

Influence of Transaction Cost Determinants on Credit Customer Category of Commercial Banks in Tanzania.

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Abstract

The provision of credit services in rural areas is a challenge as agriculture and other rural economic activities have unique characteristics of dependence on natural resources, long production cycles and vulnerability to multiple risks. This paper aims to analyse transaction cost as the determinants of the choice of credit customer category for commercial bank's credit business scale-up in Tanzania. Primary data for this study were collected from 37 registered and licensed commercial banks in January 2018 through structured questionnaires. The main sources of secondary data were peer-reviewed journal articles on transaction cost economics and rural financing. Data were analysed quantitatively through the logistic regression method. Key findings revealed that commercial banks have failed to scale up their credit operations to rural-based customers due to high transaction costs. This fact emanated from commercial banks' preference of transacting credits directly with individual borrowers instead of using intermediaries, thus multiplying transaction costs, especially when dealing with rural-based borrowers. Therefore, commercial banks believe to be better off with few urban-based credit customers. This study recommended that commercial banks should use multiple credit governance structures (CGSs)\ (methods for credits delivery) to mitigate transaction costs when giving credits. Direct channels should be opted for when dealing with urban-based borrowers since low transaction costs are involved. Indirect channels with intermediaries should be opted for when scaling-up credit operations to rural-based borrowers since they allow the spreading of credit transaction costs throughout the credit supply channel.

Keywords: Credit, Transaction Cost, Commercial banks

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1.0 Introduction

Since the 1980s, rural finance has shifted from state banks and subsidized credit to a pluralistic system offering a broad range of services. Until the 1980s, support for smallholder agriculture came from state-owned agricultural development banks using subsidized lines of credit. Few of the development banks were financially sustainable (IFAD, 2016). As financial sectors were liberalized, most countries retreated from ownership and management of financial institutions and the provision of subsidized credit. With the demise of most specialized and state-owned agricultural financing institutions and a growing realization that interest rate subsidies help the well-connected more than the intended targeted borrowers, a consensus was reached in the 1990s for liberalization of interest rate regimes, reduction of support for state banks and cost recovery in the financial services provided to the poor people. New financing models were sought with increased attention to pro-poor outreach and sustainable interest rates. This was followed by the founding of many microfinance institutions (MFIs) during the 1990s, not all of which have been successful anyway. The more successful MFIs have controlled their service costs and lending risks, integrated with the formal financial sector and adopted more sustainable business models (World Bank, 2016).

MFIs stressed developing a wide range of financial services firmly built on savings. In expanding outreach, they extended their client portfolios to lower income and mainstream rural borrowers and savers, which helped to mitigate risks, but also diffused their intended orientation to poorer households. Early proponents of externally promoted microfinance focused more on a sustainable supply of microfinance and less on its actual uses (IFAD,2016). While microfinance initiatives generally defined target groups, institutional

development was seen as a goal in itself because it filled a critical bottleneck in inclusive finance. The type of demand and the planned loan use were not the central focus, which was ensuring a reliable incentive structure for the repayments. The viability of microfinance thus relied on ensuring incentives for previously excluded borrowers to repay small loans (for example, to improve their future access to financial services) and drew on group-based lending to leverage joint liability as a comparatively effective enforcement mechanism (IFAD,2016).

Modigliani and Miller's work (1958, 1963) sensitized finance practitioners to the challenges of the debt-equity mix for funding firms or other small and microenterprises. Behavioural economics probed household or firm financing strategies that cannot be explained solely through traditional "homo economicus" perspectives. Most important, neo-institutional economics brought clarity on mechanisms, beyond price parameters, that incentivize or discourage market participants. The crucial value of information, and quick and uncompromised access to it, constitutes one cornerstone of this school, which emphasized the role that asymmetries of information and moral hazard play in impeding or compromising financial market optimization.

Many recent initiatives are built on the insights of neo-institutional economics and address the challenges related to transparency, consumer protection and moral hazard. Already in the early 1980s, a new school of economists had started to offer a different mix of analytical tools that emphasized the importance of information and risk, and the need to consider other incentives/disincentives and market imperfections to better understand the decisions of market participants. Leading proponents, such as Stieglitz (2011), identified information asymmetries as a key variable leading to market distortions. They suggested that policymakers should promote transparency and the free flow of information as a pathway to improved credit allocation – better-informed financial institutions serve clients better (IFC, 2014).

According to Finscope survey (2017), below 10 per cent of Tanzanians who live in rural areas have access to financial services from the banking sector. Information asymmetry between commercial banks and rural-based borrowers

was a major setback in commercial banks behaviour of dealing directly with individual borrowers. Information asymmetry between borrowers and commercial banks is reflected in the inability of the majority of rural-based borrowers to provide up-to-date reliable financial information and realistic business plans, which increases credit transaction costs and consequently, limits the ability of the banks to assess the credit worthiness of the individual borrowers (Kessy & Temu 2010).

Information is a key input that goes into the credit decision of commercial banks. One of the challenges for commercial banks is to acquire information about the credit risk of the borrower. Borrowers have more information than the lender about the projects (Nalukenge, 2003). Transaction cost economic theory argues that banks are not interested in offering credit to MSMEs, farmers and poor households because of information asymmetry which causes high screening costs, credit contracts negotiation costs, monitoring, and enforcement costs. High transaction costs problems are more likely to occur when commercial banks deal with MSMEs, farmers and poor households especially in developing countries' rural areas due to higher opacity (Berger et al 2011; Hyytinen & Pajarinen, 2008). By opacity means, it is difficult to ascertain if borrowers have the capacity to pay (have a viable project) and/or willingness to pay (Berger et al 2011).

Olomi (2009) and Kibassa (2012) emphasized that improper keeping of records coupled with the inability of rural-based borrowers to properly express their knowledge about business opportunities aggregates the lack of adequate information by commercial banks. Saito (2006) amplifies this argument by pointing out the lack of adequate and reliable collateral, lack of appropriate instrument to manage risk, inaccessibility of information about rural-based borrowers and perceived risks make Commercial banks in Tanzania unwilling to provide the much-needed finance, particularly to rural areas.

Recent studies in Tanzania on the performance of commercial banks focused on conventional approaches through analysing the banks' profitability, repayment rates, accessibility to services, geographical coverage, transformational/operational costs, interest rates, number of borrowers, productivity and

portfolio quality (Wangwe, 2004; Aikaeli, 2008; Ernst & Young, 2010; Serengeti, 2012). This study focused on the influence of transaction cost determinants on credit operation scale-up to rural and urban customers by commercial banks.

Other scholars have researched the application of transaction costs on Credit Governance structures (CGS). Their focus was mainly on the demand for credits and not the supply side. Ngaruko (2008) focused on how the economic reforms of Tanzania influenced the diversity characteristics of farmers, their farm investment and ultimately their demand for agro-credits. He made his analysis through the application of transaction costs theory. Mkenda and Campenhout (2011) researched the estimation of transaction costs in the Tanzania supply chain. They focused their analysis on the commodity exchange of agricultural products. Given transaction costs, which methods are suitable for supplying credits to rural and urban credit customer categories, was the focus of this study.

This study was guided by Transaction Cost Economics Theory (TCE) which focuses on the organization of transactions that occur whenever a good or service is transferred from a provider to a user across a technologically separable interface. When transactions occur within an organization, they can include managing and monitoring personnel and procuring inputs and capital equipment. The transaction costs of buying the same good or service from an external provider can include the costs of source selection, contract management, performance measurement, and dispute resolution. Thus, the organization of transactions affects transaction costs (Williamson 2010, 2005, 2002).

2.0 Methodology

This study adopted quantitative paradigm. The study utilized quantitative and statistical aspects of data organization, presentation and analysis through figures, numbers and tables. Both primary and secondary data were collected. Structured questionnaires for survey of transaction costs associated with commercial banks credit transactions were administered to 204 commercial banks Credit Officers for primary data collection. The study also used secondary data from peer reviewed journal articles on transaction cost economics and

governance structures, financial sector supervision and annual reports from the Bank of Tanzania (BOT). Binary logistic regression method was used for data analysis as narrated in data analysis section 2.3. This was done with the aid of SPSS software, version 16.0.

The targeted population was all registered and licensed commercial banks in Tanzania by January 2018 where the targeted sampling unit was commercial bank's Credit Officers. Due to inability to determine the sampling frame, a non-probabilistic sampling method was followed, a purposive sampling technique was used. Only respondents with credit administration knowledge and working in the Credit Department of commercial banks were included in the sample of 204 respondents. G power software was used in calculating the sample size since the population size was not known with reliability (Erdfelder et al 1996). Input parameter in G power were, α err prob= 0.05, power (1- β err prob) = 0.8, odd ratio = 0.6, two tail test, normal distribution and the output result for the sample size is 204.

The study was carried out in Tanzania Mainland and Zanzibar. A sample of 204 Credit Officers from 37 registered and licensed commercial banks that provided credit services to micro, small and medium enterprises and farmers were involved in the study. As per the requirement of the Bank of Tanzania, all information related to credit operations of commercial bank branches must as well be consolidated to their head offices for submission to the Credit Reference Bureau (CRB). At the time of the study, January 2018, all commercial banks in Tanzania, about 37 registered and licensed commercial banks, had their Headquarters in Dar es salaam with the exception of the People's Bank of Zanzibar

This study used descriptive statistics to assess how commercial banks preferred different methods for credit distribution. Binary logistic regression was used to assess the likelihood of commercial banks choosing a particular credit customer category (urban or rural based credit customers) given Transaction Costs. Each credit customer category was equated as a function of transaction costs. Given credit governance structures and transaction costs, a suitable credit customer category was selected.

Given a sample of (X, Y) pairs in logistic regression, the X's can be numerical or categorical, but Y's are generally coded as 0 (for those which do not have the event) or 1 (for those which have the event). According to Bryman and Cramer (1990), the logistic model is based on a linear relationship between the natural logarithm (ln) of the odds of an event and a numerical independent variable. The form of this relationship is as follows:

$$L = \ln (P/1-P) = \beta_0 + \beta_1 x + \epsilon_i$$

Where Y is binary and represent the event of interest (response), coded as 0/1 for

failure/success,

P is the proportion of successes,

O is the odds of the event,

L is the ln (odds of event),

X is the independent variable,

0 and 1 are the Y-intercept and the slope, respectively, and ϵ_i is the random error. Computations of the estimates of β_0 and β_1 in logistic regression are far more complicated; P is the probability of the event, and the odds of the event are:

$$\text{Odds} = O = P / 1-P$$

We defined $L = \ln(\text{odds of event } Y)$, sometimes called the "log odds" or logit of Y.

We can write L in terms of P, Probability (Y=1), as follows:

$$L = \ln (O) = \ln (P/1-P)$$

The logistic regression model may be written in terms of P, the risk of event Y, assuming that L is a linear function of X as follows:

$$P = \frac{e^{\beta_0 + \beta_1 x}}{1 + e^{\beta_0 + \beta_1 x}}$$

The current study used logistic regression method for the analysis, where transaction costs were predictors while credit customer categories(CCC)

were dependent variables (dichotomous). This tool assessed the likelihood of commercial banks choosing a particular category of credit customer and not the other given the Transaction Costs. Each credit customer category was equated as a function of transaction costs (TC). This means each TC category (Total Information Search Costs(TSC), Total Negotiation Costs (TNC) and Total Enforcement Costs (TEC)) was tested against each category of credit customer to determine the likelihood of choosing or not a particular customer category. Thus the most cost efficient credit customer category was revealed. The mathematical representation of the above:

And

$$CCC (\text{Urban, Rural}) = f (\text{TSC, TNC, TEC})$$

TSC includes but not limited to transport, meetings, village authority fee, reputation, personal relationship, time spent in searching and screening borrower. TNC includes but not limited to cost of lawyers, allowances for meetings, paperwork, personal relationships, transport costs, levies, opportunity cost of time spent in negotiation, reputation. TEC cost includes but not limited to penalties, enforcement campaigns, police and court case costs, time for making follow ups, cost of lawyers and reputation. Binomial logistic regression gave binary outcome; for example, 1 meaning success and 0 failure when predicting whether a CCC has been chosen or not based on TSC, TNC, and TEC. The logistic regression model gives the likelihood that, given CCC's TSC, TNC, TEC, that they are chosen (in this example, the higher the probability, the greater the chance for the CCC to be chosen). Again, a number of coefficients were obtained, but this time were used to calculate a LOGIT.

$$\text{Logit of CCC (Urban, Rural)} = \text{intercept} + a \text{ TSC} + b \text{ TNC} + c \text{ TEC} + \varepsilon$$

Usually, ε is equated to 0 since focus is on TSC (search costs), TNC (negotiation costs) and TEC (enforcement costs) as parameters used to predict the likelihood of choosing a particular CCC. Therefore;

Thus, the model was fitted to obtain values for a , b , c and the intercept, the logit value was calculated from the given data. The probability P was calculated and established chances (likelihood) of choosing a particular CCC.

This study utilized cross-sectional survey, thus all the data made available for analysis were cross-sectional data. The data were collected from different sampling units but at the same period. Cross-sectional data do not need statistical control as time series data do (Setia 2016). This study applied logistic regression method for analysis (binary logistic). This method uses maximum likelihood estimator which provides consistency approach to parameter estimation problems. Maximum likelihood estimates can be developed for a large variety of estimation situations. For example, they can be applied in reliability analysis to censor data under various censoring models. Normally maximum likelihood estimator is not affected by data quality to impair results and call for assumption testing (Cryff & Frank 2016).

3.0. Results and Discussion

3.1 Methods of Credit Supply by Commercial banks (Credit Governance Structures).

This study devised a framework that shows four different categories of credit governance structures CGS_1 to CGS_4 ; these may be used by commercial banks to mitigate TCs and distribute credits in the country. Each CGS has its own associated level of TC, depending on the choice of a CGS for credit distribution to borrowers. The level of TC influences the choice of CGS for credit supply by commercial bank to rural or urban based customers. Therefore, TSC, TNC and TEC, were independent input variables that affects choice of CGS.

Whereby: -

DR Direct channel (Credits directly from commercial banks to ultimate borrower)

CB stands for commercial bank

BR is ultimate borrower (user of credits)

TC is transaction costs (Tsh)

PIB is profit- Intermediary bank; i.e. Community development banks

PIM is profit Intermediary Microfinance Institution i.e. SACCOS

NPI is non-profit intermediary i.e. government institutions that guarantee credits from CB to employees.

CGS stands for credit governance structure.

GL is group loans

3.1.1 Preferential rate of CGSs by commercial banks in Tanzania

About 204 respondents from 37 commercial banks in Tanzania prefer distributing credits, using various credit governance structures (CGSs). About 66.2 per cent of all respondents from commercial banks in Tanzania prefer distributing credits directly to individuals rather than using intermediaries. Only 5.9 per cent preferred using profit making intermediary banks, that is, Community Development Banks as channel of distributing credits to borrowers. About 16.7 per cent of the respondents from commercial banks in the country prefer issuing credits to borrowers through profit making microfinance institutions such as SACCOS. The remaining 11.2 per cent prefer mostly servicing credits through non-profit making intermediaries. As the findings above show, only 33.8 per cent of the respondents from commercial banks prefer supplying credits through intermediaries. The rest of commercial bank's respondents believed it is costly and inefficient for them to use intermediaries in supplying credits.

Table 3:1 Preferential rate of CGSs by respondents from commercial banks

CGSs	Frequency	Percentage (%)
CGS1	135	66.2
CGS2	12	5.9
CGS3	34	16.7
CGS4	23	11.2
Total	204	100.0

On the one hand, these findings confirm previous scholars' arguments that commercial banks want to transact credits with urban based customer more than rural based customers because less transaction costs are involved. Information asymmetry is the driving factor for this desire (Kessy & Temu 2010).

On the other hand, the study findings are in contrast with the findings of the previous studies which revealed that Commercial Banks can easily mitigate transaction costs, scale-up credit operations to rural areas and thus allow majority in need of credit facility to access it, if they decide to use intermediaries and spread costs and risks throughout the credit supply chain. Currently, the Commercial Banks in Tanzania are considered inefficient in transaction costs since they have failed to scale-up their credit operation to rural areas for fear of high transaction costs.

Credit business operating environment in urban areas is conducive, thus minimizes the risks of credit transaction costs. Therefore, direct channel of credit distribution is the best for commercial banks credit supply in urban areas since transaction costs can be well mitigated. In order for the commercial banks to scale-up credit to rural based customers, they must involve credit governance structures with intermediaries as appeared in the framework above, given non-conductive nature of credit business operating environment in rural areas.

3.2 TC Determinants of Choice of Urban Credit Customers or Rural Credit Customers

From the classification Table 3.2, only 3.8 per cent of the respondents from commercial banks selected category of rural based customers for credit supply compared to 97.6 per cent of those who selected urban based credit customers as the best category for credit supply. This model correctly predicts the results by 61.8 per cent. Commercial banks prefer dealing directly with credit customers and thus the rational and optimal option for them is transacting with urban based credit customers.

This is because of high transaction costs associated with rural based customers given unconducive nature of credit business operating environment. The National Identification System has not been effectively installed nor working. It is not linked with other national data bases such as, the health insurance scheme, the pension scheme, business registration and licensing scheme and the like, thus it becomes difficult and expensive accessing borrowers' information. The newly established Credit Reference Bureau (CRB) is not

yet effectively working, infrastructures and other supportive facilities are not conducive especially in rural areas therefore made it difficult and costly locating credit customers and even more costly monitoring and enforcing credit contracts once credits were given. Thus urban based customers seemed to be the best option for most commercial banks.

The likelihood of Commercial Banks choosing urban based credit customers over rural based credit customers is influenced by an increase in TSC and a decrease in both TNC and TEC. These findings indicate that TSC are lower in urban areas since borrowers can be easily and inexpensively located due to good infrastructures and availability of supportive facilities. Borrower's information can be easily accessed, thus cut down screening costs. Thus, at all times, TSC can be easily absorbed by commercial banks in urban areas. TEC is the highest category of TCs, but can easily be reduced through direct channel for credit supply (commercial banks transacting credits directly to borrowers rather than using intermediaries) in urban areas together with TNC. Thus direct channel is considered efficient for supplying credits in urban areas by the commercial banks. Therefore, given transaction costs, commercial banks choose urban based credit customer category rather than rural based credit customers.

These findings are supported by the findings from Finscope survey (2017), indicating that less than 10 per cent of Tanzanians who live in rural areas have access to financial services including credit facility from the banking sector (particularly commercial banks). Information asymmetry between commercial banks and rural based borrowers was a major setback on commercial banks behaviour of dealing directly with individual borrowers, resulting in high transaction costs. High transaction costs influence commercial banks decision not to provide credit services at all to rural based borrowers, in turn negatively affecting both commercial banks and rural based population, (FSDT 2017).

The current findings to some extent are in conformity with the arguments made by Temu and Kessy (2010). Information asymmetry between borrowers and the commercial banks is reflected in the inability of the majority of rural based borrowers to provide reliable financial information and realistic business

plans, which increases credit transaction costs. This consequently, limits the ability of the banks to assess the credit worthiness of the individual borrowers. And therefore commercial banks believed to be better-off with few known credit worth urban based customers.

Despite foregoing observations, the current study findings have brought to light a different perspective that was not captured by previous scholars. From Table 3.3, if commercial banks decided to supply credit to rural based borrowers, both Credit Contracts Negotiation costs and Credit Contracts Monitoring and Enforcement costs would likely increase to the extent that of making the commercial banks fail to absorb by themselves. Accordingly, there is a need of indirect channels for credit distribution (multiple credit governance structures) to be used as established in this study. Commercial banks must use indirect channels to enable them scale-up their credit operations to rural based borrowers. Credit Transaction Costs can well be mitigated by commercial banks (especially contracts negotiation costs and contracts monitoring and enforcement costs as shown in Table 3.3) if intermediaries are used in supplying credits to rural based borrowers. Therefore, with proper selection of credit distribution channels, commercial banks may scale-up their credit operations to rural areas, mitigate transaction costs, and provide the opportunity for the majority in need of credit facility to have access and in turn maximize profitability.

4.0 Conclusion and Recommendations

Most commercial banks prefer direct channel for credit distribution to borrowers (CGS1). They find it suitable dealing directly with individual borrowers rather than using intermediaries. Most commercial banks do not understand the cost implication of using multiple credit governance structures. Credit governance structure one (CGS1) or direct channel of supplying credits carries low transaction costs compared to indirect channels. Direct channel is the most economic mode of credit governance structure. Despite that fact, the usage of direct channel has negative effects to both commercial banks and borrowers when dealing with rural based customers.

When supplying credits to rural based borrowers using direct channel (CGS1), often transaction costs tend to rise and commercial banks are usually required to absorb all the costs by themselves. Because of high risks and cost sensitivity, commercial banks decide it is better off not to provide credit services at all to rural based borrowers despite the need and thus focus on urban areas where the costs of credit transactions are low. This trend has led to credit starvation among most people in need of credit services in Tanzania due to limited supply of credit facility from commercial banks (origin of financial services). In this regard, the commercial banks are considered inefficient due to immense formal credit starvation faced by the majority of Tanzanians in need of credit facility, especially those in rural areas.

The current study recommended for commercial banks to use credit governance structures with intermediaries when providing credits to rural based borrowers. Examples of such intermediaries include, Community Development Banks, Village Community Banks (VICOBAs), farmers associations, trader associations, Village Savings and Loan Associations (VSLAs), Savings and Credit Associations (SACAs), Rotating Savings and Credit Associations (ROSCAs), Non-Government Organizations and Non-profit making organizations. Most of these intermediaries are located in rural areas, they are highly equipped with information of rural based borrowers and therefore asymmetric of information will be solved and transaction costs levels lowered. Such intermediaries will absorb transaction costs instead of the commercial banks carrying the burden. Thus commercial banks will easily control, monitor and enforce credit contracts on intermediaries but not individual borrowers. Therefore, the scaling-up of commercial banks credit operations to rural areas will be possible.

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