YANGON UNIVERSITY OF ECONOMICS

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MASTER OF BANKING AND FINANCE PROGRAMME

EFFECT OF CREDIT ACCESSIBILITY ON FARM PERFORMANCE

(CASE STUDY IN NGAPUTAW TOWNSHIP, AYEYARWADY DIVISION)

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ABSTRACT

This study investigates the effect of credit accessibility on farm performance in Ngaputaw Township, Ayerwaddy. The objectives of these study are to identify the credit accessibility of farmers in Ngaputaw Township and, to analyze the effect of credit on farm performance in Ngaputaw Township. To achieve these objective, this research used both primary and secondary data. The primary data were collected by two-stage random sampling technique and multiple linear regression model is used to analyze the effect of credit on farm performance in Ngaputaw Township. A sample size is 120 respondents (10%) of total loan borrowers from 5 villages of Nagputaw Township. This study found that the farmers has only required document evident for own land. In addition, interest rate is also affordable for them. Then, loan period and coverage of loan for farming harvesting are also favor for them. Therefore, the farmers have easily accessible on credit. According to credit accessibility, the farmers have good paddy yield but others influencing factors such as quality inputs, use of modernized farming, sufficient labour and experience of farming are quite relation in increase paddy yield. According to the results of the study, the farmers face with not sufficient labour. Therefore, the farmers should use advance agriculture technical methods from getting loan instead of using farm labour.

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CHAPTER I
INTRODUCTION

Globally, agriculture is the main economic source of income among the rural poor and employs the majority of the people in most low-income countries. Thus, agriculture sector is one of the most powerful tool for achieving poverty reduction & food security, and important role to economic growth as well. World's poor adults are living in rural areas. Mostly rely on agriculture for their livelihoods while agriculture contributes 40% of employment. Many of the rural poor work directly in agriculture as smallholders, farm labour, etc. (World bank report, 2017).

In Asia, regionally, the study shows that more than 2.2 billion people in the region rely on agriculture for their livelihoods in Asia and Pacific. (FOA) Rice is the most important crop throughout Asia. Currently agriculture sector of Asian is taking place in important role in economic growth and poor families in creating income. Ana Doris mentions approximately 16 percent of the land area is under agriculture. Agriculture provides employment to 61 percent of the total economically active population, and about 35 percent of the gross domestic product comes from agriculture'.

In Myanmar, 70 percent of total populations (52.476) millions are rural people, and most are living through agriculture. Dowming mentions that the agriculture sector accounts for 37.8 percent of the country's GDP, employs 70 percent of its labor force and generates 25 to 30 percent of total export earnings and 20 % of its land area is using for agriculture. According to the 2016-2017 report of Ministry of Agriculture, livestock and irrigation, total 17.6 million acres were used for paddy growing of total 51.1 million acres.

In Ayeyarwaddy region, percentage of acres for paddy is 34% of all acres, cultivated. It also shows that productivity of paddy is 76.5%. Among total areas, 28% (5.0 Millions) of acres and productivity are from Irrawaddy region. Moreover, 7.2 Million people own cultivable land in the county while 11.8 % is also taken place from Ayeyarwaddy region.

Most of the farmers are lack of investment in farming and they need finance source for their plantation during monsoon and the winter seasons. Therefore, farmers need loan funds from the formal financial institutions which providing loans to the farmers. Across the country, informal financial institutional credit is available from Myanmar Agricultural Development Bank (MADB), Microfinance, informal such as, relative and friends, merchants, the community organizations. In the study area, the MADB provides the main sources of financing.

Due to agriculture sector is main economic of the country-Myanmar, government own banks such as Myanmar Agriculture Development Bank (MADB) is also supporting the credit for farmer to invest in their farms. Besides that, other financial institutions such as MFIs, cooperative, etc., are also providing financial services without collateral small-scale farmer, marginal farmers, and poor farmers. Therefore, access to finance and financial services are very important for the farmers to start or expand, and invest in their farming activities and to contribute in economic growth as well.

1.1 Rationale of the Study

Meanwhile, agricultural producers in developing countries, particularly those in low-income countries, are facing a number of obstacles including low productivity, limited access to markets for their products, lack of adequate risk management products and services and limited access to finance. Report mentions that access to a comprehensive range of financial services is a significant challenge for smallholders, who constitute the vast majority of farmers in developing countries (IFC, 2017).

Credit accessibility called access to finance that 'Access to finance refers to the possibility that individuals or enterprises can access financial services, including credit, deposit, payment, insurance, and other risk management service.' (Siteresources. World bank.org). Moreover, Agriculture credit is also credit for farmers to invest in agricultural activities to get more productivity.

According to Making Access Possible (MAP) report 2013, in Myanmar 'over 70% of adults do not have formal access to credit, deposit and other financial services. Furthermore, although 30% of adults use regulated financial services, only 6% of adults use more than one service, and many of the available regulated products do not fully meet the needs of clients (for example, loan size, loan term, cost or quality)'. However, although there are around 170 Microfinance Institutions are working finance services activities, most of the MFI are in nascent stage. So, there are also some obstacles and factors in financial inclusion such as infrastructure, limited financial service providers, and regulatory framework, etc.

There are other financial institutions in Myanmar for banking services. They are Department of Rural Development, corporative and microfinance & Department of Rural Development was opened Ministry of Agriculture livestock and irrigation. Its objectives are improving socio-economic development and decrease rural poverty and cooperatives

association in Myanmar objective of help improve socio-economic conditions and microfinance as he primary method to fulfill. Microfinance scheme is relatively easier for farmers to access, since the institutional finance require mortgage including real estate and deposit. MFIs had been an informal sector but they are formal organization after the law. In Myanmar, microfinance institution (MFIs) are concentrated in the urban areas and currently are active in 12 states and divisions (Duflos et al. 2013) and continuous to the target the poor, especially landless farmers who cannot receive MADB support.

Therefore, this study carried out to identify of the farmer's accessibly of effects in using farming loan in Ngaputaw Township. And this study analyzes the effect of Loan on farm performance. So, that the results are very important for financial sectors in order to realign the existing strategies and even the results may support to reinforce on country regulatory framework. Total production of paddy which are 26 Township in the region out of then Ngaputaw Township stand sixth rank of the region producing the total paddy yield average yield per Annam 14.5million baskets in Ngaputaw and consumption 4.9 million yield per Annam which consumption enough it's surplus 247%.

1.2 Objectives of the Study

The objectives of this study are

1. To explore the credit accessibility of farmers in Ngaputaw Township and
2. To analyze the effect of credit accessibility on farm performance in Ngaputaw Township.

1.3 Scope and Method of the Study

Descriptive statistical method is used in this study. This study used both primary and secondary data. The target population of the study is borrowing farmers in Ngaputaw Township, Ayeyarwaddy Division. As a sampling design, two stage sampling procedures was used to collect for evaluating the farm performance of farmer on credit accessibility and other factors of farm performance. In the process of sampling, first stage was selected the five groups of village from fifty groups of village in Ngaputaw Township. After choosing sampled village, 120 (10%) sample famers are chosen as a second stage from 1212 farmers that are resident in these villages. The primary data are collected by using the face-to-face structure interview with farmers. The key informant communities' authority, leader of the villages, and government staff were also involved in this interview.

The interview process proceeded during October 2018. The secondry data from related organizations such as, Township's administration department, Township's agriculture and development bank, previous research, website, and government department, etc.

1.4 Organization of the Study

This study is organized with five chapters. The first chapter includes the introduction, objective of the study, method of the study and organization of the study. In the second chapter, literature review on agricultural loan is presented. The third chapter presents explore the credit accessibility of farmers in Ngaputaw Township. explore the credit accessibility of farmers in Ngaputaw Township, Ayeyarwaddy Division and evaluation of the analysis will be presented in chapter four. In chapter five, conclusion, recommendation and suggestions are described.

CHAPTER II
THEORITICAL BACKGROUND

In this chapter provides the keys concepts and definitions of this study. In addition, this chapter provides the literature review concerning the theories and research finding from previous studies. There are the natural of agriculture finance, role of agricultural credit accessibility, financial sources for agriculture credit, previous studies, and conceptual framework of the study.

2.1 Agricultural Finance

Agricultural finance generally means studying, examining and analyzing the financial aspects pertaining to farm business. The financial aspects include money matters relating to production of agricultural products and their disposal. Agricultural Finance is dedicated to financing agricultural related activities such as input supply, production, processing and distribution (Meyer, etal. 2004). (Murray, 1953) defined agricultural finance as "an economic study of borrowing funds by farmers, the organization and operation of farm lending agencies and of society's interest in credit for agriculture." Tandon and Dhondyal (1962) defined agricultural finance "as a branch of agricultural economics, which deals with and financial resources related to individual farm units." Farm finance has become an important input due to the advent of capital-intensive agricu1tural technologies. Farmers require capital in order to enhance the productivities of various farm resources.

Agricultural finance is the economic study of the acquisition and use of capital in agriculture. It deals with the supply of and demand for funds in the agricultural sector of the economy. Knowledge of fundamental economics and management principles and analytical procedures facilitates obtaining control over capital it will pay to allocate to alternative uses. Financial analysis relating to income, repayment capacity, and risk management indicates the total amount of capital the farm business can profitably and safely use. Information on the legal aspects of borrowing, leasing, and contractual arrangements helps the farmer select the means of acquiring knowledge of the legal and financial aspects of retirement and estate planning can ensure an orderly transition and transfer of the farm business to the next generation.

Agricultural finance needs to focus on the following four factors (World Bank, 2015). They are segmenting the smallholder farmers and identify their financial needs, finding ways to de-risk agricultural finance, identifying appropriate institutions and

delivery channels for loan and addressing issues in the enabling environment and specific government policies.

'Agricultural Credit is defined as a type of financing used to provide funding for agricultural producers. This may be in the form of letters of credit, loans or banker's acceptance documents. This is generally used to provide investment from outside resources to the farming sector' (www.mbaskool.com).

Agricultural credit is any of several credit vehicles used to finance agricultural transactions, including loans, notes, bills of exchange and banker's acceptances. This types of financing is adapted to the specific financial needs of farmers, which are determined by planting, harvesting and marketing cycles.

Agricultural credit is the money extended to the farmers to stimulate the productivity of the limited farm resources. It is not a mere loan or advance; it is an instrument to promote the well-being of the society. The role of farm credit in strengthening and developing both input and output markets in agriculture is crucial and significant. Providing appropriate finance for agricultural operations, therefore, like oiling agriculture to make its wheels more softly and smoothly (Agarwal, 1969).

Adequate agricultural credit is required for agricultural development. Dantwala (1966) rightly states that provision of good credit facility to the farmers at the right time in the right place in the right proportion is a requisite for the transformation of agriculture. Likewise, credit facilities will help farmers purchase modern inputs such as high- yielding varieties of seeds, fertilizers, and install irrigation to increase production (Chowdhury & Garcia, 1993; Vicente & Vosti, 1995). For decades, rural credit has been primarily seen as promoting agricultural production by farmers and making rural progress possible through growth in farm productivity (Llanto, 1993; Panin *et al.*, 1996).

In a broader sense, credit is not only the life-blood of modem economic system but also the magic word of socio-economic transformation and a lever of development. Credit is one of the most crucial but scarce inputs used in agriculture. Farm credit is an important instrument, which has been used to increase agricultural productivity. Credit is the most important input of modern farming.

2.2 Credit Accessibility

Credit accessibility refers to the ease or difficulty of acquiring credit by borrowers for purpose such as to enhance business performance (Salahuddin, 2006). The accessibility of credit is still fairly constrained, and particularly access to formal credit for small and medium farmers. These forces constrained borrowers to turn to more expensive and unreliable informal credit (Okurutuet, 2004). Credit has a crucial role for elimination of farmer's financial constraints to invest in farm activities, increasing paddy yield and improving of quality and quantity of farm products so, that it can increase farmers.

Credit accessibility is important for income and avoid from rural migration. On the other hand, some policy makers believe that payment of credit with low interest rate to farmers can support them against some results of development policies that threat their welfare (Ghorbani, 2005). Therefore, with limited access to credit, the budget balance becomes a constraint, where expenditures have to remain less or equal to the sum of revenues during the period, accumulated saving and credit availability. Hence, credit constraint limits the optimum production or consumption choices.

Those who involuntarily have no or only limited access to financial services are referred to as the unbanked or under banked, respectively. Accumulated evidences have shown that financial access provides credit for the most promising firms promotes growth for enterprises through the provision of credit in the most promising firms, encourages more startups, and enables incumbent firms to grow by exploiting growth and investment opportunities. It brings benefit to the economy benefits the economy in general by accelerating economic growth, intensifying competition, as well as boosting the demand for labor. In turn, this helps those at the raises income for those in the lower end of the income distribution in reducing income inequality and poverty.

Access to credit is a practical necessity in today's economy because much more than a means to make purchases, credit enables individuals and businesses to meet every day needs. It's a sad reality that many people do not realize the importance of credit until their access becomes limited. People without credit access, it becomes compromised in their choices of housing and employment, and often turn to disadvantageous lenders to pay for emergencies. In order to understand what access to credit means the practical applications of credit, along with what happens when you have no credit. Lastly, a look at initiatives to widen credit access will reveal the true importance of this valuable resource'.

2.3 Sources of Agriculture Finance

Agriculture financing is one of the most important factors to develop rural areas in developing countries. Payment of bank credit is a way of financing, facilitation of access to credit can make investment to raise the productivity. Farmers need the financial credit required for investment in agricultural sector. The farmers receive the required credit from different sources, which can be classified into two sectors. Credit is also classified based on lender according to such as

- Formal Sources of Agriculture Finance
- In Formal Sources of Agriculture Finance

2.3.1 Formal Sources of Agriculture Finance

Formal sources of agriculture finance are organizations, which are owned, controlled, licensed and registered or regulated by the government. These include the commercial banks, state-owned banks, agricultural development banks and rural banks (Martokoesoemo, 1994). Most of the commercial banks are active in urban centers financing trade business while the agricultural development banks are usually situated in rural areas serving mostly farmers. They provide transfers, savings, and lending services.

The formal sources, which provide the credit to the farmers, are known as organized sources of agricultural credit. They are established especially for the development of agricultural sector. The evolution of formal credit to agriculture could be broadly classified into four distinct phases – 1904-1969 (predominance of cooperatives and setting up of RBI), 1969-1975 (Nationalization of commercial banks and setting up of Regional Rural Banks (RRBs)), 1975-1990 (setting up of NABARD) and from 1991 onwards (financial sector reforms). Formal funding of the farm sector is mainly done by commercial banks, regional rural banks and cooperative banks. Share of commercial banks in total institutional credit to agriculture is almost 48 per cent followed by cooperative banks with a share of 46 per cent. Regional Rural Banks account for just about 6 per cent of total credit disbursement (Ramana, 1999).

Government

The government banks extend both short term as well as long-term loans. These loans are popularly known as "Taccavi loans" which are generally advanced in times of natural calamities. ADB provides short- term (less than1 year), medium term (1to5 years) and long term (more than 5years) credits to the farmers. The rate of interest is low and it is not a major source of agricultural finance.

Cooperative Credit Societies

Cooperatives are also the most important source of formal credit available to the farmer. In many of the Asian countries (Ceylon, India, Japan, the Republic of Korea, the Republic of Vietnam), the agricultural credit available through cooperatives accounts for four-fifths or more of the formal sources of agricultural finance. In China (Taiwan), the credit directly provided by multipurpose cooperatives, called farmer's associations, accounts for about one-third of total formal sources of agricultural finance, and the bulk of the balance is disbursed and recovered by these cooperatives as agents of various government bureau (Faridabad, 1967).

Commercial Banks

Commercial banks are corporations chartered under federal or state law. Previously commercial banks (CBs) were confined only to urban areas serving mainly the activities of trade, commerce and industry. The insignificant participation of CBs in rural lending was explained by the risky nature of agriculture due to its heavy dependence on monsoon, unorganized nature and subsistence approach. Through nationalization of CBs in 1969 and CBs were made to play an active role in agricultural credit was accelerated and they are the largest formal source of agriculture finance to agriculture for example, a large majority of the approximately 14,000 commercial banks in the United States are located in towns with less than 10,000 population these rural (country) banks lead all credit institutions in volume of non-real-estate farm loans and rank high in real-estate loan volume as will. From the farmer borrower's point of view, commercial banks have several advantageous features. They can give prompt credit service with a minimum of red tape, they are readily accessible, and they alone can provide a full range of financial services, including checking accounts, saving accounts, trust counseling, estate planning, investment counseling, farm management services, charge cards, and safety deposit boxes (Murray, et.al,1980).

Regional Rural Banks

Regional Rural Banks (RRBs) were set up in those regions where availability of formal sources of agricultural finance was found to be inadequate but potential for agricultural development was very high. However, the main thrust of the RRBs is to provide loans to small and marginal farmers, landless laborers and village artisans. These loans are advanced for productive purposes. At present 196 RRBs are functioning in the country lending around Rs 9,000 crore to rural people, particularly to weaker sections.

Micro Financing

Micro financing through Self Help Groups (SHG) has assumed prominence in recent years. SHG is a group of rural poor who volunteer to organize themselves into a group for eradication of poverty of the members. They agree to save regularly and convert their savings into a common fund known as the Group corpus. The members of the group agree to use this common fund and such other funds that they may receive as a group through a common management. As soon as the SHG is formed and a couple of group meetings are held, an SHG can open a Savings Bank account with the nearest Commercial or Regional Rural Bank or a Cooperative Bank. This is essential to keep the thrift and other earnings of the SHG safely and also to improve the transparency levels of SHG's transactions. Opening of Saving Bank account is the beginning of a relationship between the bank and the SHG. Once this process is over, banks liberally lend to the groups or to members and recover the loans conveniently. The banks even offer subsidy to the amount of loans borrowed based on their good response.

2.3.2 In Formal Sources of Agriculture Finance

Informal sources of agriculture finance operate without physical collateral, involve small loans and short-term transactions, and are characterized by adaptability and flexibility of operations in a certain area (Adams & Fitchett, 1992; Ghate, 1988).

The local individual who provide the credit to the farmers are unorganized sources of agricultural credit. In Nepal, the rural farmers are dependent on the unorganized sector for their agricultural credit. About 60% agricultural credit comes from these sectors. The unorganized sources of agricultural credit are as follow (http//www.meospark.com).

Friends and Relatives

The friends and relatives of farmers provide credit to the farmers in small amount to meet day to day needs and emergency needs. They provide loan with or without interest and security.

Traders and Commission Agents

Traders and commission agent’s advance loans to agriculturists for productive purposes against their crop without completing legal formalities. It often becomes obligatory for farmers to buy inputs and sell outputs through them. They charge a hefty rate of interest on the loan and a commission on all the sales and purchases, making it exploitative in nature.

Landlords

Land owners provide the credits to the farmers for short-terms as well as long term. Generally, short term credit is provided with security of standing crops and cattle and long term credit is provided with the security of land and houses. Mostly small farmers and tenants depend on landlords for meeting their production and day to day financial requirements.

Money Lenders

Despite rapid development happening in rural branches of different institutional credit agencies, village money lenders still dominate the scene. Money lenders are of two types, agriculturist money lenders who combine their money lending jobs with farming and professional money lenders whose sole job is money lending. They provide credit with security of movable and immoveable credit with the security moveable credit with the security movable and immovable property.

2.4 Literature Review

There are several studies regarding access credit of farmers. This section presents a review of some related previous studies.

The growth of a farm is dependent on its productivity and the farmers' effectiveness in the use of the inputs to operate it (Bolo, 1996). For small and medium scale farmers to improve their performance they have to improve their productivity by employing techniques such as the use of fertilizers, spraying their crops against pests and diseases, training labor, quality seeds and machinery (Klaus, 1994). Small and medium scale farmers have limited capital to afford such techniques and limited access to credit, putting the agricultural sector in a vulnerable situation.

Rural credit encourages improved resource allocation. Loans also allow farmers to make better allowance for risks associated with the nature of the agricultural production such seasonality issues. They are also enabled to afford larger investments (Stevens et al, 2001). In addition, access to credit is an important instrument for improving the welfare of the poor directly (consumption smoothing that reduces their vulnerability to short term income shocks) and for enhancing the productive capacity through financing investments (Binswanger and Khandker, 1995).

The high borrowing costs reflected by high interest rates are a perennial complaint

among most borrowers and constrain credit accessibility because borrowers need a return on their investment. Many borrowers who proceed to access loans at such rates have under-gone liquidation or lost their highly valuable collateral to lenders as a result of defaulting on repayments (Konare, 2001 & Collins et al, 2002).

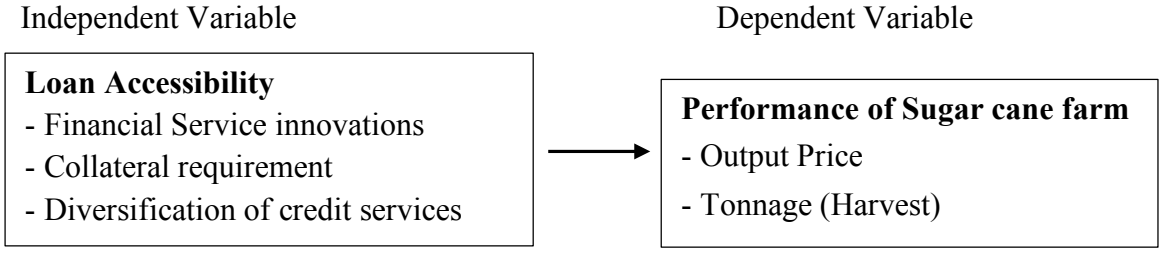
Consequently, credit constraints limit the size of firms as well as their growth, profits, activations and liquidations; the scope of operation may also be limited. Since agriculture is the back bone of most developing economies, credit constraints to the sector are of first-order importance for the performance of these economies. Capital market imperfections can impair the aggregate accumulation of capital, the rate of return on investment, innovation and accumulation (Jaime, 2006). This has led farmers in rural areas to rely on the less efficient and expensive informal credit markets and hence limited the exploitation of the agricultural sector.

Wanjawa (2017) analyzed contribution of agricultural loan accessibility to performance of small holder sugarcane farmers in Kakamega Country, Kenya. The study found that agricultural loans have significant effect on the performance of the farmers. The conceptual framework can be seen in figure (2.1). The study used threshold decision-making theory proposed by Hill and Kau (1973) to analyze the determinants of credit demand by farmers. The decision-making variable at which the decision is made, such that an action is selected or a commitment to one alternative made, making the end of accumulation of information.

The theory pointed out the fact that when farmers are faced with a decision to adopt or not adopt an innovation, in this case demand agricultural loan, every farmer has a reaction threshold, which is dependent on a certain set of factors. As such, at a certain value of stimulus below the threshold, no adoption is observed while at the critical threshold value, a reaction is stimulated. These factors are loan interest rates, disbursement of loan and accessibility of loan (Hill and Kau, 1973).

Figure (2.1)

Loan Accessibility and Farm Performance



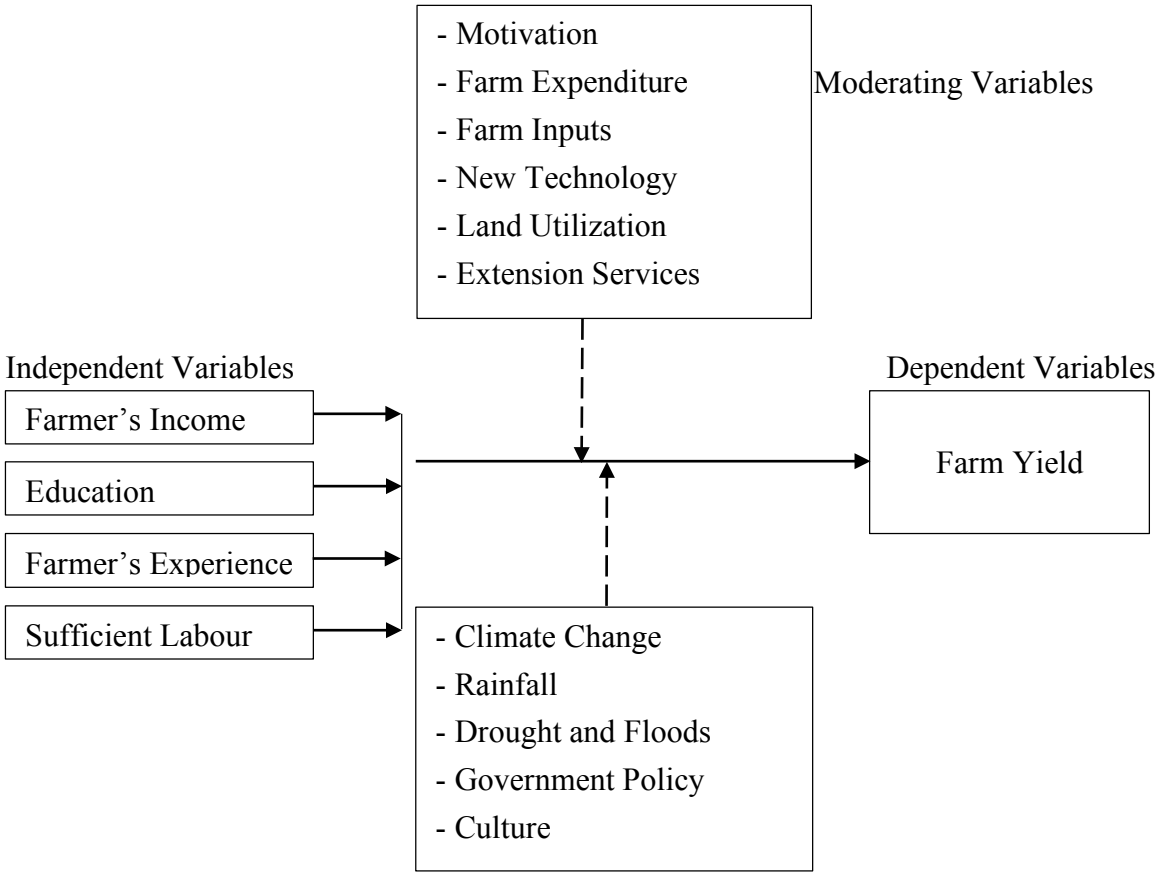
Source: Wanjawa, D., Yugi, C. and Muli, W. (2017)

According to the Figure (2.1), agricultural loans have been used as independent variable under a construct-accessibility; dependent variable which is performance of sugar farm was conceptualized as pricing of the sugarcane and tonnage. The loan affects their farm produce since they cannot invest in getting good cane suckers, fertilizer as well as labor to weed their farms. In this study, accessibility of loan was operationalized in form of flexibility of loan delivery, diversification of the loans and the innovative financial delivery services.

Figure (2.2) shows how moderating and extraneous variables influence independent variables' effect on the dependent variable. Extraneous variables are not related to the purpose of the study, but may affect the dependable variable (Kothari, 2004). Moderating variables contribute towards how the independent variable would influence the dependent variable. For example, a farmer's education may be affected by how motivated the farmer is to take up farming, or the farmer's experience may not improve farm yields if the right technology is not employed. Obiero (2013) didn't analyze the credit accessibility, but identified the social economic factors affecting farm yield.

Figure (2.2)

Social Economic Factors, Eternal Factors and Farm Yield



Source: Edward Oduor Obiero (2013)

The study found that farmer's age, farmer's experience, household size, farmer's expense and farmer's education effect on farm yield. According to the result, farmer's age and Farmer's experience has a negative relationship with farm yield. There are older farmers in the district. Older farmers may show resistance to new technology. An experienced farmer who is most likely to be an older farmer may not easily embrace new or appropriate farming technology and may lack the physical capability to go through the rigorous farming procedures to give better farm yields. The results differ from that of Wiredu et al. (2010) who showed that in rice cultivation in Ghana, age had positive effect on yield meaning experience in rice cultivation implied accumulated knowledge in rice production.

Farmer's education has a negative relationship with farm yield. Most respondents have some level of education as only 27.2% did not attend school. While farming opens up an individual to better understanding of issues, it also enables an individual to exploit other livelihood activities so that they may show less interest in farming or invest in it. It is important that educated farmers get agricultural extension support for better understanding of farming.

Sufficient labour is the most used human labour in preparing land for planting, sowing, weeding and harvesting. These studies mentioned that more than half of human labour is derived from the family. There is positive correlation between sufficient labour and maize yield.

Farmers' income has a positive and significant relationship with farm yield. Farmers with more income to expense in acquiring vital crop production inputs and performing the necessary farming procedures are more likely to get more farm yields. A sufficient investment in the farming sector gives better farm yields.

2.5 Conceptual Framework of the Study

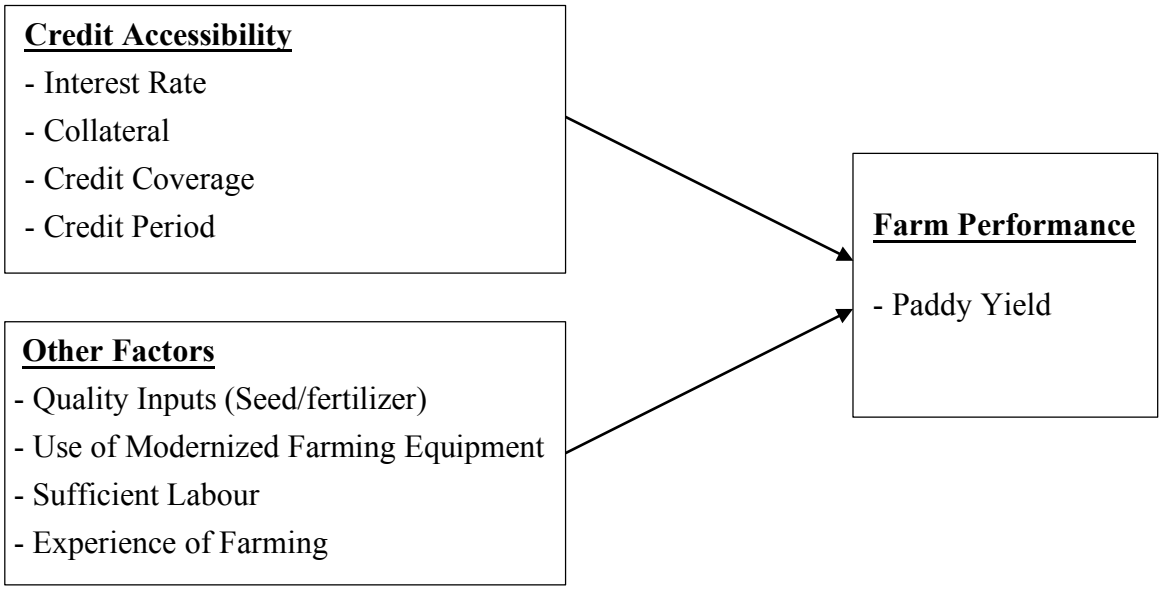
The conceptual framework for the study is constructed by considering, they are background characteristics and independent variable described credit accessibility, which are assumed to determine its effects on farm performance.

As presented in previous section, Obiero (2013) considered farmer's age, farmer's experience, household size, farmer's expense and farmer's education effect on farm yield and found that among them, farmer's experience is significantly related with crop yields.

On the other hand, Wanjawa (2017) considered loan accessibility (financial service access innovation, collateral requirement, and diversification of credit service) as the independent variables and farm as the dependent variable. The study found that credit accessibility affected on farm performance. Thus, the conceptual framework for this proposed study is constructed as shown in Figure (2.3).

Figure (2.3)

Conceptual Framework



Source: Own Compilation

According to the Figure, credit accessibility and other factors are assumed as the independent variables on the farm performance. In other factors, it considers the quality inputs, use of modernized farming equipment, qualified worker, and experience of farming. To evaluate the farm performance, paddy yield is used to measure as a response or dependent variable in the study.

It is important that to improve the paddy yields the loan must be sufficient to cover the farming expenses. Therefore, in this analysis, to identify the credit accessibility of the farmers, the dimensions such as interest rate, collateral, credit coverage and credit period are used and they are specified as independent factors. For the other factor, quality inputs, use of modernized farming equipment, qualified worker, and experience of farming are put into consideration to evaluate their effects.

CHAPTER III
AGRICULTURE FINANCE IN MYANMAR AND BACKGROUND OF NGAPUDAW TOWNSHIP

This chapter includes overview on agriculture sector in Myanmar, agriculture finance in Myanmar, background information of Ngapudaw Township.

3.1 Overview on Agriculture Sector in Myanmar

Myanmar is an agricultural country, and the agriculture sector is the backbone of its economy. The agriculture sector contributes to 37.8 percent of gross domestic product (GDP), accounts for 25 to 30 percent of total export earnings and employs 70 percent of the labour force. Myanmar has established 12 political, economic and social objectives in its efforts to establish a peaceful, modern and developed country. One major economic objective is "Development of agriculture as a base and all-round development of other sectors of the economy as well." (FAO, June 2018).

Agriculture is the backbone of Myanmar economy not only contributing to the overall economic growth of the country and but also sustaining a standard of living for more than 60 per cent of the Myanmar population. An estimated 26 per cent of the Myanmar population is living below the poverty line. Poverty in Myanmar is concentrated in rural areas, where the poor rely on agricultural and casual employment for their livelihoods. Many live near the poverty line and are sensitive to economy-wide shocks.

Agricultural sector plays a remarkable role in reducing poverty in Myanmar for many years to come because it supplies basic necessities of human life, provides basic inputs for industries and, in addition to these, purveys goods for exports and other purposes. It is extremely crucial to Myanmar's economy and future sustainable growth. If Myanmar agricultural production makes important contributions to general economic development, it can not only provide employment opportunities and but also give to diversification in such job opportunities especially in rural areas. It is one of the preconditions which must be established before a take-off into self-sustained economic growth becomes possible. The ability of agriculture to transfer its abundant resources to other sectors actually leads the economic growth.

Myanmar is rich in fertile soils and abundant water sources are legendary in South-east Asia. Almost anything can be grown in the country, from fruits to vegetables, from rice to pulses. Myanmar's agricultural sector dominates the economy, contributing 38 per cent of GDP, and employing more than 60 per cent of the workforce. Now, low labor productivity in Myanmar's agricultural sector is the lowest in Southeast Asia. An

agricultural worker in Myanmar earns only $1.80-$2.50 per day during monsoon season, and $3-$3.50 during the dry season. In addition, not only Myanmar's farm productivity remains low but also the farmers remain poor. Most farmers live on small holdings of land in rural areas; they also lack of information on the global supply-and-demand conditions that affect local prices; have limited access to crop management knowhow, and weather forecasts that impact agricultural operations (Myanmar insider).

The most common crops are rice, beans and pulses, and maize, in that order. In general, farmers grow rice and maize during the monsoon season and beans and pulses during the dry season, although farmers in the temperate highlands often try for a second harvest of rice and maize if there is enough water left after the rains. Likewise, in the water-rich Ayeyarwady Delta, farmers often eschew dry season beans for another paddy harvest.

3.2 Agricultural Finance in Myanmar

The provision of finance in rural areas of Myanmar derives from both state and non-state sectors and is composed of formal institutions such as state-owned banks, private banks, MFIs and NGOs and informal and semiformal outlets such as local pawnshops, merchants, community organizations and family and friends (Proximity Designs, 2014). Formal banking options include 4 state owned banks, 24 private domestic banks (Central Bank of Myanmar, 2017). The agricultural credit institutions are Myanma Agricultural Development Bank, Mya Sein Yaung Project, Cooperative and Microfinance. Among them, Myanmar Agriculture Development Bank (MADB) is the main source of finance for farmers.

The loan amount provided from agricultural development bank just to cover their production process, however the farmers are still need finances for their daily life consumption. Since access to institutional finance is very limited, the majority of the poor obtain financial services through others informal sources such as: relative, friend and other money lenders.

The interest rate of MADB is 8% per annum and or 0.67% per month, MFI is maximum 30% per annum and or 2.5% per month, private bank is 13% per annum and others informal sources of interest rate are high. The main source of funding in Myanmar is the MADB.

3.2.1 The Role of MADB in Agricultural Finance in Myanmar

MADB is vital role in providing agriculture credit in Myanmar (openknowledge, n.d.) describes that MADB plays an important role in agriculture finance of Myanmar. MADB was established in June 1953 by the Government of Myanmar to support the development of agriculture, livestock, and rural enterprises in Myanmar. MADB is one of the government-affiliated financial institutions, just as same as MEB, MFTB. At that time MADB has opened the banking function under the Ministry of Agricultural Livestock and Irrigations Starting from the 2017, the MADB has been operating under the control of Ministry of Planning and Finance.

MADB's objectives are to provide loans in a simple procedure, to promote rural banking, to encourage saving habit, to support rural socio-economic development, to cultivate habit of using banking services, to development banking services.

To achieve the MADB's objectives the operational guidelines are as follow:

(1) Adequate supply of credit to the client

(2) To provide credit timely

(3) To seek full recovery of loans

(4) To enable farmers for investment through savings

(5) To help to become debt-free farmers

(6) To make bank self-replying

Since its establishment, MADB has played an important economic and social role in Myanmar by providing loans to a large segment households in rural areas engaged in agricultural activities. Most MADB loan products are designed to cover the short-term working capital needs of farmers, such as purchase of seeds, fertilizers, and pesticides; payment of salaries for farm workers; and lease of agriculture equipment. MADB lends at subsidized interest rates, following the lending policies and programs issued by Ministry of Agriculture and Irrigation.

MADB is currently the largest financial institution serving the rural areas and financing agriculture activities. At the end of 2012, MADB served 1.87 million customers, mostly farmers, and had a network of 206 branches (which accounted for 23 percent of all banks' branches in Myanmar).

During the past three years, MADB has grown rapidly. From March 2010 to March 2012, MADB’s loan portfolio grew from K 20,392 million to K 116,275 million, an

increase of 470 percent. As discussed in subsequent sections of this report, this increase was driven mainly by a substantial increase in the amount of money that MADB lends per acre and not by a substantial expansion in the number of customers the institution serves or a significant increase in the number of acres financed by MADB.

In 2017, Ayeyarwady Region is granted a total loan of K 322,390.20 million to plant monsoon crops. MADB started disbursement of agricultural loans to more than 17,00 local farmers from 57 villages in Myanaung township, Ayeyarwady Region in 2018. Bago Region is the second rice producing area in Myanmar. In 2017, Bago Region is granted a total loan of K 313,196.30 million to plant monsoon crops. During the meeting held by the Private Sector Development Committee (PSDC), members of the agricultural and SME sectors raise the issue that private banks do not issue loans for either sector. If Myanmar's economy is to develop, the country's SMEs and agriculture will need to take off and grow. Private bank must grant a specified (minimum) percentage of their loans to farmers and SMEs (Chan Mya Htwe, 2017).

3.3 Background Information of Ngaputaw Township

The background information of Ngaputaw Township such as geographic of significant characteristic Ngaputaw township is presented with topography and climate situation of the region.

3.3.1. Geographic Situation

Ngapudaw township is a township of Pathein district in the Ayeyardaddy division of south-west Myanmar. There are 2 words and 50 groups of villages in the Ngaputaw township. It is bounded by Myaungmya township in the east, Bay of Bengalar in the west, sea and in the south and Kangyidaunt township, Pathein township, Labutta township in the north. Ngaputaw township is above sea level 30.28 feet and tropical monsoon climate.

The topography of Ngaputaw township is wet-topical climate and in the summer height temperature is 37 degree centigrade and lowest temperature is 22 degree centigrade in the winter season, annual rainfall is 95 inches to 122 inches. Two seasons, the wet seasons and the dry season. The wet season begin June to September and the dry season is October to May (Myanmar Population and Housing census, 2017).

3.3.2 Demographic Situation

According to 2017 Myanmar population and Housing census, total population is 327272 people and the urban population is stayed the 28,298 (8.6%) people in the city and the rural population is the 298,974 (91.4) people at total 50 villages at Ngaputaw township. The population It's includes 163128 males and 164144 females, ratio is same. In Ngaputaw township, the proportion of employed persons working in the industry of "Agriculture, forestry, salting and fishing" is the highest with 63.9 per cent. Among them total household, major job of these villages is cultivation of paddy in monsoon and plantation of beans and pulses in winter season. The most common crops are rice, beans and pulses, and maize, in that order.

3.3.3 Economic Situation

Agricultural, are the main economic activities within the township. Main occupations are most agriculture workers, private employees and public employees. Total land agriculture is the main activity of the Ngaputaw township. Agriculture, are important sector of the Ngaputaw township. The main cultivate crop is paddy of which the total areas are 204038 acres. Individually Ngaputaw farmers are own maximum 50 acres and minimum 7 acres. The major type of paddy in Ngaputaw township are Koutkyi and Paw Sann, which average yield per acre is 69.27. Total production of paddy which are 26 Township in the region out of then Ngaputaw Township stand sixth rank of the region producing the total paddy yield average yield per Annam 14.5million baskets in Ngaputaw and consumption 4.9 million yield per Annam which consumption enough it's surplus 247%. The main cultivate crop in Naputaw is paddy, there has 112 rice machine (Myanmar Population on and Housing Census, 2017)

CHAPTER IV
EFFECT OF CREDIT ACCESSIBILITY ON FARM PERFORMANCE IN NGAPUDAW TOWNSHIP

In this chapter, finding from analysis of the data from survey are presented with four sections. The first part is concerned about research design for this study, and the second part mentioned demographic characteristics of respondents of Ngaputaw Township. The third one is credit accessibility of farmers in Nagptaw township. In part four, the effect of loan on farm performance is analyzed.

4.1 Research Design

The objectives of the study are to identify farmers' accessibility to agricultural credit and the effect on farms performance in Ngaputaw Township. The target population of the study is borrowing farmers in Ngaputaw Township, Ayeyarwaddy Division. As a sampling design, two stage sampling procedures was used to collect for evaluating the farm performance of farmer on credit accessibility and other factors of farm performance. In the process of sampling, first stage was selected the five groups of village from fifty groups of village in Ngaputaw Township. These sampled townships are namely Kha Yin War Chaung, Poe Laung, Thone Gwa, Sin Ku Gyi, and Ah Wa Beik. After choosing these sample villages, 120 (10%) sample borrowing famers are chosen as a second stage from 1212 borrowing farmers that are resident in these villages. The details selecting the sample size from each village are shown in following Table (4.1).

Table (4.1)

Selecting Sample Size from Each Village

Villages	Total Population (Borrowers from MADB)	Sample Size
Kha Yin War Chaung	306	31
Poe Laung	175	17
Thone Gwa (Ma Kyae Pin)	198	19
Sin Ku Gyi	202	20
Ah Wa Beik	331	33
Total	**1,212**	**120**

Source: Survey data, 2018

4.2 Demographic Characteristics of Respondents

Demographic characteristics of farmers are classified gender, age, education level, marital status, household member and employees. These are described in Table (4.2).

In Table (4.2), it shows the sample of 120 farmers is categorized by gender, 82% of the farmers are male and the rest are female. Therefore, the male farmers are more than female farmer. The age of farmers is grouped into four classes which are under 25 years, 26 years to 45 years, 46 years to 65 years and 66 years to 85 years. From the Table (4.2) most of the farmers are age between 26 years to 45 years. It is 59.2% of the respondents. It can also be said that most of the farmers are middle age.

Table (4.2)
Demographic Characteristics

Demographics Characteristics		Respondents	Percent
Gender	Male	98	82
	Female	22	18
	Total	**120**	**100**
Age (year)	Under 25	4	3
	26-45	71	59
	46-65	43	36
	66-85	2	2
	Total	**120**	**100**
Education Level	Primary	66	55
	Middle	31	26
	High	18	15
	Graduated	5	4
	Total	**120**	**100**
Marital Status	Single	2	2
	Married	118	98
	Total	**120**	**100**
Household Member	2-5	70	58
	6-9	45	38
	10 and above	5	4
	Total	**120**	**100**
Number of Agriculture Worker in Family	1	63	53
	2	40	33
	3	11	9
	4	6	5
	Total	**120**	**100**

Source: Survey Data, 2018

The selected farmer's respondents about their education status and the results are classified in Table (4.2). Most of farmers are primary education which included 55% of the respondents. The respondents are classified their marital status and the largest portion of married 98.3% and single 1.7%. Household members are classified by three categories less than five, six to nine and ten and above. Most of respondents are 58.3% less than five members and the less and 4.2% ten and above member.

4.3 Credit Accessibility of Farmers in Ngaputaw Township

The credit accessibility of Ngaputaw township is studied according to the results on farmer perception on factors that the farmers' accessibility in interest rate, collateral, credit coverage and credit period.

(i) Interest Rate

Farmer's perceptions level of interest rate is measured by five statement. Which are the important factor, acceptance, farmer can pay interest, interest expenses are not pressure, and farm income are cover the interest costs. The results of farmer's agreement level of interest rate are presented in Table (4.3).

Table (4.3)

Interest Rate

Sr.	Statements	Mean Value	Standard Deviation
1	Saving interest rate is most important factor when I borrow money	4.25	.215
2	The interest rate is acceptable for me	4.21	.819
3	I can pay the interest in time because interest rate is affordable for me	3.21	.939
4	The interest expenses are not pressure for me	3.56	.212
5	Income from loan is well cover its interest cost	3.02	.125
Overall Mean		**3.65**	

Source: Surveyed Data, 2018

As a result of Table (4.3), interest rate is the most important factor is the highest means scores of 4.25 and small standard deviation, interest is acceptable the second highest 4.21; while farm income is cover interest, has the lowest mean score of 3.02. The overall mean score of interest rate is 3.65. The result shows, it is obvious that farmers are

most agreement the interest rate are the effect on farm performance because they are fairly agreement that is a most important factor in farm performance.

(ii) **Collateral Requirement**

In collateral, the legal documents (From-7) are main requirement to represent for getting loan. Therefore, the document (Form 7) is most important factor in credit accessibility of farmer. Farmer's agreement level on collateral requirement is measured by four statements. The results of farmer's agreement level on collateral requirement is presented in Table (4.4).

Table (4.4)

Collateral Requirement

Sr.	Statements	Mean Value	Standard Deviation
1	Collateral is not important when I borrow money	3.23	.415
2	The sources of finance are need to collateral but I am able to pay it	4.35	.254
3	When I borrow money from finance sources, there is no worry for giving collateral	4.32	.365
4	Some sources of finance are no need to collateral	3.42	.212
Overall Mean		**3.83**	

Source: Surveyed Data, 2018

As a result of Table (4.4), it was found that sources of finance are need to collateral but they able to pay collateral is the highest means scores of 4.35 and small standard deviation, also mean scores 4.32 show that when they borrow money the respondents are no worry to pay collateral, while collateral is not important when they borrow money has the lowest mean score of 3.23 with a small standard deviation. The overall mean score of collateral is 3.83 shows that all respondents are fairly agreed the collateral requirement on the effect of farm performance.

(iii) Credit Coverage Amount

Farmer's agreement level on credit coverage is measured by four statement. The results of farmer's agreement level on credit coverage is presented in Table (4.5).

Table (4.5)

Credit Coverage

Sr.	Statements	Mean Value	Standard Deviation
1	Amount of borrowing money is cover to spend the farm's inputs.	4.25	.321
2	Credit coverage for farming is most important factor but mostly is coverage for me	4.21	.348
3	The receiving loan amount is sufficient to grow up the paddy.	3.21	.325
4	Some lenders provide sufficient loan amount for farming	3.32	.251
Overall Mean		**3.75**	

Source: Surveyed Data, 2018

Table (4.5) shows that borrowed money is cover to spend the farm's inputs is the highest means scores of 4.25 and small standard deviation; while the receiving loan amount is sufficient to grow up the paddy has the lowest mean score of 3.21 with a small standard deviation. The overall mean score of credit coverage is 3.75. Therefore, the loan amount received of farmer in Ngaputaw are coverage to use of farming.

(iv) Credit Period

The credit period is the number of days that a farmer is allowed to wait before paying their loan. The concept is important because it indicates the amount of working capital that a farmer is willing to invest in its accounts receivable in order to generate their farm performance. Farmer's agreement level on credit period is measured by four statement. The results of farmer's agreement level on credit period is presented in Table (4.6).

Table (4.6)

Credit Period

Sr.	Statements	Mean Value	Standard Deviation
1	The credit period covers up to harvesting period of paddy	3.62	.212
2	Credit period covers for selling the paddy with favorable price	3.21	.348
3	Credit period is acceptable for me	3.41	.325
4	Money lender are provided loan to me with enough time	3.45	.261
Overall Mean		**3.45**	

Source: Surveyed Data, 2018

As a result of Table (4.6) shows that credit period covers up to harvesting period of paddy is the highest means scores of 3.62 and small standard deviation; while credit period covers for selling the paddy with favorable price has the lowest mean score of 3.21. The overall mean score of credit period is 3.45. The result shows, the credit period of loan for farmers is fairy sufficient.

4.4 Other Factors on Farm Performance

In this section presents other factors on farm performance. It covers the using quality input, using modernized farm equipment and quality workers and experiencing of farming. Respondents were asked to indicate the extent to which they agreed to statements relating to agreement of each factors on a five-point Likert scale (5= strongly agree, 1 = strongly disagree).

4.4.1 Using Quality Input

Investments in this strategy aim to increase farmer access to and effective use of quality inputs like seeds, fertilizers, livestock, and equipment, thereby supporting higher, more profitable and more sustainable production. As this consequence, using the quality input is most effective in farm performance. Therefore, farmer's agreement level on using

quality input is measured by four statements. The result of farmer's agreement level on using quality input is presented in Table (4.7).

Table (4.7)

Using Quality Input

Sr.	Statements	Mean Value	Standard Deviation
1	Utilization of high quality input are increasing farm productivity	3.42	.124
2	The use of pure seed paddy provides for good performance of firming	3.75	.325
3	Used of modernized firm equipment, the productivity of paddy is increase	3.10	.452
4	To increase productivity of crops, adopting relevant methods and farming input	3.21	.741
Overall Mean		**3.37**	

Source: Surveyed Data, 2018

As a result of Table (4.7) shows that the use of pure seed paddy provide for good performance of firming is the highest means scores of 3.75 and small standard deviation; while the used of modernized firm equipment has the lowest mean score of 3.10 with a little standard deviation. The overall mean score of credit period is 3.37. It is obvious that farmers are using quality inputs. It can be express that one of the factors increase in farm performance is using quality inputs.

4.4.2 Qualified Worker

Using the qualified worker is one of the determinant of the performance of the farming. Therefore, in order to that point, four statement are measured by farmer agreement level on using qualified worker. The mean scores of each statement are analyzed in following Table (4.8).

Table (4.8)

Qualified Worker

Sr.	Statements	Mean Value	Standard Deviation
1	To increase productivity of crops, the important factor is use of qualified workers	3.41	.125
2	I have qualified labor from my family members	2.51	.72
3	Qualified agriculture workers can get easily in time when cultivate farm	2.12	.452
4	Qualified agriculture workers can well perform to increase paddy yield when cultivate farm	3.24	.741
Overall Mean		**2.82**	

Source: Surveyed Data, 2018

Table (4.8) shows that increasing paddy yield is the important for using qualified workers is the highest means scores of 3.41 and small standard deviation; while qualified agriculture workers can get easily in time when cultivate farm has the lowest mean score of 2.12. The overall mean score of qualified workers is 2.82. The result shows that farmers do not agree they are facing difficulty in getting qualified workers.

4.4.3 Using Modernized Farm Equipment

Serval international studies, as well as recent survey have shown that farm performance depend on using modernized farm equipment and effective technology. As a consequence, using modernized farm equipment is one of the factor they consider the increase performance of the farming. Therefore, in order to that point, five statement are measured by farmer agreement level on using modernize equipment. The mean scores of each statement are analyzed in following Table (4.9).

Table (4.9)

Using Modernized Farm Equipment

Sr.	Statements	Mean Value	Standard Deviation
1	I can use modernized farm equipment because I can borrow money in different sources	4.21	.231
2	I can use modernized farm equipment because I can borrow sufficient money with fair interest rate	3.51	.422
3	I can use modernized farm equipment because I can borrow sufficient money without paying collateral	4.32	.455
4	I can use modernized farm equipment because I can borrow sufficient money	3.45	.634
5	I can use modernized farm equipment because I can borrow money with sufficient length of credit period	4.32	.844
Overall Mean		**3.96**	

Source: Surveyed Data, 2018

As a result of Table (4.9) shows that they can buy modernized farm equipment because I can borrow sufficient money without paying collateral is the highest means scores of 4.32 and small standard deviation; while they can buy modernized farm equipment because they can borrow sufficient money has the lowest mean score of 3.45. The overall mean score of using modernized farm equipment is 3.96. It shows that one of the factors increase in farm performance is using modernize equipment.

4.4.4 Farming Experience

The following data are representing the number of agriculture working experience of the respondents in the selected sample of 120 borrower farmers.

Most of the farmer's farm for love farming. They love to watch and nurture the growth of plants. They love to live in the presence of animals. They love to work outdoors. All of these facts depend on their experience of farming. Farmer without experience is to become the decrease of productivity and profit. Therefore, the experience of farmer is one of the determinant of farm performance.

Five statement are measured by farmer agreement level on experience of farming. The mean scores of each statement are analyzed in following Table (4.10).

Table (4.10)

Experience of Farming

Sr.	Statements	Mean Value	Standard Deviation
1	To increase productivity of crops, the important factor is use of sufficient experience for farming	4.52	.214
2	I have sufficient experience for farming	3.89	.658
3	My general workers have also sufficient experience for farming	2.52	.495
4	My family members have sufficient experience for farming	3.58	.684
5	All of us have sufficient experience for farming	3.85	.145
Overall Mean		**3.67**	

Source: Surveyed Data, 2018

As a result of Table (4.10) shows that the important factor is use of sufficient experience for farming to increase productivity of crop is the highest means scores of 4.52; and small standard deviation while their general workers have also sufficient experience for farming has the lowest mean score of 2.52. The overall mean score of experience of farming is 3.67. This means that experience of farming is effected on farm performance because they are fairly agreement that is a most important factor for farming performance.

4.5 Farm Performance

Farm Performance that can affect from loan received are studied by growth of paddy yield. Farm performance are determined by paddy yield. Respondents were asked to indicate the extent to which they agreed to statements relating to agreement of each factors on a five-point Likert scale (5= strongly agree, 1 = strongly disagree). The mean scores of the paddy yield is presented in following Table (4.11). It can be measure by five statements. The mean scores of each statement are shown in Table (4.11).

Table (4.11)

Paddy Yield

Sr.	Statements	Mean Value	Standard Deviation
1	The paddy yield is increased in this year	3.56	.742
2	The paddy yield is gradually increased within seasonal periods	3.26	1.126
3	The increasing paddy yield depends on getting loan easily	3.89	.786
4	The paddy yield is concerned good credit accessibility	3.24	.582
5	The increase paddy yield based on using quality of inputs, modernized machines, qualified worker and experience of farmers in farming	4.21	.521
Overall Mean		**3.62**	

Source: Surveyed Data, 2018

As a result of Table (4.11) shows that increase paddy yield is based on using quality of inputs, modernized machines, qualified worker and experience of farmers in farming is the highest means scores of 4.21 and small standard deviation; while paddy yield is concerned good credit, accessibility has the lowest mean score of 3.24. The overall mean score of paddy yield is 3.62 It is obvious that the credit is increased their paddy yield.

4.5.1 Effect of Credit Accessibility on Farm performance

In this section analyzes the effect of credit accessibility on farm performance of farmer who are borrowing money from formal sources. The sample linear regression model is applied to analyze the effect of credit accessibility and farm performance. The output from generating sample linear regression model is shown in Table (4.12).

Table (4.12)

Effect of Credit Accessibility on Farm Performance

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	3.970	.119		33.360	.000
Credit accessibility	1.182	.683	1.050	4.440	.004
R^2	0.679				
F Value	425.617 (.000)				

Source: Survey Result 2018

As shown in Table (4.12), the coefficient of determination (R^2) is 0.679. It reveals that the 67.9% of the total variation of farm performance is explained by credit accessibility. The value of F-test, the overall significance of the models, came out highly significant at 1% level.

These results show that the coefficients for credit accessibility is significant at 1% level since the resulted p value are less than 0.01. According to the result, if farmers with more accessible the credit, more likely to perform to get more farm paddy yield. Therefore, credit accessibility is dominant on farm performance.

4.5.2 Effect of Other Factor on Farm performance

In this section analyzes the effect of other influencing factor namely quality input, use of modernized machine, qualified worker, and experience of farming on farm performance of farmer who are borrowing money from institution. The multiple linear regression model is applied to analyze the effect of other factor and farm performance. The output from generating multiple linear regression model is shown in Table (4.13).

Table (4.13)

Effect of Other Factor on Farm performance

Others Factor	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant	4.528	.133		33.965	.000
Quality Input	1.254	.047	1.020	26.680	.000
Use of Modernized Machine	.987	.127	.771	7.772	.026
Qualified Worker	1.570	.122	.865	12.869	.006
Experience of Farming	1.285	.152	1.001	8.45	.000
Adjusted R^2	.698				
F Value	95.53**				

Source: Survey Result 2018

As shown in Table (4.13), the adjusted coefficient of determination adjusted R square is 0.698. Therefore, quality input, use of modernized machine, qualified worker, and experience of farming are affect the farm performance of borrowing farmers in Ngaputaw Township. The model explains 69.8% of the variation of farm performance is explained by other factor namely quality input, use of modernized farm, qualified worker, and experience of farming. The value of F-test, the overall significance of the models, came out highly significant at 1% level.

The result shows that, quality input, use of modernized farm, qualified worker, and experience of farming are effect on farm yield. According to the result, qualified worker has a negative relationship with farm yield. Qualified worker who could not hirer easily because wages of agricultural worker in Myanmar only $1.80-$2.50 per day. Therefore, they did not work in native, they are working other country. Therefore, quality inputs have positive relationship with farm yield. The result mentions that using of quality inputs in farming this sector gives better farm yields.

Experience of farmers had positive effect on paddy yield. These means that experience in paddy cultivation of farmers can be effect in paddy production. Similarly, the modernized machine also provides better paddy yield.

CHAPTER V
CONCLUSION

This chapter describes conclusion of the study areas of community benefits of farm performance in Ngaputaw township. This chapter contains findings, recommendations, and conclusions of the study. And the last parts are the suggestion for the further study.

5.1 Findings

Myanmar is agriculture-based country. Agriculture plays an important role in poverty in Myanmar. The country's agricultural sector accounts for 38% of national GDP and 23% of exports in fiscal year 2016-2017.Therefore, agricultural loan has always been an important factor in improving agricultural productivity and strengthening the rural economy. In the current political and economic environment, jobs are at the center of political debate in both developed and developing economies. MADB provide agricultural loan of K 1630623.38 million to farmers for monsoon, winter and pre-monsoon in 2016-2017. Development loan has issued 3613.52 million in 2016-2017. To achieve the MADB's objectives the operational guidelines are adequate supply of credit to the client, to provide credit timely, to seek full recovery of loans, to enable farmers for investment through saving, to help to become debt-free farmers and to make bank self-replying.

Therefore, this paper explores the credit accessibility and other factor that effect the loan on farm's performance. This paper examined as the study area Ngaputaw Township through questionnaire survey and determined preferable factors are to identify the credit accessibility of farmers in Ngaputaw Township and to analyze the effect of Loan on farm performance in Ngaputaw Township.

To undertake this objective, the 120 respondents are sampled by using two stage random sampling to get the required data. According to the results, most farmers fall within the age level 26 to 45 years old and half of farmers in total sampled are primary education level. Most of respondent's family member are less than five members. Regarding the farming experience, agriculture working experience less than 20 years the is the most. Most of the own paddy production acre was less than 20 acres and the most types of paddy was KoutKyi and Paw Sann by interviewing. Average paddy yield per acre is around 70 bushels per acre. Sources of finance for borrowing the farmer in Ngaputaw township may be choosing from five finance sources namely government agricultural bank, private bank, microfinance, friend and relative and another informal money lender. Most of farmers are using government bank and the second one is micro finance.

To analyze the effect of credit accessibility on farm performance, sample linear regression model is used to analyze the effect of loan on farm's performance in Ngaputaw Township. The regression results revealed that the interest rate, collateral, and credit period are key variables that significantly affected the farm performance of the Ngaputaw Township. The most obvious finding from this model collateral requirement is a key determinant affecting for agricultural credit. The results suggest that the rural households who have required document evident for own land for borrowing money getting approval for their credit provided by formal organization especially government loan. In addition, the regression model shows that interest rate is higher possibility of effectiveness in their paddy yield. In term of collateral requirement, interest rate, and credit period are highly influencing the farm performance. Therefore, these three factors are directly related the paddy yield of the farmer in Ngaputaw townships.

To analyze the effect of other factors on farm performance, multiple linear regression model is used to analyze the effect of other independent factor namely quality input, use of modernized machine, use of qualified worker, and experience of farming on farm performance. The regression output revealed that the quality input, use of qualified worker, and experience of farming are key variables that significantly affected the farm performance of the Ngaputaw Township. The most obvious finding is that experience of farming is a key determinant affecting of the farm performance. There is no doubt to argue because increase in farming experience raises human knowledge and skill to adapt to new farming techniques which increase their efficiency of production. The results suggest that the farmers in Ngputaw Township, qualified worker they are facing difficulty in getting qualified worker. In addition, the regression model shows that efficient quality inputs are higher possibility of effectiveness in their paddy yield. In term of quality input, qualified worker, and experience of farming, regressions exhibit a positive significant variable influencing the farm performance. Therefore, these three other significant factors are directly related the paddy yield of the farmer in Ngaputaw Township.

On the whole, farm performance is determined by paddy yield. Increase paddy yield based on interest rate, collateral requirement, borrowing money received sufficient length of credit period is the main statements. Other factor namely quality input, and experience of farming are found to be effectiveness of paddy production.

5.2 Recommendation

After reviewing the result findings, the recommendation and suggestions are presented for credit accessibility and influencing on the factors of the farm performance.

According to the results of the study, the farmers face with not qualified workers. Therefore, the farmers should use advance agriculture technical methods from getting loan instead of using farm labour. Other then, farmers are needed to be a lot of opportunities to improve the application of agricultural technology and techniques. Farmers currently lack the knowledge of modern agriculture practices for a wide variety of crops. Therefore, government not only provide farming loan but also should provide training to improve their knowledge for using modern agriculture and using fertilizer and chemical at critical point.

Secondly, most of the selected study area, all borrower farmers will get their respective loan for next farming season only when each borrower member of the village repays the loan the get before. That's why, all farmers do not get loan in time from MADB because some borrowers are often late to repay their loan. Even though some borrowers repay their loan in time, they will not be able to get their loan if one of the borrower members of the village repay lately. Thus, this credit system has a fundamental weakness. Farmers who do not have their own farmland do not get loan from some organization. Therefore, they do not use adequate quality seeds, reliable fertilizer and pesticides, etc. Financial organization should assist to improve their social-economic. A few farmers find it difficult getting credit from some organization. This procedure should be simplified and made farmer friendly.

Thirdly, in the surveying process, most of the farmers are answered the structured questionnaires through face-to-face interviews, it may have little bias on their answers because most of the farmers are uneducated. Therefore, government is to educate the farmers in rural areas to boost the future agricultural productivity and using quality seed, modernize farm machine and newest farming technique. If the government implements development of agricultural mechanization in the region as part of revitalization efforts for farmland, it may able to increase quality production. Myanmar agriculture subjected to high risks because of the volatile nature of factors involved. Not only the government is to play a major role in providing support to farmers with substantial intervention but also the giver facilitation is essential for sound agricultural development.

Nowadays, Myanmar agriculture sector needs the knowledge and infrastructure especially in the rural areas. Farmer need to know modern farming technique and information on the global supply and demand conditions. The government should instruct modern agricultural techniques, support modern agricultural machine to rural farmers. The government should encourage participation and provide incentives for farmers to save and recycle the funds.

5.3 Need for Further Study

In preparation of this research, there has limitation of time and some of difficulties. Therefore, the scope of data is limited to collect the farmers in Ngaputaw Township. Selecting sample is very important and selected samples can represent the whole population in reality. This study only focused on credit accessibility and effect of farm performance in Ngaputaw Township. The study area covers Ngaputaw Township only. Thus, the result for the study may not reflect the overall situation in Myanmar. Only paddy crops have been taken in to consideration. Different research method may take place the various results on the research study.

This research cannot be specifically explored farmer's loan usage for farming. Prices of paddy product and their benefits are lacking in this study. It is due to time constraints to conduct more area in survey as well as to collect more randomly selected farmers. The research was limited by time and resource constraints and the researcher would like to suggest that a further detailed study on the exploration of small farmers' credit perceptions and preferences at the regional or possibly national level be undertaken.

QUESTIONNAIRE

EFFECT OF CREDIT ACCESSIBILITY ON FARM'S PERFORMANCE IN NGAPUTAW (AYERWADDY)

FORE WORD

(i) I guarantee the information is for academic use only, not commercial.
(ii) The name will never be revealed in any of my study.
(iii) The researcher asks for your cooperation for the success of this study.
(iv) I assure I will share the result that I get with you in the end.

INSTRUCTIONS

There are two sections of answering questions.

I. Questions which require you to put tick to the box provided.
II. Question which required you to express yourself.

(a) Please answer all questions as instructed.
(b) All your answers are treated as confidential.

Village Name…… **Date of Interview …….**

I. Influencing Factors on credit Accessibility and Farm Performance

Part (A)

Demographic Factor

1 Respond Name ……. Male/Female…….....

2 Head of Family ……. Occupation …….....

4 Ages (Year)

<25 (…….)

26-45 (…….)

46-65 (…….)

66-67 (…….)

5 Education

Primary (……..…...)

Middle (…….....)

High School (…….....)

Graduated (…….....)

6 Marital Status Single (…….) / Married (……)

7 Household Member (…….)

8 Agriculture Worker (…….)

9 Farming Experiences (Years) ……

10 Farming Acres (i) Own……acres (ii) Rent…….……acres

11 Type of paddy ……

Part (B)

Credit Accessibility

II. Please to put tick to the box provided the following statement.

(1= strongly disagree, 2= disagree, 3 Neutral, 4= agree, 5 = strongly agree

1- Interest rate	**1**	**2**	**3**	**4**	**5**
Saving interest rate is most important factor when I borrow money					
The interest rate is acceptable for me					
I can pay the interest in time because interest rate is affordable for me					
The interest expenses are not pressure for me					
Income from loan is well cover its interest cost					
2- Collateral	**1**	**2**	**3**	**3**	**5**
Collateral is not important when I borrow money					
The sources of finance are need to collateral but I am able to pay it					
When I borrow money from finance sources, collateral is no worry for me					
Some sources of finance are no need to collateral					
3- Credit coverage	**1**	**2**	**3**	**4**	**5**
Amount of borrowing money is cover to spend the farm's inputs.					
Credit coverage for farming is most important factor but mostly is coverage for me					
The receiving loan amount is sufficient to grow up the paddy.					
Some lenders provide sufficient loan amount for farming					

4- Credit period	1	2	3	4	5
The credit period covers up to harvesting period of paddy					
Credit period covers for selling the paddy with favorable price					
Credit period is acceptable for me					
Money lender are provided loan to me with enough time					

Part (C)
Other influencing factors on firm performance

Use quality inputs	1	2	3	4	5
Utilization of high quality input are increasing farm productivity					
The use of pure seed paddy provides for good performance of firming					
Used of modernized firm equipment, the productivity of paddy is increase					
To increase productivity of crops, adopting relevant methods and farming input					
Qualified Worker	**1**	**2**	**3**	**4**	**5**
To increase productivity of crops, the important factor is use of qualified workers					
I have qualified worker from my family members					
Qualified agriculture workers can get easily in time when cultivate farm					
Qualified agriculture workers can well perform to increase paddy yield when cultivate farm					

Using modernized faring equipment	**1**	**2**	**3**	**4**	**5**
I can buy modernized farm equipment because I can borrow money in different sources					
I can buy modernized farm equipment because I can borrow sufficient money with fair interest rate					
I can buy modernized farm equipment because I can borrow sufficient money without paying collateral					
I can buy modernized farm equipment because I can borrow sufficient money					
I can buy modernized farm equipment because I can borrow money with sufficient length of credit period					
Experience farming	**1**	**2**	**3**	**4**	**5**
To increase productivity of crops, the important factor is use of sufficient experience for farming					
I have sufficient experience for farming					
My general workers have also sufficient experience for farming					
My family members have sufficient experience for farming					
All of us have sufficient experience for farming					

Part (D)

Farm Performance

Productivity of Paddy	**1**	**2**	**3**	**4**	**5**
The paddy yield is increased in this year					
The paddy yield is gradually increased within seasonal periods					
The increasing paddy yield depends on getting loan easily					
The paddy yield is concerned good credit accessibility					
The increase paddy yield based on using quality of inputs, modernized machines, sufficient labour and experience of farmers in farming					

Thank You

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Collinearity Diagnostics[a]

Regression (Accessibility on Productivity)

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Farm performance[b]	.	Enter

a. Dependent Variable: credit accessibility

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adj: R Square	Std. Error of the Estimate	Durbin-Watson
1	.824[a]	.679	.598	.414	1.617

a. Predictors: (Constant), credit accessibility

b. Dependent Variable: farm performance

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.788	1	3.788	425.617	.000[b]
	Residual	1.788	199	.0089		
	Total	5.576	120			

a. Dependent Variable: farm performance

b. Predictors: (Constant), credit accessibility

Coefficients[a]

Model		Unstandardized Coefficients		Std: Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.970	3.119		1.273	.214
	Credit Accessibility	1.182	.683	1.050	4.440	.004

a. Dependent Variable: Farm performance

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	4.76	4.85	4.80	.020	30
Residual	-.848	.242	.000	.406	30
Std. Predicted Value	-2.075	2.372	.000	1.000	30
Std. Residual	-2.052	.586	.000	.983	30

a. Dependent Variable: Farm Performance

Regression (Effect of Other Factor on Farm Performance)

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	Quality input Use of modernized machine, Use of qualified worker, experience of farming[b]	.	Enter

a. Dependent Variable: Productivity

b. All requested variables entered.

Model Summary[b]

Model	R	R Square	Adj: R Square	Std. Error of the Estimate	Durbin-Watson
1	.835[a]	.712	.698	.36760	1.865

a. Predictors: (Constant), Quality Input
Use of Modernized Machine, Use of sufficient labour, experience of farming

b. Dependent Variable: Productivity

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	91.292	3	30.43	95.538	.000[b]
	Residual	36.928	116	0.318		
	Total	128.22	119			

a. Dependent Variable: Paddy yield

b. Predictors: (Constant), quality input
Use of modernized machine, Use of qualified worker, experience of farming

Coefficient

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.528	.133		33.965	.000
	Quality Input	1.254	.047	1.020	26.680	.000
	Use of Modernized machine	.987	.127	.771	7.772	.026
	Use of qualified worker	1.570	.122	.865	12.869	.006
	Experience of Farming	1.285	.152	1.001	8.45	.004

Collinearity Diagnostics[a]

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions	
				(Constant)	Motivation
1	1	1.997	1.000	.00	.00
	2	.003	26.190	1.00	1.00

a. Dependent Variable: Paddy yield