INVESTIGATING FACTORS CONSIDERED IN AGRICULTURAL CREDIT APPLICATIONS, WHAT ARE CURRENTLY CONSIDERED BY A COMMERCIAL BANK?

Henning, JIF\(^1\) and Jordaan, H\(^2\)

\(^1\) Lecturer and Post graduate student and \(^2\) Senior lecturer, Department Agricultural Economics, University of the Free State, South Africa

Abstract

Credit has a very important role in agriculture to ensure the continuation of production. The granting of credit is based on the outcome of a credit application that is assessed by considering certain factors, characteristics and attributes of the applicant (farmer) and the business (farm). The five C’s of credit have been used by lenders to assess the repayment ability of an application, but each of the categories of the five C’s consist out of several factors that are considered as very important. The purpose of this research is to determine what the current factors are when analysing an agriculture credit application. This was done by means of an exploratory questionnaire that was sent to credit analyst and managers of a commercial bank. The purpose is not only identification of current factors, but also to identify factors not currently included that could improve accuracy or factors that provide difficulty to measure objectively in these applications. Results indicate that the broad categories agree with the five C’s of credit. One of the factors that were mentioned as very important is the management capability of the farmer (character), and also provides problems in terms of being accurately measured. Further analysis indicated that the factors considered in terms of the personal characteristics of the farmer can be related to psychological capital and entrepreneurial characteristics. Proposed for future research is to explore the factors that are considered as the most important when determining the repayment ability of an application. Alternative instrument or tools should be explored to objectively measure the personal characteristics and attributes that are considered in determining repayment ability.

Keywords: credit; credit applications; credit process; decision making factor/characteristics; psychological capital; entrepreneurship

1. Introduction

The phenomenon of borrowing and lending, or credit, has a long history that can be associated with human behaviour (Thomas, Edelman and Crook, 2002). Hand and Henley (1997) refer to credit as “an amount of money that is loaned to a consumer by a financial organisation and must be repaid, with interest, in regular interval instalments”. With a more related explanation to the agricultural sector Michael, Miller and Gegenbauer (2009) explains structured finance as “the advance of funds to an enterprises to finance inputs, production and accompanying support operations, using certain types of security that are not normally accepted by banks or investors and which are more dependent on the structure and performance of the transaction, rather than the characteristics of the borrower.” The granting of credit is based on an application that considers certain attributes of the enterprise whether being a business or a specific enterprise within a business. The decision to grant credit is based on several factors that are considered in an application directly linked to the activity or enterprise that forms the backbone of the loan application, but apart from the activity the reputation and characteristics of the individual are also considered.
These factors are used to categorise new credit applicants as either accepted (good loans) or rejected (bad loans) (Marqués, García, and Sánchez, 2013). The factors can vary between countries, industries and environment. There is no specific indication on established factors that have to be chosen since “it is believed that there is no optimal number of variables that should be included in building credit scoring models” (Abdou, 2009). The selection of factors that is used for building credit scoring models depends on the availability and type of data provided (Abdou, 2009). The selection of decision making factors is an important part of credit scoring. The selection of factors has an influence on the credit score model by improving the performance of predictors, provide faster and more cost efficient predictors and present an opportunity to have a better understanding of the underlying process that generated the data (Marques et al., 2013).

A great number of factors can and has been used to classify applicants in credit scoring processes in different industries. Factors that are used for categorizing the application to be either a good or a bad loan include among others (Abdou and Pointon, 2011): age, income and marital status (Chen and Huang, 2003), dependents, having a telephone, level of education, occupation, time at present address, having a credit card, time at present job, loan amount and duration, house owner, monthly income, bank accounts, ownership of a car, mortgage, purpose of loan, guarantees and some other characteristics (Belloti and Crook, 2009; Banasik, Crook and Thomas, 2003; Crook and Banasik, 2004; Andreeva, 2006; Susteric, Mramor and Zupan, 2009; Martin, 2013; Orgler, 1970: Ong, Huang and Tzeng, 2005; Lee and Chen, 2005; Lee, Chiu, Lu and Chen, 2002; Hand, Sohn and Kim, 2005 and Greene, 1998). Hand, Sohn and Kim (2005) used credit amount, credit history, duration in month, other debtors and guarantors, other installment plans, present employment, present residence, property, purpose, savings account and bonds and status of existing checking account as factors.

Lenders have made use of the five C’s of credit (capacity, capital, collateral, character and conditions) to evaluate credit loan applications (Gustafson, 1989; Featherstone, Wilson, Kasten and Jones, 2005). **Capacity** refers to the ability to repay loan and bear financial risk (Gustafson, 1989). Repayment capacity is analysed for example through historical and projected profitability and cash flow of the farm (Featherstone et al., 2005). **Capital** is the funds available to operate farm business usually determined by reviewing balance sheets and other financial ratios, including cash flow generating ability (Featherstone et al., 2005). **Collateral** represents the security agreement that serves as final sources of repayment to the lender if the borrower defaults on terms of loan agreement. Lenders carefully consider the risk return relationship of a loan request, and as risk increases larger amounts and/or higher quality collateral would be required (Featherstone et al., 2005). **Conditions** provide information of intended purpose of the loan where factors are considered such as loan amount, use of funds, and the repayment terms. In addition, the current economic conditions are also considered (Featherstone et al., 2005). **Character** refers to personal factors of the individual or borrower. The borrower’s risk attitude is an important element and a negative evaluation can lead to a rejection of the application (Featherstone et al., 2005).

Turvey (1991) indicates that liquidity and leverage are strong determinants of default risk, however further analysis indicated that both qualitative and quantitative factors should be included in selecting an evaluation method to determine creditworthiness. Financial ratios are commonly used in credit applications, including liquidity, leverage, profitability and efficiency (Turvey, 1991; Splett, Barry, Dixon and Elinger (1994). Featherstone, Roessler and Barry (2006) made used of ratios from repayment capacity, solvency and liquidity. Akpan, Udoh and Akpan (2014) used more than just financial ratios in 12 explanatory variables as factor that influence defaults in loan repayments among an agricultural credit guarantee scheme using a Tobit model. Variables used in the research included: age, family dependence level, total farm costs, farm income, time interval between loan application and disbursement, other loan scheme, visits by credit officers, loan duration, government policies, years of experience, loan size and average interest rate charged (Akpan et al., 2014).

In South Africa different lenders use their own specified tools to evaluate the repayment ability of applicants and can provide different result as different factors can and is used. Thus as these factors
are used to determine the outcome of a credit application it is important for financial organisations that provide credit, to apply the most appropriate technique(s) in building the credit scoring models (Abdou, 2009), and this would include the specific factors that are used in the analysing and decision making process. The aim of this paper is therefore to identify the factors that are considered by a commercial bank in the agricultural credit applications and any additional characteristics, as identified by the individuals involved, that are not included or are currently objectively measured, but can be a good predictor.

2. Methodology and data used

An exploratory questionnaire was used as a data collection strategy to identify the current factors that are considered in analysing credit applications. The questionnaire was also used to explore and identify other factors that are not currently considered, but can be good predictors of repayment ability. Data and information was obtained from a commercial bank in South Africa between November 2014 and February 2015. The questionnaire was sent to nine credit analyst and - managers that are involved in the assessment and granting of credit in the agricultural sector. These experts comply to the claim of Hsu and Sandford (2007), that the experts used must be highly trained and competent within the specialised area of knowledge that are related to the specific topic.

Two open ended questions were used in the questionnaire; the first question is to determine what are the factors and characteristics that are considered in the application:

1. **What are the personal characteristics and aspects of a farmer that is considered as important for assisting in credit applications? Which capabilities of a farmer are considered when writing the credit report that forms part of the credit application process?**

There is no optimal amount of factors that needs to be considered, and the second question was targeted at identifying additional factors that are not currently considered or provide difficulty in measuring the specific factor. The second question was asked to identify factors that are not considered at the moment or any other areas for improvements:

2. **In your opinion, are there any additional characteristics or factors which influence repayment ability that is not currently considered?**

The purpose of the second question was to determine, according to the credit analyst and managers, whether there are any other relevant factors, characteristics and/or capabilities of the farmer that are not currently considered in the application but would provide important information regarding the ability of a potential client’s repayment ability.

Care was taken to ensure the initial question was carefully written to guarantee that the questions are aimed to the desired responses but yet in such a way that the questions are not to direct to bias responses from the experts (Linstone & Turoff, 1975). Actual agricultural credit applications were also obtained from the commercial bank, to gain additional information. The applications could be reviewed to confirm and identify additional factors or characteristics if needed.

3. Results

The respondents used for this research are all involved in the credit application of a potential borrower. This includes the process from the original application that is submitted by the borrower to the final person who signs the approval or rejection of the application.
3.1. Factors that are currently considered

As expected the factors that were mentioned are similar, but yet different in several ways from the factors mentioned from literature and other sectors. The factors will be listed according to the categories of the 5 C’s of credit. The factors that were prominent from the responses by being mentioned by at least three of the respondents are indicated by the percentage in brackets, while the other factors mentioned were mentioned less; **Capacity** - past and current financial performance (86%); **Capital** – account standings and credit record (86%); **Collateral** - collateral (43%) farm ownership (29%); **Conditions** – type of farming enterprise external market and market projections business environment; **Character** - client success factor compared to competitors (43%), education/qualifications (43%), experience (57%), management capability (100%), reputation (57%), sustainability of the enterprise (86%), (57%) and willingness to repay (43%), succession planning, bounce back ability, labour force,. With regard to the individual and management capabilities several characteristics were also mentioned such as reputation (57%), integrity (43%), abilities (43%), honesty (30%), reliability (30%), innovation, risk behaviour, leadership, entrepreneurship, open mindedness, perseverance and business awareness. Abilities were mentioned as one factor and were also divided into more specific categories of abilities. These categories include the management abilities that were already mentioned, technical (43%), financial (71%), marketing (43%), general business and human relations abilities.

From reviewing actual credit applications, similar categories were identified, but by reviewing the actual application and the reasons for the decisions additional information could be obtained. The additional information included; Age and experience of operator (Character), the importance of the debt ratio and profitability of the business (Capital), market projections (Conditions) and information and the influence of the client’s position compared to the risk taken on by the lender.

Several of the factors that were mentioned are related to the financial performance of a potential borrower or the farm. The financial aspects of the applications do play a big role in the analysis, especially the cash generating abilities of the business. If there is no cash flow generating abilities, or any doubt in the generating of cash flow the application would be declined. The risk to the bank is just too high and can cause severe damages in terms of losses and even legal claims. When cash flow is considered for the new venture, the market and economical situations is also considered. These factors are considered according to what the expectations are for the future in terms of the sustainability of the specific enterprise. Historical financial performance, account status and securities can also be related to the financial performance and position of the farm.

The status of the current accounts is an indication of the liquid position of the current activities of the business with regards to generating cash and the repayment of current credit. While the balance sheet, especially the assets, can provide the necessary information for what securities are available. The assets used to ensure security will serve as collateral when needed in default situations. In most cases all these factors are managed by one person on traditional family farms and the personal characteristics and abilities of the farmer is also considered as mentioned by respondent 2 “most of the farming businesses are family owned with the father playing an important role and is normally the main decision maker”.

Characteristics that are directly related to the individual mentioned by the respondents. Several of these characteristics are beyond the control of the farmer such as age and experience. The farmer does not have the ability to change his age or adjust his experience in the short term; there can also be a direct relation between age and experience. Older farmers can therefore be considered as more experienced farmers. Another factor that was emphasised by the respondents was the management capabilities of the farmer. The management capabilities of the farmer are also related to the financial performance of the farm as decisions made do have an influence on the daily activities and sustainable financial performance. An important note is that some of the characteristics are reported on in the application, but are not based on any objective measurements. These characteristics are based on personal experience and knowledge of the applicant by his personal banker.
Thus, similar to what was found in the literature, the credit evaluations in South Africa prove to be based on the 5 C’s of credit. The results confirm the importance of the 5C’s of credit, and that it is applicable in the agricultural sector, but as seen in the second question of the questionnaire the factors that are included for each of the C’s provide more difficulty.

3.2. Additional factors indicated by respondents

Several factors were mentioned that can be related to each of the five categories as discussed. Most of the responses on factors that are not measured or provide problems can be related to financial aspect such as cash flow problems, for example respondent 1 mentioned: “Stress testing of income, expenditures, yields and prices” and “To what extent is farmer able to absorb any deviations or losses”. Related to the absorption of deviations, respondent 4 mentioned “Comparing projected performance with historically achieved performance, i.e. can the projections be believed?” where the historical cash flow, projection in cash flow and the accuracy is questioned. As agriculture is a rather unpredictable industry and several external factors play an important role in the daily activities such as the weather; turnaround strategy is also very important and thereby connected to implementing the turnaround strategy after a disaster. Other factors relate to market and economic conditions as mentioned by respondent 4, “Severe interest rate hikes, severe adverse movement in energy cost (sensitivity analysis which can also be related to cash flow).

Given the importance of the management capabilities of the farmer, respondent 3 mentions the following: “Management Capability: The farmer’s reputation, ability and willingness to repay the debt are assessed. This includes his/her integrity, honesty and reliability. His background is assessed his qualifications or experience as well as his track record as a farmer. This aspect is considered the most imperative, but yet the most difficult to assess”. Respondent 5 mentioned similar factors but importantly also mentioned factors that are not measured in the current systems. The respondent’s response (translated from Afrikaans):

- “Additional skills that are not currently really being measured, but will have a great influence on the ability to pay back:
- Honesty - in business transactions and general behaviour,
- To what extend does the farmer accepted responsibility for his actions,
- How adaptable is the farmer. How easily can the farmer make a different plan when the first plan does not work?
- How does the farmer respond to difficult situations? Is the farmer the kind that will work and work on new plans or just give in and fade away?
- Is this farmer optimistic by nature? Does the farmer has a positive outlook on life, an optimistic person will make use of opportunities that come his way."

These factors mentioned can be related to psychological capital (Luthans, A., Avolio, B. W., Avey, J. B., & Norman, M. 2007) consisting of: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering towards goals and, when necessary, redirecting paths to achieve goals in order to succeed (hope); and when (4) beset by problems and adversity, sustaining, bouncing back and even beyond to attain success (resilience) and entrepreneurial skills, as mentioned by Lambing and Kuehl, (2003:26) and Baron and Shane, (2005:292), such as seeing changes as opportunities, which can be related to opportunity seeking. Entrepreneurs are also able to see the big picture, as they know what they want to achieve and how to make it happen. When the first plan did not work, does the farmer have the ability to persist in overcoming the hurdles and obstacles? When faced with difficult situations, pushing through is very important and a high level of self-determination or internal locus of control is needed where the entrepreneurial farmers will respond with new alternative ideas to ensure the success. A
high level of self-efficacy will also assist a person through difficult times as the person will have a belief in his or her own abilities to perform tasks (Lambing and Kuehl, 2003:29). As mentioned by one of the respondents “management capabilities of the farmer is most imperative, but difficult to assess”, an objective manner for measuring these characteristics, skills and attributes of a farmer is a shortcoming in the current assessment of an application.

These results, even though directly related to the individual will also influence the financial performance of the business. Farmers that have the ability to think out of the box and come up with new plans in difficult situations would be better in developing and adopting turnaround strategies in difficult times instead of just fading away and default on the obligations.

From the additional factors mentioned, it is clear that there remain difficulty in determining the management capabilities of the farmer that is reliable or based on a proven measurement tool. Other factors that were also mentioned were related to the financial capabilities of the farm that provide difficulty in measuring accurately. As the agricultural sector is an ever changing environment, it can be difficult to have standards that are set in stone on which these very important decisions are based. These results indicate that the characteristics and skills that are reported in the credit applications are related to aspects such as psychological capital and entrepreneurial skills and characteristics. Psychological capital and entrepreneurial skills and characteristics are attributes that can be measured with the use of proven tools that will provide reliable information that could be included in the application.

4. Conclusions and recommendations

Credit is a very important resource in the agricultural sector worldwide. A farmer, who does not necessarily have the financial resources, is dependent on financing to ensure that production will continue. Literature report on a wide variety of factors and characteristics that are used in the analysis of application from potential borrowers, but few to none of the research was specific to the agricultural sector. The aim was therefore to identify the factors that are considered as the important factor, by commercial banks, when analysing the application of the potential borrower. Respondents, who are all involved in analysing and granting credit in the agricultural sector, mentioned several factors such as the type of operation, financial related aspect and management capabilities of the farmer. Other aspects, that are similar to literate includes age, finances, ownership, qualifications/education and experience. One of the factors that stood out as very important is the management capabilities of the farmer, and also mentioned in the feedback is the entrepreneurial versus conservatism of the farmer. Management capabilities can be related to entrepreneurial characteristics of a farmer.

The results indicate that the 5C’s of credit is still important in the consideration of agricultural loan applications as the factors mentioned are all related to the five categories used. More importantly is the factors that are used in the five main categories, and the information provided. The exploratory study identified the factors that are considered and by reviewing actual applications further information was obtained. More important factor was that the risk of the venture was too high in relation to debt ratio, cash flow projection or not sufficient securities in terms of long term lease contracts or ownership. Currently the 5C’s of credit is broadly used in agriculture, as indicated by the respondents. The respondents also indicated that several personal characteristics, such as entrepreneurial and management capabilities, of the farmer is indicators of repayment ability. Therefore indicating the importance of measuring these factors accurately, but there are problems associated with measuring these factors. Thus by only including the information that is currently used in evaluations may lead to misclassification of applicants.

As a wide range of factors were mentioned in the responses with only a few with real consensus, future research explore the factors that are considered as the most important when determining the repayment ability of an application. Alternative instrument or tools should be explored to objectively measure the personal characteristics and attributes that are considered in determining repayment ability.
Acknowledgement

“This work is based on the research supported in part by the National Research Foundation” of South Africa for the grant, Unique Grant No. 94132. Any opinion, finding and conclusion or recommendation expressed in this material is that of the author(s) and the NRF does not accept any liability in this regard.”

5. References


