance.

The findings of this study established that knowledge on loan adequacy is important for achievement of objectives of both the lender and the borrower. The lender (AFC) is mandated to disburse loan funds so as to meet social objectives. As such, the amount injected should be adequate to fully fund the implementation of the project which borrowers are intending to undertake. Inadequate funding may cause diversion, incomplete projects and multiple borrowing. This therefore means that there will be challenges in collecting inadequately disbursed loans. This was also observed by Dhib [70] who argued that adequate funding is a sine-qua-non for full project implementation which had coefficient which was positive to compliance in loan service and that inadequate funds in agricultural projects resulted to diversion.

From the perspective of AFC borrowers, inadequate funding of the intended project presents implementation challenges. This means that the project may not be completed or if implemented it will be at extra costs than the budgeted cost. In this scenario, it might be hard to recoup the cost of capital. From the findings of this study, some borrowers disclosed that they diverted their loan funds due to inadequacy. The objective of improving the welfare that agricultural loan is meant to achieve will be a nightmare in this case. This will deteriorate borrower-lender relationship the and in most instances, result to exit of frustrated borrowers [71]. This was corroborated by Farhan [35] who reported that adequate funds helped to implement the desired projects thus meeting the government objectives. Therefore, disbursements should be adequate so as to implement the intended projects so that the mandate of the government can be attained, through the action of AFC resulting to financial empowerment of the farming communities.

3.2. Description of the Econometric Models on the Effect of Lender Behavioural Characteristics on AFC Loan Default Rate

The objective explores the results of the consequence of lender behavioural characteristics and its effect on the AFC loan default rate. Probit model was used to evaluate the consequence of lender behavioural characteristics on AFC loan default rate. The model is best suited since it helps deal with the problem of heteroscedasticity. The objective covers four indicators which are farm visit, disbursement timeliness, political lending and adequate funding. AFC loan default rate is the dependent variable that takes the values of 1 for default and 0 for compliance. Probit estimates for the indicators of the lender behavioural characteristics affecting AFC loan default rate as shown in Table 7.

Table 7. *Probit estimates for lender behavioural characteristics affecting AFC loan default rate.*

Indicator	Coefficient	Standard errors	Z	P>(z)
Farm visit	-0.355	0.12	-2.96	0.003
Disbursement timeliness	0.602	0.106	5.69	0.000
Political lending	0.916	0.236	3.89	0.000
Adequate funding	1.177	0.239	4.92	0.000
Constant	-2.466	0.452	-5.45	0.000
Number of observations	300			
Pseudo R Squared	0.4880			
LR Chi squared	147.87			

The model was tested at 1% level of significance. The goodness-of-fit measures were done and reported. The Probit regression gave a Pseudo R – squared of 0.4880 implying the lender behavioural characteristics considered in the model explained 48.80 percent of the dependent variable of loan default. The log likelihood ratio (LR) statistic =147.87 which is significant at one percent, meaning that at least one of the parameters has a coefficient different from zero. Therefore, it can be concluded that the Probit model used has integrity and is appropriate. The model findings revealed that all the lender behavioural characteristics that were considered in the study significantly affected AFC loan default rate at 1% level. The p-values of the behavioural characteristics were less than the p-value of 0.01 (Table 7).

The models shows that the coefficient of the indicator of the farm visit is negative (-0.355). This implies a negative effect such that an increases in the number of visits by the AFC official to the borrower reduces AFC loan default rate. However, the coefficient of disbursement timeliness was positive (0.602) means that lag in crediting the account of the borrower leads to increased default rate in AFC loans; the political lending positive (0.916) coefficient hints at increase in AFC loan default rate with escalation in cases of political interference; and adequate funding had a positive coefficient of 1.177 meaning that disbursement of inadequate funds rises AFC loan default rate. The marginal effects of the lender behavioural characteristics on AFC loan default (Table 8).

The marginal derivatives revealed that visits by the AFC official to the borrowers since the loan inception was negative and significant at 1% level of significance. An increase by one visit of the AFC official to the borrowers leads to marginal decrease of 0.059 in defaulting implying a similar probable increase in compliance. Ahamefule [67] in concurrence to the findings of this study, established that farm appointments improved farmers' credit repayments.

Table 8. *Marginal effects of the lender behavioural characteristics on loan default.*

Indicator	dy/dx	Standard error	Z	P>(z)
Farm visit	-0.059	0.021	-2.85	0.004
Disbursement timeliness	0.01	0.019	5.12	0.000
Political lending	0.152	0.04	3.84	0.000
Loan adequacy	0.195	0.048	4.08	0.000

This study found that disbursement timeliness positively and significantly effected loan default rate (Table 8). This means that delay in disbursement of loan by a unit leads to a marginal increase of 0.01 in default rate. Concomitant to this finding, Chandio [69] found that delay in disbursement significantly increased transaction and the possibility of default.

Political interference positively and significantly associated with default rate. The presence of political interference is associated by a marginal increase in default rate of 0.152. Consistent to these findings, Farhan [35] found that inconsistency in policies regarding lending of the government coupled with political interference affected the efficiency and sustainability of lending institutions, thus increasing default rate. Adequate funding was also found by this study to correlate to conformity in debt servicing. The marginal increase in credit default was found to be 0.195 due to inadequate funds which implies that adequate funds would lead to probability in compliance with the same change (Table 8). The model findings also showed that fund adequacy is associated by a positive significant effect on default rate. The findings by Boateng [72] established that inadequacy of funding significantly increased the possibility of defaulting in loan servicing.

4. Conclusion

The study concluded that for effective credit programs, lenders need to be active in their roles. The target of AFC should be loan officials who are up to the task and are conversant with lending policy such that their action input is proficient. By this ipso facto, credit officers can make frequent supervisory appointments at borrowers' communes; observe the disbursement timeliness to adhere stipulated turnaround time as specified in AFC service charter; act professionally without undue influence, compromise and coercion from politicians and ensure that loan amounts that are disbursed are adequate to fund the project items that are listed in the proposal. If the loan amount is to be revised downwards based on borrower's ability, the disbursing officer should seek consent from the borrower who needs to specify the priority items. The officer can advise on how to adjust with reduced loan amount so as to eschew project underfunding. To attain service level agreements, corporate support and government supportive intervention is called for. As such, officers can escalate issues that are beyond their capacity or compromising to their integrity and professional ethos. Since the lender behaviour in serving borrowers efficiently is associated with elastic response in loan repayment more compliantly, service charter should be adhered to so that delivery of services is as per the service

level agreement. The study recommends that AFC should adequately and timely fund supervised borrower projects and own those projects by extending advisory and training inputs even as they embrace a neutral working environment that is free from political manipulation, compromise and influence.

Competing Interests

The authors have not declared any competing interests.

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