

Enhancing Credit Facilitation Processes for Agricultural Cooperatives in Uganda: Decisions That Matter

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Abstract

This paper argues that improving the significant role of financing played by agricultural cooperatives to increase agricultural productivity can be strengthened. The paper is advancing that this can be done through enhancing decisions that matter for the credit facilitation processes in agricultural cooperatives as they advance credit to their members. Generically credit facilitation processes include credit capital sourcing, credit preparation, application and approval, and credit reporting. However not every activity under these processes comprises of a decision that matter. This paper proposes an approach for enhancing credit facilitation for the agricultural cooperatives by attempting to determine decisions around cost of equity, external borrowing, credit limit, credit duration, lending rate, financial position and credit reporting. To achieve the proposed purpose, the study utilised a review of literature on the key decisions. A total 15 dissertations and 24 academic articles accessed from the internet and physically in the library were critically reviewed and results are presented in the paper.

Key words: Credit facilitation process, agricultural cooperatives, decisions that matter

Introduction

Agricultural cooperatives in Uganda, a landlocked, developing and agriculturally inclined country located in Eastern Africa (UBOS, 2013) are being viewed as an engine to rebuild agricultural productivity through providing agricultural financing through credit facilitation especially to the members.

Seventy-three percent of all employment in the Uganda is related to the agricultural sector (IFPRI, 2012). The sector is predominantly made up of smallholder farmers that are highly challenged with; rude mentally means of farming, lack of quality certified inputs, poor mechanisms of technology, lack of certified pesticides, herbicides, expensive land, expensive labour, expensive yet irrelevant financing to boost investment and many challenges (Kwapong, et al, 2013). With all these aggravated challenges related to financing, the main motivation for the revival and growth of agricultural cooperatives in Uganda has been to provide a solution to these challenges. Increasingly observed is the formation of many primary agricultural cooperatives as these are in direct reach to the farmers, they have less bureaucracy and their contribution is very noticeable in form of supporting smallholder farmers (Meador, et al., 2016).

The core mandate for agricultural cooperatives' formation is to provide in-house capital supply for farmers that can be borrowed by members in order to enable various farm activities which would otherwise be very difficult for individual farmers (Msemakweli, 2012).

This agenda by the agricultural cooperatives is fully supported by the government of Uganda as articulated in the National Development Plan and Vision 2040 as one of the key drivers to foster economic growth in the country. However, it has been argued that in order to ensure sustainability of credit facilitation in primary agricultural cooperatives, it is important to have well-articulated and appropriately managed credit facilitation processes (Atsbaha, 2008).

Issues in Agricultural Cooperative Credit Facilitation Process

A literature review towards the agricultural cooperative credit points; Agricultural credit as the process of obtaining control over the use of money, goods and services in the present in exchange for a promise to repay at a future date (Adebayo & Adeola, 2008). Agricultural Cooperatives' Credit enhances productivity and promotes standard of living by breaking vicious cycle of poverty of small scale farmers.

Credit facilitation is described as a series of processes inclusive of which are: credit sourcing, credit preparation, application and approval and credit reporting (Mutua, 2016; ATTF, 2012). Danso, (2015) further emphasised that the sole reason for management of credit facilitation is risk management which if not unmanaged will undermine the ability of the shareholders to realise profit from their savings investment as credit capital in the cooperatives.

OeNB, (2004) also emphasises that individual credit facilitation processes need to be identified and the various risk components be checked as each individual process has unique decisions that contribute to the impact of credit approved and this has influence on the ability to pay and an influence on the return of investment as expected by the shareholders.

Even though the processes of credit facilitation are highly generic and crosscutting for all providers of similar services, not all these processes and their respective activities are key decision elements for agricultural cooperatives. This paper' key contribution will be to explain the decisions that matter in each credit facilitation processes and the issues that surround them in order to recommend a relevant and workable solution to manage them and thus enhancement for the way these decisions are made.

Theoretical perspective

On the global scene, although many lenders inclusive of agricultural cooperatives, have been facing credit risk ever since the early ages of credit facilitation, credit risk has not been widely studied until recent 30 years (Crosbie et al, 2003). Early theory (before 1974) on credit uses traditional actuarial methods of credit risk evaluation and related decision making, whose major difficulty lies in their complete dependence on historical data. There are three quantitative approaches of analyzing credit risk: structural approach, reduced form appraisal and incomplete information approach (Crosbie et al, 2003). Melton (1974) introduced the credit risk theory otherwise called the structural theory which is said to explain default as an event. It is derived from a firm's asset evolution modeled by a diffusion process with constant parameters. Such models are commonly defined "structural model "and based on variables related a specific issuer. This model was found idea for explaining the credit sourcing one of the processes of credit facilitation. An evolution of this category is represented by asset of models where the loss conditional on default is exogenously specific. In these models, the default can happen throughout all the life of a corporate bond and not only in maturity (Long staff & Schwartz,1995).

This model was critiqued by MacDonald et al, 2006 for not being able to specifically spell out the areas that lead to potential default which would guide decision makers on the credit analysis and reporting areas they need to observe. And thus MacDonald et al, in (2006) advanced the 5C's of credit, that lending institutions must ensure to build a credit policy around; Character (of the applicant), Capacity to borrow, Capital (as back up), Collateral (as security), economic Condition. These assessments are based upon lenders own experience taking into consideration not only historical information but also the futures view of the borrowers' prospects (MacDonald et al, 2006). Character refers to as the maturity, honesty, trustworthiness, integrity, discipline, reliability and dependability of a customer. A person of good character was open and divulges information about them in the process of the decision making. Capacity refers to the ability of a client to service his debt obligation fully. This is determined by reviewing sources of income versus obligations to determine his paying ability based on past information about borrower. Capital refers to the borrower's wealth position measured by financial soundness and market standing. The loan officer looks at what would happen if there is deterioration in the borrower's financial condition. Would they still be able to meet the debt obligation? Condition looks at the commercial, socio-economic, technological and political environment to assess the successful implementation of the project therefore the recovery of the loan issued. It looks at the sources of cash and how they vary with the business cycle and consumer demand. Collateral is a security issued to secure a loan. These guarantee the issuer of credit of a source of income in the event of failure. Securities include land, building, machinery and others that can be disposed off in loan recovery (MacDonald et al, 2006). Even though this theory is ideal, and appreciates the importance of understand the 5C's in credit facilitation, it doesn't provide for how these 5C's can be determined and this provides the theoretical gap for this study.

From the discussion above, it's theoretically evident that credit facilitation processes cannot be divorced from decision making and therefore decision that matter. Mintzberg et al. (1976), Simon, (1960) explains that decision making facilitates information search on the problem to be solved. Providing possible solutions alternatives, evaluating these different alternatives and choosing the most viable alternative as well as controlling the alternative decided. Decision making is characterised by rationalistic and bounded rationality models (March, 2010). Rational decision making implies that the decision maker operates under certainty, has several alternatives with their related outcomes, is conversant with the decision criteria and has the ability to make an optimum choice to implement (Towler, 2010; Simon, 2009). In reality, the situation is such that actors operate in uncertain and complex business environments (Keen & Sol, 2008), such situations include the agricultural cooperatives (Aregu, 2014). There are several challenges highlighted that arise from decision issues of credit facilitation processes that portray the complexity of the agricultural cooperative business environment. These challenges undermine agricultural cooperative managers' ability to make rational decisions.

In the above situation of inability to make rational decisions, cooperative managers use heuristic rules in decision making to simplify highly engaging tasks into simpler ones. The heuristic rules work hand in hand with Jager & Janssen (2012)' proposed consumat. These authors proposed a set of four decision strategies based on their consumers studies: a) repetition (do as you always do), b) imitation (do as your close peers do), c) inquiring (study what all peers do and do as the majority do), d) optimizing (calculate all alternatives and choose the best). The research assumes that in the absence of information requirement for rational decision making cooperative managers either repeats what they have done before, benchmark on what other cooperatives are doing, make an inquiry from an authority or optimize amongst available options. Utilising the proposed consumat leaves the cooperative manager who is also an agent with a dilemma of focus on the decision process and dependent on the stakeholders' views which contravenes. Mintzberrg et al. (1976) recommendations in decision making discussed above that "decision making ends when a final decision that can be evaluated is taken. Therefore, the two issues of decision processes and final evaluated decisions discussed are important for enhancing credit facilitation decisions in agricultural cooperatives.

Research methodology

This paper was developed based on literature evidence compiled using document review of reports, journal articles and empirical dissertations. The paper can be classified as subjective and interpretive. A total 15 dissertations and 24 academic articles accessed from the internet and physically in the library were reviewed, regarding credit facilitation processes in agricultural cooperatives were reviewed.

Agricultural Cooperative Credit Facilitation Process

An overview of literature indicates that agricultural cooperatives undertake three major processes as they advance credit to their members; these include credit sourcing where cooperatives have to make deliberate efforts in soliciting for credit capital. Danso, (2015) specifies that credit capital in agricultural cooperatives is either from internal sources (equity) or external sources (financing) and this is taking a loan outside the cooperative. The other process is credit preparation, application, evaluation and approval where there is preparation of credit terms, invitation of credit application, and financial and technical evaluation of application and approval of applications. The final process is credit reporting which includes monitoring and providing feedback about what has been achieved from credit facilitation. These processes have been used to propose a model which is graphically presented in Figure 1 below.

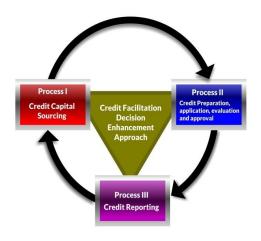


Figure 1: Credit Facilitation Decision Enhancement Approach

Decisons that matter in each case		
Process 1: Credit Capital Source • Decisions on	Process II: Credit Preparation, Application, Evaluation and Approval Decisons on credit	Process III: Credit Reporting • Decisions on
the cost of equity Decisions on the considerations for loan borrowing	duration Decisions on credit limit Decisions on the lending rate Decisions on acceptance and rejection of an application Decisions on applicants position	monitoring guidelines Decisions on compliance checks for repayment standards Decisions on collateral security valuation Decisions on debtor communication Decisions on liquidation Decisions on write-offs

Figure 1 above presents a graphical summary of an interpretative literature review results conducted on the credit facilitation processes in an agricultural cooperative with an intention of identifying and discussing the decisions that are taken at each process. While there are so many decisions that happen at the credit facilitation processes presented above there are few critical decisions that must not be overlooked in decision making. These decisions are termed as "Decisions that Matter" (Keen & Sol, 2008).

Adebayo, (2008) opines that there is no credit facilitation process if credit capital is not solicited and thus confirmed that credit sourcing is the first process in credit facilitation in agricultural cooperatives. This process involves a series of activities that range from deciding about the source of capital to the actual credit capital acquisition. The sources of capital need to be thought through and appropriate business-oriented decisions ought to be made before the agricultural cooperative can zero down to a particular source of capital. This mechanism is highly required because of the cost implication of sourcing for capital from different sources and the expense of repayment of this source of capital. As well as adhering to the cooperatives mandate that emphasises a cooperative as an autonomous association of persons united voluntarily to meet their common economic, social, cultural needs and aspirations through a jointly-owned and democratically controlled enterprise (Ortmann & King 2006). Withstanding to all these factors there are different sources of credit capital available to agricultural cooperatives due to their unique mandate described above (ATTF, 2012). These include:

Credit capital from members as users and investors. Sourcing credit capital from members has been justified as the best of source capital because of its enormous benefits (Ombado, 2010), and these outweigh the costs of the same. Some of the benefits as advanced by Pischnke and Rouse, 2004 include: The presence of greater accountability, this encourages member participation in decision making and this leads to strengthening the cooperative' financial self-reliance and operational autonomy. Further still the greater the amount of capital held by the cooperative, the greater its ability to purchase more efficient technology, and making other improvements in its service delivery. Raising credit capital from members can be through different means inclusive of which are Membership fees and other miscellaneous transactions fees that are not treated as patronage. Determination of the different rates of membership fees /cost of equity is a major decision in credit capital sourcing. Cost of equity informs the shareholding that an individual member has in the cooperative (USDA, 2005) as well as the credit capital available. Pederson, (1998) explains that whereas other corporations with equity securities that are active and frequently traded in efficient capital markets determine their cost of equity using the cash flow per share to derive the market price. This is not the case for cooperative stock as its non-tradable which makes defining the true cost of capital very difficult. Alternative means must therefore be obtained to develop a reason estimate.

Furthermore, the cost of equity capital is the opportunity cost of funds for the cooperative members. This adds complexity to the derivation of a cost of equity capital because the range of financial alternatives members may consider is potentially quite diverse (USDA, 2005). This paper recognizes that added complexity, but (Pederson, 1998) explains that no particular solution to address this issue has been established for agricultural cooperatives and yet these are decisions that matter while trying to raise credit capital from members for them to be sure that their funds will return them gains.

External financing is another source of credit capital where decisions that matter are made. Finance literature explains that external financing is that part of the total debt in a cooperative that is owed to private commercial banks, other cooperatives, national and international financial institutions among others. Onyango, (2016) explains that external financing too has got several advantages and are that; it fosters faster growth; it delivers greater economies of scale, and leveraged returns especially when good investment is done using borrowed capital.

Fiorillo, (2006), noted that external financing if applied effectively can help a strong cooperative become stronger but would not help a weak one become strong. Further still (Ondieki, et al., 2012) confirmed that financial performance of credit providing cooperatives is influenced by financing, investment policies and portfolio quality decisions. Even though external funds are very important in the credit capitalization, Chipembere, (2009) notes that the source of external funds is very important and requires ultimate care to be agreed upon. Otherwise external funds too cause laxity amongst members and can lead to eventual

collapse of the cooperative. This was further confirmed by Eriotis et al., (2007) that highly profitable firms tend to use their internal finances for their investment activities as compared to not so profitable firms that highly rely on debt financing (Eriotis et al., 2007). Chipembere thus recommends a strong management and financing structure in the case of using external financing as well as establishment of linkages with financial institutions need to be put in place in order to achieve sustainable external financing. In Uganda, due to the nature of agricultural cooperatives there have not been a proper direct on establish proper financial structures for external funding as most of these cooperatives are managed in local setups. This comprises decision making and leaves decisions that matter source of external funding, cost of this funding, and the management of this funding unanswered.

Kavun & Vorotintces, (2016) explain that credit facilitation is a structured process that emphasizes risk management from all fronts and this is strengthened by preparation of credit terms, ably soliciting for applications, analysis and approvals of credit. This presents the second process in credit facilitation which is credit preparation, application, evaluation and approval. This process presents lots of activities that range from preparation of terms and conditions to guide credit facilitation and these are core as they set the boundary for credit provision. These terms and conditions include establishing key aspects of; the credit purpose (for seedlings, capital, land and labour), the type of credit (cash credit, in-kind credit inform input supplies), the agricultural sector (livestock, crops, apiary, aquatic), the credit duration (longterm period, short-term period), the credit limit (maximum and minimum amounts for a farmer to borrow), and the credit cost (interest rate to be charged) (Danso, 2015). In an effort to establish and develop each of the terms, it must be recognized that each of the terms represents an important decision that must be made if the cooperatives are to accurately set parameters for identifying and managing risk. Tan, (1987) opines that agricultural cooperatives highly depend on the type of farmers to determine the credit duration. He and other researchers like (Onyango, 2016) emphasise that most of the small holders farmers are highly opportuned for short term loans and the large-scale farmers are suitable for long-term and medium term credit.

In the Philppines where similar cooperative models have been used successful with the ultimate determination of appropriate credit duration. Smallscale farmers are those farming on 50 arces and below while large-scale farmers are those above 50 arces (Tan,1987). Smallscale farmers'loans are borrowed and repayable within a period of one year or less while longterm loans are borrowed and repayed in more than one year. The situation in Ugandan Agricultural cooperatives shares the same as in the philippines. It also ought to be noted that large long-term loans have a comparative advantage over small loans because long term loans not only increase an enterprise's capital base considerably but also give the enterprise longer grace and repayment (credit) periods, which have been found to support business growth (Myers, 1997). In an effort to define the credit duration many activities happen which require information support in order to make appropriate decisions. As noted by Onyango, (2016) different cooperatives use either requirements for purchase or the arcage of farmers to determine credit duration. Even though this has been able to work in the past to some extent it has caused misdetermination which has led to irration decision making. The reason behind this is that both aspects lack emprical proof about their ability to be appropriate factors for credit duration. With the focus of this paper as to diagnose and identify the risk points in order to improve on credit facilitation processes, this irrational decsion sources need to be enhanced and thus the recommendation that credit duration decsion is a decision that matters and requires enhancement.

More than the credit duration decisions, agricultural cooperatives have to make decision on the credit limit that are provided to their members (Byaruhanga,2013). Kissinger (2002) notes that credit limits are key in the determination of capital requirements of farmers as set by the cooperative. Limits are necessary to guard against large single or correlated credit events and the erosion of cooperative capital.

Credit Limit promotes granularity by restricting exposure to any single borrower and thus promotes diversification by restricting exposure to any grouping of borrowers (Taylor,2002). Normally, due to the possibility of default and lack of effective contract enforcement mechanisms, lenders have additional incentives to restrict the supply of credit, (Avery 1981; Stiglitz and Weiss 1981). Even though limiting credit is one of those ways to limit risk exposure, the meachanism of this process must be pronounced appropriately to prevent a situation of limiting asset growth in a cooperative. (Essendi, 2013).

Taylor (2002) suggests the use of the economic capital-based approach in setting credit limits for a financial institution. Under this approach basic questions on how much the institution is willing to risk to the debtor needed to be addressed. Also these credit commitment questions can be for the different industries, different obligators, and type of farm engaged in. The advantage of this economic capital-based approach is that it is constistent with the value-at-risk approach which addresses the market risk, also measures the risk exposure based on each applicant. This has worked well in other financial institutions and (Essendi, 2013) relecommends that this needs to adopted in agricultural cooperatives to improve on deciding on credit limits for the applicants inorder to manage rsik exposures reo default.

Deciding on lending rate for credit advanced in agricultural cooperatives is equally an uphill task and needs not to be underestimated. Haberler, (1937) claims that "The theory of interest has for a long time been a weak spot in the science of economics, and the explanation and the determination of the interest rate still gives rise to more disagreement amongst economists than any other branch of general economic theory". In other words, there is no commonly accepted theory of how an interest rate is determined. Prominent loanable funds theory runs in terms of demand for capital (credits) and supply of savings which both determine interest rates. Different researchers have broadly discussed the role of Cooperatives in mobilizing local savings and expanding credit access to farmers. The bulk of research dealing with interest rate setting by cooperative which are non-profit financial entitles addresses mainly credit unions. The most influential contributions include those by: Taylor (1971), Flannery, (1974), Brockschmidt (1977), Walker & Chandler (1977), Baltensperger (1980), Fry et al. (1982), Patin & McNiel (1991), Feinberg & Rahman (2001), McKillop & Wilson (2011), and Bressan et al. [2013].

Theoretical modelling of interest rate behavior in Cooperatives enables to explain formally the nature of cooperative banking idea. In such approach neither typical features of commercial banks nor those of traditional cooperatives can be adopted, at least for two reasons. Firstly, contrary to credit union, not all Cooperatives Bank's customers are its members. Secondly, unlike for commercial bank (usually joint-stock company), the profit maximization is not a prime goal of Cooperative Bank's owner-member. Rather, her purpose is to exploit own benefits from bank's membership. This does not imply, obviously, that Cooperative Bank as a firm is not concerned about profit generation which is related with its solvency and economic survival.

Cooperative Bank's members may be either borrowers or savers with the bank. Borrowers prefer reduced loan interest rates while savers prefer higher deposit rates. The dilemma, then, is how to deal with the actual conflict between them about the benefits distribution. Successful management of interest rates by cooperatives requires balancing the expectations of those both groups. Siudek & Zawojska(2015) proposed a model for the Polish cooperative banks to guide setting interest rate and this stipulated two major requirements. Firstly, an objective function should reflect the optimization of bank members' benefits arising from transactions with CB (i.e. maximization of their loans and deposits at, respectively, the lowest and highest interest rates). Secondly, within the membership group, borrowers and savers should be treated equally, i.e. without any discrimination. Basing on the reality of Polish Cooperative Bank, the model assumes that its member and non-member customers are treated similarly with respect to loan and deposit interest rates. The model seeks maximum financial gains for borrowers and savers. This

model could be benchmarked on in Uganda where the cooperative members share the same sentiments with Poland members because increasing unstructured information is used in developing a lending rate.

With the credit terms described before, measurement and understanding the applicant' financial position is very key and this forms the credit evaluation process that leads to credit approval and credit disbursement. Credit evaluation includes activities of checking on adherence to submission requirements as set in the credit terms described before (Danso, 2015). It entails technical analysis of the applicants' profile, history, and financial position. It also entails analysis of the collateral security presented by the applicant as the basis for seeking credit (Essendi, 2013). As well as performing reference checks. Even though these activities are key and dynamic in nature, the irony of agricultural lending in Ugandan agricultural cooperatives is that the credit evaluation process has undergone little change despite all the dramatic changes that have occurred in the other credit providing financial institutions (Byarugaba, 2013). All commercial lenders including System institutions establish and maintain a basic process for making credit decisions. The evaluation of agricultural loans has traditionally been based on analysis of the five primary credit factors. These credit factors, often called the "five C's of credit" for capacity, capital, collateral, character, and condition, remain valid for making sound credit decisions today. For analytical purposes, institutions typically assign a relative weight to each of these credit factors based on the specific circumstances for each individual borrower. While the "five C's" are a useful tool, credit analysis should increasingly emphasize the evaluation of the applicant's future debt repayment capacity. This analysis should be based on various sources of information about the borrower that become more reliable and sophisticated as the complexity and size of the farming operation increases (Thangata, 2016). They include historical financial indicators, credit bureau reports, an assessment of the borrower's managerial abilities, and a demonstrated willingness to repay the loan. Historical financial indicators can be calculated from previous financial statements and should be used to assess past trends in liquidity, solvency, profitability, efficiency, and debt repayment capacity. This information is important to lenders as they evaluate the borrower's current financial position and how well the borrower has performed in recent years. These indicators should then be compared to the lender's underwriting standards to assess the individual borrower's creditworthiness. Even though this information is important, it's equally useful to record, store and retrieve such information whenever it's needed to enable rational decision making.

The credit facilitation processes are incomplete even though credit evaluation, approval and disbursement is done if there isn't any reporting mechanisms (Fiorillo, 2006). Credit reporting includes activities of setting monitoring guidelines, tracking of credit repayments, tracking of collateral and preparing of credit status report for the final users of agricultural cooperative information (Danso, 2015). And thus credit reporting forms the third process in the proposed credit facilitation decision enhancement approach. Like the other two processes discussed before ensure that key decisions are rationally made at this stage is very helpful to arresting risk and managing it before it records high damage to the cooperative' profitability and benefit delivery. Maina, Kinyariro, Muturi, & Maitai, (2016) explain that credit reporting is a structured form of credit information sharing. Credit information sharing is expected to create an incentive for defaulters to make payments against the defaulted debts (Kairu & Amandi, 2014). Credit information sharing undoubtedly plays a pivotal role in reducing the information asymmetry that exists between lenders and borrowers. Furletti (2002) in his study on the overview and history of credit reporting was of the view that credit reports give businesses insights into a consumer's past behavior, similar to the ways in which an insurance company might use a driving record or a prospective employer might use a college transcript. These insights, which include a consumer's record of meeting financial obligations, can be used to make decisions about the borrower' stability in credit repayment in line with the set durations. Credit reporting information is occasionally shared with borrowers to keep them up to date on the accounts but also trigger their notification for urgency for payment. Without such information, borrowers would likely be required to have such information on their own. However, this situation would make it difficult

for the cooperatives to keep track and plan for the next seasons. Keeping and sharing information is a fundamental decision that cooperatives must undertake (Maina, etal, 2016). In Uganda this has not been appropriately articulated and therefore requires special attention if cooperatives are to understand their accounts.

Conclusion and Recommendations

With the discussion so far it's evident that the credit facilitation process in agricultural cooperatives is a decision journey. Understanding these decisions and planning for these decisions will empower agricultural cooperatives to be better planned but also to manage the cost of production, increase membership benefit and thus improve the relevancy of agricultural cooperatives. As described in the introduction agricultural cooperatives are a reality solution to agricultural financing to the poor and small holder farmers not only in Uganda but in the world (Essendi, 2013). From the credit facilitation processes described above and as per Keen & Sol, 2008, not all decisions are decisions that matter. Consideration decisions for selecting a loan provider, decision on credit duration, decide on credit limits, decisions on the lending rate to be applied on the credit, decisions to accept or reject a received application ,decisions to okay an applicants' financial position made, decisions to approval/reject the collateral security provided made, decisions on adherence to the monitoring guidelines ensured to check for compliance to duration and due payments ensured, decisions in regard to the status of the collateral security made, decisions of communicating with debtors, liquidation decisions.

From the above study, that was able to identify the decisions that matter in the credit facilitation processes of agricultural cooperatives, it should be observed that there is need to develop realistic solution to address the decision challenges identified above. This study recommends that all these challenges can be addressed using information communication technology as it provides workable solution for capturing, recording, storing and retrieving relevant information as to when is required. This can easily provide sufficient information on demand which can enhance the various decisions reviewed throughout the credit facilitation process.

References

ACORD. (2010). Problems Facing SmallScale Farmers inIsingiro District, Uganda Focus on Bananas. Kampala: ACORD Uganda.

ACSDS. (2012). Agricultural Cooperatives Sector development Strategy 2012-2016. Retrieved from http://www.ata. gov.et/news/resources/sector-strategies/

Adebayo, O., & Adeola, R. (2008). Sources and Uses of Agricultural Credit by Smallscale farmers in Surulere Local Government Area of Oyo State. *Anthropologist*, pp. 313-314.

African Development Bank. (2010). Uganda: *Multi-Sector Country Gender Profile. Agricultural and Rural Development North east and South Region*. Uganda: AfDB.

AGRA. (2016). Africa Agriculture Status Report. AGRA.

Ahabyoona, F. (2017). agricultural finance practices. Technology and Management, 21-14.

Andrade, A. D. (2009). Interpretive research aiming at theory building: Adopting and adapting the case study design. *The Qualitative Report*, 42-60.

Antonia, M.-C., & Pedro, H. (2010). Information Transfer in the Agricultural Sector. *Journal of Agricultural and Food Information*, 123-142.

Atsbaha, A. (2008). Analysis of the Role of Cooperatives in Agricultural Input and Output Marketing in Southern Zone of Tigray Ethiopia. Retrieved from https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/4655/Analysis%20of%20the%20Role%20of%20Cooperatives%20in%20Agricultural%20Input%20. pdf?sequence=1

- ATTF. (2012). Credit Assessment & Credit Management Organisational Sheet. Seminar for Banker in Skopje Macedonia.
- Barrett, C., Mude, A., & Omiti, J. (2007). Decentralisation and the Social Economies of Development: An overview of concepts and Evidence from Kenya. CAB International
- Birchall, J. (2003). Rediscovering the Co-operative Advantage: Poverty reduction through self-help. ILO.
- Bryman, A., & Bell, E. (2007). Business Research Methods (2nd Ed). Oxford: Oxford University Press.
- Chambo, S. (2009). *Agricultural cooperatives:Role in food security and rural development.* (pp. 5-10). Moshi: Moshi University College of Cooperative and Business Studies.
- Cohen, D., & Crabtree, B. (2006). Qualitative Research Guidelines Project.
- Co-operatives UK. (2008). Cooperatives Review 2008. Manchester.
- Cornish, F., & Gillespie, A. (2009). A pragmatist approach to the problem of knowledge in healthy psychology. *Journal of Health Psychology*, 800-809.
- Costello, G., & Donnellan, B. (2012). Proposing a meta-theoretical framework for innovation research. Social Innovation for Competitiveness, Organisational Performance and Human Excellence European Academy of Management (EURAM) 2012 Conference. Rotterdam.
- Dalgaard, T., Ferrari, S., & Rambonilaza, M. (2006). Introduction: Feature of environmental sustainability in agriculture: Some conceptual and operational issues. *Int. Journal of Agricultural Resources, Governance & Ecology* Vol. 5, 107-115.
- Danso, M. (2015). An Assessment of Credit Management Process of Credit Unions (A Case of societies in Obuasi Municipality). Nairobi.
- Delve, R., & Benfica, R. (2016). Agricultural produtivity through intensification and local institutions. In *AGRA*, *Africa Agriculture Status Report* (p. 108). Nairobi-Kenya: AGRA.
- Develtere, P., & Pollet, I. (2008). Renaissance of African Cooperatives in the 21st Century; Lessons from the field. In P. Develtere, I. Pollet, & F. Wanyama, *Cooperating out of Pverty. The renaissance of the African Cooperative Movement* (pp. 14-52). Geneva: International Labour Office and World Bank Institute.
- ECA, U. N., & SRO-SA, S. A. (2011). Agricultural Input Business Development in Africa:Opportunities Issues and Challenges. ECA-SRO-SA.
- Essendi, K. L. (2013). The Effect of Credit Risk Management on loan potfolio among SACCOs in Kenya. Nairobi: University of Nairobi.
- FAO. (2011). Opportunities of poultry breeding programmes for family production in developing countries: The bird for the poor. e-conference of the International Network for Family Poultry Development.
- FAO. (2011). The state of food and Agriculture-closing the gender gap for development. Rome: Food Agriculture Organisation.
- FAO. (2013). FAO Statistics: Food and Agricultural Organisation of the United Nations. http://faostat.fao.org/site/573/default.aspx#ancor.
- Fernandez, E. (2014). Selling Agricultural products; Farmers' Cooperatives in Production and marketing 1880-1930. *Business History*, 547-568.
- Fiorillo, A. (2006). The effects of wholesale lending to SACCOs in Uganda. Financial Sector Deepening Project.
- Galliers, R. D. (1992). Choosing Information Systems Research Approaches. In R. Galliers, *Information Systems Research: Issues, Methods and Practical Guidelines* (pp. 144-162). Oxford: Blackwell Scientific.
- Goldkuhl, G. (2012). Pragmatism vs Interpretivism in qualitative information systems research. *European Journal of Information Systems* 21(2), 135-146.
- Gonzalez, R. A., & Sol, H. G. (2012). Validation and design science research in information systems. Research methodologies, innovations and philosophies in software systems engineering and information systems (pp. 403-426). IGI Global.
- Grant, A. (2012). Five trends and their implications for agricultural coops. Mckinsey and Company.
- Gregor, S., & Hevner, A. (2013). Positioning and presenting design science research for maximum impact. *MIS Quarterly* 37(2), 337-355.
- Groeneveld, H. (2016). The Road towards one Cooperative Rabobank, Utrecht, Rabobank. 4.
- Gueye, E. F. (2002). Employment and income generationthrough family poultry in low income food-deficit countries. *World's Poultry Science Journal*. Vol. 58, 541-556.
- Hevner, A., & Chatterjee, S. (2010). *Design research in information systems: Theory and practice*. Springer Science and Business Media.
- Hohler, J., & Kuhi, R. (2014). Position and Performance of Farmer Cooperatives in the Food Supply Chain of the EU-27. *Annals of Public and Cooperative Economics*, pp. 579-595.

- Hussan, T. (2012). Factors influencing demand for credit from foml and informal sources in Gujranwala district, A case of Commercial banks and Arties. Norwegian University pf Life science.
- Iliopulos, C. (2015, March). Ownership and Governance in Agricultural Cooperative: An Update. Agricultural Economics Research Institute wrking paper series, pp. 1-4.
- Jones, L. (2010). Agricultural Value Chain Finance . Rome, Italy: Food Agriculture Organistion.
- Jurgen, S. (2014). Cooperatives in Africa: Success and Challenges. Geneva: International Labour Organisation .
- Kabuga, C., & Batarinyebwa, P. (1995). *Cooperatives Past, Present and Future*. Kampala: Uganda Cooperatives Alliance Ltd.
- Kabura, N. (2012). Is ICT in Agricultural Extension seabile in enhancing marketing of agricultural produce in Kenya: A case of Kiambu District. *Journal of International Agriculture*, 245-256.
- Kaplinsky, R., & Morris, M. (2014). A hand book for value chain analysis. IDRC.
- Kavun, S., & Vorotintces, M. (2016). Credit Risk Assessment for Financial Institutions Activity. *Journal of Finance & Economics*, 142-150.
- Kibinge Coffee Farmers' Co-Operative Society, Uganda. Retrieved from http://www.fairtrade.org.uk/en/farmers-and-workers/coffee/kibinge
- Kingori, A. M. (2011). Review of the factors that influence egg fertility and hatchability in poultry. *International Journal of Poultry Science* 10, 483-492.
- Kirui, O. (2012). Determinants of Uses and Intesity of Use of Mobile Phone-based Money transfer services in Smallholder Agriculture. Case of Kenya. The third IAALD Africa Chapter .
- Klasing, K. C. (2005). Poultry nutrition: A comparative approach. *The Journal of Applied Poultry Research* Vol 14, 426-436.
- Koopsman, R. (2006). Agrodok 38, Strating a cooperative. Farmer-controlled economic initiatives. Wageningen: AgricCord, IFAP and Agriterra.
- Kwapong, N., & Korugyendo, P. (2010). Revival of agricultural cooperatives in Uganda.
- Kwapong, N., Koregyendo, L., & Ilukor, J. (2013). Why afew Agricultural Cooperatives Survived the Crises in the Cooperatives. *International Journal of Arts and Commerce*.
- Lee, A. S., & Baskerville, R. L. (2003). Generalizing generalizability in information systems research. *Information Systems Research* 14(3), 221-243.
- Lester, F. K. (2005). On the theoretical, conceptual and philosophical foundations for research in mathematical education. *ZDM* 37(6), 457-467.
- Maina, N., Kinyariro, K., Muturi, M., & Maitai, J. (2016). Credit Information sharing and level of loan default in deposit taking SACCOs in Meru County, Kenya . *International Journal of Economics, Commerce and Management*.
- March, S. T., & Storey, V. C. (2008). Design Science in the information systems discipline: An introduction to the special issue on design science research. *MIS Quarterly* 32 (4), 725-730.
- Meador, J., O'Brien, D., Cook, M., Grothe, G., Werner, L. A., Dianga, D., & Savore, R. (2016). Building sustainable smallholder cooperatives in Emerging Market Economies: Findings from afive-year project in Kenya. *sustainability*, 1-12.
- Mingers, J. (2004). Real-izing inormation systems: Critical realism as an underpinning philosophy for information systems. *Information and Organisation* 14(2), 87-103.
- Msemakweli, L. (2012). *Perspectives for Cooperatives in Eastern AFrica: The Case of Uganda*. (pp. 2-5). Kampala: Uganda Cooperatives Alliance.
- Nandhakumar, J., & Jones, M. (2002). Development gain: Participant observation in interpretive management information systems research. *Qualitative Research* 2, 323-341.
- NBS. (2013). Statistical Abstract. National Bureau of Standards. The United Republic of Tanzania.
- OeNB), O. B. (2004). Guidelines on Credit Risk management, Credit Approval Process and Credit Risk Management. Vienna: OesterreichischeNational Bank(OeNB).
- Okello, L. (2013). The Cooperative Movement and the Challenge of Development: A search for alternative Wealth Creation and Citizen Vitality Approaches in Uganda. Retrieved October 2015, from Uhuru INstitute for Social Development, Centre for Basic Research and Action Aid: http://www.actionaid.org/sites/files/actionaid/cooperatives_report.pdf
- Ondieki, A., Okioga, C., Okwena, D., & Onsase, A. (2012). Assessment of the effect of external financing on financing performance of savings and credit cooperatives in Kisii central district, kenya.
- Onyango, A. (2016). The Effects of External Financing on the Growth of Savingsand Credit Cooperatives Societies wealth in Nairobi ,Kenya. Nairobi: United States International University-Africa.

- Orlikowski, W. J., & Barley, S. R. (2001). Technology and institution: What can research on information technology and research on organisation studies learn from each other? *MIS Quarterly* 25 (2), 145-165.
- Orlikowski, W., & Baroudi, J. (1991). Studying information technology in organisations: Research approaches and assumptions. *Information Systems Research* 2(1), 1-8.
- Porter, M. (1998). Competitive advantage, creating and sustaining superior performances; with a new introduction.
- Powell, T. C. (2001). Competitive advantage: Logical and philosophical considerations. *Strategic Management Journal*.
- Prabakaran, R. (2003). Good practices in planning and management of integrated commercial poultry production in South Asia. *Food and Agriculture Organisation* 2003:159, 20-30.
- Ramaswami, B., Birthal, P. S., & Joshi, P. K. (2005). *Efficiency and distribution in contract farming: The case of Indian poultry growers*. Discussion Papers in Economics.
- Ratsifandrihamanana, L. (2012). Cooperatives and the Role of Information and Communication Technologies (ICTs). New York: FAO.
- Remenyi, D., Williams, B., Money, A., & Swartz, E. (2003). *Doing Research in business and management: An introduction to process and method.* London: SAGE Publications.
- Renema, R. A., & Robinson, F. E. (2004). Defining normal: Comparison of feed restriction and full feeding of female broiler breeders. *World's Poultry Science Journal* Vol. 60, 508-522.
- Reynolds, A. (2013). Defining the Value of the Cooperative Business Model. Madison.
- Roelants, B., Hyungsik, E., & Terrasi, E. (2015). Cooperatives and employment:a global report.
- Ruete, M. (2014). *Inclusive investment in Agriculture: Cooperatives and the role of foreign investment.* Geneva, Switzerland: International Institute for sustainable development.
- Rwakakamba, M. (2012). *Transforming agriculture in Uganda:Nine points for action*. London: International Institute for Environment and Development.
- Salisbury.L, & Tekawade, A. (2006). Where is agricultural economics and agribusiness research information published and Indexed? A comparison of coverage in web knowledge, CAB Abstracts, Econlite and Google scholar. *Journal of Agricultural and Food Information*, 125-143.
- Schvaneveldt, R. W., & Cohen, T. A. (2010). Abductive reasoning and similarity: Some computational tools. In P. P.-D. D. Ifenthaler, *Computer based diagnostics and systematic analysis of knowledge*. New York: Springer.
- Sifa, C. B. (2004). *Role of Cooperatives in Agricultural Development and Food Security in Africa*. http://hss.ulb.unibonn.de/2004/0469/0469.pdf. Retrieved July 14, 2016, from http://hss.ulb.uni-bonn.de/2004/0469/0469.pdf pdf: http://hss.ulb.uni-bonn.de/2004/0469/0469.pdf
- Sol, H. G. (1982). Simulation in information systems development (Doctoral Thesis). University of Groningen.
- Stahl, B. C. (2003). How we invent what we measure: A constructionist critic of the empiricist bias in IS research. Proceedings of the ninth American Conference on Information Systems, (pp. 2878-2884).
- Tan, A. V. (1987). An Evaluation of the Cooperative Systeme in the Philipppine. *Journal of Philippine Development*, 321-354.
- Taylor, P. C., & Medina, M. (2013). Educational research paradigms: from positivism to multiparadigmatic. *Journal for Meaning-Centered Education* 1.
- Thangata, P. (2016). Farmer's led successful Business cases. Cooperative& Business Models in Uganda. The case of Nyakyera-Rukoni Area Cooperative Enterprise(NRACE). Kampala: PAF &CTA.
- Trostle, R., & Seeley, R. (2013). Developing countries dominate world demand for agricultural products. USDA Economic Research Service.
- UBOS. (2015). Statistical Abstract 2015. Kampala: UBOS.
- USDA. (1990). Cooperative member responsibilities and Control: Cooperative Information Report 1. United States Department of AgricultureAgricultural Cooperatives Services.
- USDA. (2005). Problems and Issues facing farmer cooperatives. United States Department of Agriculture.
- Valdes, C., Hallahan, C., & Harvey, D. (2015). Brazil's broiler industry: Increasing efficiency and trade. *International Food and Agribusiness Management Review*. Vol. 18, 263-275.
- Van de Kar, E. A. (2004). Designing mobile information services: An approach for organisations in a value network (Doctoral Thesis). Technical University of Delft.
- Van de Ven, A. (2007). Engaged Scholarship: A guide for organisational and social research. Oxford University Press.
- VanDerSangen. (2013). "The Netherlands". In D. Cracogna, A. Fici, & H. Henry, *International handbook of Cooperatives Law* (pp. 541-561). Berlin: Heidelberg and Springer.



Zhuang, R., & Moore, T. (2015). Factors influencing U.S poultry exports. *International Food and Agribusiness Management Review*: Vol 18, 13-26.