CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical framework

2.1.1 Concept of Effectiveness

Generally effective means success or ability to achieve goals. Effectiveness analysis is a component of the overall processes such as mobilization of inputs, organization of necessary activities, production of outputs and achievement of desired outcomes. The connection of these microfinance elements is shown in Figure 2.1.
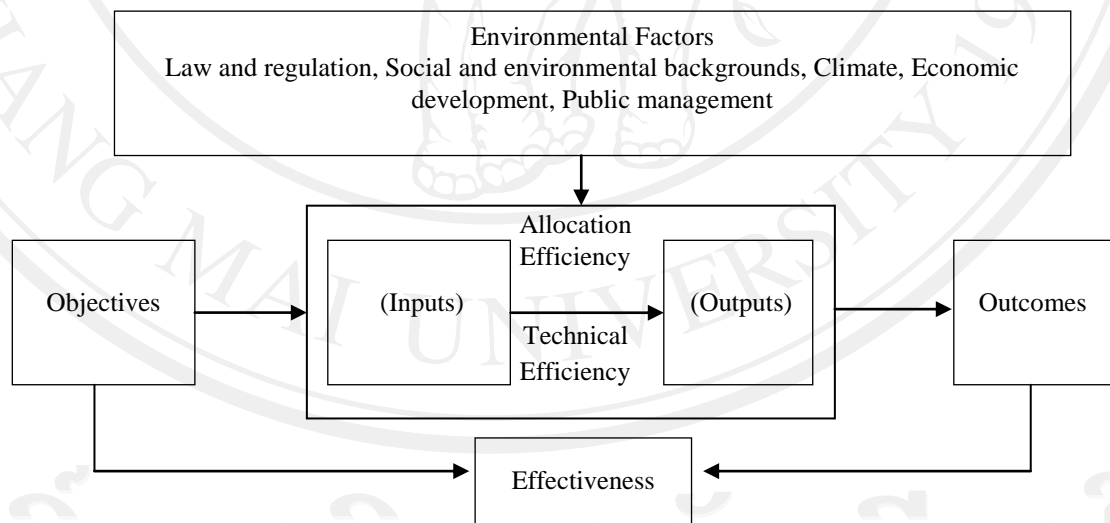
Figure 2.1 Efficiency and operational effectiveness of the organization.

In Figure 2.1, the effectiveness relates to inputs or outputs and connects to the last successful objective called outcome. Since most outcomes link to welfare and growth

purpose, there are many exogenous variables that are called environmental factors as well as productivity factors. Sawasdisalee (1996) used the term of effectiveness and efficiency, as well as explained and classified the effectiveness into 2 types. The first is cost effectiveness, being the relationship between the cost or used resource and outcome. It is a measure of the value of the investment so they can be evaluated in terms of money. On the contrary, if the value of the investment cannot be appraised in terms of money the effectiveness can be explained in terms of the description. Secondly, there is the relationship measurement between outputs and desired objectives. This effectiveness measurement disregards resources or used cost and has many measurements such as consumer satisfaction.

For effectiveness measurement, Mahanon (1986) broadly distinguished the approaches as follows :(1) Goal approach. This effectiveness measurement is based on methods and objectives of the organization including productivity, flexibility and lacking of pressure and expostulation that relate to or are relevant to organization goals. (2) System resource approach. This measurement avoids some of the weaknesses and deficiencies in objective evaluation by disregarding organization goals, but uses an environmental system model based on the fact that organization is an open system which relates to exchange and a competition environment instead. Therefore, effectiveness is a beneficial pursuit for the environment, especially for rare and valuable resources. The most effective organization is in the right position of both bargaining and application. (3) Multiple criteria of effectiveness. This approach is widely accepted both academically and in application for organization effectiveness measurement, and the criteria are productivity and productivity measurement, characteristics of organization measuring

from organizational atmosphere and operational competency, and production performance scaled by cooperation, development and operation.

2.1.2 Concept about efficiency

The study of financial institution efficiency has expanded rapidly in the twentieth century. Both efficiency and inefficiency are evaluated in many way such as stochastic frontier analysis (SFA) and data envelopment analysis (DEA). Most of the analysis of financial institution efficiency in developing countries is based on the DEA method.

The efficiency analysis by nonparametric approach, DEA method does not depend on frontier function, but on the linear combination between inputs and output that envelope entire samples of data. Therefore, this method avoids misspecification problems (Miller and Noulas, 1997; Resti, 1997; Fried el al. 1999). The DEA concept involves a decision making unit (DMU) using different *n* inputs to produce *m* outputs. The relationship between inputs and output is measured in terms of the ratio of weighted output to weighted inputs and variable return to scale (VRS), because DMUs do not produce at the optimal scale or under imperfect competition, or government regulation or financial restriction (Coelli et al. (2005)).

In addition, DEA also has an advantage in that it provides a decision for DMU with many outputs produced by many inputs which is superior to SFA, which applies only a single output. Even though DEA has many advantages and is easy to implement on a small sample study, researchers should pay attention to model selection according to the objectives of production which are divided into two sides. They are output-oriented being restricted input and input-oriented being restricted required output (Coelli et al. 2005).

However, another interesting feature of this approach is to allow for production comparison among different inputs, and DEA score, implying production efficiency, is easy to analyze by standard econometric techniques. In addition, efficiency scores obtained from DEA are also used to analyze the factors affecting the efficiency as well (Miller and Noulas, 1996; Resti, 1997; and Fried et al., 1999). A Simple concept of the DEA method in mathematics is that the efficiency of DMU that uses *n* different inputs to produce *m* output is measured by the ratio of weighted output to weighted inputs. The technical efficiency score ranged from 0 to 1. In linear programming that describes the DEA, it must be assumed that there is a constant return to scale (CRS) or variable return to scale (VRS). The concept of the DEA of single input and output is shown in Figure 2.2.
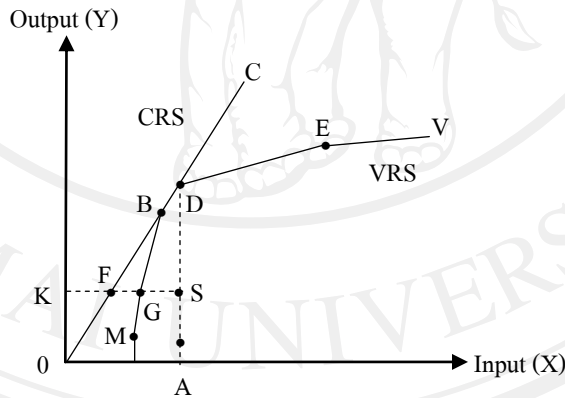

Figure 2.2 DEA Frontier**.**

In Figure 2.2, under the CRS, assumption the frontier curve is OC, while under the VRS is MGBDEV curve. In estimation, efficient score of DMU obtains form Euclidean distances from the frontier and axis. For example, the DMU B and D are on the frontier meaning that both DMU are efficient whereas DMU S and T are in efficiency because they are not on the frontier. Consider at point S using an input at the same level

as D but producing a lower yield. By comparing point S and F or G, it is clear there is the same level of output, S, but applies more inputs. In economic perspective, the efficiency is based on the shortest distance from S to the point on the frontier curve.

However, this method is rather difficult due to technical reasons. Therefore, most studies have focused on the basic objective of either an input-oriented approach or an output-oriented approach (Staton (2002)). For example, suppose our consideration based on the CRS frontier, the efficiency estimation which puts emphasis on the input-oriented approach for DMU S is calculated by the ratio of the distance between KF and KS. It is the ratio measurement between the input used with the same output level. On the contrary, if the output-oriented approach is applied, the efficiency for DMU S is estimated by the AD/AS ratio.

2.2 Literature review

2.2.1 Quality of life of farmer households

Sustainable well-being of farm households is considered in four areas: value of property, capital assets, physical features and human capital, of which the household must have a sufficient level for surviving under unusual circumstances such as disease outbreaks or drought (Chambers and Conway (1992)). These variables affect the quality of life of farmers as well: demographic variables (age, gender, household size, number of people working on the farm), biological variables (abundance of forest and soil quality), and natural resource variables such as wood and products from the forest, and water (Walker and Homma, 1996; Homewood, 2004; Ezra and Kiros, 2001).

2.2.2 The role of saving group in poverty problem

Savings groups have an important role in poverty troubleshooting because they are funding resources for low-income borrowers in order to invest in their career (Aubert, 2009). This helps to promote household employment (Zeller, 1999) and is a source of funds for the agricultural sector (Gondon, 2009), so the yields and farm income increase, and the poverty of the agricultural household decreases (Morduch, 1995; Khandker,2003). Lending of saving groups made investment distribution to the rural area and causes increase in household income (Morduch, 1995). It also helps to improve the quality of life by allocating a portion of profits to establish a welfare fund in order to help its members who suffer from catastrophic events such as natural disasters (Hiattand Woodworth, 2006; Hisako and Kobe, 2009). This role has a significantly impact on the economic growth of the country and can be significant used as a tool in the recovery from the economic downturn (Weiss et al., 2003). For this reason, governments in many countries (especially in Africa) use them as a tool to solve household poverty problems particularly in agriculture sector (Kevane, 2001). Many countries are successful in implementing form this policy such as Bangladesh, Ghana, Africa county group and some countries in Asia, Malaysia and China. However, if the government wants to use the savings groups as a means of breaking the cycle of poverty, the government must not interfere in the operations of the saving group (Morduch, 2000).

Apart from the role of economy, saving groups plays a social role by reducing disparities or social inequalities (Zeller, 1999). An obvious example is the operation of Grameen Bank in Bangladesh that can reduce social inequality, especially the housewife can have an equal role with the man. In addition, this organization creates career

opportunities and education to the disadvantages in both urban and rural areas (Hartarska, 2005).

In the case of Thailand, even though saving group operation has an objective to enhance the well-being of poor households by supporting them in order to access financial resources with the lowest restrictions possible, such as low interest rates or not requiring collateral, the poor benefit from membership less than a group of people who are economically and socially privileged, because most of the administration depends on the latter group (Menkhoff and Rungruxsirivorn, 2010).

2.2.3 Effectiveness of the savings groups

The saving group operation has a high impact on the household level. A study of Pakistan clearly pointed out that the income and property of a household being a member of a saving group is higher than one without a membership. Since they can get a low-interest loan for their career particularly in agriculture and small enterprises, the status of poor people is better, and also migration decreases (Mahmood, 2009). As a result of high employment opportunities and the reduce in the burden interest, Manning (2001) pointed out that savings groups enhance household income. In order to evaluate the saving group performance, the assessment tool is DEA such as in the work of Godwin (2004) and Marek (2009).

2.2.4 Farm household production efficiency

The production of agricultural households has more or less efficiency depending on various factors. The characteristics of the household, namely the age of householder and agricultural household member, has a significant effect. (Ajibefun et al.,

1996; Chirwa, 2007; Coelli, 1996). The education level of agricultural household members has a positive effect on the production efficiency of the agricultural household (Coelli, 1996; Chirwa, 2007; Omonona, 2010; Saima et al., 2010). However, there is the argument of Bates et al., (2010) that found that the level of education has no effect on the production efficiency of the agricultural household, but family size (Battese et al., 1996; Nyemeck et al., 2001) and long farming experience have positive impacts to the production efficiency (Ben, 2000; Saima et al., 2010; Wilson et al., 2001). In contrast, the study of Bates et al., (2010) found that the long farming experience of an agricultural household does not impact production efficiency.

2.2.5 Factors affecting the efficiency of agricultural households

The production factors of agricultural households discovered that a large farming area or large farms can increase production efficiency and establish increasing return to scale (Coelli, 1996; Tadesse, 1997; Chirwa, 2007; Jabbar and Akter, 2008; Wilson et al., 2001; Saima et al., 2010). On the other hand, if a household divides land into small sections by reducing the planted area, it will cause inefficiency because of the waste of input resources. In the case of farm location, particularly the distance between habitat and farm and between farm and output distribution center have negative impacts to production efficiency (Bates et al., 2010; Lyubov and Jensen, 1998; Binam et al., 2004). Labor used in the household (Omonona et al., 2010) and labor used the suit the production can enhance production efficiency (Bates et al., 2010; Lyubov and Jensen, 1998; Ajibefun et al., 1996). However, the migration of agricultural workers to work in the city has negatively affected the efficiency of the agricultural household. The modern

production technology of households (Chavas et al., 2005; Seyoum et al., 1998), having significant inputs on their own such as seeds, fertilizers and pesticides (Omonona et al., 2010; Bates et al., 2010; Saima et al., 2010), number of growing or producing each year (Saima et al., 2010), the household agricultural production in a systematic way (crop rotation each season) (Binam et al., 2004), agricultural households assisting each other in production (Nyemeck et al., 2001), integration to farming in order to bargain with capitalists (Binamet al., 2004), and agricultural price factor are all factors that significantly affect the production efficiency of agricultural households (Omonona et al., 2010).

2.2.6 Factors affecting the performance of saving group

The level of efficiency of operational saving group depends on the following factors. The first category of can be classified as factor institutional factors. The previous studies clearly indicated that the skills and knowledge of the committee are the most important factor to the operational efficiency of saving groups (Josefson, 2004; Nieto, 2004). A subordinate factor is the camaraderie of it members. Since a saving group loan a loan without collateral, it depends on the camaraderie and faithfulness between members. The integrity of the members is also an important factor for the loans (Casson, 2006). In addition, the following institutional factors all influence saving group performance: a monitoring system between members such as whether use the money is used as intended (Hermes, 2005), participation of members in management such as rules and policy regulation (Westover, 2008), strengthening cooperation within the saving group by as the participants to expressing their views is the development group (Hartarska, 2005),

standardized and systematical management that can be checked at any time (Arun, 2005), operating with transparency and having mechanism to monitor performance in order to build member confidence (Nieto, 2004), reasonable and consistent policy that meets member needs (Harrision, 1998; Casson, 2006; Zeller, 2011), appropriate and sufficient financial services for member needs such as fast and convenient financial service development for the member needs. In addition, the financial liquidity will affect the saving group efficiency.

The second group of factors are the economic factors which are classified as (1) a member which is composed of investment patterns of members who loan from the saving group and whether their loans are consistent with the economic and social environment (Westover, 2008). This factor affects investment return as well as income received from investment (Hudonand Traca, 2006), and influence on the consumption level of members causes income from returns to determine the level of consumption (Harrison, 1998; Thapa, 2005). Furthermore, the previous research found that the cost of living is another important factor because it affects the level of household saving (Thapa, 2005). (2) In the case of the saving group, that composes of the amount of saving group capital (Hartarska, 2005) and grants and donations from outside organizations particularly private organizations, that usually grant fund without any interest (Herme, 2005). In addition, because of the lower operational cost factor, the saving group profit is higher, and the capital cost of operations is not increased. Consequently, saving groups have flexibility to determine the rate of interest to members. The profit of a saving group reflects its operational efficiency (Masanyiwa, 2008; Westover, 2008). The previous studies found that saving groups charged members lower loan rates than financial

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institutions. (Casson, 2005; Adbul, 2006; Manos and Yaron, 2007). (3) The external factors are composed of the economic structure of society, basic infrastructure (Hartarska, 2005), and the economy (Hartarska, 2005). These factors affect the investment of members. Government policies will also affect the performance of the saving group. If such policies interfere in the saving group administration, the group makes management decisions in the absence of independent operations. This includes regulations related to the operation of the group (Hartarska, 2005; Adbul, 2006).

The final set of factors are social factors which comprise of the generosity and compassion of people in their society. This factor is social capital and is necessary for financial integration (Vanroose, 2008). The traditions and culture of the community are supporting factors for the solidarity of the members (Casson, 2005; Thapa, 2005; Vanroose, 2008). The prejudice against women also affects the operational efficiency of saving groups.

The efficiency score of the savings group operation (TE_{MFI}) is estimated using DEA. Most of the former studies indicated that this method is used to evaluate the performance of banks (Gutierrez-Nieto et al., 2007; Yaron, 1994). However, very rarely do is this method applied to evaluate the operational efficiency of a saving group.