CHAPTER 1

INTRODUCTION

1.1 Background to Research

Contrary to most beliefs about co-operative, it is an organization with a long history. As noted by historians, there were co-operatives operating in Europe and North America in the 17th and 18th century (Roy, 1981). The modern co-operative movements were propagated by the famous Rochdale Pioneers Society in England in the 19th century (Zeuli & Cropp, 2004). Throughout more than a hundred years of existence, these organizations had also gone through various changes and development.

In relation to development, co-operatives have long been regarded as a mechanism for growth and development by social philosophers, economists and policy makers around the world. This is evidently clear as co-operatives were encouraged and nurtured by people who believe in co-operatives' aspiration and philosophy. Today these organizations are found in nearly all countries from the developing nations of Asia, Africa, and South America to the industrial countries of Europe and North America. According to the International Co-operative Alliance (ICA) statistical information on co-operative movement, over 800 million people are members of co-operatives around the world (ICA, 2010).

1.1.1 Characteristics of Co-operative Organization

It is important to understand the meaning of co-operative before further discussions on the characteristics of co-operative is undertaken. Although there is no single universally

accepted definition of a co-operative, following the commonly used definition given by ICA, Co-operative Information Report 55, 1997, it is said to be "a business owned and democratically controlled by the people who use its services and whose benefits are derived and distributed equitably on the basis of use."

In this definition, co-operative is referred to as business that stresses on usage and distribute benefits (profits) on the patronage basis. The connotation is slightly different in the case of Malaysia. In Malaysia, co-operative is a registered organization under the Laws of Malaysia, Act 502. One commonly used definition of a primary co-operative based on the Malaysian Co-operative Societies Act 1993 is as follows:

> "A co-operative society which consists of individual persons only and which has as its object the promotion of the economic interest of its members in accordance with co-operative principles …." Co-operative Societies Act 1993, p. 14.

Note that this definition stress on members' economic as the core purpose of co-operation. Another internationally recognized definition is according to the Statement of Co-operative Identity (ISCI) by the ICA. ICA definition of co-operative is as follows:

> "A co-operative is an autonomous association of persons united voluntarily to meet their common economic, social and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise."

Voluntary membership and democratically control organization structure are important elements in the ICA definition. This definition has also been used by the Malaysian co-operative movement. Regardless of whatever definition to adhere, a co-operative can be described as a non-governmental, independent, autonomous organization with democratic structure which has been promoted by their own members on their free will to meet their social and economic needs.

From the point of view of a business enterprise, in many aspects co-operatives are similar to other businesses as they may have similar facilities (such as offices, buildings, factories, vehicles and others) to undertake their businesses, may undertake similar functions (such as marketing, purchasing, retailing and others) and follow good business practices. However, co-operatives differ from other businesses in their purpose (Roy, 1981; EuroCoop[1], n.d.) at least in four aspects which is in the establishment, ownership, control of co-operative and distribution of net earnings. Co-operative is organized or established when there is an interest and the need for it to function by group of people in a community. In the case of Malaysia, its application and registration need to be approved by Malaysia Co-operative Societies Commission's executive Chairman who is the registrar-general of co-operative and must meet the requirement of the co-operative law (Law of Malaysia, 2012).

A co-operative belongs to every member regardless of the amount of shares the member owned. Co-operative members select and elect their representative among themselves to be the Board of Directors (BOD). BOD is the governing body of the co-operative entrusted and given mandate to manage the affairs of co-operative by members. Co-operative share is different from the private company's share. The ownership and control in co-operative is not link to the amount of share ownership or capital contribution practiced in profit motive private businesses. Co-operative net earnings are returned to member patrons based on their patronage. Members also received dividend on share ownership. These four aspects are being influenced by co-operative values and principles and are reflected in the way co-operatives do their business.

[1] Euro Coop is European Community of Consumer Co-operatives, www.eurocoop.coop

1.1.2 Co-operative Values and Principles

Co-operatives are based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. Following the tradition co-operatives' founders, co-operative members believe in the ethical values of honesty, openness, social responsibility and caring for others. Besides these values, co-operatives are also unique as these organizations are based on a timeless and universally valid set of principles. These principles were inherited from the Rochdale Pioneers which were actually based on co-operative business practices (Roy, 1981). These distinctive principles followed by today's co-operatives are important as it became a factor that distinguishes co-operatives from other forms of organizations.

As stated in the Malaysia Co-operative Societies Act 1993, the workings of a co-operative must be guided by these principles. Ungku Abdul Aziz Abdul Hamid (1967) had stressed on the importance of these principles to the co-operators and supporters of the movement, as he put it:

> ……"the co-operators and potential supporters of the movement in Malaysia must be inspired by ideals and philosophical principles that are in harmony with their own social way of life and their own experience" (p.28).

The International Co-operative Alliance (ICA) has undertaken three reviews of the principles in 1937, 1966 and 1995. The reviews are steps to modernize, maintain its relevance and provide an up-to-date test of whether the organization is qualified to call itself a co-operative (ICA, 2008).[2] Birchall (2005) believes that from inside the movement this was an attempt to revitalize and give future direction to the co-operative

[2]ICA is International Co-operative Alliance, http://ica.coop/

whilst from the outsider's view it appears to be efforts to develop a global 'brand' or co-operatives.

The current "Statement on the Co-operative Identity" was adopted at the 1995 Congress and General Assembly of the International Co-operative Alliance, held in Manchester to celebrate the Alliance's centenary. Recommended to the Congress by the ICA Board, the Statement was the product of a lengthy process of consultation involving thousands of co-operators around the world. The process was chaired by Mr. Ian MacPherson of Canada, who prepared numerous drafts of the Identity Statement and its Background Paper in an effort to understand the state and needs of the co-operative movement at the end of the twentieth century. Co-operatives all over the world observe these seven universally accepted principles:

1. **Voluntary and open membership**

Co-operatives are voluntary organizations, open to all persons able to use their services and willing to accept the responsibilities of membership, without gender, social, racial, political or religious discrimination.

2. **Democratic member control**

Co-operatives are democratic organizations controlled by their members, who actively participate in setting their policies and making decisions. Men and women serving as elected representatives are accountable to the membership. In primary co-operatives members have equal voting rights (one member, one vote) and co-operatives at other levels are also organized in a democratic manner.

3. Member Economic participation

Members contribute equitably and democratically control the capital of their co-operative. At least part of that capital is usually the common property of the co-operative. Members usually receive limited compensation, if any, on capital subscribed as a condition of membership. Members allocate surpluses for any or all of the following purposes; developing their co-operative, possibly by setting up reserves, part of which at least indivisible; benefiting their members in proportion to their transactions with co-operative; and supporting other activities approved by the membership.

4. Autonomy and Independence

Co-operatives are autonomous, self-help organizations controlled by their members. If they enter into agreements with other organizations, including governments, or raise capital from external sources, they do so on terms that ensure democratic control by their members and maintain their co-operative autonomy.

5. Education, Training and Information

Co-operatives provide education and training for their members, elected representatives, managers, and employees so they can contribute effectively to the development of their co-operatives. They inform the general public-particularly young people and opinion leaders-about the nature and benefits of co-operation.

6. Co-operation among Co-operatives

Co-operatives serve their members most effectively and strengthen the co-operative movement by working together through local, national, regional and international structures.

7. Concern for the community

Co-operatives work for the sustainable development of their communities through policies approved by their members.

1.1.3 Co-operatives in Malaysia

Co-operatives were first introduced in Malaysia 90 years ago by the British colonial masters. A movement with unique characteristics and historical background, it naturally has had an impact on the Malaysian economic development. With continuous yearly increase in the number of co-operatives since its introduction, there are 9,074 co-operatives registered at end of year 2011. The movement have 7.04 million members, share capital amounting to RM10.49 billion, total assets worth about RM92.8 billion, turnover of RM23.09 billion and profits of RM2.62 billion (Malaysia Co-operative Societies Commission, 2012). Within the 2005-2009, the average growth of co-operatives is at 4.7 percent, membership at 4.7 percent, share capital at 8.2 percent, asset growth at 20.8 percent and turnover growth at 17.0 percent. From 2009 to 2011, the average growth of co-operatives, share capital, assets and turnover had increased. Utilizing the movement assets, capital and supported by 7.04 million members and non-members, co-operatives had been able to undertake activities contributing to economic growth and wellbeing.

Credit and banking co-operatives played the most active function contributing 64 percent to the total co-operatives turnover in 2009. There are 575 credit/financial co-operatives and 2 co-operative banks servicing 2.8 million members. The biggest contributor to the financial strength of the movement is Bank Kerjasama Rakyat Berhad (Bank Rakyat). The biggest number of co-operatives is consumer co-operatives

where there are 1,681 adult consumer co-operatives and 2,115 school consumer co-operatives. Beside these, other types of co-operatives are the services, agriculture, housing, industry, construction and transport co-operatives.

In the Ninth Malaysia Plan, 2006 – 2010 (RMK-9) co-operative was identified as the third sector to generate economic growth apart from the public and private sectors. RMK-9 also states the approval of the Malaysian Co-operative Societies Commission (MCSC) to replace the present Department of Co-operative Development (DCD). MCSC was established under the Malaysia Co-operative Societies Commission Act 2007. The change is to ensure the Department's efficiency in regulating and supervision in the co-operative sector and to realize the co-operative full potential. MCSC is to play a significant role in the implementation of National Co-operative Policy. The direction taken by MCSC to intensify the co-operative development is by introducing a business development strategy which focuses on fostering and strengthening entrepreneurialship spirit among members and by revitalizing the co-operative financial service sector (Ministry of Entrepreneur and Co-operative Development, 2006).

Following the efforts taken by ICA in 2004 to boost public confidence about co-operative businesses and demonstrate the importance of co-operatives in the world economy, MCSC had announced the "100 Best Co-operatives Index" on the 20th July 2008. This index became a benchmark for all the co-operatives in Malaysia and the list of 100 best co-operative were revealed to the public. This index is similar to the ICA Global 300 list of co-operative ranking around the world. It is based on the co-operatives financial and organizational information. Among the active co-operatives, Bank Kerjasama Rakyat Malaysia Berhad was declared as heading the list of 100

outstanding co-operatives followed by Koperasi Permodalan Felda Berhad in second place and Koperasi Peserta-Peserta Felcra Berhad on the third spot. All these co-operatives are professionally managed co-operatives with competent managers and entrepreneurial experience. These co-operatives are aggressive, creative and had adopted business strategy good enough to compete with their competitors (MCSC, 2012).

1.2 Problem Statement

Studies by Zeuli & Cropp (2004), Birchall (2004), and Birchall & Ketilson (2009) had shown that co-operatives had operated in a highly competitive economy successfully and had been regarded by their members as a business with efficient and solid financial performances. Other studies by Taimni (2000) had concluded that in developing countries, co-operatives were conceived, designed and operationalized to play a part in the development of these countries. Gertler (2001) elaborates on the suitability of co-operatives as organization for sustainable development. Related to the issues of development, report from the World Summit for Social Development held in Copenhagen on the 6th – 12th March 1995, had recognised co-operative movement as an important contributor for promoting and supporting entrepreneurial development. Co-operative model of business enterprise had enabled people to reach their personal and community development goals in various developed countries such as U.S.A., Canada, Sweden and Japan.

However, despite having enormous potential and advantages, co-operatives seem to have also left indelible impression on a lot of people that co-operative is incapable of

playing any beneficial role in the economic development (Birchall, 2003). Adeler (2009) concludes that co-operative development in various countries around the world differs as it is related to the supportive environment, strength of sector's infrastructure and government's commitments.

In the case of Malaysia, co-operative role as an instrument of development are still ambiguous. Can co-operatives perform as well as the private enterprise? Co-operatives efficiencies are questionable and the movement is said to be confronted with issues related to financial, management problems and lack of professionalism among co-operative leaders and management (Ministry of Entrepreneur and Co-operative Development, 2006).

Today's co-operatives performance in Malaysia is being influenced by the huge and complex role assigned to them such as in the National Co-operative Policy and the various Malaysia Plans (e.g. 6^{th} - 9^{th} Malaysia Plans). Expectation placed on the co-operatives are high as they are supposed to be the third sector (after the government and private sector), play a vital part in reducing poverty and are given a specific place in the overall plans for the national development. Does co-operative movement have the capability and incentives to meet global challenges despite been given a lot of help and incentives from government? These are the challenges faced by the movement in Malaysia. Co-operatives in Malaysia are at a crossroads due to stiff competition and challenges from other institutions and organizations that are also expanding and developing rapidly with increased opportunities in and outside Malaysia.

Co-operatives are expected to play an effective role in helping the poor both in the urban and rural sector. The need to reach out to the poorest of the poor is still imperative

in Malaysia. It is recognized that an efficient co-operative movement in Malaysia can play this role in helping the poor. However, majority of co-operatives in the rural are not very successful, confront with financial problems and are still dependent on government support. They are far behind rural co-ops in the developed countries. The Agriculture based co-operatives under FOA had decreased from 1,484 (1974) to just 553 co-operatives (2005). Audit report 2004 had shown that about 30 percent of these co-operatives suffer financial losses.

The issues such as whether co-operatives are still relevant, able to maintain their integrity and continue to develop at the same pace, if not faster in the future thus contributing to the country's development process need to be address. Another important and crucial question to the co-operative future is whether they are efficient organizations. As agent of social and economic change for the masses of poor people they have to be efficient, effective and successful. Among the co-operatives in the movement, there are well managed, self-supporting and profitable co-operatives. Profitability ratio showed that slightly over 50 percent of co-operatives are generating profits.

1.3 Research Questions

In trying to achieve the proposed research objectives, the following questions are useful in conducting and guiding the research.

1. Are co-operatives still relevant in the country's development process?
2. How are the membership trends, attitudes and participation of members?
3. What is the efficiency and productivity growth of co-operative movement?

4. What is the co-operative bank financial position and performance?
5. What are the challenges in establishing co-operatives?

1.4 Research Objectives

Following the problem statement and research questions, the main objective of this thesis is to analyse the performances and efficiency of co-operatives in Malaysia. The main objective has been translated into four specific objectives in separate chapters. These specific objectives are as follows:

1. To review the co-operative movement and the co-operative role in the Malaysia development.
2. To investigate the co-operative members' participation and support.
3. To analyse the overall efficiency and productivity growth of co-operative movement based on membership target groups and measure the changes in productivity of the Bank Kerjasama Rakyat and other non-co-operative commercial banks in Malaysia and compare their relative efficiencies in the period of 2005 to 2010.
4. To undertake an action research and document the process of setting up three community co-operatives in three Marine Park Areas (MPAs) in Malaysia.

1.5 Research Design

Quantitative and qualitative research methods are used to carry out the co-operative performance investigation. Both the economic and social aspects of co-operative

contribution from various stakeholders are analyzed. This dual method had been suggested by many experts in research and had received increased interest by researchers (Blaxter, Hughes, & Tight, 1996; Creswell, 2009).

A study of the co-operative bank (the Bank Kerjasama Rakyat Malaysia Berhad) is deemed important as this co-operative bank alone is currently the biggest contributor to the movement. An analysis of Bank Rakyat's performance therefore is an important indicator of the movement's performances. A comparative efficiency level analysis of co-operative bank within a group of fourteen banks (13 other local non-co-operative banks) to enable a detailed and in-depth efficiency analysis, calculated relative to the banks observed best practice.

Following this method will provide a systematic way of looking at events, collecting data, analyzing information and reporting results (Ahmad Mahdzan Ayob, 2002, 2007; Flyvbjerg, 2006). A pragmatic and progressive qualitative research method based on an action research will further strengthen the analysis and produce the desired results in achieving the research objective.

Quantitative researches are as follows:

1. Presented in chapter 3 of this thesis is an investigation on co-operative members' participation, support and perception of their co-operative in Selangor and Kuala Lumpur.
2. Presented in chapter 4 of the thesis is DEA analysis of co-operative target groups and estimating the productivity change of Bank Kerjasama Rakyat Malaysia Berhad and other non-co-operative Commercial Banks using DEA Malmquist Productivity Index approach.

Qualitative researches are as follows:

1. A descriptive and historical analysis of the co-operative movement in Malaysia and its role in the economic development in chapter 2.
2. An action research reviewing the establishment of three community eco-tourism co-operatives in three Marine Park Areas in Redang Island, Terengganu, Tioman Island, Pahang and Tinggi Island, Johor in chapter 5.

1.5.1 Core Concepts and Research Framework

This research follows the co-operative core concepts which are related to the unique co-operative attributes which is different from the attribute of other similar organization. Co-operative is about the development of individuals who are their members, not against the others, but with others. Co-operative is an organization set up by members for their economic and social benefits. Therefore a co-operative value is related to the derived stream of economic and social benefits by its members.

A co-operative may not have profit as the main objective in fact profit can become the secondary objective (Bolger, 1985). Co-operative may have the goals of achieving the improvements of incomes and outputs while at the same time making changes in social structures, attitudes and beliefs. However, co-operative as a business entity cannot and must not abandon profit seeking. Furthermore, achieving social objective and fulfilling social responsibilities would be impossible if co-operative is financially unviable and unable to make profits in its operation.

Three key concepts in understanding co-operative are: 1. Control and ownership, 2. Structure, and 3. Objective. A co-operative is established, control and owned by

members. Its structure is democratic as the Board of Directors (BOD) are elected by members in their general meeting, members have the power to determine major policies through voting rights and each member has equal votes regardless of the amount of shares they owned. The democratic structure constitutes an important attribute as members are not only the owners, but are also patrons of the co-operative business (Mc Bride, 1986).

An important difference between co-operative with other business is the primary objective of members' welfare and other objectives are secondary. Helm (1968) believes that an individual's reason for establishing or joining a co-operative would be to gain economic and social benefits. In co-operative, the benefits of economic value are achieved by co-operative members when greater profits are obtained through pooling their financial resources, which leads to reduced costs through economies of scale and co-ordination. Benefits are also obtained from increased market power, resulting in fair or efficient price or through provision of markets, supplies of inputs, and services that are missing or in danger of being lost. Benefits of social value include all non-economic results or outcomes of interest or importance to members such as satisfaction experience through co-operation, unity, and involvement characteristic of member-controlled organizations. These benefits are very important. However, if co-operatives do not fulfill their economic purpose, in the long run they will be in no position to fulfill even non-economic purposes.

Co-operative membership holds the key to co-operative success. Its democratic member control principle (second principle in the ICA list of co-operative principles) ensured that a person is more important than the capital contributed to the co-operative. Members' involvement in co-operative is of utmost importance. Members' investment

in co-operative capital is not for the purpose of making quick profits as shares only receive a limited interest or dividend (third co-operative principle). Co-operative principle's also stressed on members' involvement and participations in all co-operative activities especially in business.

The co-operative principles ensure that co-operative performance depends on members' loyalty and satisfaction towards their co-operative. Following this, members' satisfaction towards their co-operative services for example will indicate how well the co-operative had performed. Performance is measured both from the economic or profit point of view and non-economic benefits such as members satisfaction and wellbeing.

A co-operative performance is influenced by member participation and supports as it rely on its members' for support in business and other activities. The different types of co-operative, functions, location (urban or rural) and membership will also contribute to the differences in co-operative performance. Therefore, characteristic of co-operative membership preferences and factors that influence member participation and support to co-operative are important factors to be investigated in this study. Studies had been conducted on the extent of membership affiliation, degree of activity in an organization and in degree of emotional commitment to an organization (Rogers, 1971).

In investigating co-operative performance, productivity and efficiency are very important concepts taken into consideration. The term efficiency refers to economic efficiency which arises from the usage of inputs or resources that maximizes the production of output (Coelli, Rao, O'Donnell & Battese, 2005). Similar to other firm, co-operative firm also uses input/inputs to produce output/outputs. Co-operative

outputs are goods and services produced by co-operative, rendered to members and the public.

Following their definition, measuring co-operative efficiency requires identification of co-operative input and output. It is also particularly difficult in the co-operative case due to the unique character of co-operative with both economic and social objectives. This means in the case of co-operatives, profits are pursued but at the same time social benefits are provided to their members.

In this study, physical inputs such as assets (RM millions), members equity (RM millions), liability (RM millions) and labour (can be represented by overhead expenses) hence are used to represent inputs. The outputs are revenue (RM millions), profits (RM millions), loans and deposits (RM millions).

Figure 1 explains the framework of research followed in this study. This research will begin with a review of the Malaysian co-operative movement and the role it played in the economy. This is followed by the second essay which investigates the co-operative members' participation and support towards their co-operative.

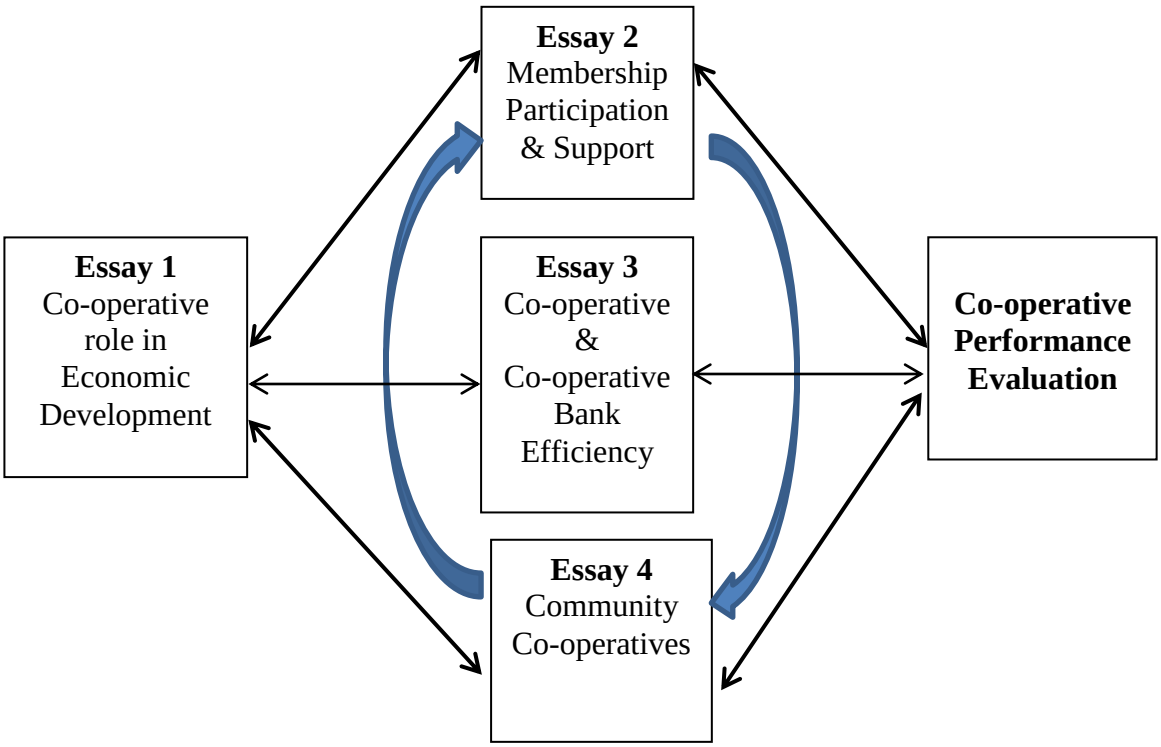

Figure 1: Research Framework

The third essay will focus on the analysis of the overall efficiency and productivity growth of the co-operative based on membership target groups and an analysis of the Bank Kerjasama Rakyat Malaysia Berhad. This co-operative bank has played a very important role in the overall Malaysian co-operative movement. This bank is compared to other local conventional and Islamic banks in Malaysia. As the bank's role is important, its performance will then have implications on the co-operative movement.

The practical concern of this research is about the people involved with co-operative or the members. Out of this concern, this research also adopts a qualitative research practice which is an action research approach in the fourth essay. The role of co-operative, steps involved in starting a co-operative and challenges faced by the community co-operative in each of three MPAs are central issues in this essay. This essay serves to validate the theories and empirical results obtained from previous

essays. Co-operative provides practical solutions to issues and problems faced by the Island community torn between conserving the environment and their own survival. It is a documentation of the real life experiences of organizing a community co-operative and the problems and challenges faced by these communities.

The performance of co-operative movement from an institutional perspective will be demonstrated through these four essays. The intent is to give a fair evaluation on the co-operative organization performance in Malaysia based on a broader perspective. This research framework follows many of the other co-operative studies in the literature such as studies on the role of co-operative in the market economies, effect of competition, participation, loyalty and globalization on the institution among others by Nilsson (1997); Novkovic (2008); Spear (2006); Zeuli & Bentancor (2005).

1.6 Positioning the Thesis

In the effort of achieving various objectives of this thesis, this study employs multiple methods, economic theories and thoughts which are related to various economic, sociological, developmental, managerial and new institutional economics (NIE). Williamson (2000), discussed in great length the NIE methods and conduct of institutional study. This thesis follows the two NIE propositions in conducting research;

1. The assumption is that co-operative and the movement's existence do matter, and
2. The determinants of institutions are susceptible to analysis by the tools of economic theory.

The four levels of social analysis as explained by Williamson (2000) are considered in the execution of the research. The levels distinguished the social analysis and can be explained based on Figure 2.

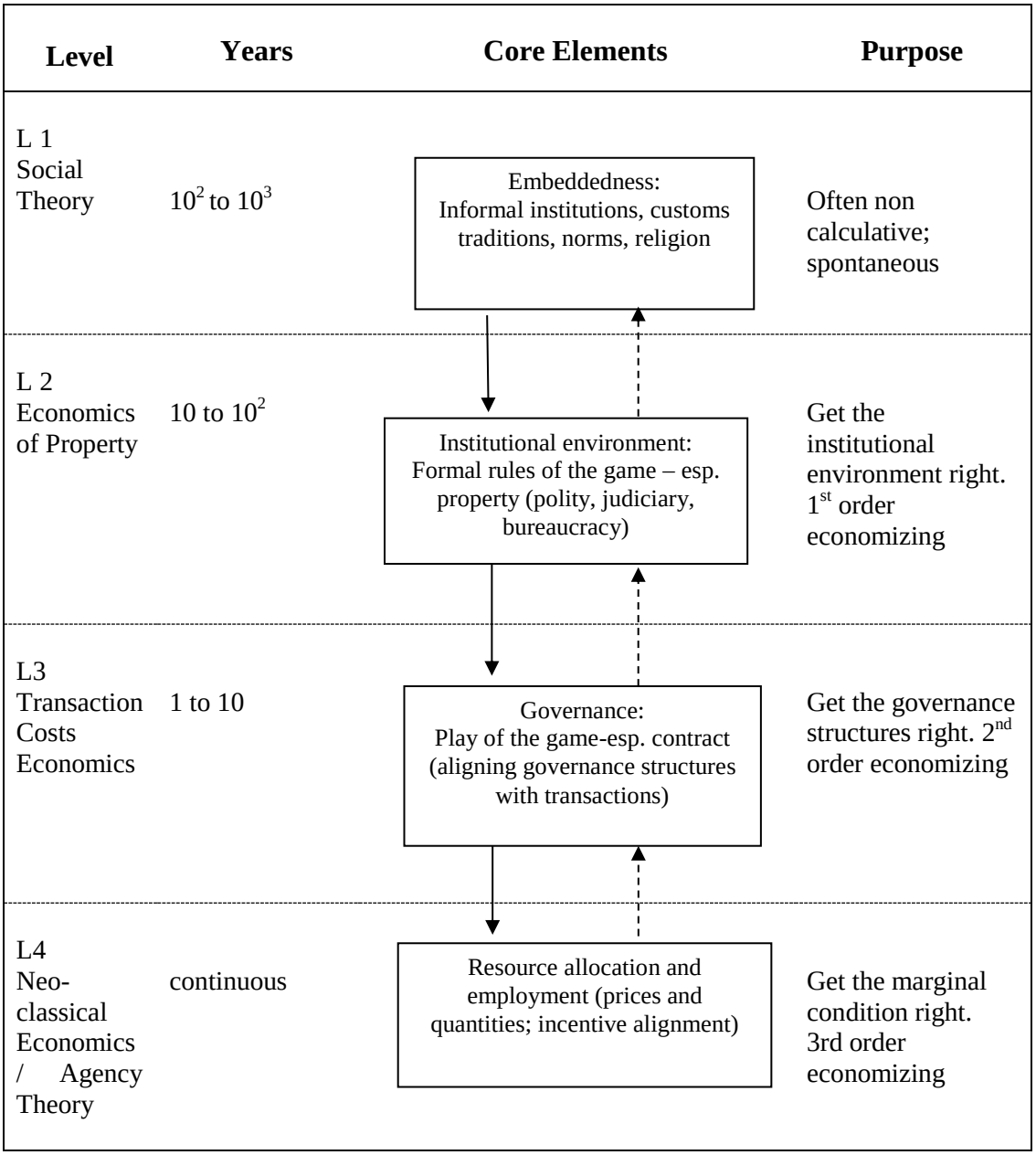

Figure 2: Economics of Institutions
Source: Williamson, 2000; p.597

The research construct strongly consider the 4 levels of social analysis. Note that the solid arrows signify the connection of a higher with lower level analysis and the reverse dashed arrows on the other hand connect lower with higher level, which also signal

feedback. Williamson ignored the feedback but acknowledged the interconnectedness of the system. This thesis however, acknowledges both the relatedness of the system and also considers the feedback from the different levels of systems. This is important due to the nature of co-operative as a democratic organization where decision making and governance in the individual co-operative as well as in the movement should be bottom up and democratic. Feedback from co-operative members will be a valuable indicator to measure the co-operatives performance.

Level 1 is the social embeddedness level in which the norms, customs, mores, traditions and others are located. This level changes very slowly (centuries of millennium) and usually taken by economic historians and other social scientist as given. This level has an influence on the way a society conducts itself. Level 2 is referred to as the institutional environment. It is the product of evolutionary processes as well as political actions. At this level, the definition and enforcement of property rights became important. Adaptation of the institutional environment requires a long time. NIE is concern with level 2 and 3. Level 2 include the executive, legislative, judicial, and bureaucratic functions of government as well as the distribution of power across different levels of government. Level 3 of analysis is governance which is important to ensure law and order, minimize conflict and achieve mutual benefits. Level 4 is resource allocation and employment.

This thesis fits in the third and the fourth level of the institutional or organizational analysis. Co-operative is a complex organization, with unique ownership and organizational structure stressing on bottom up democratic member control. The difficulty is intensified by the multiple economic and social objectives pursued by most of the co-operatives. The performance of co-operative is as a result of the co-operative

governance in each of the co-operatives by the Board of Directors (BOD) elected by the members themselves and the management hired by the BOD in a functioning legal system. Although BOD are given mandate and powers by the members to manage the co-operative, the BOD are not above the other members as the highest power in the co-operatives are in the hands of the members through the Annual General Meeting (AGM). BOD and the management staff are responsible to execute decisions agreed in the co-operative AGM.

1.7 Significant of Study

The analysis in the research is an effort to evaluate the co-operatives performance, describing and analyzing changes in the movement. DEA to some extent enable the research to identify the best practices in the use of resources among the various co-operative groups. It is an important first step tool in a comparative analysis. Other than that, by studying the membership preferences and factors that influence member's participation and support, the thesis also stress on the impact of incentives on individual behavior and on efficient governance structures. The efficiency study of the biggest co-operative bank (Bank Kerjasama Rakyat Berhad) is regarded as urgent by the fact that the movement has been supported by this bank. With this perspective, this research hopes to take stock of the performance of the co-operatives in Malaysia and make recommendations for improvement in membership commitment and innovative co-operative management.

First this research is important as it will fill the gaps in economic performance evaluations in the Malaysian co-operative study. Secondly, it is also important as

lessons can be drawn from the study for recommendations and proposal plan to be made for co-operators and policy makers responsible for the advancement of co-operative development. This study is also a step towards finding solutions to enhance the Malaysian co-operative performance. It is also an effort to complement many other efforts taken by various agencies and individuals who belief in the co-operative movement.

1.8 Thesis Outline

This thesis consists of six chapters. The chapters are as follows:

Chapter one introduces and presents an overview of the research. It covers the problem statement, research questions, objectives, design and significance of study.

Chapter two reviews the discussion on the background of co-operative movement, co-operative policies, programmes and presents the movement contribution in the country's economic development.

Chapter three presents an investigation on the co-operative member's participation and support based on survey data on co-operatives in Selangor and Kuala Lumpur.

Chapter four deals with the evaluation of co-operative movement based on the membership target group using non-parametric efficiency analysis and analyze the efficiency and productivity growth of the co-operative movement by membership target groups and estimate the productivity change of the co-operative bank in comparison to

the other non-co-operative banks using the DEA Malmquist productivity index approach.

Chapter five present and document the efforts and challenges faced in setting up a community eco-tourism co-operative as a development initiative towards achieving a sustainable business development model.

Chapter six gave the summary of main conclusions, policy implications and recommendations.

CHAPTER 2

CO-OPERATIVE MOVEMENT AND MALAYSIA'S DEVELOPMENT GOALS

2.1 Introduction

Over the last ninety years, co-operative movement had flourished in Malaysia. The aim of this chapter is to identify the movement's relevancy, discuss the co-operative policies, programmes and portray the movement performances in the context of Malaysia's economic development. It starts with a brief historical overview of how modern co-operative begin, Malaysia's development policies, the past and present descriptive analysis of co-operative movement, government's role, the co-operative legislation and policies, and the co-operative movement's role in poverty eradication and entrepreneurial development. This chapter is important in understanding issues and problems discussed in the following chapters.

2.1.1 Co-operative Movement's Humble Beginnings

The foundation of the Rochdale Equitable Pioneers' Society in England, 1844 has been acknowledged traditionally as the starting point of the history of the modern co-operation movement (Lambert, 1963). Similarly, the modern co-operative movement in Malaysia has also had their influenced as co-operatives were introduced to the public in Malaya before the Second World War by the British colonial. The introduction of co-operative movement into Malaya was paralleled to British policy of introducing the movement into other colonial territories such as India and Burma (currently Myanmar). The plight of Indian farmers in rural areas forced into debt-bondage by money-lenders and the problem of pervasive

indebtedness of urban labour forces had prompted British Imperial Government of India to suggest co-operative credit society as a viable solution to the problem as alternative to state intervention and finance (Fredericks, 1986; Abdul Majid Mohamed, 1982).

Malaya's economy during the British colonial period had depended on tin and rubber industries which were mostly developed and produced by European owned estates (Mohamed Ariff, 1998). The population of Malaya during this period was made up of different races with different religious and political ideologies. The Malays formed the majority of the population and they constituted a high percentage of the rural population. Most of the Malay population had depended on small-scale agriculture and fisheries, thus were left behind in the development of their own nation. They have problems adapting to the financial economic system introduced by the British and faced deprivation of life. Their low educational status and their subsistence economic practices forced them to depend on traditional technology that provides very low returns.

Abdul Majid Mohamed (1982) reiterated that the dilapidated condition causes them to be exploited by landlords, traders, middlemen, pawnbrokers and moneylenders. Malay poverty problems however, took place in both rural and urban areas. Urban white color job workers who are mostly in the government sectors also faced the same sad plight due to indebtedness. Their economic situation worsened when their problems are not given attention by the government at that time.

Mutual co-operations in social and economic activities (such as in weddings, funerals and harvesting seasons) among villagers have actually been a common

practice among rural folks in Malaya. Ironically however, formal co-operative organization is new to the local peasants and society. This is one of the reasons why the early attempt by the British official in Malaya did not take off very well. Detail discussions on the introduction of co-operative in Malaya are in the second part of this chapter.

As stated in the Co-operative Societies Act 1948, (Act 287) and rules and regulation, co-operative was defined as a society with the objective of promoting the economic interest of its members in accordance with co-operative principles. Later in the amended Co-operative Societies Act 1993 (Act 502), co-operative is defined as an organization formed and owned by a group of individuals for the purpose of improving their participation in economic and social activities of its members, based on the co-operative principles.

As an organization, it operates and was managed based on values and principles first introduced by the Rochdale pioneers in the nineteenth century whereby all co-operatives are managed based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. In both the Co-operative Societies Act mention, the co-operative principles to be followed are:

1. Voluntary and open membership;
2. Democratic management;
3. Limited interest on capital;
4. Equitable division of profits;
5. Promotion of co-operative education; and
6. Active co-operation among registered societies.

The National Co-operative Organisation of Malaysia or Angkatan Koperasi Kebangsaan Malaysia Berhad (ANGKASA) which is the apex co-operative was established on May 12th 1971. ANGKASA is the representative of the co-operative movement in Malaysia. It was also responsible for introducing the principles to the Malaysian co-operative movement (Ungku Abdul Aziz Abdul Hamid, 1983; ANGKASA, 2006). It is affiliated to the International Co-operative Alliance (ICA) and as an apex organization, served to guide and assists the movement development. On the 25th May 1975, in the ANGKASA National Conference, co-operative movement manifesto was released to the public (Ungku Abdul Aziz Abdul Hamid, 1983). ANGKASA's manifesto presented the following principles as guidelines for the co-operative movement in Malaysia

1. Democratic organization.
2. Voluntary membership.
3. Fair returns on capital.
4. Distribution of the trading surplus in the form of increased shares in capital or according to patronage.
5. Repayment of capital according to investment.
6. The needs of society shall take precedence over individual interests.
7. Neutrality in politics and religion.
8. Encouragement of education.
9. Working together at all levels of co-operation.

ANGKASA's principles have Rochdale's influences as the principles emphasizes on fair returns on capital, needs of society shall take precedence over individual interests and neutrality in politics and religion. These are a good example of the heritage of an explicit set of principles derived from the Rochdale Pioneers. These

are the Malaysian version of co-operative principles presumably created after taking into consideration various political, economic and social factors that had surrounded and affected co-operative growth and development at that time.

Principles are important as they not only constitute the framework of co-operative operation and governance, (Ungku Abdul Aziz Abdul Hamid, 1967) but also serve as a way of defining a co-operative since it is difficult to specify a succinct set of necessary and sufficient conditions for an organization to be called a co-operative. Although it is not the perfect way of defining a co-operative it is indeed one way of doing so.

Following the statement of co-operative identity announced in the ICA Congress in Manchester on the 23rd September 1995, the Malaysian co-operative movement is also required by law (Co-operative Societies Act 1993 (Act 502)) to observe the seven universally accepted principles (the details of the principles have been discussed in chapter 1). This revision exercise was deemed necessary for the progress of co-operative movement worldwide. As stated by ICA 2004, "These reviews modernised the idea of co-operation, maintained its relevance and provide an up-to-date test of whether an organization qualified to call itself a co-operative."

The revised principles are:

1. Voluntary and open membership
2. Democratic member control
3. Member Economic participation
4. Autonomy and Independence
5. Education, Training and Information

6. Co-operation among Co-operatives
7. Concern for the community

Although co-operative principles are important for the movement, these principles only described co-operative structure but not their consequent behaviour. They could not describe clearly the performance or the market conduct of a co-operative especially considering the range of co-operatives available today (Abrahamsen, 1976; Bakken, 1954).

2.1.2 Malaysia's Rural Development

The Malaysian economic development after independence needs to be evaluated in the medium term development perspective of the country. Under the Second Malaysia Plan (SMP) (1970-1975), the main objectives of the New Economic Policy (NEP) were to reduce income disparities amongst ethnic groups and eradicate poverty (Malaysia, 1971). Similarly, modernisation in the rural sector aimed to improve the level of education particularly among the Malays, indigenous people and the poor of other races. Rural development introduced modern industries into the rural area and new growth centres through rural-urban migration in order to reduce economic imbalances. Likewise, regional growth strategies were implemented which focused on the need to rectify the imbalances in the growth rates among states.

Other policies to address racial economic imbalances included the programme to create a Bumiputera entrepreneurial community. The private corporation was used to achieve economic opportunity and equity distribution among races. Concurrently, the human resource and labour force strategy was to expand job opportunities in line with the

expanding economy. The plan also put a strong focus on the need to provide more productive employment especially for those engaged in low-income activities (Malaysia, 1971). About 596,000 new jobs were to be created during the plan period. The employment strategies included increased economic growth, expansion of public policies and the adoption of new policies to expand the public sector (Malaysia, 1971). Rural development included the attempt to manage land development through the opening up of new areas for land settlement, increasing use of labour, education and training programmes, labour mobility and placement services – restructuring labour supply imbalances.

However, the Third Malaysia Plan (1975-1980) has also emphasised growth through job creation and reduction of unemployment. The expansion of incomes and productivity was focused particularly in rural and urban occupations by increasing access to opportunities to acquire skills. Also, the plan aimed at creating a commercial and industrial community to own and manage at least 30 percent of the total commercial and industrial activities, and expanding the supply of trained manpower through appropriate education and training policies and programmes. At the same time, strategies were formulated to reduce underutilisation of labour in rural areas, which was expected to reduce the unemployment rate from 7.0 percent (1975) to 6.1 percent (1980).

The early stage of rural transformation put a strong demand on human resources which was much needed in the economy. Initially, there was a constraint in skilled manpower which included the lack of technical expertise in the sciences and professions particularly among the Bumiputera. Based on the racial restructuring programme, the share of Bumiputera employment increased from 28.9 percent to 33.1 percent over the plan period. The employment strategies and programmes included the expansion of the

economic activities, land development, expanding the supply of skills, labour market policies and programmes, and labour laws and industrial relations.

The Second Malaysia Plan represented a major turnaround in the role and policies implemented by the government. It clearly attempted to address the failure of the free market that the colonial power had attempted to introduce into the system, especially in aspects related to a more equitable income distribution across race, ethnicity and regions. Thus, the SMP shows a more interventionist role of the government as the SMP started off the New Economic Policy as well as the First Outline Perspective Plan 1971-1990. The introduction of these policies saw a more direct role of the public sector in rural development that include setting of policies related to equity, ownership and employment in the growing economy. As such, the role of the co-operative sector needs to be studied given such significant changes and the challenges in creating Bumiputera entrepreneurs.

Malaysia's development to date has been substantial. Rapid advances have been made in all sectors of the economy and all regions have contributed to the growth of the national product. The growth in productivity has raised the general standard of living and provided more jobs for the growing labour force. The economy has been able to embark on a substantial program of rural development, an expansion of health, housing, education and other services and the extension and improvement of the transport system, public utilities and other infrastructure needed for development. The progress made in expanding production and economic diversification has enabled the economy to withstand the problem of price declines in its major export commodities and to meet essential security requirements without sacrificing important development needs.

The goal of eradicating poverty is to be achieved through a variety of measures. Policies and programs under the Plan, which bear more heavily on the objective of eradicating poverty, will be directed at:

(i) Increasing the productivity and income of those in low productivity occupations through the adoption of modern techniques and better use of facilities. Measures for this purpose include programmes for double-cropping, off-seasons and inter-cropping, drainage and irrigation, improved marketing and credit, and financial and technical assistance to small-scale business industries.

(ii) Increasing opportunities for inter-sectorial movements from low productivity to higher productivity activities in new land development schemes, modern fishing and forestry projects and in commerce, industry and modern services; also, the provision of financial and technical assistance, education and training opportunities and the necessary organizational arrangements to facilitate movements into these modern sectors.

(iii) Providing a wide range of free or subsidised social services especially designed to raise the living standards of the low-income groups. Such services include public housing projects, subsidised rates for electricity, water and transportation, health and medical services, improved educational opportunities and increased recreational and community facilities.

The creation of a strong demand for labour is an important prerequisite for eliminating poverty, as well as restructuring of society. Wider job opportunities must be created, especially for youths of all races, to provide increasing rewards for productive human

effort. In this striving for employment creation, Malaysia must overcome the problems posed by rapid population growth. During the period of the Second Malaysia Plan and several years beyond, the number of job seekers would be rising rapidly. The family planning program, launched under the First Malaysia Plan, will not even begin to have an impact on labour force growth until sometimes in the 1980s.

It is evidently clear therefore, that Malaysia must plan for a higher rate of economic growth. It will also necessitate major changes in economic structure. The industrial sector and key portions of the service sector will have to expand rapidly in order to achieve a satisfactory rate of job creation. Furthermore, the provision of employment as a means of eradicating poverty cannot be viewed merely in terms of numbers of jobs created. Adequate opportunities must be provided for those now being educated and trained for skilled work and for the even larger numbers who will be educated and trained in the future.

2.1.3 The New Economic Policy: Nation Building through Socio-Economic Restructuring

The New Economic Policy (NEP) views growth and structural change as the means to create a much larger modern sector. Economic growth will also be pursued with emphasis on employment. Investment incentives will be geared to take due account of employment needs. In implementing development projects particularly in the public sector, deliberate efforts will be made to use more labour-intensives techniques. These and other measures aimed for higher rates of labour absorption at given rates of investment. In this way it should be possible in time to have a much more highly trained labour force. Unemployment and underemployment will then cease to be factors tying down large numbers of Malaysians in poverty.

The Plan incorporated a two-pronged New Economic Policy for development. Firstly, to reduce and eventually eradicate poverty, by raising income levels and increasing employment opportunities for all Malaysians, irrespective of race. Secondly, to accelerate the process of restructuring Malaysian society to correct economic imbalance, so as to reduce and eventually eliminate the identification of race with economic functions. These processes involves the modernisation of rural life, a rapid and balanced growth of urban activities and the creation of a Malay commercial and industrial community in all categories and at all levels of operation, so that Malays and other indigenous people will become full partners in all aspects of the economic life of the nation.

NEP was succeeded by the National Development Policy (NDP) for the period of 1991-2000 and the National Vision Policy (NVP) for period 2001-2010. NDP was introduced after a review of the effectiveness of NEP policies by the National Economic Consultative Council (Malaysia, 1991). The relevancy of NEP was reaffirmed but at the same time matters arising from some of the ineffectiveness in the execution of the NEP programmes and project, domestic and global challenges are given consideration for a more balanced development.

This new development thrusts requires change in focus of anti-poverty strategy towards an eradication of hard-core poverty while reducing relative poverty; emphasizing employment creation; the rapid development of an active Bumiputra Commercial and Industrial Community for a meaningful increase of Bumiputra participation in the modern sector; greater reliance on the involvement of private sector in the restructuring objective by creating greater opportunities for its growth; and focusing on human

resource development as a fundamental requirement in achieving the objectives of growth and distribution (Malaysia, 2004).

NVP was embodied in the Third Outline Perspective Plan (OPP3) in 2001. The focus was on creating a resilient and competitive nation while still incorporating eradicating poverty irrespective of race and restructuring society at the same time inclusive of the NDP's balanced development strategies.

While all the policies mentioned above were gearing Malaysia towards a developed nation with knowledge-based society, with endogenously driven growth, dynamic growth of agriculture, manufacturing and services sectors, national unity is fundamental and remains to be the overriding objective of the country. A stage has been reached in the nation's economic and social development where greater emphasis must be placed on social integration and more equitable distribution of income and opportunities for national unity and progress.

2.2 Background of the Co-operative Movement in Malaysia

The discussion on background of co-operative movement in Malaysia will be based on the following three main periods which is before Malaysia's independent (1957), after independent and post 1990s until recently.

2.2.1 The Early Period 1920 - 1957

Realizing the deteriorating socio-economic conditions of the locals in Malaya, effort in introducing co-operative to the Federated Malay States started in 1907. Effort was however, wasted as response from British officialdom and the European planting community was not favorable (Fredericks, 1986, Abdul Majid Mohamed, 1982). Co-operative was later reintroduced when some high ranking British colonels realized the need of it in helping the plantation sector by 1919. Mr. A. Cavendish a civil servant was given the task to review the co-operative movement in India and Burma (currently Myanmar) in 1921. He recommended a self-financing Co-operative Bank of Malaya in his report to the Federal Legislative Council. The purpose of creating such bank was to solve credit problems among rural and urban population in Malaya. However his proposal was rejected by the government.

Only a year later, July 1922 the Co-operative Societies Enactment was passed by the Federal Legislative Council. The British established the formal structure of the movement by setting up the office of the director of co-operation (known later as the Department of Co-operative Development) in 1922 in order to emphasize the operational structure of the movement (MCSC Annual Report, 2009). The enactment was based closely on the Indian Co-operative Societies Act of 1912 and had remained

unchanged up to 1948. Co-operatives in this early period were initiated to combat the problem of the chronic rural indebtedness and deficit spending among wage-earners in places of employment.

The Federated Malay States Post and Telegraph Co-operative Thrift and Loan society Limited was the first co-operative in Malaya. It was registered on 21st July 1922. The co-operative movement's growth later became stable and soon spread to various states such as Kedah, Perlis, Terengganu, Johor and Kelantan as subsequent efforts to set up new co-operatives became more widespread. Other earlier co-operatives are the Kampung Bagan Tiang Thrift and Credit Co-operative society (registered in 1923) and Kampung Tebuk Haji Musa Co-operative Society Limited, (registered in December 3rd 1923) in Parit Buntar, Perak (CCM, 2006). In 1930, 150 co-operative societies were formed; by the end of 1941, there were 307 co-operatives registered with a membership of 94,000 people.

During the Japanese occupation in Malaya (1941-1943) all the co-operative societies were totally stopped except in Kedah and Selangor. Criticism of the past colonial co-operative policy by the British Fabian Society in a 1944 report was accompanied by recommendations for the adoption of a more enlightened policy. This spurred the Colonial Office to undertake a series of studies which recommended the political legitimacy of co-operatives as a policy instrument. This also led to the repeal of the 1922 Enactment and its replacement by the Co-operative Societies Act, 1948 (which was later revised in 1983). The 1948 Act was intended to bring about a more systematic development. With this act, the revival of the movement took place almost immediately after the war and by the end of 1947 there were 841 societies with a membership of 88,989 persons.

From the inception of the movement up to late 1950s, co-operatives were unifunctional, dealing with members' savings and loans, marketing of members' produce, rice milling, consumer stores and a few housing societies. Early post-war co-operative policy was characterized by a wider perception of the agrarian environment and the potential of co-operation.

The movement later spread to Sabah and Sarawak in 1958 and 1959 respectively. Beside primary co-operatives, secondary co-operatives were predominant in the post-war period. Fredericks (1986) discussed the limited inter-co-operative relations problem between urban and rural co-operatives which arises due to the structure of co-operative movement in West Malaysia. The Co-operative Union of Malaya established in 1953 had affiliated all urban-based secondary co-operatives while Co-operative Apex Bank of Malaysia formed in1954 had played its role in affiliating the rural co-operatives which in turn are credit based. This apex bank at the same time acted as a facilitating agency to disburse loans and grants to rural people.

The Department of Co-operative Development (DCD) was established since 1922 to register and revoke the registration of co-operative societies. It is also to encourage, promote and to ensure that co-operative function in accordance to the Societies Act. Although the early growth of co-operative movement was through efforts of the government through its agencies, it was also envisaged that the state would mainly play a promotional, supervisory and guidance role vis-à-vis co-operatives. So in the first eleven years after the movement began, its emphasis was only on economic functions with very minimal non-economic functions. There was also very little efforts put forward into training and educational programmes of committee members and members

due to the limited financial resources allocated for these programmes (Fredericks, 1986).

As a result, there was not much awareness of the co-operative principles and philosophy among co-operative members. Despite this, co-operatives were established both in urban and rural areas and their numbers steadily increased. Thrift and loan societies in urban areas, agricultural co-operatives, fishery co-operatives, housing co-operatives and a nation-wide insurance co-operative society were the significant types of co-operatives. An appraisal of agro-based co-operatives by Wells (1981) found that these co-operatives have not succeeded in attaining their savings mobilization, rural credit, land development and marketing facilities goals. Until 1930, the rural credit co-operative has grown to overcome the competition from other money lenders or companies.

According to Mokhzani Abdul Rahim (2006) the effectiveness of these co-operatives to solve the peasantry credit problems is questionable. These co-operatives themselves are in poor state and have not been able to save farmers from the credit system of "padi kunca" (payment in fixed amount of paddy) and frugal habits of borrowings. Started in the 50s, rural credit co-operatives have been established at the secondary level co-operatives, known as the co-operative bank. These union banks later formed the Apex Bank in the Federated Malay States in 1954.

Unlike the history of the co-operative movement in Britain, where consumer activities were their core business from the start, the DCD (headed by a British official) was skeptical about the viability of consumer co-operatives. It was only after the findings of a Committee on profiteering that led to the formation of two consumer societies in 1922 (Fredericks, 1986). Consumer co-operatives were to help reduce the high wholesale-retail margin which contributes to high retail prices that burden consumers

(Abrahamsen, 1976; Bakken, 1954). The operation of consumer co-operatives should have benefitted the people however, initial progress can be considered slow as by 1939, there were only three rural stores operating.

By 1950, the number had increased to 21 co-operatives. In 1950s, because of the Korean War, the Suez Canal Crisis and the state of Emergency, the government fully supports the formation of more consumer co-operatives in the country with the objective of overcoming the problem of food shortages, high cost of living and adulteration of foodstuffs. As a result of government direct intervention and active involvement, a consumer co-operative network co-existed with the private distributive trade. Consumer co-operative was an integral part of the government's emergency policy to control the flow of commodities to the rural areas. The numbers of such co-operatives grew in the rural and urban areas and were effective in assisting the government distribute essential goods at controlled prices. The Malayan Co-operative Wholesale Society became the central supplier to the consumer societies (Fredericks, 1986; Hayati Md. Salleh, Asha'ari Arshad, Ahmad Faizal Shaarani & Norbiha Kasmuni, 2008).

The post-war period saw the establishment of agricultural co-operatives as part of the government plan to develop the rural economy. This was done through the creation of the Rural and Industrial Development Authority (RIDA) in 1950 through which credit, marketing and processing projects were undertaken. Capital for carrying out business and research loans could be obtained from RIDA through co-operatives. RIDA was in close co-operation with the DCD in its effort to help farmers. It was expected to achieve the objectives of self-help and integrated approach to rural development. The role of RIDA in supplying credit to farmers however, faced with problems when the demand for loan far exceeded the amount allocated. The role in supplying short-term credit was

eliminated in 1955 and subsequently its role in the development of the co-operative movement was reduced.

2.2.2 The Movement After 1957

The co-operative movement became strong and active after Malaysia gained independence on 31st August 1957. The first half of the 1960s saw a more effective consolidation and rationalization programme being undertaken by the DCD and the Bank Kerjasama Rakyat (Bank Rakyat). By 1966, the realization of the importance of inter-linked markets prompted the policy aimed at encouraging existing and new co-operative to develop into multi-purpose co-operatives. In the 60s the rural credit co-operatives made up of the most number of co-operative. Until 1965, the number was 1576 with membership of 58,000 people and working capital of RM12 million. Total loan disbursements amounted to RM2 million. It was in the Second Five Year Plan (1961-1965) that showed proof of co-operative being seriously considered as a development tool by the government.

Table 2.1 provides a detail allocation of public investment in the First Malaysia Plan (1966-1970) and Second Five Year Plan (1961-1965) on various sectors such as agriculture, transport, communication, utilities, industry and social services.

Table 2.1: Allocation of Public Investment in the First and Second Five Year Plans

Sector	Allocation of Public Investment During the First and Second Five Year Plans Approximate Actual 1966-1970 (RM Million)	Plan target 1961-1965 (RM Million)
Agriculture	**227.5**	**545.3**
Rubber Replanting	153.4	165
Drainage and Irrigation	38.3	100
Land Development	16.7	191
Co-operative Credit	**n.a**	**20**
Coconut Rehabilitation and Replanting	-	15
Research and Extension Work	2.4	20
Animal Husbandry	1.7	10
Forestry	2.2	5
Fisheries	2.4	7.2
Survey	3.6	6.9
Other	6.8	5.2
Transport	**206.5**	**362**
Roads and Bridges	95.2	190
Railway	71.4	65
Ports	37	55
Civil Aviation	2.9	52
P.W.D Plant and Equipment	23.6	68.7
Communication	**51.6**	**72.9**
Telecommunications	47.4	50
Broadcasting	2.7	5
Posts	1.5	17.9
Utilities	**238.6**	**402**
Electricity	142	254
Water	80.6	140
Sewerage	16	8
Industry	**12.1**	**27**
Site Development, etc.	11.1	7.5
Other	1	9.5
Rural Industry	n.a	10
General	**73**	**121.1**
Municipal Development	14.2	16.7
Government Buildings	48.8	38.8
Miscellaneous (includes Police)	10	65.5
Social Service	**138.8**	**491**
Education	60.9	260
Health	12.7	145
Social Welfare	n.a	6
Housing	65.2	80
Total Public Investment	**971.7**	**2,090**
Defence	35	60
Grand Total	**1,007**	**2,150**

Source: The First Malaysia Plan (1966-1970)

The major financial provision in the plan for rural co-operative activity was an advance of RM20 million to expand co-operative agricultural credit. Of this, a net amount of RM5 million was used in addition to the existing co-operative resources for short term loans for seasonal supplies such as fertilizer. Substantial progress was expected in

freeing co-operatives members from dependence for financing on the "padi kuncha" system and on private money lenders. The remaining RM15 million was to be used to finance projects to increase productivity through land improvements, purchase of equipment and others, as well as to finance the processing and marketing activities of co-operative society (Fredericks, 1986).

In addition to co-operative credit, the plan included another RM5 million for purchase of fixed assets such as land or building to strengthen the co-operative movement. Rural credits was the subject of a special study which will delineate co-operatives activities, RIDA and other agencies in order to avoid duplication of functions and to achieve greater effectiveness.

In line with the implementation of the First Malaysia Plan (1968-1970), co-operative movement was part of the strategy of the country's rural development programme. Under the plan, resources were allocated for the development of Co-operative College of Malaysia (CCM) and the formation of credit scheme. The decision to boost co-operatives as the third sector of the economy is necessary when the nation was exhibiting higher growth and rising inequality. As such, co-operatives offer an alternative strategy for growth with redistribution policies. Indeed in other neighbouring countries such the Philippines, the emergence of co-operatives was important as they promoted equitable income distribution and economic growth, based on the philosophy of enlarging small economic units (Krinks, 1983).

By late sixties, there were 3,000 co-operatives with a membership of over 500,000. The DCD then began to take cautious approach towards the registration of new co-operatives. Consolidation and reorganization efforts were made by the DCD and small

co-operatives were encouraged to amalgamate, thus bringing in the gradual evolution of a strategy to create multi-purpose co-operative societies. Dormant societies were de-registered and the formation of larger and more viable societies was encouraged. Secondary co-operative organizations such as the Co-operative Union of Malaysia and the Co-operative Central Bank were established.

The government was anxious for speedier agricultural development after the attainment of independence. The experience of agriculture co-operatives in Taiwan had influenced the government to introduce Farmers' Associations in the country from 1958 onwards. Farmers' Associations were to undertake mainly agricultural extension activities and an act in a role secondary to agricultural extension activities and act in a role secondary to agricultural co-operatives (ANGKASA, 1978; Wells, 1981). In 1967 the Farmers Association Act was passed for the purpose of forming Farmers' Associations (FOs) which could undertake multipurpose commercial activities (Wells, 1981). FOs were also granted legal exemption from profit tax, stamp duty relevant sections of trade union laws and company acts to put them on par with co-operative societies. Under the 1967 Act, the single purpose Farmers' Associations whose functions were to provide credit, input supplies, transportation, extension services and marketing facilities. Unfortunately the presence of these two types of organisations within the same locality caused confusion among farmers and serious conflicts and rivalries. In view of this, two new Acts were enacted, viz. (I) Act No. 109 Farmers Organization Act 1973 and Act No. 110 Farmers Organization Authority (FAO) Act 1973 (Rana and Dahl, 1987).The FOA was vested with power to amalgamate agro-based co-operative society and the farmers' association into one organisation known as Farmers' Organisation (FO). The FOA had more or less the same powers and the responsibilities as the registrar and the director general of co-operatives in respect of farmers' organizations. The DCD thereafter did

not have any power and responsibility vis-à-vis co-operatives in the rural areas. No agricultural co-operatives were to be promoted by the Co-operative Department. In 1975, the Fisheries Development Authority (FDA) was set up to oversee the development of the fisheries co-operative. The rapid growth of Farmers' Association in the post-1967 era coincided with a rationalization and consolidation programme for the agro-based co-operatives. This programme had the effect of reducing the numbers of mono-functional societies and the creation of a rapidly expanding network of multi-purpose societies. This latter process results in major membership and functional duplication between the two types of producers' organizations. Their parallel development also led to an intra-ministry, inter-divisional conflict, which was finally to be resolved by integrating both organizations and placing them under the responsibility of the newly formed Director-General, Farmers' Organization Authority (FOA) in 1973.

The position of co-operatives in term of co-operative numbers, members, capital and assets after the take-over is as shown in table 2.2. This move towards specialization was to bring about a greater consolidated effort by each of the three agencies to channel their resources towards continued promotion and development of co-operatives in Malaysia. Societies from the three agencies however are united under and represented by a national apex organization, ANGKASA. Since majority of the co-operatives are under the DCD, it has always been held responsible for the development of co-operatives in general, especially so with the inclusion of co-operatives from Sabah and Sarawak after the formation of Malaysia.

Table 2.2: Co-operatives Numbers, Members, Capital, Assets Under Supervising Agencies, 1975

Agency	Co-op numbers (%)	Members (%)	Capital RM 000,000 (%)	Assets RM000,000 (%)
FOA	1,502 (58.1)	165,355 (20.7)	10.5 (4.1)	26.9 (4.3)
FDA	51 (2.0)	10,000 (1.2)	0.5 (0.2)	6.4 (1.1)
DCD	1,031 (39.9)	724,850 (78.1)	245 (95.7)	588.3 (94.6)
Total	2,584 (100)	900,205 (100)	256.1 (100)	621.6 (100)

Source: Department of Co-operative Development, Kuala Lumpur.

FOA policy seemed initially to be geared towards integration that did not require the dissolution of either institution. It was envisaged that each body would maintain its own identity and retain its own assets and liabilities and farmers would be permitted to maintain dual membership. A number of difficulties emerged, in particular farmer-members continued to have divided loyalty, and joint activities in the parent farmers' organizations were impeded because each member-unit sought to protect and further its own organizational interests. As a result of this problem a policy to amalgamate farmers' associations and agro-based co-operative societies into farmers' co-operative was introduced. Integration proved difficult to implement in practice since full integration can only be undertaken in accordance with the constitution and by-laws of the farmers' associations and co-operative societies. Basically, this necessitates the agreement of the two-thirds of the assembly or representatives of the farmers' associations and three-quarters of the registered members of the agro-based co-operatives.

The 1980s saw a new dimension in the co-operative movement with the declaration of the New Co-operative Era in 1982. This was a measure taken by the Ministry of National and Rural Development (the Ministry in charge of co-operatives at that time)

to activate, streamline and prepare the co-operatives for more dynamic and effective roles in the economic development of the country and in poverty alleviation programmes. With the New Era, government began to initiate new co-operatives such as the District Development Co-operatives (DDC), the Cottage Industry Co-operatives (CIC), the Village Development Co-operatives (VDC) and the Workers Investment Co-operatives (WIC).

The DDCs and VDCs main objective were to encourage villagers to undertake community development related projects such as the construction of rural roads, religious buildings, community centers, irrigation facilities and housing. DDCs and VDCs were intended to foster unity and co-operative spirit and encourage members to participate in local development projects at district level and village level, and for them to benefit in the form of dividends as well as increased employment opportunities. As at end of 1990, there are 78 DDCs and 5 VDCs with a membership of 28,184 and 1,541 respectively and a paid up capital of RM1,659,084 and RM39,215 respectively had been registered. The National Development Co-operative is the apex organization for DDCs and VDCs, but membership is opened to all registered to co-operatives.

The CICs are integrated projects between the Department of Co-operative Development (DCD), the Prime Minister's Department (PMD) and other related agencies in the Ministry of National and Rural development, i.e., KEMAS (the Community Development Department), MARA (Council of Trust for Indigenous People) and the Malaysian Handicraft Development Corporation. They were introduced with a view to intensify efforts in promoting cottage industry in order to uplift the rural economy and alleviate poverty. CICs encourage the development of village handicrafts from local resources such as clay, bamboo, rattan and pandan leaves whereby promoting many

activities on a co-operative basis. By the end of 1990, there were 36 CICs with a membership of 2,219 and a paid up capital of RM48,485 had been registered.

WIC is modeled after the Japanese co-operatives. WICs were set to encourage closer co-operation and understanding between employer and employee and at the same time helping the employees to help themselves. The basic idea embodied in the WIC was to encourage thrift through monthly savings, provide credit and loans, supply of consumer goods, provide transportation to workplace and operate staff canteen. By the end of 1990, there were 20 WICs with a membership of 11,039 and a paid up capital of RM3,650,000. The beginning of the co-operative bank was the merger of 11 union banks into an apex bank or Bank Agong. The union banks were to facilitate the co-operative movement especially in providing financial needs to their members following an expansion of the co-operative movement in Peninsular Malaysia. The bank Agong was then replaced by Bank Kerjasama Malaysia Berhad in 1967.Government had intervened when this bank suffered losses amounting to RM65.233 million at the end of 1975 to ensure that the Bank can be managed and administered properly. As a co-operative bank, Bank Rakyat has not only been successful in functioning as a financial institution but also has undertaken its role in fulfilling social obligations and contributed to the human capital development (Bank Rakyat, 2004).

Youth of today are the country's future and are not forgotten in the co-operative strategic development plan thanks to the prominent Malaysian co-operative thinker and father of the Malaysian co-operative development, Royal Professor Ungku Abdul Aziz Ungku Abdul Hamid. He was the "social architect" in all the efforts to introduce Malaysian children to co-operative and give them the experience of being in a co-operative via the school co-operatives development that was initiated by ANGKASA.

The promotion of secondary school co-operatives are a combined effort by the Co-operative Department and the Ministry of Education. The school co-operatives are a combined effort by the DCD and the Ministry of Education to introduce co-operatives in secondary schools. Started in 1972 with the first registration of school co-operatives, the objectives are to instill the spirit of thrift among the younger generation and train them in the co-operative movement. It is envisaged that such co-operatives will form the training ground and backbone for the development and continued existence of the movement (ANGKASA, n.d.). The apex of school co-operatives is the National Schools co-operatives which are supported by the Ministry of Domestic Trade, Co-operatives and Consumerism. Known as the National School Co-operative, this parent organization undertakes the bulk purchase and production of school requisites for distribution to member co-operatives. In 1990 there were 778 school co-operatives with 659,994 members with a total share capital of RM3 million.

Another dark spot on the co-operative landscape happened again on the 8th of August 1986 when the government had to freeze the assets of 24 deposit-taking co-operatives following the share and property market plunge, mismanagement and corruptions among directors and bank managers. These co-operatives used high interest rate as bait and had attracted over 1 million members and RM3 to RM4 billion deposits. On July 23rd, the government introduced Essential (Protection of Depositors) Regulations, 1986 enabling the Central Bank of Malaysia (Bank Negara) to begin their full investigations and take actions on these co-operatives. The Co-operative Central Bank was put under receivership for management problems and insolvency in 1988. These co-operatives had experienced bad management practices, either due to lack of expertise and professionalism or the corrupt practices of management. They disregard the co-operatives principles and were found to be operating purely as profit-oriented deposit

takers, housing developers and share speculators. At the end of 1988 there were 2,913 registered co-operative in Malaysia. Out of these 322 were in Sabah and 433 in Sarawak. There were 2.6 million co-operative members in Peninsular Malaysia, 61,000 in Sabah and 117,300 in Sarawak (CCM, n.d.; Hayati et. al, 2008).

2.2.3 The Movement Post 1990s and Recently

Structurally in this period, co-operatives movement can be segmented into the flourishing urban segment which is financially strong and the rural segment comprises of various types of agro-based co-operatives, fishermen's co-operatives and co-operatives under the government agencies. Urban credit and banking co-operatives formed the backbone of the movement. Other primary societies include consumer, co-operative housing societies, land development and school co-operatives.

The co-operatives supervised by government agencies such as FELDA, FELCRA and the RISDA served the rural community and their main functions are contractual work, transport service (lorries, buses and tankers), retail stores and mini-markets, and the supply of electrical appliances, motorcycles and furniture. Co-operatives in the land schemes are also encouraged to form secondary societies at state levels. These secondary societies became agents for their members to supply the needs of the settlers, thus ensuring quality goods at reasonable prices and at the same time cater for the collective market of their produce including fruits, vegetables, chickens and goats and others. Members and their children are encouraged to take up vocational courses so that they can operate their own service oriented programmes like workshop for motorcycles and agriculture machinery repair.

Table 2.3: Co-operative Status: Membership, Share Capital, Asset and Turnover by Year

Year	No of Co-op	Membership (million)	Share Capital (RM billion)	Asset (RM billion)	Turnover (RM billion)
1990	3,028	3.33	1.64	6.15	n.a
1991	3,083	3.44	1.75	6.55	n.a
1992	3,228	3.66	1.92	7.60	n.a
1993	3,388	3.91	2.18	8.33	n.a
1994	3,473	4.06	2.44	10.14	n.a
1995	3,554	4.25	2.74	10.39	n.a
1996	3,753	4.21	2.83	12.17	n.a
1997	3,847	4.13	3.17	12.96	n.a
1998	3,942	4.55	3.60	14.10	n.a
1999	4,050	4.33	3.84	14.10	n.a
2000	4,154	4.50	4.21	15.82	n.a
2001	4,246	4.76	4.30	18.90	n.a
2002	4,330	5.03	4.40	19.00	n.a
2003	4,469	5.21	5.57	25.12	n.a
2004	4,651	5.39	6.06	25.70	n.a
2005	4,771	5.69	6.85	34.87	4.60
2006	4,918	5.86	7.36	38.38	5.05
2007	5,170	6.32	7.80	47.40	6.01
2008	6,084	6.51	8.42	55.7	7.75
2009	7,215	6.78	8.97	64.92	8.92
2010	8,146	6.60	9.55	71.78	9.53

Source: Monitoring Division, Malaysia Co-operative Societies Commission (MCSC), various years

In October 1990, DCD was under the Ministry of Land and Co-operative Development. This ministry emphasized on creating more WIC co-operatives operating in factories and in private companies. The objectives in the Sixth Malaysian Plan (1991-1995) were to have 500 WIC co-operatives and 1,000 other co-operatives. The number of co-operatives, membership, share capital, assets and turnover in 1990 onwards is shown in table 2.3.

Looking at the growth performance of the movement from the year 1990 to 2010, the movement portrayed both positive and negative growth patterns. Within the first eight

years (1990-1997) the movement grew at 3.5 percent a year with the membership, share capital and asset growth of 3.2 percent, 9.93 percent and 11.42 percent respectively. The co-operative movement was effected by the 1997 financial crisis that hit Malaysia and other countries in this region. The percentage growth of number of co-operatives, membership, share capital and assets is depicted in table 2.4.

Table 2.4: Growth Trend of the Co-operative Movement in Percentage

Years	No of co-op (%)	Membership (%)	Share Capital (%)	Assets (%)	Turnover (%)
1990-1997	3.49	3.17	9.93	11.42	n.a
1997-2000	2.59	3.09	9.96	7.00	n.a
2000-2005	2.81	4.81	10.58	18.04	n.a
2005-2009	11.12	4.5	6.98	16.91	18.21
2009-2010	12.9	-2.65	6.5	10.57	10.97

Source: Monitoring Division, Malaysia Co-operative Societies Commission (MCSC), various years. Note; data is not available for turnover before 2005.

As shown in tables 2.3 and 2.4, although the economy suffered due to the Asian financial crisis, the co-operative movement showed only a slight decrease in growth as from 1997-2000, the co-operatives grew at only 2.59 percent, membership at 3.09 percent, and share capital at 9.96 percent. Co-operatives assets growth however, had suffered a dropped by more than 4 percent to just 7 percent.

Co-operatives with investment in shares during stock markets boomed were also affected by the unanticipated financial bubble burst. These co-operatives as in other business enterprises in Malaysia were left financially vulnerable with liquidity problems. As mentioned in Hayati Md. Salleh, Asha'ari Arshad, Ahmad Faizal Shaarani & Norbiha Kasmuri (2008), findings by DCD showed that fifty-two co-operatives with investment in shares and trust funds especially with borrowings from the private financial institutions suffered the worst from the crisis. They faced liquidity problems and had received some form of help from the government to ease their financial

problems. Despite the crisis, co-operative movement recovered with progress in the share market following the country's economic recovery.

Co-operatives in the 21st century (2000 - 2005) grew at an increasing growth rate of 2.81 percent, membership at around 4.8 percent, capital at 10.58 percent and asset growth rate at 18.04 percent. By December 2005, there were 4,771 co-operatives registered with 5.685 million members, share capital amounting to RM6.849 billion and total assets worth at RM34.868 billion (DCD {Department of Co-operative Development Malaysia}, 2006). Within 2005 – 2009 onwards, the percentage number of co-operatives increased by 11.12 percent, membership decrease to 4.5 percent, share capital to 6.98 percent and asset growth slightly down to 16.91 percent. As of December 2010, the number of co-operatives raised to 8,146 with 6.6 million members, RM9.55 billion share capital, assets worth RM71.78 billion and turnover of RM9.53 billion. Even with the above mention increase however, within 2009 and 2010, there is a decrease in membership (-2.65 percent), dropped in share capital (to 6.5 from 6.98 percent) and assets (10.57 percent from 16.91 percent). Average percentage increase in turnover for the period 2005 – 2009 is 18.21 percent while the increase in the 2009 – 2010 period went down to just around 11 percent.

The MCSC had classified all co-operatives into 9 different functions based on their business activities. The functions are banking, credit/finance, plantation, housing, industry, consumer, construction, transport and services. The status of co-operatives by functions as at December 2009 is shown in table 2.5. Taking these statistics as indicators of performance, these figures had portrayed that co-operatives have had the support of the people as over 6 million people are members of co-operatives. However, there might be an over reporting of co-operative members, due to duplication in co-

operatives' membership. This is as the result of restrictions formerly imposed by co-operative law being lifted since 2008 on people who wish to become members of more than one co-operative.[3] The activities undertaken by co-operatives have recorded earnings (turnover) of RM9.53 which have contributed as much as 1.7 percent to the total gross domestic product (GDP) which is RM558,382 billion (BNM, 2010; MITI, 2011).

Table 2.5: Co-operatives in Malaysia by Functions as at 31st December 2009

Functions	No of Co-op	Members	Share Capital (RM)	Assets (RM)	Turnover (RM)	Profit/Loss (RM)
Banking	2	838,932	2,289,504,293	51,251,535,708	4,338,062,555	1,577,844,058
Credit/ Finance	575	1,963,054	4,170,086,940	7,180,092,477	1,367,606,347	348,108,617
Agriculture	1,362	289,484	244,317,272	1,256,095,986	613,878,566	123,113,737
Housing	107	89,162	133,356,559	406,619,034	36,442,571	164,698,774
Industry	117	17,634	5,238,548	56,620,186	33,127,694	3,339,389
Consumer-adult	1,681	670,908	279,481,976	1,127,480,418	791,900,262	56,451,623
Consumer-school	2,116	2,106,130	17,264,427	177,673,323	195,120,375	25,508,868
Construction	117	62,171	14,365,358	56,784,381	64,188,685	2,593,031
Transport	346	148,196	58,654,263	250,163,546	512,207,073	19,914,402
Services	793	598,084	1,753,250,727	3,236,209,436	966,475,435	341,347,245
TOTAL	**7,216**	**6,783,775**	**8,965,520,363**	**64,999,274,495**	**8,919,009,563**	**2,662,919,740**

Source: Monitoring Division, Malaysia Co-operative Societies Commission, Kuala Lumpur

By the end of 2009, 53 percent of the co-operatives are consumer co-operatives, 11 percent are services, 8 percent are involved with credit, and 5 percent are in transportation, 2 percent in construction, 1.5 percent in housing and 1.6 percent are in industry. The movement has 2 co-operative banks that is the Bank Kerjasama Rakyat Berhad and Bank Persatuan Malaysia Berhad. Bank Persatuan Malaysia Berhad or commonly known as Bank Persatuan is a co-operative bank established under the Societies Act 1993. This bank was registered on June 7, 1950 as "The Province

[3] Co-operative Societies Act 1993(Act 502) prior to 2008 in Part IV Rights and Liabilities of Members had a restriction on membership in society. Section 29 stated that "No person shall be a member of more than one registered society whose primary object is to grant loans to members." As at 10th May 2008 this statement was deleted.

Wellesley Banking Co-operative Union Limited. Formerly a credit society, it transformed itself into a bank after it was recognised and declared a co-operative bank by MCSC on the 16th July 2010. Now running as a full fledge Islamic co-operative bank, it has 13 branches in Penang, Kedah, Perlis, Selangor, Kelantan, Pahang and Kuala Lumpur. Currently the Bank Persatuan total assets amount to RM 700 million (Bank Persatuan, 2010). Banking and credit/finance co-operatives contributes highly to the movement assets, turnover and profits.

Despite the progress, co-operatives in Malaysia seem to be at a cross roads due to stiff competitions and challenges from other institutions and organizations that are also expanding and developing rapidly with increased opportunities in and outside Malaysia. The co-operative movement is facing problems and challenges that need to be address by the co-operative themselves and the government. In the National Co-operative Policy (NCP) 2002-2010 the ministry in charge of co-operatives had acknowledged that a majority of co-operatives are small in size and capital, they are facing members' apathy problem and have very poor networking among them. The co-operatives are also facing problem generating and getting sufficient capital to conduct their activities.

Most co-operative are dependent on the conventional sources of capital which is the share capital, fee and accumulated profits. Among co-operatives with access fund, these are not being utilized economically but are channeled to other non-co-operative financial institutions (MLCD [Ministry of Land and Co-operative Development], 2003). In the long run these problems will hinder co-operative performance and co-operative will not be able to contribute to the economy. A large proportion of the co-operatives are still being managed by boards on a voluntary basis and not by the full time professional managers as in the bigger and more successful co-operatives. This creates

difficulty for co-operatives to maintain good governance, inefficient administrative and poor financial management. As of July 2006, it was announced that 9.8 percent of the 4,771 co-operatives were inactive (Berita Harian, 2006). In this year a total of 217 co-operatives were under liquidation (DCD, 2006).

Based on the MCSC report 2009, 92.8 percent of co-operatives (6,695 co-ops) are in the small and micro clusters which are only contributing as much as 4.5 percent and 3.4 percent respectively to the movement's turnover in 2009. Contrary to this, the big clusters (2.2 percent of co-ops) are responsible for 83.1 percent total co-operative movement's turnover. Banking and credit co-operatives are the type of co-operatives in this cluster. The medium size clusters co-operatives contribute 9 percent of the movement's turnover. In relation to this it is no exaggeration to say that co-operatives success, strength and performance have skewed towards the biggest clusters which are dominated by the banking and credit co-operatives. As in earlier discussion, this co-operative function as the backbone of the Malaysian co-operative movement.

2.3 Government Policies and the Co-operative Movement

Co-operative development has been affected by globalization, liberalization, deregulations and changes in government policies. Following this co-operative philosophy, concepts and identity are being challenge by both the external and internal forces (Department of Co-operative Development, 2006). Despite this, the government had and still perceives to have played an important role towards the formation, promotion and continued growth of co-operatives in Malaysia. Technical assistance in the form of seconding government officers to the co-operatives in the land development

schemes (under agencies such as RISDA, FELDA, FELCRA) to assist the co-operatives during their initial development stage were given. The officers help to supervise and manage these co-operatives with the intention of withdrawing their service once the settlers are capable of managing the more matured societies themselves.

Various government and non-government agencies are involved in the promotion and development of co-operatives. They are namely:

1. **Ministry of Domestic Trade, Co-operative and Consumerism (MDTCC).**

   With the change in Prime Minister on April 3rd, 2009, this ministry is responsible for co-operative movement. Prior April 2009, the Ministry of Entrepreneur and Co-operative Development (MeCD) was responsible for the co-operative movement growth and development. MDTCC was established on 27th October 1990 with the aim of encouraging ethical trade practices and to protect consumer interest. The Malaysia Co-operative Societies Commission (MCSC) is an agency under MDTCC. Its function is to registers, audits accounts, advises, motivates, develops and executes the Co-operative Law.

2. **National Co-operative Organization of Malaysia (ANGKASA).**

   ANGKASA is recognized by the government as the national apex body representing the co-operative movement in Malaysia. Formed on May 12 1971, under the Co-operative Ordinance 33/1948. Its function is to promote the co-operative ideology, provides member education and advisory services, publishes co-operative literature as well as represents the co-operative movement in national and international matters. It is a member of the ICA. Its affiliated co-operative members number more than 5,000 co-operatives with more than four million individual members

(ANGKASA, 2006). ANGKASA is financed by the annual subscription of members and statutory contribution of 1 percent of annual net profits of co-operatives, sale of ANGKASA's own publication, contributions and donations. This annual subscription was later reduced to 0.8 percent and subsequently to 0.6 percent, which is the current fee.

3. **Co-operative College of Malaysia (CCM).**

The college was established in 1956 and is now under the MDTCC. The College was further strengthened in 1968 with the passing of the Co-operative College (Incorporation) Act 1968. This is the only tertiary institution in Malaysia providing co-operative education. It provides training and education to the co-operative movement in Malaysia. It also publishes, conducts research on co-operative activities and provides advisory services to co-operatives (CCM, 2006). Its allocation for administrative expenditure is from the Co-operative Education Trust Fund which came from the net profit of co-operatives. It is compulsory for all registered co-operative to contribute 2 percent of their net profit into this trust fund.

3. Federal Land Development Authority (FELDA), Federal Land Consolidation Authority (FELCRA), and the Rubber Industries Small Holders Development (RISDA).

FELDA was established under the Land Ordinance Act 1956, followed by FELCRA in 1966 and in 1973, RISDA was established for the development of rubber smallholders. These organizations are in charge of land development and improving the economic and livelihood of the rural population. The government encourages the setting up of co-operatives in these land schemes with the main objective to encourage co-operation amongst the settlers and to improve their socio-economic condition.

4. Farmers' Organization Authority (FOA) and Fisheries Development Authority (FDA).

The Farmers' Organization Authority (FOA) was set up in 1973 to undertake the supervision of all agro-based co-operatives. The Fisheries Development Authority (FDA) was established by the government in 1971 under the Malaysia Fisheries Development Authority Act 1971. Both authorities are under the Ministry of Agriculture and Agro based Industries. FDA is responsible for the registration, monitoring and the fishermen's co-operatives and fishermen's associations.

Incentives have been given to co-operatives by the government since independence. The incentives were to help encourage the setting up, overcome their initial financial burden, and the development of co-operatives. These include the provision of free registration; tax relief and other tax exemptions such as free stamp duty and the issue of business licenses. According to the Malaysian tax system 2008, co-operatives are given special deduction up to a maximum of 25 percent of net income for contribution to statutory reserve fund (compulsory under the Co-operative law), an amounts equal to 8 percent of the member's funds and are exempted from paying tax for the first 5 years, from the date of registration. A further five years of tax exemption is given to co-operatives with members' funds of RM750,000 or less will continue to be tax exempted. Dividends paid by co-operative to their members are also exempted from tax (Ministry of Finance Malaysia, n.a.). The tax rate after taking into consideration all the exemptions and deductions are lower than private companies' taxation rate.

In the efforts to promote co-operative development, the government is also giving quality awards to well-managed co-operatives based on their application of good co-operative values and good management practices. Recognition is also given to good statutory compliance in the management of co-operative accounts. Encouragement and

awards are also being given by ANGKASA to co-operative leaders in recognition of their efforts towards more effective and responsible management.

The government also believes in the importance of co-operative education and training. The task of educating co-operators and the public has been actively undertaken by the government through the Co-operative College of Malaysia, the MCSC and ANGKASA. The Co-operative College provides co-operative training and education in the fields of co-operative law and administration, co-operative accounting and financial management, co-operative business management as well as in computer studies and their application in co-operatives. These are short and long term courses which are conducted in and outside campus. Due to the increasing need for professionals in the management of co-operatives, the College has been conducting the Diploma course in Co-operative Management since 1991. The course is conducted on a full and part - time basis. The Malaysian Technical Co-operative Programme (MTCP), an international course is also offered to those interested. In 2006, the College offer 109 out campus programmes involving 6,781 trainees. ANGKASA has trained and educated about 5,000 trainees yearly. The MCSC through its training and publicity division conducts basic co-operative education programmes for members at the state and grassroots levels. The extension division is responsible for activities related to education, learning and dissemination of information to co-operatives and to promote active collaboration with the co-operative movement. This division was provided an allocation of RM1.5 million to implement extension programmes in 2006. The department held annual National Co-operative Day on the 21st of July which was attended by more than 4,000 co-operatives. Expo for co-operative and entrepreneur were organized in conjunction with this day. Various workshop and seminars were conducted for the benefit of the movement.

The government envisioned co-operative movement to be the third engine of growth besides public and private sector. Commitment and confidence place by the government are reflected by the financial and non-financial support indicated in various development plan. Prior to the Fourth Malaysia Plan there was no clear government policy on co-operative in their development plans. The Fourth Malaysia Plan (1981-1985) clearly outlines the government's policy on co-operatives. It states that:

> "The co-operative movement provides an important vehicle for the promotion of economic activities, mobilization of capital and the acquisition of property."
>
> (Fourth Malaysia Plan, 1981, p.121)

The Department of Co-operative Development was given an allocation of RM49.55 million to carry out its development programmes. Out of this amount, an allocation of RM41.71 million was given as financial assistance to small co-operatives in the form of advances at a low rate of interest for financing potentially viable projects. This assistance was given to deserving co-operatives which do not qualify for normal bank loans. The Federal government has since then allocated a substantial amount from the national budget for co-operative development.

Under the Fifth Malaysia Plan (1986-1990), a sum of RM33.07 million has been allocated by the government for co-operative development. Out of this amount, RM26.36 million was for loans to co-operatives: RM4.5 million as subsidies for school and other co-operatives initiated by government and RM1 million for the purpose of intensifying member education activities undertaken by the Department of Co-operative Development (CCM, 1991). Since 1986, the government had taken steps to introduce the formation of workers' co-operatives amongst the unemployed graduates. The aim of the co-operatives was to group graduates together, in order to pool their resources and

skills so that they can be co-owners and co-workers of some business or economic venture for mutual benefits.

A management subsidy was also given to school co-operatives so as to enable them to employ workers to manage their business efficiently. In 1986, 300 school co-operatives were given RM100 each as management subsidy and a loan of RM 200,000 was given to the National School Co-operatives. The apex organization of the Community Development Co-operatives which co-ordinates and acts as a supplier to the other CDCs were also given a loan of RM1 million in April 1986 for the purchase of cement to be supplied to the CDCs The Department has provided a total loan of RM65 million at 2 percent to 4 percent interest rate for the period 1978 to 1993 to co-operatives in Malaysia.

Under the Sixth Malaysia Plan (1991-1995), the DCD were given an allocation of RM12.75 million. From this amount a sum of RM450,000 is for the promotion of consumer activities and another RM3.85 million is for the development of school co-operatives (many of which are actually undertaking consumer activities). The balance is for the activities of the Village Industrial co-operatives, Districts Development Co-operatives and for co-operative training's. Besides financial assistance, technical assistance was also given to facilitate co-operative growth in their initial stage of formation. The Sixth Malaysia Plan had reported that co-operatives provide 11,300 people with employment. The National Youth Co-operative Movement (KOBENA) was instrumental in mobilizing Malaysian youth into various business and economic activities (Malaysia, 1991).

The Eighth Malaysia Plan (2001-2005) had incorporated strategies, programmes and projects designed to achieve the National Vision Policy. The objectives are of sustainable growth, strengthen economic resilience as well as create a united and equitable society. In this plan a total of RM 33.2 million was allocated for co-operative development.

In the Ninth Malaysia Plan (2006-2010) the government intent to develop a more robust financial services sector to support socio-economic development and capitalize on new growth and wealth creating opportunities. The government had stated that In order to enhance access to financing through co-operatives, the industry will be strengthened with priority accorded to improvement in their financial capacity and operational capability. In the effort of implementing and attaining the Bumiputra Commercial and Industrial Community (BCIC) objective, this plan aimed at enhancing co-operatives, trust agencies and GLCs (Malaysia, 2006).

The MCSC will play a significant role in spearheading the implementation of the NCP that focuses on a more holistic approach in the development of co-operatives. The focus will be on ensuring the stability and soundness of financial and management operations of co-operatives. Among others, this will include the mandatory registration, regulation and supervision of all co-operatives including those which were previously under the Farmers' Organization Authority (FOA) and Fisheries Development Authority (FDA) (EPU, 2006). The government allocated RM69.5 million (USD 19.14 million) to further promote and develop co-operative activities.

2.3.1 Co-operative Legislations

The Co-operative Act 1948 was the co-operative legislation governing the co-operative movement since before independence. This Act had been reviewed and was found to ineffective as an instrument for constitution and control and had been replaced by the Co-operative Act 1993. This new Act consolidates and unifies the various legislations that governed the co-operatives in the country.

The co-operative Regulations 1995 were deemed necessary according to DCD as a way "To further strengthen the law and give the effects to the principles and provisions of the Act" (Department of Co-operative Development, year n.a.). The main features of the Co-operative act 1993 and Regulations 1995 were the promotion of good management practices, enhancement of member empowerment, explicit development role of the Department, co-operatives to set up subsidiaries in order to take part in the economy and to enable co-operative to set aside some portion of their profit to fund projects for the benefit of the community.

A Bill was passed by the Malaysian Parliament in early 1993 (through a Pan-Malaysia Co-operative Act) for the legislation amendment and consolidation governing co-operative movement in the country. The introduction of the new Co-operative Act 1993 is also aimed towards the creation of a self-reliant and self-regulating the movement through accountability and transparency in its management (Laws of Malaysia, 1995).

Amongst the new provisions aimed towards these objectives are the following:

1. Every registered society shall hold an annual general meeting of members or delegates not later than six months after the close of each financial year (sec. 39, 1993 Act).
2. Eligibility for appointment to Board or Internal Audit Committee, sec. 43, 1993 Act states the following:

   (1) No person shall be eligible to be appointed to the Board or the Internal Audit Committee of a registered society if - he has been convicted of an offence under this Act; or he has been dismissed as an employee of a registered society.

   (2) No person shall be eligible to be appointed to the Internal Audit Committee of a registered society if he has been appointed to the Board of such registered society and no person shall appointed to the Board of a registered society if he has been appointed to the Internal Audit Committee (IAC) of such registered society.

   (3) From the third year of registration of a society, no person shall be appointed to be a member of the Board of such registered society unless he has been a member of such registered society for a minimum period of two years.
3. The provision for better control through the Internal Audit Committee, sec. 49, 1993 Act. The Internal Audit Committee of a registered society shall examine all accounting and other records relating directly or indirectly to the registered society and its subsidiary or subsidiaries, if any, for the purpose of determining whether the affairs of such registered society are conducted in accordance with the objects of such registered society, the provisions of its by-laws and the resolutions adopted at its general meetings. Such observations will be presented at the annual general meeting.

4. The Act requires all allowances for the board, and that of Internal Audit Committee and payment to board members who are appointed on the board of directors of any of the subsidiaries, shall be tabled for approval at the general meeting.
5. No approval on accounts is required from the Registrar General but every registered society shall submit to the Registrar (not less than thirty days before the AGM) and accordingly, table at its annual general meeting the accounts and balance sheet including those of its subsidiaries, (sec. 59, 1993 Act).
6. The formation of subsidiaries has to get the prior approval off the Registrar-General.
7. With the approval of the annual general meeting, co-operatives are allowed to obtain external loans as opposed to the old Act which requires approval from the Registrar-General.
8. The contribution of the reserve fund has been reduced from 25 percent to 15 percent, which allow for greater internal financing of the activities of the co-operatives.

As noted from some of the features of the new law (as in 1, 2, 3 and 7), it is the policy of the government to enhance the supervision of the co-operatives by way of member supervision rather than through external bureaucratic control. The role of government on the financial affairs of co-operatives is only providing observations on the account of the co-operatives. The need to obtain approval from AGM regarding member's appointments to IAC and scrutiny on Board member's allowances and remuneration will encourage accountability and discipline in management. Members are given wider chances to be involved and question the affairs of their co-operative management. The penalty for any offence regarding improper management and improper disclosures on the affairs of the co-operatives is severe under the new Act. Any co-operatives or officer, employee, member or any other person guilty of offence under the Act are liable

to compound up to a maximum of RM25,000 or a maximum fine of RM50,000 upon conviction and or to a term of imprisonment not exceeding four years.

The Co-operative Act 1993 was amended with 1995 (Act 928), 1996 (Act 963) 2001 (Act A1128) and 2007 (Act A1297). The latest amendment was brought forth by the setting of the Malaysia Co-operative Societies Commission (MCSC). The introduction of Co-operative Act 2007 (Act A1297) is necessary to tighten the regulations and oversee the co-operative movement. This Act came into force on the 1st January 2008 and the Department of Co-operative Development is replaced by the Malaysia Co-operative Societies Commission. The changes in the Act are to make provisions for the constitution, registration, control and regulation of co-operative societies.

The objective of the introduction is to promote the development of co-operative societies in accordance with the co-operative values of honesty, trust worthiness and transparency in order to contribute towards achieving the socio-economic objectives of the nation and for matters connected therewith (Malaysia, 2008). As discussed by Hayati Md. Salleh et al. (2008) the following gives some example of the amended subsections based on the objectives of these amendments:

1. **Amendments to help facilitate the formation and management of co-operatives**.

In section 5, the conditions for registration has been simplified by a reduction in number of individual persons to be registered in co-operative formation to only 50 persons as compared to 100 before amendments.

Section 37 and 39 (1) had given power to MCSC to exclude representatives of co-operatives from attending the Annual General Meeting (AGM) and extend the date of

AGM longer than the six months after each financial year duration as stipulated in the 1993 Act.

Under section 57, co-operatives are given permission to use the Statutory Reserved Fund to pay for the shares or subscription and issue bonus shares to members with the approval from MCSC. There are more freedom for co-operatives to utilize their net profits for payment of the welfare of its members and community. Previously this payment is only limited to ten per cent.

2. Amendments to improve efficiency of co-operatives governance.

Section 43 (2), (3) Act A1297 had given powers to MCSC to verify the appointment or reappointment of any co-operative board and their Internal Audit Committee. MCSC scrutiny will ensure that only suitable, responsible and trustworthy members are on the board hence the movement will get better and more effective governance.

The emergence of Islamic banks and financial institutions in the Malaysian financial market for more than a decade ago had also prompted the government to make changes in the Act to give due recognition on the availability of the Islamic banking and financial facilities to those in the movement who require these services. Subsection 44 A had stress on the responsibility of the board or chief executive officers to disclose the importance of Islamic financing or credit facility. Following this subsection, to prevent any conflict of interest it is also the board or chief executive officer to disclose any conflict of interest. The declaration of the fact, nature and extent of the conflict must be done after he held office.

In relation to co-operative distribution of audited net profits, subsection 57 1(E) stated that the Statutory Reserve Fund shall be maintained in a separate account and shall be invested in the Co-operative Deposit Account as referred to in the Malaysia Co-

operative Societies Commission Act 2007. It is hope that such step will prevent the misuse of fund by co-operatives and fund will be used to protect co-operatives from liabilities. MCSC have the power to determine the amount to be paid to the Co-operative Education Trust Fund and the Co-operative Development Trust Fund in the case of secondary or tertiary co-operatives before declaring dividends for each financial year.

Subsection 59 (2A) of the amended Act further strengthen the MCSC financial control by stating that MCSC's observations that have financial effect on the co-operative audited accounts and balance sheet must be adjusted accordingly by the co-operative and should be clearly shown in the audited accounts of the co-operative society in the next financial year. This will prevent co-operatives from ignoring the MCSC observation and not portrayed their true financial standing.

3. Changes related to penalties.

This new Act spells out clearly the amount of fine impose in cases where co-operative or its officer fails to comply with any subsections and provision. Fines for committing offence are liable to be imposed on the board, the chief executive officer, other management staff or anyone else in the co-operative. The high penalty for every offence will act as deterrence and warnings to those concerned that government is serious about poor statutory compliance to Co-operative Act. This is to protect the majority of co-operative members from being exploited by their own operatives and at the same time enforce law and order in the conduct of business and affairs of the movement.

2.3.2 The National Co-operative Policy (NCP)

The National Co-operative Policy (NCP), 2002-2010, was launched in 2002 to provide for the orderly re-development of co-operatives. This is the first national policy on co-operative development since independence. NCP however was introduced in detail later in 2004 to all co-operatives to encourage co-operatives to play a bigger role and to participate actively in the economic growth of the country. NCP envisaged a co-operative movement which is active, strong and self-reliant and the government as the movement's regulator. It outlines the short and long term goals of the NCP and eight strategies of achieving the NCP's objectives. This policy is in line with the other development policy such as the Vision 2020 and the National Vision Policy (Department of Co-operative Development, 2003).

The objectives of co-operatives are as follows:

1. Short-term objective: Enhancing the understanding of co-operative ideology amongst the people, so that the co-operative can function as organizations that are capable of contributing towards economic growth and social development.
2. Long-term objective: To transform the co-operative movement into a vehicle that is competitive and geared towards eradication of poverty, creation of employment and business opportunities and upgrading of quality of life, based on the co-operative principles, for the national development in line with Vision 2020.

The eight NCP strategies are:

1. Ensuring co-operative philosophy and principles are understood and practice by the co-operative movement.
2. Review law and policy to encourage the progress of the co-operative movement.

3. Recognize the co-operative movement as a catalyst and contributor to the country economic development.
4. Strengthen the co-operative governance, management, financial and monitoring.
5. Increase the co-operative capital sources to enable co-operative to be competitive.
6. Increase co-operation among co-operatives and between co-operative and another third party.
7. Constantly improve the product quality and services so that members will always receive the best product and services.
8. Setting up of the National Council of Co-operative Representative. (MPKK)

With the acceptance of the Malaysia Co-operative Societies Commission Bill 2006, Malaysia Co-operative Societies Commission (MCSC) was approved to replace the present Department of Co-operatives Development of Malaysia to effectively regulate and supervise the co-operative sector and to realize its full potential. As indicated in the MCSC Bill, subsection 4, page 9, the objectives of the Commission are to:

a) Foster sound and orderly development of co-operative societies and the co-operative sector in accordance with co-operative values and principles to contribute towards achieving the socio-economic objectives of the nation;
b) Promote a financially sound, progressive and resilient co-operative sector; and
c) Maintain confidence in the co-operative movement.

As indicated in the MCSC Bill, subsection 23, page 20, the Commission functions are as follows:

(a) To promote and maintain stability of the co-operative sector;

(b) To be responsible for the surveillance, supervision and regulation of co-operative societies and the co-operative sector;

(c) To encourage and promote sound and orderly development of co-operative societies and the co-operative sector;

(d) To foster co-operative values and principles;

(e) To create a conducive environment for co-operative societies to carry out their activities;

(f) To register and revoke the registration of co-operative societies;

(g) To act as trustee and to manage any scheme of Islamic financing or credit facility set up by the Government of Malaysia for co-operative societies;

(h) To advise the Minister on all matters relating to co-operative societies and the co-operative sector; and

(i) To carry out any function under any written law as may be prescribed by the Minister by notification published in the Gazette.

The Central Liquidity Fund (CLF) and Co-operative Deposit Account (CDA) were set up following this Act. Co-operative societies are compelled to contribute a percentage of their money to these funds. CLF will give loans to member co-operative societies in the event that they face cash-flow problems or run into financial difficulties. This Act requires co-operative to put their finances in their own statutory reserve fund while excess fund are put into CDA. The fund is to assist co-operatives expand their businesses. The CLF aims to help co-operatives facing liquidity problems and the CDA is to assist co-operatives expand their businesses.

2.3.3 The Second National Co-operative Plan

With the first National Co-operative Policy ending in 2010, MCSC had introduced the second National Co-operative Plan (NCP2) to enable continuity in charting the direction for co-operatives development. This is especially important in their efforts of making the co-operative sector as a key sector in the economic development of this country. This new policy seems to be more focused with specific targets and plan of implementation. The direction of the new NCP2 is in line with the new direction in Malaysia's development (MCSC, 2010).

The year 2009 was the start of a new shift in the socio-economic development with the Prime Minister Dato' Seri Najib introduction of the new principle, 1 Malaysia, People First, Performance Precedence and the National Key Result Areas (NKRA). The Government has also introduced the New Economic Model in 2010 to make Malaysia a developed high income nation. This development brings new challenges to mobilize society as the government has to act more effectively not only to improve peoples' living standards but also in realizing the national development agenda. In this light, this also requires comprehensive reforms of the co-operative movement.

NCP2 was supposed to deal with issues that had all these years had restraint the progress of the Malaysia's co-operative movement such as management, finance, lack of leadership problem, lack of entrepreneurial spirit and lack of members' involvement effectively. In the effort to boost the co-operative movement to a higher level, MCSC emphasis co-operative involvement in the field of high-value human capital development that are creative, innovative with entrepreneurial culture and with awareness of environmental change (MCSC, 2010). NCP2 follows five strategic thrust:

1. Strategic Thrust I - Stimulating the Co-operative Participation In the High Economic Value Sector.

Changing economic environment in both domestic and international level is an important phenomenon's that influences co-operative progress. This requires co-operative movement to move together with the changes or else the movement will be left behind in the development. The co-operative movement is supporting to help Malaysia achieve the ambition to be a high income country by 2020.

With respect to this role, the movement is taking the task of strengthening the financial co-operative sector in the country (which is the core co-operative activity in the country) to ensure a steady development. In addition to this, other key service sectors such as the distributive trade, tourism, food production and plantation development will also be enhanced. Co-operatives will also support the government's recommendations to improve food production to meet the national demand. In this aspect, agricultural co-operatives will be involved in food and livestock production. Green technology will be applied in the processing of food by production co-operatives in the effort to enhance participation in this activity and to bring its progress to a higher level that will benefit the majority of the people in this country. The first strategic thrust also states that all effort will be powered by the following strategic alliances and business networks with third parties within and outside the country. Co-operatives will benefit in terms of capital, technology and market.

2. **Strategic Thrust II - Strengthening the Co-operative Capacity and Capability.**

Co-operative success is based on its ability to continue, survive and compete in its business. This became more challenging in the era where globalization and market liberalization are becoming more intense. Attaining this second NCP goal requires good business management and governance. Thus this became an important element in ensuring co-operative continuity in the market. Co-operative capacity and capability will be enhanced through various efforts such as:

a) Selection of a knowledgeable and committed leaders who can lead the society and bring it a higher level;
b) Expansion of operations in order to enjoy economic scale and competitive advantage;
c) The merger or partnership between the co-operative with third parties to explore new areas which require large capital;
d) Use modern technology to improve productivity and effectiveness; and
e) Expansion of access to finance for co-operatives to expand their business.

3. **Strategic Thrust III – Establish and strengthen the Co-operative Human Capital Capabilities.**

Co-operative success lies in the co-operative members, board members, internal audit committee (IAC) and its staff. Education is an important factor in the efforts of developing human capital and intellectual strength. With education, training and skill enhancement an individual can improve business knowledge and attitudes. Thus in relation to this, empowerment of co-operative members through enhancement of human knowledge, skills and positive attitude is the determinant of co-operative success. This goal will be achieved through:

a) Changes in the minds of leaders and co-operative members to proactive thinking, creative, innovative and entrepreneurial culture;

b) Increased knowledge and skills in areas which are currently being pursued by the co-operatives;

c) Increased professionalism in the co-operative management and administration;

d) More effective implementation of compulsory courses to board members and JAD; and

e) Promoting the lifelong learning among co-operatives members to master various sciences.

4. Strategic Thrust IV - Improving Public Confidence in the Co-operative Movement.

Co-operative movement is to become the platform for helping people to improve and enhance their quality of life through group activities. Co-operative membership enables individual participation in economic activities to generate income and wealth. Therefore the awareness about the benefits of joining a co-operative should be promulgated to attract people to participate in an existing or establish new co-operatives.

The MCSC's intention is to promote co-operative to the public so that co-operatives will be perceived and accepted as part of their normal practice in their lives. All walks of life and communities are thereby encouraged to establish co-operatives in their community or at the workplace. In this aspect, the strategy recommends to increase public confidence, understanding about co-operative and their activities by:

a) Promotion of co-operative awareness through people-friendly approach;

b) Increased awareness, co-operation and support to employer or the association leaders in the effort to develop cooperatives in the country;

c) Facilitating the establishment of co-operative to encourage more people to become co-operative members; and

d) Dissemination of co-operative information more effectively with the co-operation of the media and government agencies.

5. Strategic Thrust V -Strengthening Co-operative through Effective Supervision and Enforcement.

Conducive legal environment will help promote the co-operatives growth and successes. Enabling environment alone is not enough therefore, firm action is needed to ensure good governance so that co-operative societies continue to grow and become sustainable. With this, co-operatives can participate in mainstream national development. Early detection and pre-emptive action is the new approaches to enhance compliance towards the legislation.

This approach will be implemented continuously to make the co-operative movement stronger and become more credible. The strengthening of regulatory and law enforcement actions will be carried out through:

a) Preventive education to provide an understanding of the co-operative legislation;
b) Effective initial preventive action which is done quickly and systematically on high risk co-operative as an early warning, to protect the interests of members and the public;
c) Conducive preparation of the legal framework of co-operatives through ongoing review and assessment to curb unhealthy among co-operatives; and
d) Dissemination of information about unhealthy activities in the cooperative movement to co-operators and the public to increase awareness and vigilance to maintain confidence towards the cooperative movement.

2.4 Co-operative Role in Poverty Eradication

The Malaysian government had made consistent and committed efforts towards eradication of poverty. The efforts are evident as in the first NCP long term objective which is geared towards eradication of poverty, creation of employment and business opportunities where by upgrading of quality of life, based on the co-operative principles, for the national development in line with Vision 2020. Detailed discussions are in the previous section of this chapter. Malaysia's poor are mainly concentrated in the states of Kelantan, Terengganu, Kedah, Perlis, and Sabah. The incidence of poverty in Malaysia had decrease from 8.5 percent (1999) to 1.7 percent (2012). Likewise hard-core poverty also decreased to 0.2 percent (2012) from 1.9 percent (1999). Refer to table 2.6.

Table 2.6: Percentage of poor and hard-core poor households by strata, Malaysia, 1999 to 2012

	1999	2002	2004	2007	2008	2009	2012
Poor							
Malaysia	8.5	6.0	5.7	3.6	3.8	3.8	1.7
Rural	14.8	13.5	11.9	7.1	7.7	8.4	3.4
Urban	3.3	2.3	2.5	2.0	2.0	1.7	1.0
Hardcore poor							
Malaysia	1.9	1.0	1.2	0.7	0.8	0.7	0.2
Rural	3.6	2.6	2.9	1.4	1.8	1.8	0.6
Urban	0.5	0.3	0.4	0.3	0.3	0.2	0.1

Source: Economic planning Unit and Department of Statistics household income surveys 1999- 2012

The poor households are predominantly rural and agriculture based. The characteristics of households with hard-core poor are normally headed by female, elderly male, of low education background, large family size and of ethnic minority such as the indigenous population. The Poverty Line Income (PLI) now used is based on the food PLI and non-food PLI defined in household income survey (HIS) based on size, demographic composition and its location. A household is considered poor if its monthly income is less than the food PLI (Noriyah Ahmad, 2007).

In the Ninth Malaysia Plan period, efforts were undertaken to eradicate pockets of poverty among the disadvantaged groups, in particular the Orang Asli in Peninsular Malaysia. The thrust of poverty eradication strategies will focus on eradicating hard-core poverty and halving overall poverty by the end of 2010. New and improved institutional mechanisms and specific social welfare programmes will be pursued to ensure that hard-core poverty continues to be eradicated beyond 2010.

In addition, measures will be undertaken to reduce poverty in the rural and urban areas as well as among Bumiputera in Sabah and Sarawak through income generating projects and employment opportunities. Only the elderly, poor single parents, handicapped and destitute who are unable to participate in gainful economic activities will continue to receive outright assistance (Malaysia, 2006).

In relation to poverty, the Malaysian co-operative history also shows that co-operative had a role in poverty eradication (Wells, 1990). Ungku Abdul Aziz (1983), who was the president of ANGKASA had stressed on the role of co-operative in changing the fate of the poor and the struggle to overcome oppression in the society through co-operative movement. Tebuk Haji Musa Co-operative in Parit Buntar, Krian, Perak was the second co-operative to be registered in 1923. This co-operative was set up by the farmers and peasants who are majority poor. Rural poverty was prevalent at that time. Poor farmers had no saving and were exploited by their own local moneylenders, traders and shopkeepers. Not only they were made to pay exorbitantly high rate of interest for their loans, because of the debt they also have to sell their produce to the particular trader at very low prices. Most of the farmers end up mortgaging their crops and their land.

Rural Co-operatives Credit Societies and banks became important in the early years in Malaya with membership numbered over 60,000 people mainly paddy-planters and rubber small-holders. Loans from co-operatives help them pay their living expenses and improve lives. The Employees' Co-operative Credit Societies formed among the employees mostly from the rubber estates had played a significant role in helping eradicating poverty among estates workers (Kularajah, 1968). According to Kularajah (1968), thrift and loan societies had also played a great role in encouraging thrift and in giving credit to members at very low rates of interest.

MCSC provides information of co-operative statistics by target groups. These groups are based on types of members' occupation and activities. Detailed statistics of co-operatives by target groups (membership) with regards to the share capital and assets in Malaysia as at 2010 is shown in table 2.7, page 82-83. This statistics is useful as it portray the adoption of co-operative activities across various occupations and how extensive is the spread in reaching out to various Malaysian populations. In table 2.7, from a total of 8,146 co-operatives (in 2010), co-operatives are subdivided into 64 various sub-target groups.

The groups indicated by MCSC seem to be based on type of members' work, land development scheme, special needs criteria, learning institutions and types of activity. The special needs criteria groups are related to single mothers, Muslim converts, disable, poor, pensioner and indigenous people. Co-operative are also targeted among workers from various jobs such as government agencies, private sector, sportsman, banks, youth land-scheme, doctors, teachers, small industries, insurance, lawyers, imam, factory and estate workers. The policy is to embrace the 1 Malaysia concepts through

the co-operative spirit by promoting co-operative in every community. MCSC launched the 1 Community 1 Co-operative in March 2010 (MCSC, 2010).

As at 2010 (shown in table 2.7) there are 25 co-operatives among the estates workers with 4,292 members. These co-operatives' have an asset worth RM13,251,157 and share capital of RM4,299,535. On average the individual member share holdings of the 25 co-operatives are RM1,000 per member. The National Land Finance Co-operative Society Ltd (NLFCS) is an example of a co-operative set up in 1960 to solve the problems among estates workers retrenched and evicted from homes after the European-owned rubber estates they worked for were sold off and resold again for profit. This co-operative was set up by the late Tun Dr. V.T. Sambanthan, the prominent Malaysian Indian Congress (MIC) leader with the objective of giving opportunity to estate workers to own land (NLFC, 2012). Besides this objective the co-operative also looks into the welfare of members' children and education, housing ownership, promote small scale entrepreneurship opportunities and financial aid to members.

Table 2.7: Co-operatives by Target Group as at 31st December 2010

Target Group	No. of Co-op.	Membership	Share Capital	Assets
		No.	(RM)	(RM)
Government Agencies	31	22,431	65,431,814	147,745,667
Sportsman	1	104	90,640	109,134
Banks	2	813,554	2 ,362,445,404	56,733,242,511
Youth/Youth Land Scheme (RTP)	198	87,916	34,913,041	461,091,863
Doctors	2	705	7,854,785	27,198,910
FELCRA	149	50,943	49,634,825	136,010,432
FELDA	308	351,792	1 ,691,945,774	2,331,192,530
Adult Federation	37	9,381	26,212,130	462,298,352
chool Federation	9	620	312,527	1,159,971
Teachers	77	178,471	727,697,796	952,259,941
Single mothers	13	556	27,258	38,874
Imam/Bilal	3	1,071	1,092,025	2,386,580
Small Industries	39	2,370	828,113	2,184,617
Insurances	4	417	136,522	230,100
Mosque KARIAH	47	4,485	531,961	1,109,279
Welfare	23	9,121	763,049	2,695,256
Family	197	9,404	2,112,955	9,503,416
KEMAS*	13	14,238	21,675,249	28,673,750
Union	58	7,984	3,882,139	16,562,233
KESEDAR	8	2,045	470,599	1,348,089
KOBERA	277	17,777	934,738	1,952,887
Community College	41	20,711	509,465	2,922,945
Matriculations	5	1,466	81,314	1,912,467
Private Colleges	36	21,537	1,638,055	5,508,909
Landownership co-op	34	6,051	10,033,933	29,259,129
Development Village Co-operative	19	2,683	732,531	8,190,894
Uniformed Personnel	23	375,937	1 ,138,090,725	2,745,416,134
Other Government Servant	58	21,228	55,034,699	105,995,961
Teachers Training College	25	8,806	618,784	3,564,102
Muslim Converts	1	114	6,140	5,402
Fishermen	39	8,301	2,363,884	16,108,945
Disable People (OKU)	14	2,119	224,749	1,706,794
Orang Asli	17	10,979	2,191,166	12,999,185
Civilian	2,134	1,130,435	805,717,250	2,489,629,924
Government Servant	240	296,713	1 ,122,063,173	2,253,902,241
Lawyers	2	87	8,700	9,355

Table 2.7, continued

Statutory Agency Workers	100	66,620	250,363,818	375,161,102
Factory Workers	44	32,384	79,166,966	132,823,670
Estate workers	25	4,292	4,299,535	13,251,157
Stevedoring	12	8,753	21,843,960	37,802,987
Private Sector Employee	144	259,898	775,564,248	1,212,469,518
Worker Investment (KPP)	5	8,299	6,993,598	16,392,126
Drivers	67	9,833	2,169,511	25,372,645
District Development(KPD)	71	35,277	10,389,702	46,671,758
Wholesaler	1	49	4,400	4,793
Housing Area/R.PJG	556	90,593	23,801,935	176,659,620
Village Head	9	659	1,024,302	2,550,546
Small Businesses	95	62,355	24,243,359	125,133,583
Livestock breeder	12	553	51,240	51,299
Pensioners	82	12,845	5,318,735	45,014,497
Farmers	190	18,691	3,583,790	17,776,562
Polytechnics	24	106,655	2,899,194	17,502,324
Training Centers	27	10,274	380,775	5,106,390
Training Centers (GIAT MARA)	4	187	9,600	60,803
Training Centers (IKM)	8	7,689	671,866	5,679,967
PUTERA	4	175	8,500	5,250
RELA	1	50	5,000	5,400
RISDA	60	187,764	37,440,428	107,585,819
Schools	2,135	2,086,950	18,916,728	200,198,773
University Students	16	8,608	40,431,865	52,551,593
Public Universities	33	22,728	81,426,395	65,024,565
Private Universities	13	3,331	2,435,016	2,295,741
Entrepreneurs	49	3,171	1,438,629	21,664,504
Women	175	58,806	13,976,949	83,743,984
TOTAL	**8,146**	**6,600,041**	**9,547,167,957**	**71,784,687,756**

Source: Malaysia Co-operative Society Commission (MCSC), 2010

The spirit of co-operative in the community was meant to be a force to help groups that are poor and less fortunate in the community. The Koperasi Bela Rakyat (Kobera) or People's Advocate Co-operative is set up especially with the agenda of reducing hard-core poverty in Malaysia. There are 277 Kobera with target members comprising of the destitute and the very poor. Beside these 14 co-operatives for disabled persons operating with services and consumer functions, 13 single mothers' co-operative involved in

health services and consumer activities. These co-operatives are situated in Perlis, Kuala Terengganu, Penang, Selangor and Wilayah Persekutuan.

Co-operatives are also encouraged among the Orang Asli community. The government's viewpoint is that co-operatives are deemed important for them as Orang Asli is an ethnic minority that is still left behind in the development process in Malaysia. There are 17 co-operatives set up by Orang Asli people with more than ten thousand members. The Department of Orang Asli Affairs (JHEOA) reported that 29,873 or 87 percent of the Orang Asli population are poor. Out of this, 12,435 are hard core poor. Currently, this minority group is given attention by various government and non-government organizations (such as the Centre for Orang Asli Concern (COAC)) as they have the highest school drop-out rate among the students in both primary and secondary schools.

The community is not only facing economic but also social problems. The Orang Asli co-operatives are running their business independently to help solve their own problems. Their activities are mainly in agriculture, supplies, book shop business, services and consumer activities. These co-operatives were set up by their members with the specific objectives of helping, developing and promoting activities to enhance the well-being of their community (MCSC, 2007). As at 2010, the amount of share capital owned by the 17 co-operatives is RM2.2 million. If one were to divide the RM2.2 million share capital by 10,979 members, on average this will amount to each member holding only approximately RM200 shares each in their co-operatives.

Co-operatives in the land settlements (FELDA, FELCRA, RISDA, MADA, KADA, KESEDAR) and the Development Programme for the Hard Core Poor (PPRT) in

KEDA, had also played a significant role. Co-operatives began as a government tool to provide help for the poor. Later on, these co-operatives progress and they not only grew in size, membership, asset ownership but also provide employment for the rural labour force, provide return in the form of dividends, rebate and bonus shares to their members and most importantly provide the needed services for their members and the community. As at December 2010 there are 308 co-operatives in FELDA, 149 co-operatives in FELCRA, 60 co-operatives in RISDA, 19 co-operatives in KEDA and 8 co-operatives in KESEDAR. These co-operatives are actively involved in plantation, transportation, construction and consumer activities. The number of co-operatives however had shown a decreased in FELDA (down to 308 from 318 in 2007) and FELCRA (down to 60 from 69 in 2007).

Co-operatives among the poor fishermen are not a new development. However, fishermen co-operatives progress is relatively slower compared to other agriculture sector. Fishermen co-operatives were formerly under the surveillance of FDA following the 1971 Fisheries Development Authority Act. With the new MCSC set up, the remaining 34 fisheries co-operatives are return back to MCSC. As at 2010 the number of fisheries co-operatives had increased to 39 co-operatives. These co-operatives will once again be oversee and supervise by MCSC and be subjected to the Co-operative Societies Act. The government wants more co-operatives to function in the fishing community and help support the fishing industry. Investigation done by MCSC had revealed that only 53 per cent of these are active (MCSC, 2008). Another 26 per cent are with potential and will be revived. Among their activities is marketing, transportation of fish, produce and supply ice, renting out boat license and selling diesel. MCSC is also responsible to help empower fishermen (turn the traditional coastal/

inshore fishermen into deep-sea fisherman) through skill enhancement by giving technical training and turning the fishing industry into a commercialized industry.

The government had recently launched Koperasi Pembangunan Rakyat Pahang Berhad (KPRP) on the 1st June 2007 with the objective of elevating the hard-core poor and their families in the fishing community in various places in Pahang such as Pekan, Kuantan and Rompin. The objective of this co-operative is to create jobs for poor fishermen, provision of transportation for fish, fish processing plant, provide an efficient fish marketing services and a workshop or marine engineering services. Four commercial fishing vessels were built for the co-operative with RM12 million government grant, a joint project with University Kuala Lumpur (UniKL) and WMA Resources Sdn Bhd. KPRP's revenue from fishing and downstream related activities in 2010 was RM1,423,073 and have created employment for 55 people (MCSC, 2010).

2.5 Co-operative Movement and Rural Entrepreneurial Development

In the last 5 decades, Malaysia has undergone significant structural transformations and changes along with a fairly robust economic growth in the region. The resource rich country has been transformed from a mere agricultural based to an industrializing economy in less than 3 decades. Along with this transformation, the wealth distribution issues have been very central in affecting the socio-ethnic relationship among the various ethnic groups. Thus far, Malaysia's fairly robust growth could be considered as a prime factor in creating a more cohesive Malaysia, in which each ethnic group can co-exist with other communities while maintaining its socio-cultural and religious values and beliefs. This harmonious communal relationship is expected to strengthen economic

growth as political stability and ethnic consensus are important pre-conditions for national development.

However, the trickle down impact of economic growth does not assure equitable distribution of the gains from growth among the various communal and ethnic groups. In other words, qualitative changes in the economy could be as important contributors to change along with the quantitative growth achievements (Lee, 2003). In a way, the robust growth of the Malaysian economy in 1980s and 1990s has spurred foreign direct investment, creating employment opportunities and wealth. Many researchers have argued that further economic liberalization and growth in an open economy like Malaysia must also include moderate ethnic relations that are quite vulnerable to changes and pressures (Gomez, 1997; Lee, 2003; Snodgras, 1980; Ozay Mehmet, 1984; Ishak Shari, 1989; and Jomo, 1991). In other words, they seem to propose that a continuous and robust economic growth will continue to be an important factor in stabilizing inter-ethnic relations and social justice in a multi-racial country such as Malaysia.

Nevertheless, the post New Economic Policy period saw the emergence of a new policy in the form of National Development Policy (1991-2000). The National Development Policy (NDP) does have a new approach in addressing the issue of economic equity among the ethnic races. For example, even though the NDP continues to focus on economic growth, the redistribution aspect took on different pro-business strategies in the form of market liberalization, privatization and others. Nevertheless, the 1997 financial crisis shows how fragile and vulnerable the system was when Malaysia achieved negative growth in 1998. The crisis also further worsened the ethnic income differentials as Bumiputera households showed a relatively lower income levels as

compared to other ethnic groups. In this way, the economic downturn further eroded the initial NDP objective of growth with distribution as emphasis under NDP announced in the early 1990s.

2.5.1 Micro Entrepreneurship through Co-operative Movement

The orientation and emphasis of rural development efforts have been to (i) develop the rural sector based on indigenous capital that is viable during the time (ii) address the structural problems that is impending in rural development that needed a major shift in term of priority and emphasis (iii) address the backwardness associated with the dualistic nature of the rural development after the postcolonial era (iv) create linkages as the rural sector still play an important role in generating growth especially in supplying basic needs such as food and agricultural products needed by the urban sector.

The structure of agricultural production has been strongly characterised by small-scale production and limited land size. Thus, the emergence of the third sector institution such as the co-operative movement is appropriate. It can be seen that there were fairly active efforts made to develop the third sector as part of the economic structure. To complement this role, the development era has seen the proliferation of marketing agencies and farmer's organization as well as the drafting of legislation and ordinance that provides the basic structure and foundation of co-operatives movement in the national development process.

In retrospect's, the government have strongly focused on the role of institutions in promoting change, growth and development. Institution and organisation can facilitate collective action and enable community to transcend the limitations of acting in isolations. Institution and organisation can facilitate collective action and enable

community to transcend the limitations of acting in isolation. Financial intermediation through the co-operative movement can be seen as a small local self-help strategy that is organized around income generating activities and locally available skills. In this sense, the promotion of such strategy is an important tool to empower and encourage participation in rural community to engage in commercial decision-making.

No doubt rural development were confronted with the daunting task of not only in terms of limited economic resources owned by the rural poor, but also in terms of asymmetric or imperfect information, production risk, high transaction cost, urban biased economic policies as well as weak intermediary institutional capacity. As argued by Myrdal (1968), utilizing third sector institution such as the co-operatives is quite in line with the international trend as it also represents socio-democratic process without the overly zealous role of the state (Fredericks, 1986). In this regard, such relationship may also be seen in terms of what Worsley (1971) proposed as the principle of mediation in which the role of co-operative entity is expected to mediate between the process of decentralization of government control versus that of the participation of the community in the development process.

The introduction of the market economy in the early phases of Malaysia's development process does bring about a new institutional approach that is expected to enhance growth and development process. Economic theory would suggest that market efficiency would assure of an equally efficient mobilisation of resources to enhance the valued added aspect of wealth creation. Nevertheless, the market may also fail for the simple reason that asymmetric information as well as distortions due to well-designed but poorly executed policy interventions.

On all counts, the emergence of market institution in less developed economies could be treated as a panacea to speed up reforms and allow exchange that can promote greater wealth creation. In this process, linkages and trickle- down effects are expected to take place and bring about the favourable effects of economic of change and development. However, the actual dynamics of change and growth are far more complex as market theory may be based on rather simplistic assumptions. Thus, market failure especially in term of the availability of perfect and free information may result in a distorted market that may impeded the expected impact of linkages and trickle- down effect of market efficiency.

The co-operatives supervised by government agencies, such as FELDA, FELCRA and the RISDA, served the rural community and their main functions are contractual work, transport service (lorries, buses and tankers), retail stores and mini-markets, and the supply of electrical appliances, motorcycles and furniture. Co-operatives in the land schemes are also encouraged to form secondary societies at state levels. These secondary societies become agents for their members to supply the needs of the settlers, thus ensuring quality goods at reasonable prices and at the same time cater for the collective market of their produce including fruits, vegetables, chickens and goats and others. Co-operatives not only serve members but also help to empower their children who are encouraged to take up vocational courses so that they can operate their own service oriented programmes like workshop for motorcycles and agriculture machinery repair.

The performance of Farmers' Organizations is also very encouraging. Their main agro-business activities are agriculture inputs, marketing of agricultural produce, agricultural processing, and farm mechanization services. In their last FOA Corporate Plan (2000-

2005), it was reported that FOs has already achieved their roles in creating a business network. A case in point is the achievement of the Johor State Farmers' Organization (JSFO) which has created a marketing network for fresh oil palm, marketing and the oil palm processing factory to cater to the needs of its member Area Farmers' Organizations (AFO) in the state of Johor.

Another example of a good network between FOs is the Bukit Awang AFO in the state of Kelantan which addresses the needs of its red chilly production carried out by its members by having a contract farming arrangement with Nestle. Farmers benefitted from FOs objectives of creating entrepreneurs among farmer members. Usage of new technologies and application of good management practices on their farm had produce high quality and high value products which benefitted consumers and the nation. FOA had allocated RM38.18 million in 2009 for the projects related to manufacturing of basic food related to paddy, fruits, livestock and aquaculture. These projects it was reported to have brought about a number of 9,737 entrepreneurial farmers (FOA, 2009).

Clearly the success of co-operative movement especially in the rural sector hinges heavily on the transformation of the rural economy. In the history of rural growth, Tun Abdul Razak's (the late second prime minister of Malaysia) rural development model has been instrumental in creating the basic infrastructure for the creation of entrepreneur and business community among the rural community. As such, co-operatives as the conduit for the development and growth of micro entrepreneurship has been emphasis until today in current development plan.

The Malaysia's rural development model is the transformer that enable new generation of today taste the fruit of development. This model transcended beyond the late prime

minister's era reflecting his futuristic vision of his development plan. In retrospect, the growing number of co-operative movement and its membership is a clear manifestation of such development design which continues to support the growth of entrepreneurial community across the various economic sectors. FOs organization structure is divided into 3 which comprised of the National Farmers' Organizations (NAFAS), State Farmers' Organizations (PPN) and Area Farmers' Organizations (PPK).Tables 2.8 and 2.9 shows the development of FOs.

Table 2.8: Membership of FOs and Share Capital

Year	No. of members	Share capital(RM Million)
2003	466,881	77.662
2004	470,266	88.96
2005	481,671	98.85
2006	488,115	105.40
2007	498,394	107.87
2008	511,748	117.18
2009	530,693	135.96
2010	545,014	163.26

Source: Farmers Organization Authority, Annual Report, 2005 and 2010

Table 2.9: Business Volume of FOs (RM Million)

FOs	2006	2007	2008	2009	2010
PPK	707.84	904.14	785.55	824.83	874.3
PPN	483.36	628.06	540.13	567.13	601.2
NAFAS	898.75	1,369.0	1,164.62	1,222.53	1,295.9
Total	2,089.95	2,901.2	2,490.3	2,614.49	2,771.4

Source: Farmers Organization Authority, Annual Report 2010

The increase in FOs membership had contributed to the significant increment in their share capital. The amount of accumulated share capital in 2009 was RM135.96 million, an increased by 13.8 percent from 2007 (RM117.18 million). As indicated in table 2.9, statistics showed that from 2006 to 2010 there has been positive growth in business volume undertaken by the FOs. Looking at the increased business volume of the FOs with members, the overall business performance of FOs has also been very encouraging.

The value of supply of agriculture inputs and marketing of agriculture produce done through FOs amount to RM716 million and RM465.2 million respectively (FOA, 2010).

2.6 Discussions and Conclusions

Taking into consideration the state of Malaysia's economic and social performance, this study concludes that the Malaysian co-operative movement is still relevant and had a role to play in the economy. The co-operatives' moderate but steady growth for the past ninety years has been due to the trickle-down effect of the country's buoyant economic growth. Beside the economic growth, Malaysian co-operative have been sheltered by the enabling environment created by the government. These two factors are very important reasons that have ensured co-operatives survival. It is an "open secret" that since the co-operatives' introduction, until today apart from the "big" co-operatives (which is only slightly over 2 percent), over ninety percent co-operatives (micro and small) grew, developed and existed because of the backing of the government. All the rural and urban co-operatives (big and small) had benefitted significantly from the positive environment created by the government.

The introduction of MCSC to replace the Department of Co-operative Development and NCP2 are timely and consistent with the needs of comprehensive reforms in the movement. It is important to increase co-operative participation in the economic sector as well as to strengthen their capacity and capability. Besides, NCP2 is also important in addressing the financial deficiencies which contributes to the constraint in the co-operatives expansions. However, finance is not the only issue as despite having potential business capabilities and impressive performance, co-operatives face great challenges from the weakness within the movement itself as well as intense competition

and rivalry from other businesses. Co-operatives are facing serious problems of internal weaknesses arising from management, leadership inefficiencies, lack of entrepreneurial spirit and members' apathy. All these problems contribute to the fact that co-operatives still lagged behind in growth as compared to the private businesses. Hence, human capital and capacity building is equally important that NCP2 have to address. This is inline with recommendations of strengthening co-operatives in Asian countries by Birchall (2004).

Co-operative efficiency in governance must be improved for the movement to be sustainable. The policy of enhancing co-operatives' supervision by way of members' supervision rather than through external bureaucratic control is in line with the co-operative principles. In the long run this will enhance the co-operative governance. As there is an unequal growth in terms of business activities and sizes in the co-operative movement (where 92.8 percent of co-operatives are still in the small and micro clusters), these co-operatives, the FOs and Fisheries co-operatives are still in need of much attention and supports from the government.

The socio-economic context surrounding co-operatives in Malaysia makes the role of co-operatives more significant and complex. Two factors that influenced the socio-economic environment in Malaysia are firstly the level of education of peasants in the country. Any form of development programme, whether co-operatives or alternatives, would need a considerable time to be accepted by people especially by the rural and urban poor. Co-operatives usually start with a small number of members and these co-operatives will be able to attract more members only if this small group of innovators is successful. This phenomenon also implies that the principles of voluntary membership and the democratic control may need to be compromised to enable the co-operative

movement to start. The slow acceptance by the community is the reason why the Orang Asli, farmers and fisheries co-operatives are lagging behind in terms of membership.

Secondly co-operatives became a political tool to achieve quick social and economic change after independence. Co-operative movement increased rapidly because of the government's intensive efforts in encouraging co-operatives. However, when people joined co-operatives without understanding the ideologies and principles of co-operation, they have no sense of commitment to co-operatives. As members have no sense of belonging and tend to regard co-operatives as just another government organization, members' loyalty problem arise. As in many other developing countries such as India, Indonesia and Thailand, Malaysian co-operatives are stepping stone to get to the subsidies, credit or other incentives given by the government through co-operatives (Mokhzani Abdul Rahim, 2006).

Access to dependable and adequate sources of finance is also an essential pre-condition if a co-operative is going to be successful. Financial assistance from the government although necessary, it can also turn out to be a negative factor in co-operative development. Government subsidies may lead to massive government interventions so as the co-operative may lose its autonomy. Furthermore, the issue of fairness should also be considered since at present public funds only benefit a relatively small number of active co-operators, whereas they could be used to improve the economic position of the larger group of low income people in general.

Permanent government assistance will not promote self-help and self-reliance in co-operatives. Nevertheless, co-operatives must not be written off as a mechanism for enhancing economic development and alleviating poverty, since the advantages of co-

operative organization have been demonstrated in many developed countries. Government assistance should concentrate on education, promotion, advisory services and audit by government officers who would respect the independence and autonomy of co-operatives.

The introduction of co-operative as third sector linking market and government seems to provide an ideal mechanism to promote rural economic growth, poverty alleviation and encouraging co-operative to involve in medium and large scale businesses. From reviewing the development plans, there seems to be strong emphasis on the creation of Bumiputera entrepreneurial community. This is particularly so under the various development plans in which various strategies to alleviate rural poverty has been conceived. For example, under the First Development Plan, the emphasis was on: Agricultural and Rural Development, Rural Co-operatives, Green Revolution and Integrated Area Development. Co-operatives have been viewed as a particularly useful medium for rural and agricultural development.

Due to the limited resources among farmers especially in term of primary input such as land and capital, there is a need to pool and collectively manage the resources in order to create an opportunity for them to improve the material condition. The rural economy needs to be further developed by enhancing the co-operative development. The creation of rural entrepreneurs through the co-operative movement plays an important part in (a) integrating producers/consumer against middlemen, landlords and buyers, b) releasing saving resources from the rural community and (c) adopting superior organization that should be managing in a least cost manner.

Although the current co-operative movement is affected by globalization, liberalization, deregulations and changes in government policies, the Malaysian co-operative movement is still a force to be reckoned, as it is local people's business, set up, governed and managed by them for their own and community's interests. It is imperative that Malaysian government should only be at the supervisory role for the continued growth of co-operatives. In view of the importance of co-operatives' principles and for the sake of co-operative sustainability, independence and integrity, the role of government should be minimized to monitoring and enforcement of co-operative laws and regulations. In conclusion, the development of co-operative movement as the third sector remain the crucial link in enhancing rural industrialization that will link rural-urban growth and the encouragement of Bumiputera entrepreneurial community which could contribute towards the long term growth of the nation.

CHAPTER 3

AN INVESTIGATION ON CO-OPERATIVE MEMBERS' COMMITMENT, PARTICIPATION AND SUPPORT

3.1 Introduction

There are many definitions given to co-operative. As defined in the Malaysia Co-operative Societies Act 1993 (Act 502) co-operative is

> "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise"
>
> (Laws of Malaysia, 2008, p. 8).

All co-operatives in Malaysia are managed based on the values of self-help, self-responsibility, democracy, equality, equity and solidarity. The organisation and management of these co-operatives are subjected to the Co-operative Act 1993 and their respective by-laws (Laws of Malaysia, 1995; 2008). The law stresses that the ultimate power/authority of all co-operatives are in their annual general meeting (AGM). This is possible as the Board of Directors of co-operatives (BOD) is co-operative members. Members elect their own BOD, and the BOD is given mandate to run and manage their co-operatives. The policy and direction of co-operative are determined by members in the AGM (Idris Ismail & Mohd Safaai Said, 2003).

Following the introduction of the Statement of Co-operative Identity by the International Co-operative alliance (ICA) in 1995, Malaysian co-operatives also

observed the seven universally accepted principles (Laws of Malaysia, 2008). Co-operatives are regarded by government as a tool for the country economic development especially in helping to eliminate rural poverty, enhance rural and urban development, solves the unequal income distribution and thus bridging the income disparity between rural and urban (Azmah Othman & Fatimah Kari, 2008). Commitment and confidence placed by the government are reflected by the financial and non-financial support indicated in various development plans (Azmah Othman & Fatimah Kari, 2008).

Similarly, such as in Spain, Italy and Canada, co-operative development in Malaysia is also depending on the government's commitment and support (Adeler, 2009). Malaysian government has also played an important role in promoting and encouraging growth among co-operatives in Malaysia through enabling proper environment for co-operative to stay active and infrastructure for co-operative operate its activities. This has ensured new opportunities for co-operative development. As discussed in chapter two, these support policies and programmes for co-operative development are in the form of legislative, educational, technical, advisory and financial assistances.

As at December 2010, there are 8,146 registered co-operatives in Malaysia with 6.6 million memberships (Malaysian Co-operative Societies Commission, 2012). In relation to the total number of populations in Malaysia (28.3 million in 2010), 23.3 percent of the population is member of some form of Malaysian co-operative. Although these figures can be an indication of support from the people, co-operatives in Malaysia is still at a cross roads due to stiff competition and challenges from other institutions and organizations that are also expanding and developing rapidly with increased opportunities in Malaysia and abroad. Some of these competitions and challenges are from private companies or from the government linked companies.

These problems and challenges that need to be address most importantly by the co-operatives themselves. In the National Co-operative Policy (NCP) 2002-2010, the government had acknowledge that majority of co-operatives are small in size and capital, they are facing members' apathy problem and have very poor networking. They are also facing problems of generating and getting sufficient capital to implement their activities (Malaysia, Department of Co-operative Development, 2003). As grass root organization, it is the people in the co-operative that should be given most attention.

A typical social economic enterprise organized by the people and run by themselves naturally they would ensure that they reaped the benefit of their own labour. People being referred here are the co-operatives' members. It is crucial to evaluate co-operative membership because the success or failure of the organization highly depends on them. The findings of this research are different from other research as this study is focused on factors that influence co-operative membership and their share increment in Malaysia. This is important because success or failure of the organization highly depends on membership and to a certain extent to the amount their share invested in their co-operative.

The importance of co-operative movement in the economic development and lack of research on co-operative in Malaysia has motivated the researcher to examine three issues related to co-operative:

The first issue is membership loyalty and its related issues specifically the factors that might influence co-operatives' membership preferences such as their age, income level, types of occupation, educational background and level of outside involvement. Why are there instances where individuals frequenting co-operative shops and yet refuses to be

member of that very co-operative? There are also cases where individuals are already member, but choose not to be active, but prefer to be just dormant or inactive member.

Secondly is the co-operative share capital issue. Co-operatives depend on and benefitted from their member's share capital contribution and commitment. Factors that affect and influence members' decisions to increase share capital contribution became important as it will influence the financial stability.

The third is issue related to membership satisfaction, dissatisfaction and benefits. Members' perception of their own co-operative's success and the co-operative's role in business and development is a portrayal of co-operative success in general. Again members' satisfaction or dissatisfactions are important as they are reflections of their co-operative performances.

All the three issues are pertinent and related to the co-operatives in Malaysia as these issues could affect the co-operatives performance in this country. Furthermore the issues have not been investigated before by past researchers. Finding from this study is also useful for co-operative board of governance, management as well as government agencies supervising and monitoring the co-operative movement.

Past works on the Malaysian co-operatives have looked at co-operative development and policies in West Malaysia (Fredericks, 1986), co-operative contributions in providing housing for Malaysian (Alip Rahim, Abu Hassan Abu Bakar & Abdul Mutalip Abdullah, 1992), research on co-operative workers satisfaction by Indar Kaur, Sushila Devi, Rafiah Omar & Rahimah Abd.Samad (2005) and research on the efficiency of Fishermen's co-operative in Malaysia by Jamilah Din (2006).

This chapter is divided into 5 parts. Following the introduction is part 2 which discuss the literature review. Part 3 present data and methodology, followed by results from the analysis in part 4 and in part 5 are the discussions and conclusion.

3.2 Literature Review

Co-operative organizations are seen by most people as a form of social enterprise as well as a grass root organization with potential in helping people. Various researches on co-operative role in community development in countries around the world and its role in poverty reduction confirm the importance of co-operatives (Birchall, 2003; 2004; Birchall & Ketilson, 2009; Birchall & Simmons, 2008; Frederick, 1997; Zeuli & Cropp, 2004). In all of Birchall's work he had stressed on the enormous potential of co-operatives in helping the poor especially in developed countries. Co-operatives successes however, in the developing countries are less evident with the exception of countries that had promoted co-operative intensively and provided their co-operatives with the right conditions. Adherence to co-operative principles and human resource development are key factors for co-operative success. Birchall's argument is that co-operatives are able to play the role in reducing poverty as it is an organization that generates income given it is run properly and successfully. Birchall gave an analogy of the Asian co-operatives problems that arise from lack of resources, lack of able management personnel and weaknesses in the business strategies. Birchall (2003) stressed on the importance of self-organization by the poor for a successful anti-poverty work. Co-operative business model was also found to be more resilient in times of financial and economic crisis. In many parts of the world, co-operative sector was

regard as a trustworthy sector which is more risk-averse and less profit driven (Birchall & Ketilson, 2009).

As compared to other types of organizations, co-operative has not been a very popular research topic in Malaysia. There is still a need for in-depth studies on the movement although co-operative organizations have been in existence in Malaysia for the past ninety years (Malaysia Co-operative Societies Commission, 2012). Past research done by Fredericks (1986) on co-operative movement in West Malaysia showed that there has been differences between co-operative policies before and after independence. His study also concludes that the movement has economic and social impact on the communities. Another research by Azmah Othman (1999) on consumer co-operatives' in Peninsular Malaysia found that consumer co-operatives are not attracting members from the lower income people and was behind in terms of performance when compared with private businesses. Alip Rahim et al. (1992) disclosed that housing co-operatives have not been very successful and recommends a production subsystem to strengthen these co-operatives activities.

Indar Kaur et al. (2005) had done a study on 261 co-operatives in Malaysia in relation to co-operative workforce and found that 61 percent of co-operatives do not have executive workers. Their research also found that over 80 percent of these workers do not receive co-operative trainings and co-operatives were lagged behind other organizations in career plan and development of their workers. Jamilah Din (2006) analysed the efficiency of the Fishermen's Associations in Malaysia using DEA and found them to be beneficial for the members as they provide both economic and social benefits. On a more recent study done by Yusof Ismail & Suhaimi Mohd Sarif (2010) on senior co-operative managers in Malaysia revealed the existing gap between global

and traditional managerial skills among co-operative managers and they suggested that co-operative managers need to be equipped with new advanced global managerial skills to be competitive.

As compared to other state and private enterprises, there is lack of interest in studying co-operatives in Malaysia. To the best of the researchers' knowledge no other research was undertaken with the focus on finding factors influencing membership in Malaysia and our survey respondents are both co-operative members and non-members that had shopped at the co-operative shops. Yet, membership and progress of co-operative business are related because unlike other businesses, co-operatives are highly dependent on members for business survival and success.

Having said this, (1) membership participation, (2) commitment and (3) members' loyalty became important, complex and sensitive issues in the development and progress of co-operatives. Co-operative members' commitment and their trust towards their board of directors are influenced by several factors such as their economic background, age and own experience in the co-operative operation (Osterberg, Hakelius & Nilsson, 2007). Osterberg et al. (2007) study of Swedish co-operators revealed that economically strong members (farmers) are less involved in their co-operative as compared to small farmers. Older members were more supportive towards the democratic control of their co-operatives. Members that have been involved in the co-operative governance were found to be more committed towards their co-operative. Thus their study recommended that co-operative should invest in the creation of well-functioning member democracy and at the same time pursue profit for the benefits of their members.

Trusts among the co-operative members and between members and their co-operative management are also important in determining group cohesion and performance (Hansen, Morrow & Batista, 2002). Group cohesion is important as it will have a positive effect on co-operative performance. The co-operative group cohesion generally is generated from the sense of trusts among members. Trusts and group cohesion are two factors that enhanced co-operative performance. The development of trust in co-operatives varied between different types of services rendered and geographic dispersion of co-operative. Fostering trusts and bonding among members will influence co-operative performance.

As co-operative membership size gets bigger and more heterogeneous, this will likely to affect members' commitment, democratic control and co-operative success (Fulton, 1999; Fulton & Giannakas, 2001). The linkages between membership, patronage and investment will also affect co-operative progress (Pischke & Rouse, 2004). Increase in membership will increase members' share capital commitment. As amount of capital held by co-operative gets bigger with more members' share, the ability to invest in technology, training and education will also improve. Co-operative should focus on the strategy of operational efficiency, increasing member patronage and at the same time attracting more member capital.

Zeuli & Bentancor (2005), revealed that although co-operative members are loyal to their co-operative, loyalty among co-operative members constitute a challenge to the co-operative model followed by agricultural co-operative in the U.S.A and suggest that co-operation among co-operatives could be a way out in reducing input prices, enhancing co-operative benefits and reducing membership loyalty problems. In a survey analysis about attitudes and satisfaction with co-operatives among Alberta residents, the

researchers found that respondents' attitude towards their co-operatives is the most important and significant predictor of co-operative patronage. The study found high commitment, positive attitude and high satisfaction level among respondents. The study however disclosed a low participation level among youth which could threaten the long term survival of these co-operatives (Dakurah, Goddard & Osuteye, 2005).

3.3 Research Directions and Objectives

In trying to fill in the gaps in the literature of Malaysian co-operatives, this research focused on the membership preferences and share contribution of members by following Osterberg, Hakelius & Nilsson (2007) research approach. However, instead of studying agricultural co-operative members as in Osterberg et al, this study investigates members of consumer and credit co-operatives in Selangor and Kuala Lumpur, Malaysia. In addition to this difference this research is limited to the principal concern of membership preference, commitment towards share contribution, satisfaction and perception towards their co-operatives only. The research objectives are as follows:

1. To investigate the co-operative members' preferences, participation and support.
2. To identify variables influencing preferences to become co-operative members and members financial contributions towards co-operative.
3. To measure co-operative success in terms of members' satisfaction and perception regarding their co-operative benefits, future role in business and development.

3.4 Data and Methodology

Data used for analysis is primary data collected via survey done using self-administered questionnaires on twenty co-operatives. Survey was done in July 2008 and was completed by December 2008. The co-operatives were from Selangor and Federal Territory, Kuala Lumpur. 380 people were interviewed and from these respondents, 175 are co-operative members and 205 are non-members. The non-members interviewed are people that shops at the co-operative stores or have received services from the co-operative.

The selections of co-operatives were based on random sampling and the respondents were randomly picked and interviewed at their respective co-operatives. The type of activities undertaken by the co-operatives surveyed was centered on consumer and credit. 80 percent are co-operative with consumer activities. Even though these co-operatives are registered as credit or consumer co-operatives, majority are multipurpose co-operatives, hence beside consumer and credit activities, the co-operatives also run patrol station, kindergarten, and insurance and travel agent services. Detail breakdown of the respondents according to type of co-operatives are as follows: 66 respondents from credit co-operatives and 314 from consumer co-operatives.

The information on co-operatives, type of activity and the number of respondent interviewed are in table 3.1.

Table 3.1: Description of Co-operatives Surveyed, Activity, Number of Respondents and Percentage

	Co-operatives	Activity	No Respondent.	Percentage
1.	Koperasi Belia Nasional Bhd	Credit	11	2.9
2.	Koperasi Kakitangan LPPKN Sdn Bhd	Credit/travel agent/hand phones	25	6.6
3.	Koperasi Keluarga orang Istimewa Bhd (PERKOB)	Consumer Services	11	2.9
4.	Koperasi KKUM	Consumer/travel agent/bookstore/ catering	25	6.6
5.	Koperasi Kobaru Berhad	Consumer/ kindergarden/ workshop	14	3.7
6.	Koperasi Kospeta Semenanjung Malaysia Bhd	Credit/trading/ motorcycle	10	2.6
7.	Koperasi Maktab Perguruan Islam	Consumer	25	6.6
8.	Koperasi Mardi Bhd	Consumer	4	1.1
9.	Koperasi MKM	Consumer/travel agent/catering	26	6.8
10.	Koperasi Paralimpik	Consumer/trading	12	3.2
11.	Koperasi Pemuda Bandar Tun Razak Bhd	Consumer/credit	25	6.6
12.	Koperasi Politeknik Shah Alam	Consumer	28	7.4
13.	Koperasi Pusat Latihan Belia Dusun Tua Bhd	Consumer	21	5.5
14.	Koperasi PUSRAWI	Consumer	26	6.8
15.	Koperasi Runcas Berhad	Credit	24	6.3
16.	Koperasi SIRIM Bhd	Consumer	7	1.8
17.	Koperasi UDACO	Consumer	11	2.9
18.	Koperasi UITM Bhd	Consumer/trading/ insurance	25	6.6
19.	Koperasi UNIKL Berhad	Consumer/trading	25	6.6
20.	Koperasi UPM Berhad	Consumer/credit/patrol station/kindergarden	25	6.6
	TOTAL		**380**	**100.0**

This survey on the co-operative patrons was undertaken to obtain feedback from people that have frequented and used co-operative services (members and non-members) to enable the researcher to fulfill the above research objectives. Questionnaires were designed for the members of the co-operatives and for the non-member patrons of the co-operative. The questionnaires are in the appendix A of this thesis.

Questions regarding respondent's background (age, income level, types of occupation, educational background), members capital contribution such as capital ownership in a co-operative, the duration of membership, attendance at annual general meetings (AGM), familiarity with Board of Directors (BOD), involvement in other co-operative activities, and involvement in other voluntary activities and level of outside involvement were included.

Respondents were ask to rate their satisfaction by a five-point Likert scale ranging from 'most dissatisfied' through 'dissatisfied', 'moderate', 'satisfied' to 'highly satisfied'. The intention is to measure members' satisfaction regarding various aspect of services provided by co-operative such as with regard to the price of products, assortment of goods, services by co-operative personnel, availability of credit, operating hours, rate of dividends offered, patronage rebate, reliability of services and shop location.

The questionnaire was also design to predict the respondents' perception on satisfaction or dissatisfaction on the benefits from the co-operative activities. Statements were given to reflect the respondents' knowledge of their co-operatives, the benefits obtained and their outlook of co-operative future. Respondents' views on matters pertaining to whether co-operative is helpful and beneficial to them, co-operative help uplift their wellbeing, membership are beneficial and helpful for them, they should increase purchases of co-operative shares, that co-operative shares are profitable investments and the role they foresee being played by co-operative in the global business scenario and also in the country's development are gather from the questionnaire. Equally important are views regarding members disappointments and regret. Information regarding these variables was obtained from the five-point Likert scale ranging from 'highly disagree', through 'disagree', 'don't know', 'disagree' to 'highly agree'.

Several statistical methods and techniques are applied in this study. Each technique is conducted with the specific aims to meet the research questions discussed earlier. The different type of analysis and aims summarised in table 3.2.

Table 3.2: Summary of Type and Aim of Analysis

Types of Analysis	Aims of Analysis
Crosstab/Chi-square	1. To identify variables associated with membership and test the association between co-operative membership and age, income level, occupation, outside involvement, and academic background. 2. To test the association between co-operative share increment and membership duration, familiarity with BOD and staff, AGM attendance, income level and age.
Logistic Regression	3. To predict the preference for co-operative's membership and share increment from a set of predictor variables; age, income level, type of occupation, academic background, AGM attendance and activities/outside involvement.
Factor Analysis	4. To identify and measure the underlying variables that indicates co-operative patron's satisfaction on the benefits and services of co-operative.

The first focus of the analysis is to determine variable/variables affecting members' preferences to become members. Factors that might influence co-operatives' membership preferences such as their age, income level, types of occupation, educational background and level of outside involvement are examined.

Secondly this analysis focuses to examine the co-operative patrons' behaviour patterns specifically members' involvement and support for their co-operatives and their important impacts towards the co-operatives. As this study is also concern about members' financial contributions and commitments to their own co-operative businesses, analysis is also made on factors that affect and influence members' decision

to increase share capital contribution. These factors are capital ownership in co-operative, members shopping behavior at their co-operative store, the duration of membership, attendance at annual general meetings, involvement in other co-operative activities, and involvement in other voluntary activities. The analysis on association between members' commitment and loyalty and the relationship with their satisfaction and co-operatives' performance are examined.

In this study, chi-square tests examine the following relationship:

1. The relationship between co-operative membership and age, income level, occupation, educational background and involvement in outside activities.
2. The relationship between members' co-operative share increment and the duration of membership, attendance at annual general meeting (AGM), familiarity with board of directors (BOD) and income levels.

For chi-square tests, this research underlines the following hypotheses:

H_1: there is an association between membership and age

H_2: there is an association between membership and educational background income level.

H_3: there is an association between membership and occupation

H_4: there is an association between membership and income.

H_5: there is an association between membership and level of outside activities.

H_6: there is an association between share increment and members' AGM attendance

H_7: there is an association between share increment and duration of membership.

H_8: there is an association between share increment and involvement in outside activities

The corresponding null hypothesis (H_0) for each of the above hypothesis is that no associations exist. The chi-square tests on factors that affect membership preferences are $H_1 - H_5$ and the chi-square test on members co-operative share increment and co-operative participation and support are $H_6 - H_8$.

3.4.1 Logit Regression Model

This study utilizes the binary logistic regression analysis to investigate the co-operative patrons' preferences for membership. Logistic regression analysis was performed to identify factors that could influence the choice of becoming a co-operative member or otherwise. Dependent variable is the respondent which is categorized as either member or non-member. The independent variable include age of respondent, gender, types of occupation, monthly income level, involvement in outside activities and academic background.

In the analysis of factors associated to member's preferences to increase their co-operative shares, dependent variable is member's preference to share increment. The independent variable are membership duration, familiarity with BOD or the management, the frequency of attending their co-operative annual general meeting (AGM) and their income level are considered important factors that should be explored.

A variety of multivariate statistical techniques can be used to predict a binary dependent variable from a set of independent variables, for example using multiple regression analysis and discriminant analysis. However, these techniques pose difficulties when the dependent variable can have only two values - a binary variable representing an event

occurring or not occurring. As the dependent variable can have only two values, the assumptions necessary for hypothesis testing in regression analysis are violated. For example, it is unreasonable to assume that the distribution of errors is normal. Another difficulty with multiple regression analysis is that predicted values cannot be interpreted as probabilities. A multivariate technique for estimating the probability of an event occurring is the logistic regression model. In the logistic regression model, the probability of an event occurring can be directly estimated.

The logistic regression model for the case of a single independent variable can be written as:

$$\text{Prob (event)} = \frac{e^{B_0 + B_1 X}}{1 + e^{B_0 + B_1 X}} \text{ or equivalently} \qquad (1)$$

$$\text{Prob (event)} = \frac{1}{1 + e^{-(B_0 + B_1 X)}} \qquad (2)$$

Where, B_0 and $B_1$are coefficients estimated from the data, X is the independent variable, and e is the base of the natural logarithms, approximately 2.718.

For more than one independent variable, the model can be written as

$$\text{Prob (event)} = \frac{e^{z}}{1 + e^{z}} \text{ or equivalently} \qquad (3)$$

$$\text{Prob (event)} = \frac{1}{1 + e^{-z}} \text{ where } Z = B_0 + B_1 X_1 + B_2 X_2 + ... + B_p X_p \qquad (4)$$

The probability of the event not occurring is estimated as

$$\text{Prob (no event)} = 1 - \text{Prob (event)}. \qquad (5)$$

The dependent variable in this regression equation is the logarithm of the odds that a particular choice will be made. One important appeal of the logit model is that it transforms the problem of the p. The slope of the cumulative logistic distribution is

greatest at predicting probabilities within a (0, 1) interval to the problem of predicting the odds of an events occurring within the range of the real line. The odds are the ratio of the probability that an event will occur to the probability that an event will not occur. It is the log of the odds that is called a logit, thus these models are called logit models. The slope of the cumulative logistic distribution is greatest at P = 1/2. This implies that changes in independent variables will have their greatest effect on the probability of choosing a given option at midpoint of the distribution. The lower slopes towards the two extremities imply that large changes in X are necessary to bring about a small change in probability. The log linear models have been useful in analyzing the complex relationship among the variables in a multiway cross tabulation. Logit models contain terms corresponding to those in loglinear models.

3.4.2 Factor Analysis Model

Factor analysis can be described as a statistical technique whose objective is to reduce a large data set. It is a technique used to identify a relatively small number of factors that can be used to represent relationships among several sets of many interrelated variables. This is done when the programme seek the underlying unobservable (latent) variables which are reflected by the observed variables.

For this study, the latent variables are satisfaction level of members and non-members. Members as well as non-members, were asked to rate their satisfaction level on various services offered by their co-operative. The services are: (1) price of the products, (2) assortment of goods, (3) personnel service, (4) availability of credit, (5) operating hours, (6) rate of dividends offered, (7) patronage rebate, (8) reliability of services, (9) shop location, (10) quality services, and (11) comfort when doing transactions.

Beside satisfaction towards services provided, members were to give perception on their co-operative contributions. The following aspects were considered: (12) co-operative for a better family wellbeing (13) co-operative providing benefits and facilities (14) the need for members increase share purchases (15) shares as a profitable investment, (16) co-operative shareholding as a long term investment (17) co-operative important in helping members (18) co-operative as an organization capable of doing business (19) co-operative as an independent organization (20) members have freedom to make decision (21) co-operative having a bright future (22) co-operative having an important role in the development and (23) co-operative have potential in doing business in the global market.

These are included as variables to help members express satisfaction in their co-operative. The responses to these questions then constitute the observed variables in the factor analysis. The mathematical model for factor analysis is similar to a regression equation. Each variable is expressed as a linear combination of factors that are not actually observed.

The benefit index is expressed as:

Co-operative benefits = a (members' satisfaction on services provided)

+ b (members' perceptions on wellbeing, shares, investment, benefits, role in business and development) + $U_{benefit}$ (1)

This equation is different from the usual regression equation because member's satisfaction and perceptions are not single independent variables but are labels for groups of variables that characterize their satisfaction levels and perceptions. These

groups of variables constitute as the "factors". Member's and non-member's characterization for satisfaction and perceptions are called common factors. The U in equation is a unique factor, since it represents that part of the benefit index that cannot be explained by the common factors.

The model for the ith standardized variable is written as

$$X_i = A_{i1}F_1 + A_{i2}F_2 + ...+ A_{ik}F_k + U_i \quad (2)$$

Where,

F's -the common factors,

U - the unique factor, and

A's - the coefficients used to combine the k factors.

The factors are inferred from the observed variables which are the respondents' perceptions. The factors can be estimated as linear combinations of the variables. The estimated member's satisfaction factor is expressed as;

$$\text{Members' satisfaction} = C_1(X_1) + C_2(X_2) + C_3(X_3) + ..C_{11}(X_{11}) \quad (3)$$

$$\text{Members' perception} = C_{12}(X_{12}) + C_{13}(X_{13}) + C_{14}(X_{14}) + C_{15}(X_{15}) + .. C_{23}(X_{23}) \quad (4)$$

Where,

$X_{1....}$ is price of the products,
$X_{2...}$ is assortment of goods,
$X_{3...}$ is personnel service,
X_{4}…is availability of credit,
$X_{5....}$is operating hours,
$X_{6...}$is rate of dividends,
X_{7}…is patronage rebate,
$X_{8....}$is reliability of services,
X_{9} …is shop location,
X_{10} ...is quality services,
X_{11} ….is comfort in doing transaction,
$X_{12....}$is co-operative for a better family wellbeing,
$X_{13....}$is co-operative providing benefits and facilities,
$X_{14....}$is the need for members increase share purchases,
$X_{15.....}$is shares as a profitable investment,
$X_{16.....}$is shareholding as a long term investment,
X_{17} …is co-operative important in helping members,
$X_{18.....}$is c-operative capable of doing business,
$X_{19.....}$is co-operative as an independent organization,
$X_{20....}$is members have freedom to make decision,
$X_{21....}$is co-operative having a bright future,
$X_{22.....}$is co-operative having an important role in the development, and
$X_{23....}$is co-operative have potential in doing business in the global market.

Where, C's are the coefficients.

The general expression for the estimate of the jth factor, Fj , is

$$Fj = \sum_{i=1}^{P} W_{ji} X_i = W_{j1}X_1 + W_{j2}X_2 + W_{J3}X_3 + ... + W_{jp}X_p \qquad (5)$$

The W_js are known as factor score coefficients, and p is the number of variables.

3.5 Empirical Findings

This sub-section will present the empirical findings obtained from the analysis done. The empirical findings begin with the discussions on the profile of survey respondents followed by membership preference, satisfaction and perception analysis results.

3.5.1 Profile of Respondents

Several interesting facts that came out of the survey findings are firstly 94.2 percent of the 380 total respondents are Malays. Secondly over sixty percent of members and non-

member respondents are females. Thirdly the profile of respondents also showed that a significant percentage of the member is in the working-age category between the age of 25 years old and above 45 years old. This is expected as it is usual for co-operatives to be set up in the work place such as in government department, schools, private institutions, factories and institution of higher learning. Finally in contrast to members, the non-member respondents were found to comprise of a higher percentage of the "less than 25 years old" group.

Apart from that, other characteristic of respondents which is important is their level of education. Regarding respondents' education background, a very small percentage of members and non-members, 4.1 percent and 2.5 percent respectively are either without formal or with only religious and primary school education background. Among the members 65.7 percent had college and university education while 68.5 percent of non-members had similar education level. The remaining respondents are with secondary school education.

With respect to monthly income earned by members and non-members 14 percent of members earned less than RM1,000 a month and 40.2 percent of non-members earned less than RM1,000. The percentage of those that earned between RM1,001 and RM3,000 are more or less same for both members and non-members (47 percent and 46.2 percent respectively). However 40.1 percent of members and only 13.6 percent of non-members are earning more than RM3,000 a month.

With regards to the respondents' occupation, 39.5 percent members are working with the government while only 16.4 percent of non-members are in the government sector. The percentages of private sector workers are around 38.2 percent of the members while

43.3 percent of the non-members are private sector workers. 17.2 percent of members appear to be in the category of self-employed, unemployed or not having fixed job while the percentage is slightly higher (19.3 percent) for non-members.

When enquired about their involvement in other formal organization such as parent-teachers associations, political party, youth associations mentioned above and other co-operatives, 51.2 percent of members indicated that they do not have any involvement with any association or other co-operatives. Slightly less than half of the members are involved in other organization. On the other hand, the involvements among the non-members are lesser as 74 percent had indicated non-involvement. Table 3.3 showed details of respondents' profile.

Table 3.3: Profile of Respondents According to Qualitative Variables

	Members		**Non-members**	
	Frequency	**%**	**Frequency**	**%**
Gender				
Male	66	37.7	70	34.1
Female	109	62.3	135	65.9
Total	**175**	**100.0**	**205**	**100.0**
Age				
≤ 25	42	24.6	139	68.8
25.01 to 45	90	52.6	56	27.7
≥ 45.01	39	22.8	7	3.5
Total	**171**	**100.0**	**202**	**100.0**
Income				
< RM1,000	20	13.6	53	40.2
RM1,001 to RM2,000	45	30.6	43	32.6
RM2,001 to RM3,000	23	15.6	18	13.6
≥ RM3,001	59	40.1	18	13.6
Total	**147**	**100.0**	**132**	**100.0**
Occupation				
Government sector	62	39.5	28	16.4
Private sector	60	38.2	74	43.3
Self-employed /unemployed/no fix job	27	17.2	33	19.3
Student	8	5.1	36	21.1
Total	**157**	**100.0**	**171**	**100.0**
Educational Background				
No formal education /Religious /Primary school	7	4.1	5	2.5
Secondary school	52	30.2	59	29.1
College	62	36.0	82	40.4
University	51	29.7	57	28.1
Total	**172**	**100.0**	**203**	**100.0**

3.5.2 Analysis on Co-operative Membership Preferences

This paragraph discussed the results of Chi-square tests on factors that are associated to membership preferences (H_1- H_5). The data for this analysis are based on twenty co-operatives and 380 respondents.

Table 3.4 shows the chi-square tests results on factors influencing membership preferences. Result of tests showed that age, occupation, income level and involvement in outside activities are statistically associated with co-operative membership. Gender and education level attainment however are independent of membership.

Table 3.4: Results of Pearson Chi-Square Tests

Variables	Value	df	Asymp. Sig (2-sided)
Age*Membership	80.139	2	.000*
Gender*Membership	.523	1	.470
Occupation*Membership	32.186	3	.000*
Education level*Membership	1.332	3	.721
Monthly Income*Membership	36.704	3	.000*
Outside Involvement*Membership	16.078	2	.000*

*chi-square probability of less than 0.05
Result obtained using SPSS 16

Following the chi-square tests, variables that are found to be significant are then selected for the logistic regression analysis. The logistic regression analysis was carried out using SPSS version 16 in Windows 2007. Logistic regression analysis was performed to identify factors that could have influence the choice of becoming a co-operative member or otherwise.

Dependent variable in the logistic regression model is membership status which is categorized as either member or non-member. The independent variable include age of respondent, gender, types of occupation, monthly income level, involvement in outside activities and academic background. Each of the independent variable was tested for univariate association with membership status using simple binary logistic regression. The selected independent variables are the ones with p-value < 0.05.

Table 3.5: Univariate Analysis by Using Binary Logistic Regression

Variables	Wald Statistics	Df	p-Value	Exp (B)	95% C.I. for Exp (B)	
					Lower	Upper
Age (1)	42.575	1	0.000*	.054	.023	.130
Age (2)	7.824	1	0.000*	.289	.121	.689
Gender(1)	.523	1	0.470	1.168	.767	1.778
Occupation(1)	12.305	1	0.000*	.366	.209	.642
Occupation(2)	8.317	1	0.004*	.370	.188	.727
Occupation(3)	25.830	1	0.000*	.100	.041	.244
Monthly Income(1)	33.055	1	0.000*	.115	.055	.241
Monthly Income(2)	11.048	1	0.001*	.319	.163	.626
Monthly Income(3)	5.173	1	0.023*	.390	.173	.878
Outside Involvement(1)	3.814	1	0.051	.247	.061	1.005
Outside Involvement(2)	.318	1	0.573	.669	.165	2.708

Table 3.5 shows the result of univariate logistic regression. Result shows that Wald statistics for all variables age (1) and (2), occupation (1), (2) and (3), monthly income (1), (2), and (3) with the exception of outside involvement are less than 0.05 and therefore are statistically significant. Following these findings, all variables with p-value less than 0.05 are statistically significant, are then entered into the final binary logistic regression model.

A multivariate logistic regression analysis was then conducted in the effort of finding an optimal model with all the independent variables that maintain a significant association with membership status. A forward stepwise likelihood ratio method was chosen and the chi-square score was examined. Age and occupation are the two predictors selected by the logistic regression model. The result of the final logistic regression model is shown in Table 3.6 below.

Table 3.6: Multivariate Analysis using Forward Stepwise Likelihood Ratio

					95% C.I. for Exp (B)	
Variables	**B**	**S.E**	**p-Value**	**Exp (B)**	**Lower**	**Upper**
Constant	-0.943	0.394	0.017	0.389	-	-
Age (1)	1.744	0.354	0.000	5.723	2.858	11.458
Age (2)	2.953	0.516	0.000	19.163	6.965	52.721
Occupation(1)	-0.660	0.315	0.036	0.517	0.278	0.959
Occupation(2)	0.271	0.467	0.561	1.312	0.526	3.273
Occupation(3)	-0.793	0.883	0.369	0.453	0.080	2.553

Following the logistic regression results, the final model that explained the factors associated with co-operative preferences are:

$$\mathbf{Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5}$$

$$\mathbf{Z = -0.943 + 1.744\ x_1 + 2.953\ x_2 - 0.660\ x_3 + 0.271\ x_4 - 0.793\ x_5}$$

Where;

Z = log odds of co-operative membership preferences = ln (odds (membership preferences))

x_1 = Age (1): 25.01years old to 45 years old

x_2 = Age (2): 45.01 years old thru highest

x_3 = Occupation (1): private sector workers

x_4 =Occupation (2): self-employed/ pensioner/ unemployed/ no fixed job

x_5 = Occupation (3): students

From the results in table 3.6 of the logistic regression, it can be explained that individuals in age group between 25.01 years old to 45 years old are 5.723 times more likely to become members taking individual age less than 25 years old as the baseline group. However, those in the older age group (45.01 years old thru highest) are 19.163 times more likely to become members.

Those in the private sector are 0.517 less likely to become members taking the government servant as a baseline. Among those that are self-employed / pensioner/ unemployed and having no fixed job the result showed that they are 1.312 times more likely to join co-operative. However students are 0.453 time less likely to become members.

The effectiveness of the model expressed in the equation was tested by performing these three steps:

1. Overall model evaluation; when it demonstrates an improvement over the intercept-only model or the null model. The null model acts as a good baseline as it does not have any predictors. -2 Log likelihood (-2LL) ratio for the null model is 451.331 and correctly classifies 52.1 percent of members preferences. When the significant covariates are included, the -2LL (3) is reduced from 451.331 to 369.055, indicating a better fits of the data as compared to before predictors are included in the model. It predicted correctly 72.4 percent of member preferences.

2. The improvement over the baseline is examined by looking at the three inferential statistical tests: the -2LL, Cox & Snell (CS) R square, Nagelkerke (N) R square and

Hosmer and Lemeshow tests. The results are as follows: R square= 1.00 (H & L), .22 (Cox & Snell), .30 (Nagelkerke). Model x^2 =82.28 (1) with p-value .000. The results indicate that the logistic regression model fits the data well.

3. Residuals was examine to check for points that indicate that model fits poorly and points that exert undue influence on the model. Looking at Cook's distance, leverage, standardized residuals and DFBeta values are quite good as all Cook's distance and Leverage value are less than 1, all the standardized residual are under ± 1.96 and less than 5 percent studendized residual have with value ± 1.96.All the DFBeta for constant as well as predictors are values less than 1.

In the analysis of factors that are associated to member's preferences to their co-operative's share increment, chi-square test was again run to examine which factors are significant. Individual's membership duration, familiarity with BOD or the management, the frequency of attending their co-operative annual general meeting (AGM) and their income level are considered important factors that should be explored. Chi-square tests result for analysis of factors that are associated to member's preferences for share increment is featured in table 3.7.

Table 3.7: Results of Pearson Chi-Square Tests on Share Increment

Variables	Value	df	Asymp. Sig (2-sided)
AGM Attendance*Share Increment (H_6)	12.331	3	0.006*
Membership Duration*Share Increment (H_7)	8.709	3	0.033*
Familiarity with BOD*Share Increment(H_8)	1.575	1	0.209
Income level*Share Increment (H_9)	2.659	4	0.616

*chi-square probability of less than 0.05

Result of tests showed that AGM attendance and membership duration are statistically associated with co-operative share increment. Members' familiarity with their BOD and their income levels are independent of share increment.

Following the chi-square tests, each of the independent variable was tested for univariate association with share increment status using simple binary logistic regression. Table 3.8 showed result of tests that out of the four variables (membership duration, familiarity with Board of Directors (BOD), and AGM attendance), two variables that is AGM attendance and membership duration statistically associated with members share increment. Familiarity with BOD and income level, however are independent of member preference of share increment.

Table 3.8: Univariate Analysis by using Binary Logistic Regression for Share Increment Preferences

Variables	Wald Statistics	df	p-Value	Exp (B)	95% C.I. for Exp (B)	
					Lower	Upper
Membership duration (1)	2.960	1	0.085	2.632	0.875	7.924
Membership duration (2)	5.321	1	0.021	5.143	1.279	20.676
Membership duration (3)	6.691	1	0.010	4.267	1.421	12.808
AGM attendance (1)	1.694	1	0.193	1.778	0.748	4.228
AGM attendance (2)	10.238	1	0.001	3.948	1.702	9.156

Table 3.9: Final Model of Multivariate Analysis using Forward Stepwise Likelihood Ratio

Variables	B	S.E	p-Value	Exp (B)	95% C.I. for Exp (B)	
					Lower	Upper
Constant	-1.068	0.350	0.002	0.344	-	-
AGM attendance (1)	0.604	0.443	0.173	1.829	0.768	4.356
AGM attendance (2)	1.373	0.429	0.001	3.948	1.702	9.156

Table 3.9 showed the results of the logistic regression which could be used to explain co-operative member's behaviour towards share increment. Other covariates were not selected by the model as it was not found to be important. It was revealed that among AGM attendees, those that went for 1 – 3 times in the last 5 years are 1.829 times more likely to contribute to co-operative share increment as compared to those that had never attended their co-operative AGM (baseline covariate). Those that diligently attended AGM were found to be 3.948 or 4 times more likely to increase their co-operative shareholding.

The final model that explained the factors associated with co-operative share increment preferences are:

$$\mathbf{Z = \beta_0 + \beta_1 X_1 + \beta_2 X_2}$$

$$\mathbf{Z = -1.088 + 0.604\ x_1 + 1.373\ x_2}$$

Where,

Z = log odds of member's preferences to increase shares = ln (odds (member's share increase preferences))

x_1 = AGM attendance(1): attended AGM 1 – 3 times in the last 5 years

x_2 = AGM attendance(2): attended AGM every year in the last 5 years

Similarly for the second binary logit model the effectiveness of the model expressed in the equation was tested by performing these three steps:

1. The overall model evaluation to check to see if it demonstrates an improvement over the intercept-only model or the null model. The -2 Log likelihood (-2LL) ratio for the null model is 226.643 and it correctly classifies 57.2 percent of members preference for share increment. With the inclusion of the significant covariates, the -2LL (3) was reduced to 214.904 indicating a better fits of the data as compared to before covariates are included in the model. It correctly classifies 63.3 percent of member's preference for share increment.

2. The improvement over the baseline is examined by looking at the three inferential statistical tests: the -2LL, Cox & Snell (CS) R square, Nagelkerke (N) R square and Hosmer and Lemeshow tests. The results showed R square = 1.00 (H & L), .068 (Cox & Snell), .092 (Nagelkerke). Model x^2 =11.74 (1) with p-value .003. The results indicate that the logistic regression model fits the data well.

3. The examination on residuals to check for points that indicate that model fits poorly and points that exert undue influence on the model found that Cook's distance, leverage, standardized residuals and DFBeta values are quite good as all Cook's distance and Leverage value are less than 1, all the standardized residual are under ± 1.96 and less than 5 percent studendized residual have with value ± 1.96. All the DFBeta for constant as well as predictors are values less than 1.

3.5.3 Analysis of Members' Satisfaction and Perception; Factor Analysis Model.

The aim of this model is to evaluate whether co-operatives' provide significant benefits to members based on their perceptions on co-operatives services. Factor analysis (FA) approach is used to address whether the observed correlations between variables can be explained by the existence of a small number of hypothetical variables. It is used as an expedient way of ascertaining the minimum number of hypothetical factors that account for the observed covariant, and as a way of exploring the perception data.

In this section, factor analysis is used to test the hypothesis that co-operative do benefited members and non-members. In this aspect, it is a means of confirming the hypothesis. Questions were put forward to member and non-member regarding the services rendered by their co-operatives. The questions are in appendix A, section C. in this thesis. Factor analysis is also used to find the dimension of satisfaction and opinion from among the various scores given as answers by members and non-members when ask to rate satisfaction on benefits and opinions regarding their own co-operative or the co-operative that offer them services.

The dimension of satisfaction among the various scores from answers obtained from 380 respondents (175 members and 205 non-members). To ensure the reliability of the analysis, attention was given to make sure that sample size is adequate. In this analysis, the data is from 380 respondent and the communalities after extraction are all above 0.5. Following Field (2009), this is an adequate sample for factor analysis. This analysis was conducted using Principal component extraction method. The choice of rotation method is Varimax with Kaiser Normalization (orthogonal rotation). Varimax was chosen as factors in the analysis are expected to be independent.

Further effort to test accuracy of the analysis is by looking at the inter-correlation between variables. The correlation matrix was scrutinized thoroughly to check for pattern of relationships. Beside correlation matrix, the one-tailed significance of these coefficients was scan for values greater than 0.05. Attention is given to variables that are highly correlated with correlation coefficient, R greater than 0.9 for singularity of data. The determinant of the correlation matrix must be greater than 0.00001. Factor analysis needs variable that correlate fairly well but not perfectly.

The total of eight trial runs was done before the final model was obtained. At first the model had included all the 22 questions as in equation 3 and 4. In the process subsequently, six questions are eliminated to attain the best model. This model fulfilled the KMO = 0.896 and Bartlett's test is highly significant with low correlations ($p<0.001$). This indicates that all questions in the questionnaires correlate fairly well and none of the correlation coefficients are particularly large therefore there is no need to consider eliminating any questions. A total of sixteen variables are in the final factor analysis model.

The result from data screening serves as a proof that factor analysis is appropriate for the data. Reliability test of factor scales conducted using the index of internal consistency of a scale test, the Chronbach's coefficient Alpha based on 16 items gives a value of 0.9225. This value means that the scale has a high internal consistency. Factor loadings less than .4 have not been displayed based on Steven's (2002) as cited in Field (2009) as this cut-off point was appropriate for interpretation purposes. Table 3.10 showed the rotated component matrix of factor analysis.

Table 3.10: Factor analysis - Rotated Component Matrix[a]

	Component	
	1	**2**
Quality of goods and services	0.797	
Reliability goods and services	0.797	
Rate of dividend	0.794	
Price of goods	0.773	
Assortment of goods	0.771	
Shop location	0.758	
Sales personnel	0.708	
Credit facilities	0.654	
Shares as a profitable investment		0.797
Important role in community wellbeing		0.794
Shares as a long term investment		0.774
Co-operative have a future in country's development		0.771
Membership enable profit/facility attainment		0.766
Co-operation in helping members		0.750
Indulge in variety of businesses		0.689
Membership help enhance family wellbeing		0.659

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 3 iterations.

In table 3.10, the first factor Component 1 has high score on satisfaction with product quality and reliability of goods and services. These two variables fetch the same highest score of 0.797. This is followed by tangible benefits such as dividends and price of goods. Assortment of goods, shop location, services of sales personnel which are related

to comfort related satisfaction (intangible benefits) are next important consideration. Credit facilities however are the least important in the first factor.

The second factor Component 2 is related to perception of co-operative as an organization. Interestingly it was found that variable with the highest score of 0.797 is the statement that co-operative share is considered profitable investment. The second highest in the perception that co-operative play a role in community wellbeing. An important finding from this analysis is that empirical results showed that co-operative benefits can be grouped into Component 1 which is extrinsic benefits and Component 2 which is intrinsic benefits. The results also proved that co-operatives have a role in the development which is a positive perception of co-operative as a reliable and beneficial organization.

3.6 Discussions and Conclusions

The essence of co-operatives performance is based on their strong membership commitment and support. Co-operative success not only relied on the strength and efficiency of board of governance and management but more importantly on membership. Members contributed to the financial strength, members supported and participated in co-operative activities. Without doubt, members played a role in the success or failure of their own co-operative. Result of data analysis of co-operative survey in Selangor and Kuala Lumpur revealed that individuals between 25 years old to 45 years old are 5.723 times more likely to become members as compared to those less than 25 years old. The analysis also showed that those in the older age group (45 years old and above) are 19.163 times more likely to become members as compared to age less than 25 years old. Hence this study concludes that the membership of co-operatives

in Selangor and Kuala Lumpur is favourable to the older age group resulting in the potential shortage of younger members in future or in the long run.

This result is consistent with the result of study done by Osterberg, Hakelius & Nilsson (2007) where age is important in influencing members' commitment and trust towards co-operative directors. Dakurah, Goddard & Osuteye (2005) on co-operative study in Alberta also found that youth are less attracted to patronize co-operatives. Similarly Nurjihan Idris & Amin Mahir Abdullah (2011) investigation of factors affecting agricultural co-operative performance in Malaysia also found that youth are not attracted to join the agricultural co-operative in their areas. As a result of less young people interested in co-operative organization, there will be implications on the governance and decision-making in these co-operatives as the "old" leaders will be making decisions for them. Lack of young people joining the co-operative would also have an impact on the preparation of second echelon co-operative leaders. The young must be groomed and be ready to take over from the "senior" leaders to ensure that their co-operative's sustainability will not be threatened.

Besides age, individual's occupation also has an influence on membership preference. The analysis revealed that those working in the private sector are 0.517 less likely to become members as compared to government servant. Among those that are self-employed/ pensioner/ unemployed and having no fixed job, analysis result showed that they are 1.312 times more likely to join co-operative. From the point of view of occupation, our result indicates that co-operative is favoured by workers in the government sector. There is a need for co-operative management to find ways to encourage people from private sector and the self-employed to be members as well. However, there is evidence that the unemployed and non-regular job holders seem to

favour co-operative. Thereby they may have the view that co-operative is an organization helpful to them.

Similar to other non-co-operative enterprises, co-operative enterprises require capital and other resources to enable them to operate smoothly and achieve their objectives. As a self-help organization, co-operative financial strength lies on their membership. The internal sources of capital at times, are more important and inexpensive compared to the other sources such as loan from banks or from other co-operative. Internal capital is normally drawn from the members' contribution in shares, deposits and fees. Members share increment naturally plays a significant part in co-operative financial stability. This analysis showed that the frequency of attending co-operative AGM and duration of co-operative membership are found to be statistically associated with members' share increment. Familiarity with BOD and income level, however are independent of members' preference of share increment. The result revealed that among AGM attendees, those that went for 1 – 3 times in the last 5 years are 1.829 times more likely to contribute to co-operative share increment as compared to those that had never attended their co-operative AGM (baseline covariate). Members diligently attended AGM were found to be 4 times more likely to increase their co-operative shareholding. Thus, share increment and holding have a positive relationship with AGM attendance. Members are inclined to shoulder group responsibility, be committed and supported their co-operative as their shareholdings in the co-operative are higher.

This result is consistent with result of study done by Pischke & Rouse (2004). Members share capital represents the individual member's commitment to their co-operative. It promotes group cohesiveness, encourage co-operative patronage and contribute to the

achievement of material and social objectives. Indirectly community and country will benefit from this social cohesiveness.

These results have implications on the current and future government policy with regard to co-operative development in Malaysia if similar situation were faced by co-operatives in other states as well. The co-operative movement may be facing problems in reaching out to the younger generations as compared to the older ones. This can have an impact on the co-operative business, sustainability and future success. Co-operative performance and progress clearly depends on the trust and commitment of not only older people but also the young.

In this new globalized era, effective governance and management of the any type of co-operative is dependent on the youthful, skilled, innovative and technological savvy membership. If the Malaysian co-operative movement intends to maintain as a viable and relevant organization and continue help support the community and the country development, the movement must pay due attention to ways of attracting new members and to the needs of the younger members.

The last analysis of this chapter had looked at co-operative success and performance in terms of members' satisfaction and perception of their own co-operative. Factor analysis extracted two factors. The first factor is related to satisfaction towards co-operative tangible benefits (services or product). Product quality and reliability of goods and services variables fetched the same highest score of .797. This is followed by tangible benefits variables like dividends and price of goods. Assortment of goods, shop location, services of sales personnel which are can be considered as comfort related

satisfaction (intangible benefits) are next important consideration. Credit facilities however are the least important in the first factor.

The second factor is concerning respondents' perception towards the intrinsic benefit of co-operative organization studied. The statement that viewed member's share as a profitable investment received highest score of 797. The second highest is on the perception that co-operative play a role in community wellbeing.

An important finding from this is that, individuals' strongly perceive that co-operative as a beneficial investment and have a role to fulfill in the country's development. This perception then trickled down to both members and non-members that co-operative enable them to attain financial and non-financial profits. In general, the result of this study concludes that the public actually have a positive perception towards co-operative organization. Here the co-operatives under study are regarded by the respondents as reliable and beneficial organization. This is similar to what Dakurah, Goddard & Osuteye (2005) observed in their Alberta co-operative survey.

These results have positive and negative implications on the current and future government policy with regard to co-operative development in these states in Malaysia. The implications are as follows:

1. It is heartening that co-operatives are still being regarded by these members and non-members as an important and beneficial organization. If so, then the government seems to be on the right tract in reaffirming the policy of encouraging co-operatives among the community especially the poorer segment.
2. The analysis had also revealed that co-operatives had not been able to reach out to the younger generations as compared to the older populations. This is worrying

as the number of school co-operatives are increasing each year. This phenomenon should not be allowed to continue if the government is relying on co-operatives to help support the community development and create employment creation.

Although the result of this research had suggested that co-operatives have been perceived by members as reliable and beneficial organizations however, these positive perceptions are downgraded by members' poor reaction towards increasing shareholdings in co-operatives. This negative reaction has serious implication on those co-operatives which rely heavily on members as financial contributors. Poor financial achievements experienced by members in the past could cause this reaction. Co-operatives also faced free-rider problems and because of this problem, members are not the reliable financial sources for co-operatives and they under-invest in their co-operatives.

CHAPTER 4

AN EFFICIENCY ANALYSIS OF CO-OPERATIVE AND ESTIMATING THE PRODUCTIVITY CHANGE OF BANK KERJASAMA RAKYAT MALAYSIA BERHAD

4.1 Introduction

Productivity and efficiency evaluation among any types of businesses and organizations whether profit or non-profit motives became more important amidst the global financial crisis, inflation and economic recessions. In their attempt to appraise their position, the management of companies, firms, organizations and institutions tend to rely on the monitoring and efficiency evaluation results in their effort to improve, be competitive and sustainable (Siegel, 1980; 1981). Performance evaluation is important as it became a tool in helping organizations to constantly evolve, improve, and succeed in global competition (Zhu, 2003).

In relation to co-operative organizations and co-operative businesses, the International Co-operative Alliance (ICA) have since 2006, published the Global 300 co-operatives indicating top 300 co-operatives around the world with high turnovers and other financial data to promote co-operatives as successful business institutions, important employers and contributors to the economic stability and sustainable development. Malaysia follows the ICA criteria and had ranked the best co-operative in the movement for the past five years. The 100 best co-operatives are awarded to co-operatives that had achieved the best financial performance (turnover, assets and equity) and had complied with the Malaysia Co-operative Societies Commission (MCSC) standards of business

management and legal standards (MCSC, 2012). Co-operatives are divided into five sizes ranging from five stars to one star rating taking into consideration the co-operative members' equity (30 percent), total asset (30 percent), business turnover (25 percent), total membership (10 percent) and total number of workers employed (5 percent). In determining the best co-operatives MCSC had considered both the financial and non-financial criteria. The list of 100 best co-operatives are further divided into for four different clusters that is big (more than RM5 million turnover), medium (more than RM1 million turnover), small (within RM200 thousand to RM1 million turnover) and micro (less than RM200 thousand) clusters (MCSC, 2012).

The commitment and confidence placed by the government on co-operatives in Malaysia commensurate the role co-operatives are supposed to play as a third engine of growth besides public and private sector. These are reflected by the financial and non-financial support indicated in various development plans (Azmah Othman & Fatimah Kari, 2008). Malaysia's favorable public policy towards co-operatives resembles the public policy in the U.S.A and Western Europe countries (Sexton & Iskow 1993). The direction of local co-operative movement appears to be parallel with the international co-operative's direction which is the revitalization of the communitarian tradition (Borgaza & Spear, 2004).

Public support had played an important role towards the promotion and continued growth of co-operatives. Provision of free registration, tax relief and other tax exemptions such as free stamp duty and the issuing of business licenses are also a form of assistance. Under the Income Tax Act of 1967, co-operatives are exempted from paying tax for the first five years, from the date of registration. A further five years of tax exemption is given to co-operatives with members' funds of RM750,000 or less. The

rate of tax is also lower than that for private companies. Tax exemptions are also given for the dividends paid to co-operative members. As in the U.S.A and other European countries the pro co-operative public policy has been received with mixed feelings. Questions were raised on the effectiveness of such policy and issues of public policy promoting inefficiencies in co-operative businesses in Malaysia have also been highlighted.

The Malaysian government's mission is to develop a robust financial services sector to capitalize on new growth, wealth creating opportunities and at the same time support socio-economic development (Malaysia, 2006). With this mission in mind, the government had stressed on efforts to enhance access to financing through co-operatives and strengthened the industry to improve their financial capacity and operational capability. The MCSC's utmost important role is ensuring the stability and soundness of financial and management operations of co-operatives. Among others, this will include the mandatory registration, regulation and supervision of all co-operatives including those which were previously under the Farmers' Organization Authority (FOA) and Fisheries Development Authority (FDA) (Malaysia, 2006). The government had allocated RM114.2 million to further promote and develop co-operative activities in 2010. Out of this amount, RM14.2 million is for the development budget and eighty eight (88) percent or RM100 million is for the Working Capital Fund-Department of Co-operative Development (TMPJPK) (MCSC, 2010). TMPJPK is managed by the Credit Financing division of MCSC. The fund is to provide simple conditional loan facility to co-operatives (especially the small and medium size co-operatives) to help carry out viable projects and to assist co-operatives in realigning problematic projects.

In line with achieving the MCSC's aspiration to increase the number of co-operative involvement in various sectors of the economy and improving public confident and understanding of co-operative, the movement thus must reach out to as many people in the community as possible. In tracking the progress (in reaching the community), MCSC have classified co-operative membership into 36 groups comprising of members working in various work places.

Table 4.1: Status of Co-operatives by Functions as at 31 December 2010

Function	No. of Co-ops	Membership	Capital (RM)	Assets (RM)	Turnover (RM)
Banking	2	813,554	2,362,445,404	56,733,242,511	4,922,574,029
Credit/ Finance	613	1,786,508	4,507,384,712	8,119,078,033	1,326,810,294
Plantation	1,441	429,559	388,615,588	1,479,849,950	600,463,067
Housing	118	145,823	162,412,315	666,365,426	49,081,726
Industry	137	14,467	5,017,038	51,177,619	32,643,171
Consumer (Adult)	1,731	501,765	212,530,614	742,374,930	526,490,488
Consumer (Schools)	2,135	2,086,950	18,916,728	200,198,773	236,994,964
Construction	134	38,007	12,659,831	55,201,793	48,805,937
Transport	429	145,193	57,751,635	270,501,095	562,355,156
Services	1,406	638,215	1,819,434,092	3,466,697,627	1,226,882,588
Total	**8,146**	**6,600,041**	**9,547,167,957**	**71,784,687,756**	**9,533,101,420**

Source: Monitoring Division, Malaysia Co-operative Societies Commission, 2010

Co-operatives status as of 31st December 2010 by number, membership, capital, assets, turnover and profit/loss are indicated in the table 4.1. In term of percentages, 62 percent of the co-operatives are consumer co-operatives, 13.8 percent are agriculture co-operatives, 10 percent provide services, and 9 percent are credit co-operatives and 8.6 percent are in transportation, 2.1 percent in construction, 1.7 percent in housing and 1.2 percent are in industry and 0.03 percent is co-operative banks. In terms of assets, capital, turnover and profits generated, the two co-operative banks had made the highest contribution to the co-operative movement.

Profits generated by banking co-operatives' are 59.3 percent of the total profits generated by the co-operative in the movement. Including the credit/finance co-operative, the amount of profits generated is 72.3 percent. This has always been the trend and it proves that banking and credit co-operatives thus formed the backbone of movement and therefore are significant to the economy.

4.1.1 Co-operative banks

Following the International Co-operative Banking Association (ICBA)[4] (2005) co-operative bank can be defined as follows;

> "**A** co-operative bank is a financial entity which belongs to its members, who are at the same time the owners and the customers of their bank. Co-operative banks are often created by persons belonging to the same local or professional community or sharing a common interest. Co-operative banks generally provide their members with a wide range of banking and financial services (loans, deposits, banking accounts...)."

Co-operative banks follow the universal co-operative principles. Their activities are deeply rooted in the local areas and communities as they are involved in local development and contribute to the sustainable development of their communities.

[4]The International Co-operative Banking Association (ICBA) is a sectoral organization of the International Co-operative Alliance (ICA).

4.1.2 Co-operative Banks and Development

There are many studies advocating co-operative banks involvement in communities and co-operative movement as the third sector contributing besides public and private sectors to the economy from countries around the world especially the United States, United Kingdom (U.K), Germany and Australia. Apart from this, there are also considerable literatures on different types of ownership structure of firms (private, public and mutual/co-operatives) influencing firm's economic behavior. Oliver Wyman report (2008) examined the European co-operative banks' business performances and challenges as a model in the economy. It had concluded that co-operative banks advocated customer champion and are important alternatives to the commercial banks.

"Almeria model" or Cajamar in Southern Spain is an example of a successful co-operative bank model. The innovative and proactive involvement of Cajamar in the local economy contributes significantly towards the sustainable development of the local economy (Giagnocavo, Aguilera & Perez, 2010). As for banks in Asia, Nakagawa and Laratta (2010) provide evidence of successful role of Japanese co-operative banks as "community organizer" thus in doing so going beyond the role of the normal banks.

A study done on co-operative performance during financial and economic crisis by Birchall and Ketilson (2009) showed that co-operative in general and in particular co-operative banks, savings and credit co-operatives are enterprises that performed very well in crisis. Their study had provided historical and current empirical evidence in various countries such as United States of America (U.S.A), United Kingdom (U.K), Netherland, Germany, Canada and Taiwan as proof of co-operative being a model that withstand crisis, are resilient and sustainable. Ferri (2008) had revealed the advantages

of having co-operative banks in many economies in times of credit crunch particularly during the Asian crisis 1997-1998. The three positive attributes of credit and financial co-operatives are; they are less inclined to ration credit, less prone to raise loan rates and were prudent in lending which reduced risk in their operations.

As for the relationship between co-operative structure and ownership with performance in economic activities, Altunbas, Evans & Molyneux (2001) investigation of banks in Germany had shown that public and mutual ownerships create weak owners' management control. Thus management has less incentive to be efficient. O'Hara (1981), Nicols (1967) and Miles (1994) as cited by Altunbas, Evans & Molyneux (2001) all argued that management of mutual firms (including co-operative and co-operative banks) are cost inefficient as compared to private ownership. Co-operative in particular co-operative banking is an area of study full of controversies and challenges and had been the focus of many western scholars.

Malaysian researchers and academics however, are not drawn towards co-operative research. Although there are considerable amount of studies done on other enterprises, organizations, financial institutions and banking industry in Malaysia, the interest in the study of co-operatives, credit co-operatives and co-operative banks are very scarce. Research on Malaysian banks for example by Katib (1999), Dogan & Fausten (2003), Krishnasamy, Alfieya Hanuum Ridzwa & Perumal (2003), Fadzlan Sufian (2004; 2006; 2007), Fadzlan Sufian & Suraya Ibrahim (2005) and Fadzlan Sufian & Muhd-Zulkhibri Abdul Majid (2007) had highlighted challenges and contributed to the industry growth.

There is no single best method of efficiency measurement acceptable by all scholars. Various methods and techniques have been proposed by researchers such as parametric

and non-parametric to assess performance. Berger & Humphrey (1997) had discussed in their study that there are three main approaches using the parametric frontiers which are Distribution-Free approach (DFA), Stochastic Frontier approach (SFA) and Thick Frontier approach (TFA). Data Envelopment Analysis (DEA) and Free Disposal Hull (FDH) are two types of non-parametric approach. Between these two, DEA is a popular non-parametric method which is based on mathematical programming as it was found to be a powerful quantitative and analytical tool for measuring and evaluating performance (Cooper, Seiford & Zhu, 2004). DEA also enable researchers to find the best practice technology among firms and allows them to avoid specification of error structure (Seiford, 1996; Grosskopf, 1986, as cited in Fukuyama, Guerra & Weber, 1999).

Emrouznejad, Parker & Tavares (2008) indicated from their literature survey of DEA's 30 years history of research in efficiency and productivity that out of a considerable amount of published research, a significant portion focused on DEA application of efficiency and productivity in public and private sector activities. This trend originates from both the developed and less developed countries. The fields in which DEA research covers are very diverse i.e. from education, banks, health care, prisons, agriculture, manufacturing, transportation and others (Ramanathan, 2003).

4.2 Objectives of Chapter

Specifically the three objectives in this chapter are as follows:

1. To analyze the efficiency of the co-operative movement by membership target groups using DEA analysis and the determinants of the efficiency.
2. To measure changes in productivity Bank Rakyat in relation to other conventional banks and investigate factors that determine the productivity.
3. To measure changes in productivity Bank Rakyat in relation to other conventional banks and Islamic banks and to compare their relative efficiencies and investigate factors that determine the productivity.

In this chapter DEA is first used to estimate the relative efficiencies of co-operatives based on the membership target groups in Malaysia. Efficiency of the various types of membership groups is a continuation of the analysis on the co-operative membership preferences and members' satisfaction done in chapter 2 of this thesis. Following Ramanathan (2003), this is a cross-sectional analysis in which performance of co-operatives groups are compared over one time period that is 2008. Co-operatives are categorized and grouped by the MCSC based on their membership target groups. The variable return to scale (VRS) and constant return to scale (CRS) input-oriented approach model was used to measure technical efficiency of these co-operative groups. The objective is to analyze the overall efficiency and productivity growth of the co-operative movement by membership target groups. Second stage analysis on DEA result was also run to determine which of the inputs have significant correlations with the efficiency scores.

Apart from the study done by Jamilah Din (2006) on Fishermen co-operatives using DEA to measure efficiency, to the researcher's knowledge this study is the only other attempt to study co-operative membership groups performance (co-operatives which are supervise by the MCSC) using DEA method in Malaysia.

The second and third objectives of this chapter are achieved by investigating efficiency and productivity changes of Bank Rakyat and other banks using two models by applying the Malmquist DEA methods to panel data. This investigation is a time series analysis as the DMUs (banks) are observed over multiple time periods. This method calculated the indices of total factor productivity (TFP) change, technological change, technical efficiency change and scale efficiency change (Coelli, 1996) and gives variations of efficiency over time which is important in making conclusions (Ramanathan, 2003). The first investigation compares efficiency of Bank Rakyat and nine (9) other domestic conventional banks and secondly compares efficiency between Bank Rakyat, conventional and Islamic banks. A panel data of Bank Rakyat, conventional and Islamic banks chosen were examined in this analysis. The time period of bank study was from 2005 to 2010.

This research also attempted a second stage analysis on the first stage DEA result. Coelli, Roa, O'Donnel & Battese (2005) recommends DEA researchers to include environmental variables (characteristics of banks, macro-economic factors such as GDP per capita, export and unemployment) and investigate the influence of these variables on efficiency. Some environmental variables are beyond the control of bank managers for example GDP and inflation. Second stage analysis was given consideration to counter the effects of problems encountered in the study and the DEA limitations. As discussed by Ramanathan (2003), past researchers have used variety of approaches such

as regression based analysis and principal factor analysis to identify factors that influence efficiency scores in their studies. In this study DEA results were analyzed with Anova two factor (without replication) to investigate whether there is any significant differences in the efficiency scores of the banks studied and Tobit regression to investigate factors that might have influenced the banks' inefficiencies/efficiency.

Prior to this study, a preliminary study was conducted by the researcher (Azmah Othman, 2010) using Malmquist Productivity Index (MPI), DEA of Bank Rakyat and nine other conventional banks using only 2007 and 2008 panel data. The result was encouraging and the researcher decided to extend the panel data to six year period to give a better insight to the bank performance. Comparison of Bank Rakyat with the conventional and Islamic banks was also done in the effort to give an even better performance indication as all these banks are competing against each other in the financial market.

4.3 Motivation for Study

It is unfortunate for the Malaysian co-operative movement when there are not much reliable empirical research done on financial co-operatives i.e. credit co-operatives and co-operative banks in Malaysia. As in the case of co-operative movement in developed countries, results from strong, reliable and unbiased research can contribute to the progress of these co-operatives. It is also extremely important for co-operatives in Malaysia to be evaluated due to the high expectations and complex role shouldered upon them by the government and its agencies responsible for the co-operatives

development in the country. Furthermore co-operative is a tool for socio-economic development since its first formal inception in 1922.

The gap in the Malaysian co-operative research particularly on the performance analysis of co-operatives and co-operative banks had motivated the researcher to extend DEA application and attempt an evaluation of co-operative performance and investigation on the efficiency of the co-operative bank. Results from studies on co-operatives and co-operative banks in the other countries have significantly influenced the research questions in this study.

This study on Bank Rakyat is even more important as Bank Rakyat is currently the biggest contributor besides credit co-operatives to the growth and development of the co-operative movement. The monitoring and evaluation of this co-operative bank in relation to other banks is deemed beneficial not just for the future development of **B**ank Rakyat itself, but also for the co-operative movement.

Mohd Aminul Islam (2012) had studied Bank Rakyat and Bank Simpanan Nasional (BSN) using financial ratios in his comparison of BSN and Bank Rakyat performance (in the capacity of Development Financial Institutions) in relation to the attainment of socio-economic development objectives of the country. He found that in comparison to BSN, Bank Rakyat was more effective and efficient in the management of expenses, assets and in generating income. This study is different from Mohd Aminul Islam (2012) study as the methodology of research is different. This analysis incorporates DEA in the first stage analysis to study the efficiency of Bank Rakyat and the researcher compares Bank Rakyat with other 13 non-co-operative banks in Malaysia. In the second stage analysis variables that influence the efficiency scores were investigated.

The remainder of this chapter is as follows. Following the introduction, is paragraph 2 which discuss in brief the background of Malaysian banking system, and Bank Rakyat. Paragraph 3 presents the literature review, paragraph 4 presents methodology and data, followed by paragraph 5 on empirical findings and lastly in paragraph 6 are the discussions, conclusion and recommendations.

4.4 The Malaysian Banking System and the Bank Kerjasama Rakyat Malaysia Berhad (Bank Rakyat)

The Banking system in Malaysia is comprised of commercial, investment, Islamic and co-operative banks. These banks are regarded as the major mobilizer of funds and source of financing that helped support economic activities. Besides these banks there are non-bank financial intermediaries such as development financial institutions, provident and pension funds, insurance companies, takaful operators and credit/financial co-operatives that complement banks in mobilizing savings and meeting the financial needs of the Malaysian economy (MIDA, 2008; Bank Negara Malaysia, 2011). There have been many positive changes in the last thirty years in the banking system as the Malaysian government pursues prudent macroeconomic policies, maintaining low inflation rate with strong external reserves. Malaysia was not spared from the 1997 East Asia credit crunch and financial crisis which resulted in sharp slowdown of lending activities and some banks suffered a marked deposit outflows (Domac, Ferri & Kang, 1999; Ferri, 2008). Central bank bailout, structural adjustments and regulation amendments are important steps taken to ensure long term financial stability and thus creating propitious environment the development of banking and financial system.

The Central Bank of Malaysia had undergone bank merger programme to address the problem of over banking in 1999 (Lum & Koh, 2004). The exercise is to curb the declined in bank efficiency and enhance competitive conditions. Pivotal to the progress and development of the financial sector in Malaysia, two 10-year master plans have been drawn:

1. The Financial Sector Master Plan (FSMP) 2001-2010 and
2. The Financial Sector Blueprint (FSB) 2011-2020.

These plans have been responsible for the orderly and stable development of the monetary and financial sector in Malaysia. FSB is a continuation of FSMP. It considers the past achievements and was built on to continuously pursue and strengthen financial sector linkages and support the intra-regional integration. FSB also comprehend the internationalization of Islamic finance and the development of an international Islamic financial centre in Malaysia (Central Bank of Malaysia 2012).

An overview of the number of financial institutions as at end September 2008 and 2011 is shown in table 4.2. In 2008 there are 126 financial institutions in Malaysia excluding co-operative banks and credit/financial co-operatives operating with more than 2,200 branches across the country. The number has increased to 134 in the year 2011. Out of these, 84 are Malaysian controlled institutions and 42 are foreign controlled. Stable and progressive financial institutions are very important to the achievement of Malaysia's sustainable economic growth and development.

Table 4.2: Financial Institutions in Malaysia as at 2008 and 2011

Financial Institution	Number of Institution		Malaysian-Controlled institutions		Foreign-Controlled Institutions	
	2008	2011	2008	2011	2008	2011
Commercial Banks	22	24	9	9	13	15
Investment Banks/ Merchant Banks	15	15	15	15	-	-
Islamic Banks	15	17	10	11	5	6
International Islamic Banks	1	4	-	-	1	4
Insurers	41	40	25	25	16	15
Islamic Insurers (Takaful operators)	8	11	8	8	-	3
International Takaful Operators)	1	1	-	-	1	1
Reinsurers	7	7	3	3	4	4
Islamic reinsurers (Retakaful operators)	3	4	1	2	2	2
Development financial institutions	13	11	13	11	-	-
Total	**126**	**134**	**84**	**84**	**42**	**50**

Source: Malaysian Industrial Development Authority (2008) and Bank Negara Malaysia (2011)

The central bank envisioned financial sector not only as the enabler of growth but as a key driver and catalyst of economic growth. It is envisaged that financial system will grow at a rate of 8-11 percent annually with contributions to the GDP increasing from 8.6 percent in 2010 to between 10 to 12 percent by 2020. With this vision surely the co-operative banks must also move forward progressively to be a part of the vision achiever.

The history of co-operative banking in Malaysia had started even before Malaya's[5] independence when Bank Rakyat was established under the first co-operative law, the Co-operative Ordinance 1948 in September 1954. At this point of time, the co-operative movement was to be expanded to Peninsular Malaysia and the way to go about

[5]Malaya is Malaysia before the independence 31st August 1957.

facilitating the expansion is by setting union banks which in turn will provide financial needs to their members. The turning point for the co-operative bank happens on September 1954 when the Bank Agung or Apex Bank was formed when 11 of these union banks decided to merge. Twelve years later in 1967, Bank Agung was then replaced by Bank Kerjasama Malaysia Berhad, (Bank Rakyat, n.d.). From now on the bank's membership is open to both co-operatives and individuals. The bank was also able to open subsidiary companies and open branches to serve customers and their members with the subsequent changes in its by-laws. Another milestone occurrence is on the 6th January 1973 when the name was change to Bank Kerjasama Rakyat Malaysia Berhad or better known as Bank Rakyat.

In 1989 Bank Rakyat was placed under the Ministry of Land and Co-operative Development and the Ministry of Finance. At this point of time Bank Rakyat only operate in Peninsular Malaysia. However, in 1993 when the Co-operative Act was reviewed, the act allows the Bank to operate in Sabah and Sarawak. Bank Rakyat's track record is not one hundred percent clean. The bank has suffered losses amounting to RM65.233 million at the end of 1975. With debts and liabilities exceeded assets, the bank almost went bankrupt if not for the government intervention. The Chairman of the Board, General Manager and Managing Director of the bank were sentenced in 1978 for criminal breach of trust (Consumer Association of Penang, (2012); Radziah Abdul Latiff, 2012).

Bank Kerjasama Rakyat (M) Berhad Act 1978 (Special Provision 202) were presented on December 19th, 1977. This Act (with effect from 6 February 1978) empowers the government to appoint new Board for the administration of business affairs of the bank.

Besides being under the preview of the Ministry of Finance and the Bank Negara (as others bank requirement), because of the status of a co-operative bank, Bank Rakyat is also under preview of the Ministry Domestic Trade, Co-operative and Consumerism.

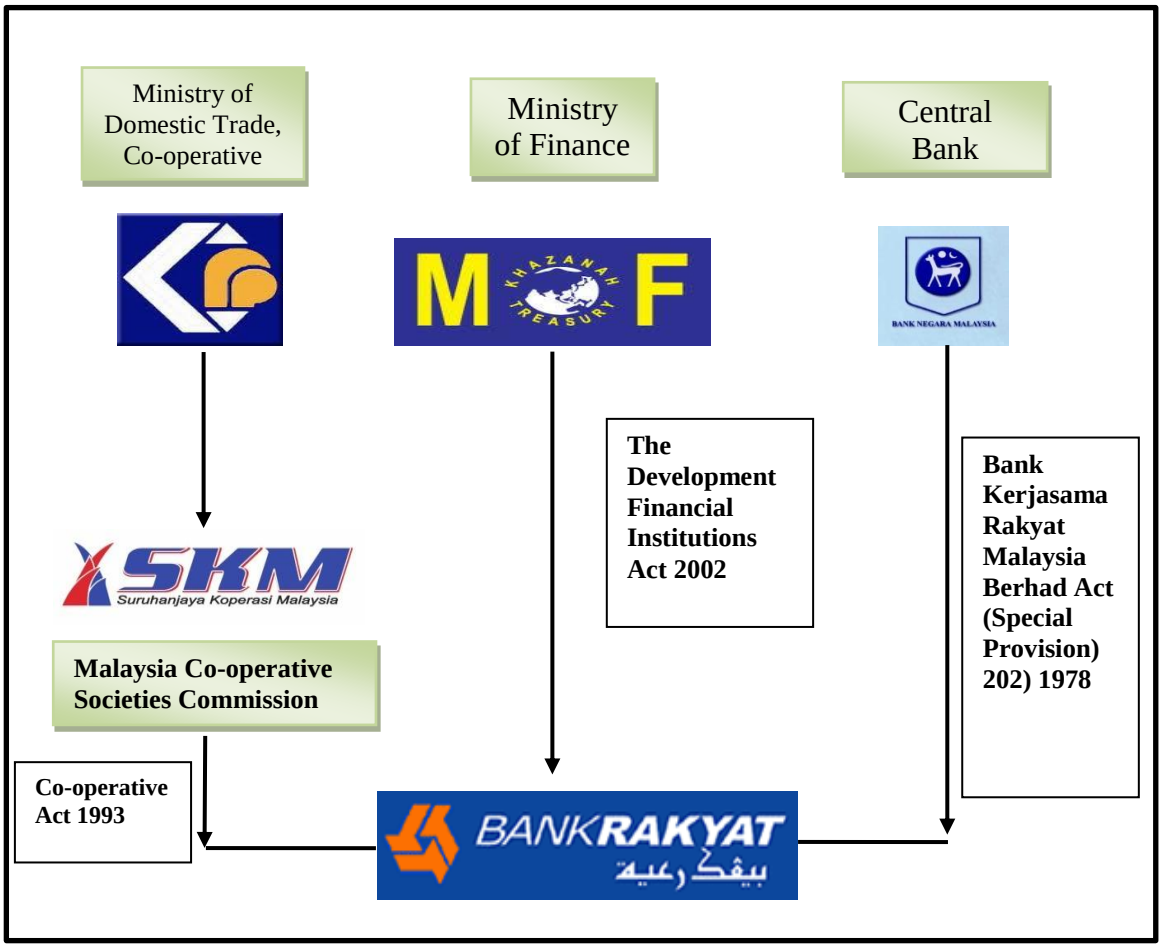

Figure 4.1: Bank Rakyat Satutes and Government Linkage
Source: Bank Kerjasama Rakyat Annual Report 2010

Bank Rakyat not only wears the "hat" of a co-operative bank but also that of a development financial institution. Bank Kerjasama Rakyat (M) Berhad Act 1978 (Special Provision 202) and its bylaw are two important laws that governs this bank. Beside these, because of the dual status, Bank Rakyat is under the Co-operative Act 1993 and also the Development Financial Institutions Act 2002. These Acts and provision should serve to be an effective monitoring tools and instill disciplined among the bank's management thereby safeguard the interest of the bank's shareholders

(individual members and co-operatives) and the general public. The Bank Rakyat statutes and government linkages is shown in figure 4.1.

Although Bank Rakyat is a co-operative bank it is also allowed to provide financing to non-members. This is an added benefit to the bank as it widens the range of customers that banks could cater for. Bank Rakyat took a giant step towards becoming a Syariah co-operative bank and operates as an Islamic co-operative bank on the 8th May 1993.

Bank Rakyat became a full-fledged Islamic co-operative bank in 2002. Hence, with this major decision, Bank Rakyat marked another milestone in history where it became the third bank to offer total Islamic banking products in Malaysia. On 15 February 2002, Bank Rakyat together with six other financial and development institutions was placed directly under the supervision of Bank Negara Malaysia (Central Bank of Malaysia) under the Development of Financial Institution Act (DFIA).

As an Islamic co-operative bank and also a development financial institution, Bank Rakyat has its mission and objective. Bank Rakyat's mission as stated in their by law Article 5(i) is

> "To help improve the economic well-being of members by providing financial facilities at an affordable rate for agriculture, production, marketing, fishing, transportation, housing and business activities deemed beneficial to members and to also promote thrift and savings."(Bank Rakyat, 2010, p.1).

The objective is "To ensure satisfactory profit towards meeting dividend payments to its members while charging reasonable profit rates that is not a burden to its members" (Bank Rakyat, 2010).

Table 4.3: Products and Customer Facilities Offered by Bank Rakyat

Savings & Investment • Savings Account-i Tawfir • Savings Account-i Nuri • General Investment Account-i Qiradh • Bank Rakyat Certificate Financing(SPBR) **Consumer Financing** • Personal Financing-i 1Aslah • Home Financing-i Manzili • Car Financing-i AnNaqlu • Education Financing-i Falah • Pawn Broking-i Ar-Rahnu/Az-Zahab/GENiUS • Contract Financing-i Tijari • Land Financing-i Ardhi • Fixed Asset Financing-i Al-Mal • Share Financing-i • Collateral Financing-i (Unit Trust Investment Certificate) • Credit Card-i • Debit Card-i •Grocery Store Transformation Loan (TUKAR-i) • Automotive Workshop Transformation Loan (ATOM-i) **Commercial Financing** • Contract Financing-i • Share Financing-i • Bridging Financing-i • Property Financing-i • Term Financing-i • Hire Purchase **Financial Planning Services** • Investment • Bancatakaful • Wealth Distribution	**Financing for SMI and Cooperative Entrepreneurs** • CO-OP card • Micro Financing-i (MUsK) • Contract Financing-i Tijari • Term Financing-i • Bridging Financing-i • Property Financing-i • Hire Purchase • Ar-Rahnu X'change • Bank Rakyat Service Agent • Rakan Koop • Business Financing-i Belia Niaga Scheme • Revolving Credit Facility-i Tarkhis (SELAWAT) • System Autopay • Rural Development Financing-i Scheme (SPED) • Kop-Autopay Service Scheme • Rakyat Franchise Financing-i Scheme • Credit Guarantee Corporation Scheme (CGC) • SME Assistance Guarantee Scheme (SAGS) **Customer Facilities** • i-Rakyat Internet Banking • tele-Rakyat Call Centre • e-Rakyat Electronic Banking Centre • Tabung Haji Services • Interbank Giro (IBG) • Interbank Fund Transfer (IBFT) • Remittance (Western Union) • Bankcard/MEPS • Regional MEPS • e-Debit MEPS • Collection Agent – Utility (Water/Electricity Bill) – Assessment Tax/Quit Rent – Telecommunication/Broadcasting – Zakat – Deposits/Savings – Airline Company Services – Consumer/Loan – Pension

Source: Bank Kerjasama Rakyat Annual Report 2010

The bank has been providing various products and facilities to its customers. The detailed products and facilities offered to customers are in table 4.3. The products are savings and investment, customer financing, commercial financing and financing for small and medium industries (SMI) and deposit. The bank also provides the state of the art customer facilities such as i-Rakyat internet banking, tele-Rakyat call centre, e-Rakyat electronic banking centre, Tabung Haji services, interbank giro, interbank fund transfer, remittance (Western Union) bankcards/MEPS, regional MEPS and act as

collection agent for bill payment. Besides this bank Rakyat provide financial planning services (Bank Rakyat 2010). The bank strives to earn a satisfactory profit without burdening members by imposing reasonable charges on its products and facilities. Bank Rakyat has been successful in providing quality, diversified and innovative product at par with other banks meeting the customers' needs.

Among the programmes that have been undertaken by the bank in developing other co-operatives as "Rakan Koop", in which the bank will share their expertise and experiences to help co-operatives develop and improve their business operations. In their mentor-mentee programme, the bank will act as a mentor to other co-operative by providing counseling and various training. The first mentee under this programme is Bank Persatuan Malaysia Berhad (Bank Rakyat, 2009). Bank Rakyat has a role in helping Bank Persatuan implement their management and restructuring plan to their effort to become the second co-operative bank in Malaysia. Besides this, Bank Rakyat also shares its experience in Syariah Financing System (SFS) with credit co-operatives by conducting sessions on the way to implement the SFS. More than 60 credit co-operatives had benefitted and are now operating under the Syariah-based system.

Bank Rakyat also played an important role of linking co-operative and individual entrepreneur with agencies such as the Malaysian Agricultural Research and Development Institute (MARDI), Standards and Industrial Research Institute of Malaysia (SIRIM) Malaysia External Trade Development Corporation (MATRADE) to facilitate marketing, research and development. Indeed, this co-operation has improved other co-operative activities and resulted in an increase in co-operative product. A total of 12 co-operatives have become Bank Rakyat's representative receiving a commission of RM143.850. As for Ar-Rahnu activities, several co-operatives have been appointed

as a franchisee for the Islamic leasing product (Ar-Rahnu) and eight co-operatives involved with Ar-Rahnu had a turnover of RM45.2 million.

Bank Rakyat has made a substantial contribution to the other co-operative activities and the development of cooperative movement in Malaysia (MCSC, 2009). To date, Bank Rakyat has a total of 127 branches offering Islamic banking facilities to its customers. Products offered by the bank are investment accounts, financing certificates, and savings accounts, personal financing, home, hire purchase, pawn-broking, and education financing; and accidental and disability insurance products. Besides these various other services such as Automated teller machine (ATM), bill payment, electronic banking, and personal financing for senior citizens are also offered.

In addition, the bank provides other services, including report lost/stolen ATM card, financing application status, current rate information, product and services enquiry, and current promotion updates, (Bloomberg.com Business Week, n.a.). Besides financing, the bank also provides exhibition space to help co-operatives and entrepreneurs showcase their products and services in all bank branches. Bank Rakyat's shareholders comprise of individuals and co-operatives. Since 2005 until 2010 Bank Rakyat had distributed not less than 15 percent dividend yearly to all its shareholders (Bank Rakyat Annual Report 2005, 2006, 2007, 2008, 2009, 2010). Table 4.4 provides the details of shareholders. Both the number of individual and co-operative shareholders suffered a reduction in numbers in 2008. The number of individual shareholders have also decline by 4. 5 percent.

Table 4.4: Number of Individual Shareholders and Co-operative Shareholders (2006-2010)

Year	No. of Individual	No. of Co-operative	Total
2006	749,098	1,405	750,503
2007	792,079	1,401	793,480
2008	788,274	1,399	789,673
2009	792,798	1,401	794,199
2010	756,942	1,414	758,356

Source: Bank Kerjasama Rakyat Annual Report 2010

According to MCSC (2009), the success achieved by Bank Rakyat as a co-operative bank is akin with the positive growth achieved by other co-operative banks in developed countries such as in Europe. The Swiss co-operative financial institution, Raiffeisen Bank and Migros are example of banks that people prefer to go for services given by the co-operative banks as compared to the normal-bank because they believe in the co-operative banks. This is because these banks are more concerned with the rights of co-operatives members in activities and does not seek to make money by exploiting customers. In the author's opinion, efforts by MCSC to strengthen credit and banking co-operative activities not only are in line with efforts put in by the Central Bank but are wise steps toward further developing the co-operative activities as well as contributing to the internationalization of Islamic finance and the development of an international Islamic Financial Centre in Malaysia.

4.5 Literature Review

There are substantial amount of studies on co-operative role, contributions to economy, economic evaluation, performance and impacts of co-operative on the economy of developed as well as underdeveloped countries in the literature. Important literature that contributes to the teaching of co-operatives worldwide for examples are by Roy (1981); Zeuli & Cropp (2004) which provided materials on the management of co-operative as a business enterprise for co-operative practitioners. Studies particularly in the early years are from the U.S. and were mostly centered on agricultural co-operatives.

Foxall (1982) gave an overview of the role and importance of co-operative marketing and organization in European agriculture. Studies on the future of agriculture co-operatives in U.S.A by Cook (1995) suggested that despite the challenges and issues faced by the agricultural co-operatives, they have a future in helping farmers overcome the market failure problems. Studies on co-operatives in the U.S.A revealed that successful co-operatives in U.S.A (such as electric, housing, credit and banks) had contributed to the accumulation of assets and wealth (Nembhard 2002).

On a more recent note about study done on local agricultural co-operative, Nurjihan Idris & Amin Mahir Abdullah (2011) did a study evaluating factors affecting agricultural co-operative performance in Malaysia based on firm production function and regression. Their study found that most agricultural co-operatives studied, do not work on their own farm but only rely on FELDA or FELCRA for work contracts (such as harvesting, transporting harvest, irrigation and others) as income generating activity. Their study also suggested that labour is statistically significant in determining agricultural co-operative sales. Lack of labour is the result of lack of interest from the

younger generation in the agricultural co-operation. Their result is consistent with this research finding in chapter 3 which portrayed lack of interest among younger people to become members.

Yusof Ismail & Suhaimi Mohd Sarif (2010) investigated the perceptions of co-operative senior management towards managerial roles and global skills. They concluded that beside the traditional managerial skills co-operative managers in Malaysia need to be equipped with global managerial skills to face international challenges successfully. Although co-operatives are accepted and acknowledged as effective and important economic enterprise, the literature showed that co-operatives are distinguished from other enterprises as their concepts, organizational structure, governance and equity management is different (Frederick, 1997; Zeuli & Cropp, 2004).

Mac Pherson (2008) on the other hand had presented a critical review of Polanyi's and Fukuyama's work on social and economic turbulence which did not consider the roles of co-operative movement very seriously. He pointed out that unlike other business enterprise, a historical understanding of co-operative is important for the future development of co-operative. This is because co-operative have a deep rooted economic history.

4.5.1 Economic Efficiency: Comparison of Financial Performance of Co-operative with Other Firms

Three co-operative schools of thought: 1. Socialist Co-operative School[6], 2. Co-operative Commonwealth School[7] and 3. Competitive Yardstick School[8], all have had important influence on the controversy and debates surrounding the co-operative role and appreciation for the roles played by the co-operatives in the economy (Roy, 1981; Torgerson, Reynolds & Gray, 1997). Of the three, the second and third schools of thoughts were more influential and had shaped the co-operative structure, functions and market development. As an enterprise with dual characteristics (economic and social), which was established to play a role in an economic system with many other competitors, the co-operative existence naturally had received attentions by many economist, practitioners and politicians.

An extensive literature was found on the efficiency of co-operative in relative to Investor Own Firms (IOF) from as early as 1920. Pigou (1920) had examined critically the behaviour of the co-operative in the market situation. He had debated on the objectives and proceeds of co-operatives as to discuss the justification of co-operative tax exemption given by the government. Co-operatives may be as efficient as IOFs. He viewed co-operative as a good firm because marginal social optimum could be achieved through co-operative unlike the IOF but, co-operatives may not always be efficient. Enke's work on the efficiency of consumer co-operatives argued that co-operative's price policies affect their resource allocation and co-operatives seek to maximize their net consumers' surplus and thus promote the general economic welfare. The achievement of this general welfare requires co-operative to follow a price policy that

[6] Socialist Co-operative School: Socialism being the final goal and the ultimate objective in the co-operative movement.

[7] Co-operatives are alternative to capitalism, dominant business (consumer and farm sector) with other business playing a secondary role.

[8] Developed by Nourse, E.G. Competitive yardstick school is a means of checking and correcting the capitalist system, co-op preserved a bottom-up structure.

equates marginal cost to marginal demand price of the market which is also the social optimum (Enke, 1945).

An attempt to provide empirical evidence on the performance of co-operative firms in the cheese industry as compared to proprietary firms from Babb (1980) revealed significant differences in which co-operatives' processing costs are lower, co-operatives paid higher price to dairy farmers, proprietary firms generate more tax revenue and made higher return on net worth of their business. This result seems to prove that co-operatives at least in the cheese industry are efficient and brought benefits to their members and nonmembers. Six years later, Caves & Petersen (1986) studied the impact of taxation on co-operatives and corporation and concluded that tax integration on co-operatives spurred the potential of co-operative growth by increasing their net savings but co-operatives sustainability was however lowered as compared to the corporations.

There have been mixed opinions and debate given by co-operative scholars on studies related to public policies supporting various types of co-operatives in the U.S.A. These studies are all very much related to the questions of co-operatives efficiency and performances. Studies by Porter & Scully (1987) stressed on the inefficiencies fostered from public resources given to co-operatives in the U.S.A. According to Porter & Scully's dairy co-operatives analysis, costs incurred by co-operatives (as an economic agent) creates control problems in co-operatives which resulted in efficiency losses. The weak property rights structure was also found to be part of the inefficiencies in co-operative when compared with the proprietary (normal non-co-operative firms). Cain, Toensmeyer and Ramsey (1989) however, did an assessment of the farmers' opinion on the effectiveness of their co-operatives in relation to proprietary firms and found that co-operatives are regarded by them as beneficial in providing services thus providing

greater welfare and risk reductions. Sexton & Iskow (1993) on the other hand, surveyed and critiqued the work done by others on co-operative evaluation and concluded that there are no conclusive evidence to fully support co-operative as better organization than IOF. However, they believed that as a voluntary organization, co-operatives are important in the development of agriculture in the U.S.A.

Another study with results in favour of co-operatives was done by Lerman & Parliament (1990; 1993). Their study examined the hypothesis that co-operatives faced problems that rose from their ownership structure and non-marketability of equity. The results from their study however showed that co-operatives in U.S.A were performing at par with or even better than IOFs and their findings suggested that co-operatives have pursued similar goals with IOFs. New Zealand dairy industry study using stochastic production frontier models by Jaforullah & Devlin (1996) suggests no relationship between farm size and efficiency however another study by Jaforullah & Whiteman(1999) using DEA analysis had suggested that technical efficiency of farms in New Zealand could be increase by adjusting (increase or reduce) farm size.

An efficiency evaluation of the Fishermen Associations (FA) in Malaysia was under taken by Jamilah Din (2006) by applying DEA. With regard to economic and social dimensions, her research found that in the economic dimension the FAs had TFP progress while in the social dimension FAs' TFP experienced a regression. The study concludes that as an organization with dual-objective FA must not only focus on economic efficiency but balance it with the achievement of optimal social goals.

DEA literatures on organizations and enterprises have been voluminous and as a linear programming-based technique DEA was used to study the performances of a wide range

of entity such as different types of sectors in the economy (manufacturing, agriculture, banking and others) and various types of organizations (universities, schools, firms, tax offices, power plants, co-operative and others) (Ramanathan, 2003).

In the banking sector, the early literature on bank efficiency studies was dominated by studies on U.S.A banks. This is no surprise as historically the U.S.A. has the largest financial market as well as number of banks. This factor has facilitated econometric modeling used in the early banking studies. Among the popular are cost studies from size effects and product mix (Avkiran, 1999; Aly, Grabowski, Pasurka & Rangan, 1990). Economic of scale measurement using the Cobb-Douglas production technologies in the early studies were criticized. There were limitations with the assumption of lack of interdependence among outputs and the restrictive functional forms that exclude U-shaped cost curve (Aly, Grabowski, Pasurka & Rangan, 1990). Wheelock & Wilson (1995) pointed out the importance of banks efficiency studies as an indicator of success or in explaining the failure reasons of the individual banks as well as the industry and the economy. Secondly it is important to study the implication of public policy on banking efficiencies.

4.5.2 DEA Studies on Co-operative Banks, Credit Unions and Islamic Banks

There have also been many studies done by researcher using DEA to examine the technical, cost and profit efficiency of financial institutions (Berger & Humphrey, 1997; Emrouznejad et al., 2008). However, comparatively DEA studies done on co-operative banks and credit co-operatives are still scarce. Lang & Welzel (1996) analysis of 757 German co-operative banks from data 1989–1992 found that smaller banks enjoy higher TFP growth in relation to bigger banks. Mergers among the small inefficient banks

might help these banks to reap economies of scale, eliminating inefficiency through improved management and solve agency problems. However, their research done on a bigger number of German banks which include Bavarian co-operative banks led to no evidence of economies of scope. Their study have shown that compared to cost inefficiency external factors played a strong role in explaining cost differences between high-cost and low-cost banks. The results had indicated that smaller banks are more responsive to input prices (Lang & Welzel 1998).

Pasiouras, Sifodaskalakis & Zopounidis (2007) analyzed the cost efficiency of the Greek co-operative banks with the application of two-stage DEA. Cost inefficiency was contributed by allocative and not technical inefficiency. Factors such as GDP per capita, unemployment rate and disposal income influence efficiency of banks. When employing Malmquist index to examine the total factor productivity change on 13 banks for the period 2000-2005 they found that TFP experience a small decrease and that relationship between size differences and productivity is not statistically significant (Pasiouras & Sifodaskalakis, 2007).

Fukuyama (1996) had analyzed scale and technical efficiency of the Japan Shinkin banks using 1992 data and found that overall technical inefficiency is due to pure technical inefficiency. It was also found that efficiency improves as asset size of credit co-operative increases. Fukuyama, Guerra & Weber (1999) studied efficiency and productivity growth of Japan credit co-operatives from 1992-1996 with respect to types of ownership. Results suggested that foreign-owned co-operatives are more efficient with greater productivity growth as compared to Japanese-owned co-operatives. There appears to be input allocative inefficiency among many credit co-operatives as

managers are pursuing different objectives from cost minimization or output maximization.

Ngo (2012) contributed to the research on the banking sector (bank data from 1990-2010) in Vietnam using DEA and Tobit regression. His result showed that the efficiency of the banking sector in Vietnam is decreasing in this study period and interest rates, government spending and market concentration affects the sector efficiency.

Wang & Li (2006) study on the Chinese commercial banks showed that bank size and ownership had a major effect on the banks efficiency scores. Their empirical results pointed out the different efficiency between different types of banks in China. State-owned banks efficiency is much lower than the joint-equity banks.

In the case of financial sector and commercial banks in Malaysia, Dogan & Fausten (2003) examines the Malaysian banks over the period 1989-1998 and found that banks productivity deteriorated following the impact of regulatory extortions and inefficient technological reforms. Krishnasamy, Alfieya Hanuum Ridzwa & Perumal (2003) investigated the impact of bank merger exercise orchestrated by the government to strengthen banking conditions in the wake of financial recessions. In the limited period that of their study they have found that total factor productivity (TFP) of ten banks studied progressed by 5.1 percent. 80 percent of the banks however had experienced regress in scale efficiency but undergone rapid technological change due to merger process.

Credit must be given to Fadzlan Sufian for his notable intensive research on the performance of Malaysian banking industry. Fadzlan Sufian (2004) analysis of the

technical and scale efficiency of domestic commercial banks (1998-2003), concludes that merger exercise among banks was successful particularly for small and medium size banks. Fadzlan Sufian & Suraya Ibrahim (2005) application of MPI on the analysis of post-merger banks (2001-2003) and include off-balance sheet items (OBS) had concluded that the inclusion of OBS had an effect on the TFP levels for all banks studied largely on technological rather than efficiency change. Regarding the non-bank financial institutions, Fadzlan Sufian (2006) studied the institution using panel data 2000-2004 and revealed that finance companies overall efficiency are higher than that of merchant banks. Fadzlan Sufian & Muhd-Zulkhibri Abdul Majid (2007) investigated on the performance of Islamic banking sector and found that as compared to local banks, foreign banks exhibited higher technical efficiency. Their second stage analysis revealed that larger banks are more efficient with more loan intensity and less non-performing loans.

Nor Hayati Ahmad & Shahrul Nizam Ahmad (2004) investigated factors affecting risks among Islamic banks and conventional banks operating in Malaysia. Their research found that credit risks of Islamic banks are high and risk management play an important role in the banks operation. Nor Hayati Ahmad & Mohamad Akbar (2011) found that Islamic banks exhibited higher PTE and bank profitability associated positively with technical efficiency. Since risk management is an important consideration, this research use loan to asset ratio as a proxy for the loan intensity among banks studied in the second stage analysis.

At the international level, studies undertaken to compare conventional and Islamic banks have reported various results. Ihsan Isik, Lokman Gunduz & Mohammed Omran (2004), result of DEA analysis on the Jordanian banking sector suggested that within the

period 1996 – 2001, although most of the banks studied experienced operation with increasing return to scale, their research showed that managerial inefficiency are output related that is scale inefficiency and not input related or pure technical inefficiency.

Yudistira (2004) provides evidence on Islamic banking by analyzing 18 Islamic banks worldwide in the period 1997-2000 and found that the efficiency scores of these banks were determined by country specific factors such as banks outside the Middle Eastern region are more efficient as they received support from their regulators and publicly listed Islamic banks are less efficient than non-listed banks. The global crisis 1998-1999 was found to influence their efficiencies. In comparison between different types of bank, important results revealed by Mohammed Khaled I. Bader, Shamsher Mohamed, Mohamed Ariff & Taufiq Hassan (2008), suggested that there are no significant differences between conventional and Islamic banks. This study also use total asset as a measurement of bank sizes in the second stage analysis in determining factors that influence the efficiency scores.

A fairly recent work using DEA on banks is by Ong, Lim, & Teh (2011) where they compare the efficiency of domestic and foreign banks in Malaysia for the period 2002-2009. Their result revealed contrasting finding from other studies where domestic banks were found having higher efficiency level than foreign banks. An application of Tobit regression proved that capital, loan quality, expenses and asset size influenced pure technical efficiency.

Although literature on co-operatives in other countries particularly in the Western developed countries, on banking sectors and other organizations are voluminous and had benefitted the co-operative movement both in developed and developing countries,

in reality evidence showed that literature on Malaysian co-operatives are still scarce. No doubt quite encouraging efforts were put forward by local researchers in researching the financial and banking sectors but this literature search found out that none of the DEA studies on banking (either conventional or Islamic) in Malaysia had included Bank Rakyat in their analysis. This study attempts to narrow this performance research gap and contribute to the body of knowledge in co-operative research in Malaysia.

4.6 Data and Methodology

4.6.1 Overview of Analysis

This chapter focuses on evaluating the co-operative efficiency of the membership groups and the productivity change of Bank Rakyat. An input-oriented approach model was used to measure the technical efficiency of 36 co-operative membership groups. Malmquist Productivity Index, DEA was chosen as a method to calculate the indices of total factor productivity (TFP) change, technological change, technical efficiency change and scale efficiency change of Bank Rakyat, conventional and Islamic banks.

The different types of analysis, aims and research objectives in this essay are summarized in table 4.5. Both the standard DEA and the Malmquist DEA method of analysis are conducted using secondary data. DEAP version 2.1 computer program was used to run the standard DEA models and derive the Malmquist indices of all the banks studied, (Coelli, 1996).

Table 4.5: Analysis Types and Aims

Types of analysis	Aims of Analysis
Standard DEA CRS, VRS	1. To run the variable retun to scale (VRS) and constant return to scale (CRS) input-oriented approach model to measure technical efficiency of co-operative by membership groups.
Malmquist Productivity Index DEA	2. To calculate the indices of total factor productivity (TFP) change, technological change, technical efficiency change and scale efficiency change of Bank Rakyat and other non-co-operative banks.
Anova Two Factor Without replication	3. Second stage analysis to investigate the significant differences in the efficiency scores achieved by the banks studied.
Tobit Regression	4. Second stage analysis to test for factors that might have influenced the DEA efficiency scores.

In the second stage analysis, Anova two factor without replication and non-linear Tobit regression were used to further investigate the efficiency scores obtained from first stage analysis. Anova was run using Microsoft Excel 2010 and Tobit regression using the Gretl version 1.1 computer programme.

4.6.2 Data: Co-operative membership target groups analysis

The overall efficiency and productivity growth analysis had used secondary data source. These are data on the co-operative movement for the whole of Malaysia, recorded based on membership target groups in 2008 by MCSC.

Total number of registered co-operatives as at 31st December 2008 is 6,084 and total membership in the same year amounting to 6.51 million people. The membership was divided into 36 groups. The grouping ranges from bank staff, youth, settlers and staff of the land development authorities such as FELCRA, FELDA, KEDA, KESEDAR, and RISDA, teachers, schools, high learning institutions, colleges, uniformed personnel,

government servant, statutory agency workers, estate and factory workers, fisherman, private company workers, long house occupants, small businessmen, farmers and women.

Table 4.6 indicates the number of co-operatives, members, their turnover, asset and equity of the co-operative movement in Malaysia. The decision-making units (DMUs) in this analysis are the 36 member target groups.

Table 4.6: Co-operative Target Groups, Members, Turnover, Profit, Asset and Equity as at December 2008

Groups	Co-ops No.	TURNOVER (RM)	PROFIT (RM)	MEMBERS (PER.)	ASSET (RM)	SHARE EQUITY (RM)
Bank workers	2	3,551,004,345	1,254,943,822	828,484	42,208,732,138	2,199,709,013
Youth/RTP	127	26,785,673	4,644,652	40,003	64,780,498	13,216,310
Felcra	147	200,817,028	9,644,626	42,624	163,269,179	61,205,889
Felda	296	404,502,616	56,914,789	284,158	1,949,696,869	1,402,068,458
Affiliation	34	74,659,038	34,201,378	8,211	173,758,474	10,821,473
Teachers	73	176,973,759	55,204,103	129,056	737,528,013	554,090,165
Small Industry (KIK)	26	3,551,004,345	1,254,943,822	828,484	42,208,732,138	2,199,709,013
Insurance	1	65,693	-14,063	142	12,920	25,883
General Welfare	45	1,695042	156,766	11,941	6,729,871	835,300
KEMAS	13	11,545,612	398,868	15,921	26,647,410	21,418,567
Association	32	33,912,600.10	-1,124,389	9,625	40,443,957	3,889,366
KESEDAR	8	437,849.10	16,115	2,046	1,733,787	482,169
Ownership co-op	18	3,943,800	461,603	7,936	5,684,774	1,583,583
KKK(village dev)/ KEDA	3	4,032,771	320,280	814	2,522,521	148,473
Uniformed Personnel	19	444,665,767	146,836,818	269,851	2,215,771,798	671,396,086
Teachers Training College (MAKTAB)	14	2,256,234	375,701	8,367	2,236,220	562,874
Fisherman	34	1,077,511	301321.10	2120.00	5785609.10	1073734.10
General Public	1261	440,404,937	69,434,438	1,501,882	2,702,307,365	918,049,406
Government Servant	242	827,466,875	139,891,132	413,418	1,889,759,314	1,239,557,735
Statutory Agency Workers	89	116,873,921	18,015,851	63,806	1,203,982,030	247,092,096
Factory Workers	41	106,946,409	4,011,506	24,073	107,052,374.10	72,234,827
Estate Workers	18	9,397,027	791,961	5,984	11,366,011	3,787,678
Stevedoring	13	37,985,089	122,073	5,963	48,187,841	20,731,163
Private company workers	112	332,353,623	59,278,068	235,290	1,058,330,352	766,741,895
Drivers	48	4,928,174	1,061,939	10,992	238,098,64	3,326,545
District Development KPD	70	17,883,901	-12,616	47,916	369,726,99	8,701,718
Long house occupants	307	73,645,939	17,860,925	73,681	307,502,472	33,540,812
Producers / graduates	8	158,320	-90,524	2002	35,771,615	1,730,784
Small businessmen	90	95,171,525	2,601,507	51,253	1,202,256,27	17,532,412
Pensioners	37	7,275,518	3,000,225	10,939	189,209,04	19,893,648
Farmers	509	2,048,383	731,585	20,904	13,061,970	3,080,702
Training Centers	30	13,261,624	1,940,254	17,406	7,346,434	742,052
RISDA	61	472,912,819	27,068,954	170,097	272,360,965	57,194,882
Schools	2048	165,288,817	24,189,568	2,050,790	159,156,925	18,528,382
IPT	93	79,317,216	6,447,244	115,654	69,095,666	34,042,060
Women	115	7,764,845	1,560,951	24,692	39,171,835	8,786,418
Total	**6,084**	**7,749,860,509**	**1,942,319,708**	**6,509,648**	**55,730,720,236**	**8,417,996,182**

Source: Monitoring Division, Malaysia Co-operative Societies Commission, 2008

4.6.3 Specification of outputs and inputs: co-operative membership target groups analysis

Only discretionary inputs are used in this DEA analysis. These are inputs that are under the control of the co-operative management. Other non-discretionary inputs, that is, those inputs which are beyond the control of management are not being considered. The inputs considered are members which represent the labour, assets and share equity. The DEA model in the first analysis consists of two outputs (Y) and three inputs (X) which are as follows:

Outputs	**Inputs**
$Y_{1:}$ Turnover	X_1: Members (labour)
Y_2: Profit	X_2: Asset
	X_3: Share equity

The data for DEA were screen to make sure that the analysis could be run successfully and model is useful. Firstly, on the issue of sufficient observations or the number of input (m) and output (s) items to ensure good efficiency discrimination between DMUs (n) and adequate number of degrees of freedom. Following Cooper et al. (2007), the rule of thumb is n {the number of DMUs} must be equal or greater than max {m x s, 3x (m + s)}. In other words it must be at least two to three times the number of variables. The number of DMUs in this analysis is 7 times the number of variables. Secondly dataset was checked for outlier by checking the number of peers that use them as an efficient reference. Upon examining, no outliers are found. Table 4.7 showed the descriptive statistics of output and inputs used in the analysis.

Table 4.7: Descriptive Statistics of Output and Inputs in the DEA Membership Target Groups Analysis

Variables	Minimum	Maximum	Mean	Std. Deviation
Outputs				
Turnover (RM)	65,693.1	3,551,004,345	215,273,894.7	601,664,942.22
Profit (RM)	0.01	1,254,943,822	53,957,258.46	209,021,868.08
Inputs				
Members (PER.)	142	2,050,790	180,818	428,630.39
Asset (RM)	12,920.1	42,208,732,138	1,548,075,618	7,006,723,210.04
Equity (RM)	25,883.1	2,1997,09,013	233,833,227.3	496,821,904.85

4.6.4 Methodology: Co-operative membership target group analysis

The type of DEA model chosen in the analysis is intermediation model. This concur with the idea of studying the co-operatives' ability to bring in individuals into the co-operative as members or in some instances the individuals got together voluntarily and organized the setting up of their own co-operative, the co-operative management used the collected share capital gathered from members and assets accumulated throughout the years functioning as a business entity to produce financial and non-financial benefits.

An Analytic Hierarchy Process (AHP) was followed in doing the input and output specification. Both the co-operative theory knowledge and value judgment were used, following the structure comprising of the goal, criteria and looking at the alternatives in the decision-making. The analysis starts with the selection of output and input variables. The objective of evaluating co-operative performance by using DEA is based on financial performance and the tangible benefits of co-operation. In relation to this, turnover and profits are the outputs while the three inputs are members, assets and share equity. The researcher is with the opinion that all these variables are entitle to an equal relative importance.

Following this process in the effort of finding an optimal model, the DEA analysis was run firstly using two outputs (turnover and profits) and three inputs (members, assets and share equity) and then again with the same two outputs and but with only two inputs (assets and shares). In the first analysis this research considers members as inputs because in co-operative besides being the user of goods and services, members are also the owners of the co-operative enterprise. They have a very important role in management decision-making, they are required to contribute in terms of labour, time, support and collectively make financial contribution in their co-operative activities. Turnover and profits are two financial benefits which are regarded as important outputs and a yardstick to the co-operative ranking.

The variable return to scale (VRS) and constant return to scale (CRS) input-oriented approach models were run to measure technical efficiency of these co-operatives based on membership target groups. The objective is to investigate and measure how efficiently various groups (the DMUs) uses the resources available to them to generate output.

Data Envelopment Analysis (DEA) is used as it has been known to overcome problems of evaluating firm with multiple inputs and outputs and those having complex performance (Zhu, 2003). Thus, DEA could be used even when conventional cost and profit functions (that depend on optimizing reactions to prices) could not be justified. It is a linear programming technique where the set of best-practice or frontier observations are those for which no other decision-making unit or linear combination of units has as much or more of every output (given inputs) or as little or less of every input (given outputs). Developed by Charnes, Cooper & Rhodes (1978), DEA was originally intended for use in public sector and not-for-profit settings where typical economic

behavioural objectives, such as cost minimization or profit maximization, may not apply.

Charnes, Cooper & Rhodes (1978) proposed a model which had an input orientation and assumed constant return to scale (CRS). Banker, Charnes & Cooper (1984) had proposed a variable returns to scale (VRS) model. Coelli (2005) provides an introduction to modern efficiency measurement. In this section a number of commonly-used efficiency measures were discussed. The discussion of efficiency measurement begins with Farrell (1957) who drew his study from the work of Debreu (1951) and Koopmans (1951). Farrell (1957) proposed that efficiency of a firm consists of two components that is (1) technical efficiency, which reflects the ability of a firm to obtain maximal output from a given set of inputs, and (2) allocative efficiency, which reflects the ability of a firm to use the inputs in optimal proportions, given their respective prices and the production technology.

These two measures are then combined to provide a measure of total economic efficiency. CRS assumption is appropriate only when all firms are operating at optimal scale and with perfect competition without constraints or influence from government or other factors. Coelli et al. (2005) discuss how others such as Afriat (1972), Fare, Grosskopf & Logan (1983), and Banker, Charnes & Cooper (1984) proposed VRS that calculates technical efficiency without being confounded by scale efficiency (Coelli et al., 2005). VRS performance evaluation method also follows many other researches on financial institutions discussed in Berger and Humphrey (1997). Decision-making units (DMU) which perform well is separated from those performed poorly and then nonparametric frontier analysis is use to 'benchmark' the relative performance of

production units. Benchmarking is common exercise done by most financial institutions (Berger & Humphrey, 1997).

There are two approaches available in DEA i.e. the input-oriented and output-oriented. In input-oriented model, inputs are minimized and the outputs are kept at their current levels. As opposed to input-oriented, output-oriented kept inputs at their current levels and try to maximized outputs quantities. Following Coelli et al. (2005), the choice of orientation should be based on which quantities (inputs or outputs) the managers have most control over, this study choose input-oriented as the management of co-operative have most control over inputs. This orientation will help determine by how much input quantities be reduce and input slack can be determine to improve efficiency.

Discussion on DEA will follow the consideration of a set of n observations on the DMUs. Each observation, DMU_j (j = 1,…., n), uses m inputs x_{ij} (i = 1, 2, …,m) to produce s outputs y_{rj} (r = 1,2,…, s). The efficient frontier is determined by these n observations.

$$\theta^* = \min \theta$$

Subject to

$$\sum_{j=1}^{n} \lambda_j x_{ij} \leq \theta x_{io} \quad \text{i = 1, 2,….m;}$$

$$\sum_{j=1}^{n} \lambda_i y_{rj} \geq y_{ro} \quad \text{r = 1, 2,….,s;}$$

$$\sum_{j=1}^{n} \lambda = 1$$

$$\lambda_j \geq 0 \quad \text{j = 1, 2 , …, n.} \qquad (1)$$

The DEA process involved the following model:

$$\text{Min } \theta - \varepsilon\left(\sum_{i=1}^{m} s_i^- + \sum_{r=1}^{s} s_r^+\right)$$

Subject to

$$\sum_{j=1}^{n} \lambda_j x_{ij} + s_i^- = \theta x_{io} \qquad \text{i=1,2,….., m;}$$

$$\sum_{j=1}^{n} \lambda_j y_{rj} - s_r^+ = y_{ro} \qquad \text{r = 1, 2,….., s:}$$

$$\sum_{j=1}^{n} \lambda_j = 1$$

$$\lambda_j \geq 0 \quad \text{j = 1, 2,…., n.} \qquad (2)$$

The frontier determined by model (2) exhibits variable return to scale (VRS), and the model is called input-oriented VRS envelopment model. The VRS envelopment model identifies the VRS frontier with DMUs exhibiting IRS, CRS, and DRS (Zhu, 2003). Scale efficiency measures can be obtained for each DMU by conducting both CRS and VRS DEA, and then decomposing the TE scores obtained from the CRS DEA into two components, one due to scale inefficiency and one due to "pure" technical inefficiency (i.e. VRS TE), (Coelli et al., 2005). The appearance of difference in the CRS and VRS TE scores for DMU is an indication that the DMU has scale inefficiency.

Figure 4.2 showed the calculation of scale economies in DEA. Y axis showed output produced and X axis inputs used in production by firms. The concepts are expressed in ratio efficiency measure as:

$$TE_{CRS} = AP_C / AP$$

$$TE_{VRS} = AP_V / AP$$

$$SE = AP_C / AP_V$$

Where all of these measures are bounded by 0 and 1, it is also noted that

$$TE_{CRS} = TE_{VRS} \text{ x } SE,$$

because,

$$AP_C/AP = (AP_V/AP) \text{ x } (AP_C/AP_V).$$

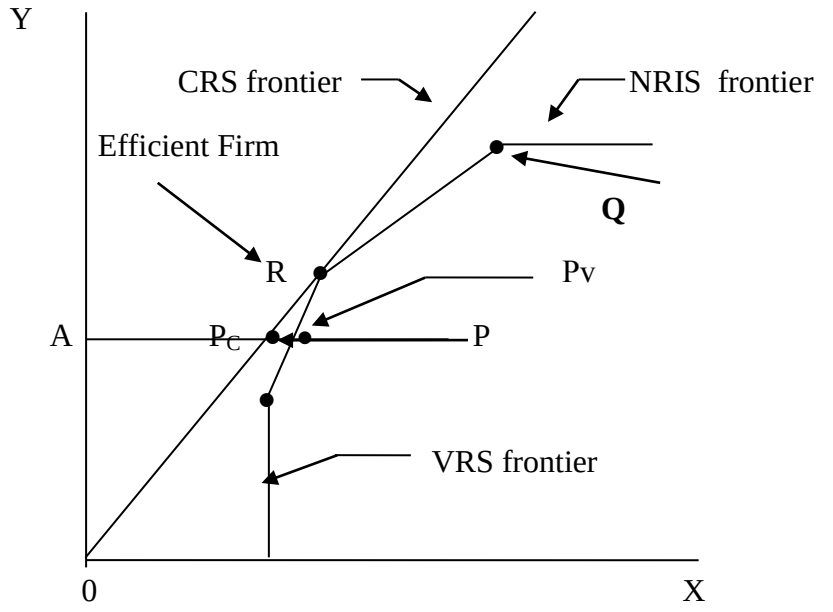

Figure 4.2: Calculation of Scale Economies in DEA
Source: Coelli, Roa, O'Donnell & Battese (2005), p. 174

CRS is thus decomposed into "pure" technical efficiency and scale efficiency. The scale efficiency measure can be interpreted as the ratio of the average product of a firm operating at a point of (technically) optimal scale. Return to scale (RTS) will describe the changes to the co-operative output if it changes all its inputs. RTS can be defined as an increase in output as a result of increasing all inputs by the same percentage.

The three types of RTS are; (a) the increasing returns to scale (IRS), (b) the constant return to scale (CRS) and (c) the decreasing returns to scale (DRS). IRS occurs as 1 percent increase in inputs produces more than 1 percent increase in outputs. For example in cases where co-operative increase its staff or capital. This increment then enable it to increase outputs in a lot more than the increase of its inputs, this can be said

to be an IRS situation. CRS can be describe as a situation when the increase results in the same amount of output and on lastly, in instances when the return from increment in inputs are a lot less than what it has invested, this will be consider as DRS.

4.6.5 Second Stage Analysis: Co-operative Membership Target Group Analysis

Second stage analysis on DEA result was run to determine which of the inputs have significant correlations with the efficiency scores. Test on the normality of data revealed that the data are not normally distributed. Due to this only non-parametric tests are considered as type of analysis. Also this research strongly considers the work by Simar & Wilson (2011) and taking into consideration that this research is using cross-sectional data which means that homoscedasticity assumption most likely would be violated. The use of OLS as proposed by Banker & Natarajan (2008) as cited in Simar & Wilson (2011) are with the assumption of bounded noise at constant would be violated as well. Therefore the DEA efficiency estimates from first stage analysis are regressed on co-operative variables (turnover, member, equity) using non-linear Tobit regression.

According to McDonald & Moffitt (1980), Tobit model is an econometric model with truncated or censored error terms and with the assumption of dependent variables value clustered at a limiting value (normally 0). As proposed by Simar & Wilson (2007) Tobit regression was run to examine factors that could be the possible source or sources of the groups' efficiency scores.

The standard Tobit model is as follows for observation (co-operative group) *i*:

$$y_i^* = \beta x_i + \varepsilon_i$$

$$y_i = y_i^* \quad \text{if} \quad y_i^* \geq 0$$

$$\text{and,} \quad y_i = 0, \text{otherwise} \qquad (3)$$

Where $\varepsilon_i \sim$ N $(0, \sigma^2)$, x_i and β are vectors of explanatory variables and unknown parameters, respectively, while y_i^* is a latent variable and y_i is the DEA score.

Tobit regression was run using Gretl software version 1.1 to investigate the association between dependent variables i.e. the efficiency scores (technical, scale and pure technical efficiency) obtained from the first stage analysis and the independent variable members' equity, turnover and co-operative members.

Tobit regression equations are as follows:

$$\theta_{it} = \alpha_0 + \beta_1 * \text{Equity}_t + \beta_2 * \text{Tover}_t + \beta_3 * \text{member}_t + \varepsilon_{it} \quad (1)$$

Where dependent variables;

θ_{it}- technical efficiency score (TE), scale efficiency (SE) and pure technical efficiency score at time *t* extracted from the DEA first stage.

Independent variables are as follows;

Equity_t - co-operative groups' equity at time *t.*

Tover_t - co-operative groups' turnover at time *t.*

member_t - co-operative groups' membership at time *t.*

ε - is the random error term.

4.6.6 Estimating the Productivity Change of Bank Rakyat, Conventional and Islamic Banks

The study period covered for the analysis and measurement of changes in productivity of the Bank Rakyat conventional and Islamic banks is from 2005 to 2010. Research samples consist of a balanced panel data set from all the 15 banks listed in table 4.8.

Table 4.8: List of the 15 Banks Studied

Banks	Type of operation*	Abbreviation
Bank Kerjasama Rakyat Berhad	Co-operative Islamic banking (1 bank)	BR
Malayan Banking Berhad	Conventional banking (9 banks)	MB
Bumiputra-Commerce Bank Berhad		CIMB
RHB Bank Berhad		RHB
Ambank Berhad		AMB
EON Bank Berhad		EONB
Affin Bank Berhad		AFB
Alliance Bank Berhad		ALLIB
Hong Leong Bank Berhad		HLB
Public Bank Berhad		PUB
Affin Islamic Bank Berhad	Islamic banking (5 banks)	AFBIS
Muamalat Bank Berhad		MMLTIS
CIMB Islamic Bank Berhad		CIMBIS
RHB Bank Islamic Bank Berhad		RHBIS
Hong Leong Islamic Bank Berhad		HLBIS

*Note: The number in brackets is the number of banks analyzed

The samples constituted of one (1) co-operative bank (Bank Rakyat), nine (9) other conventional banks and five (5) other Islamic banks in Malaysia. All these banks are Malaysian controlled banks. The financial data sets were obtained from published financial income and balance sheet statements in annual reports 2005, 2006, 2007, 2008, 2009 and 2010 of the individual banks published online for the public.

In the effort of achieving a reliable and fair view of the Bank Rakyat performance, this second study is divided into two analyses. The first analysis compares Bank Rakyat with nine conventional banks (indicated in table 4.8). In the second analysis Bank

Rakyat, eight conventional banks (MB, RHB, AMB, EONB, AFB, ALLIB, HLB and PUB) and five Islamic banks (AFBIS, MMLTIS, CIMBIS, RHBIS and HLBIS) were chosen as study samples.

4.6.7 Specification of Outputs and Inputs in the Bank Analysis

An important step in measuring efficiency using DEA is choosing the input and output indicator of these banks, (Coelli et al., 2005). In the case of the Bank Rakyat, due to the unique character of a co-operative bank with economic and social objectives, profit may not be the only objective and probably in some cases profit became the secondary objectives (Bolger, 1985). This however does not result in Bank Rakyat which is also an Islamic co-operative bank to abandon profit objective. In fact performing social objective and contributing to society would be impossible without making profits first. In this study all the banks pursued profit objective but at the same time they also provide social benefits to their stakeholders. Banks are regarded as entity that combines labour, capital and various financial inputs to produce financial outputs.

Two types of approaches that have been adopted in DEA banking studies are production and intermediation approach. Production approach measures output by the number of deposit and loan account serviced by bank. In the second approach where banks are regarded as financial intermediates that collect purchased funds and used labour capital to transform these funds to loans and other assets it is known as intermediation approach (Sealey & Lindley,1977). The second is a more common approach in banking studies.

The literature review in this study revealed that DEA literature also acknowledges controversy surrounding the choice of deposits as input or output (Berger & Humphrey,

1991; 1992 as cited in Wheelock & Wilson, 1995). According to Berger & Humphrey (1997) deposits have input as well as output characteristic, thereby deposits are regarded as inputs because deposits are paid for in part by interest payments and also as funds for the bank to further invest. Deposits however, are associated with liquidity, safekeeping and payments services provided to depositors hence are also considered as output.

The input and output used in this study is a variation of the intermediation approach originally developed by Sealey & Lindley (1977). As indicated by Wheelock & Wilson (1995), there are several variants regarding deposits in the intermediation approach where banks create high value-added such as loans, demand deposits and time, and savings deposits as important outputs with labour, capital and purchased funds classified as inputs.

In the first model, following the European banking study by Vivas, Pastor, & Pastor (2002), this study adopted the value-added approach. Deposits from customers in the banks studied are chosen as output. These are funds which can be withdrawn at any time without any advance notice to banks.

Following the value-added method in the first MPI analysis of ten banks, panel data 2005 – 2010, two outputs and two inputs are used.

The outputs (Y) and inputs (X) are as follows:

Y_1 :loans	X_1 : labour (overhead expenses),
Y_2 : deposits (from customers)	X_2 : total assets

Details of outputs and inputs variables used in the first analysis of Bank Rakyat and conventional banks study are depicted in table 4.9.

Table 4.9: Descriptive Statistics of Inputs and Outputs Variables - Comparison between Bank Rakyat and Conventional Banks (N = 10)

Variable: Loans (Output)

Year	Mean (RM Million)	Std. Deviation (RM Million)	Minimum (RM Million)	Maximum (RM Million)
2005	36,016.31	32,763.73	3,167.92	115,481.63
2006	45,976.23	36,615.55	12,901.2	127,848.40
2007	48,787.11	39,572.14	13,019.48	136223.498
2008	53,251.97	40,242.39	13,305.66	138,985.72
2009	57,511.72	42,234.62	16,277.91	144,431.789
2010	63,994.38	45,426.55	17,132.00	151,469.59

Variable: Deposits (Output)

Year	Mean (RM Million)	Std. Deviation (RM Million)	Minimum (RM Million)	Maximum (RM Million)
2005	43974.91	32,697.97	15,521.31	118,275.713
2006	51,782.52	38,301.24	16,255.50	125,137.44
2007	61,631.09	47,485.78	17,787.49	149,576.06
2008	65,673.11	47,385.34	20,979.57	156,322.56
2009	70,748.87	50,357.70	20,450.91	163,452.93
2010	66,888.19	52,958.71	16,083.98	175,379.74

Variable: Labour (Input)

Year	Mean (RM Million)	Std. Deviation (RM Million)	Minimum (RM Million)	Maximum (RM Million)
2005	446.57	310.43	170.69	1,217.41
2006	522.51	411.01	209.107	1,420.54
2007	605.72	476.09	245.569	1,573.54
2008	624.92	407.54	204.367	1,452.40
2009	700.53	492.60	208.655	1,636.27
2010	806.22	648.80	240.59	2,184.30

Variable: Asset (Input)

Year	Mean (RM Million)	Std. Deviation (RM Million)	Minimum (RM Million)	Maximum (RM Million)
2005	65,339.92	47,353.72	21,550.65	175,434.71
2006	76,449.13	58,681.14	21,687.62	197,135.27
2007	117,220.70	104,474.45	24,337.86	349,000.15
2008	88,888.39	66,306.63	27,730.47	219,172.49
2009	96,024.7	71,800.22	28,504.78	238,277.14
2010	103,281.83	74,111.79	26,937.99	248,392.27

Using data collected for banks, DEA can derive the best practice frontier. In the second analysis, the intermediation approach was followed for the fourteen banks studied using

panel data from 2006 – 2010. The second analysis on Bank Rakyat, conventional and Islamic banks was run with one output and two inputs.

The details of variables used are in table 4.10. Outputs(Y) and inputs (X_1 and X_2) are as follows:

Y_1 :loans

X_1 : labour (overhead expenses)

X_2 : total assets

Table 4.10: Descriptive Statistics of Inputs and Outputs Variables - Comparison between Bank Rakyat, Conventional Banks and Islamic Banks (N= 14)

Variable: Loans (Output)

Year	Mean	Std. Deviation	Minimum	Maximum
	(RM Million)	(RM Million)	(RM Million)	(RM Million)
2006	28,694.36	35,533.85	444.35	127,848.40
2007	29,502.95	34,969.52	1,734.16	118,557.04
2008	33,305.42	39,113.92	244.99	138,855.47
2009	37,501.90	41,730.16	2,880.71	144,431.80
2010	42,487.42	45,285.79	3,555.60	151,469.59

Variable: Assets (Input)

Year	Mean	Std. Deviation	Minimum	Maximum
	(RM Million)	(RM Million)	(RM Million)	(RM Million)
2006	48,070.47	56,528.12	2,516.25	197,135.27
2007	53,970.06	64,892.28	6,224.29	227,447.24
2008	56,046.73	63,379.87	6,069.60	219,172.49
2009	62,147.93	67,873.57	6,525.77	238,277.14
2010	67,467.86	70,752.26	7,557.28	248,392.27

Table 4.10, continued **Variable: Labour (Input)**

Year	Mean (RM Million)	Std. Deviation (RM Million)	Minimum (RM Million)	Maximum (RM Million)
2006	351.60	407.11	2.161	1,420.59
2007	339.13	388.82	6.17	1,418.46
2008	391.51	435.21	9.281	1,609.88
2009	455.30	528.16	8.197	2,037.045
2010	495.51	568.09	8.823	2,184.302

4.6.8 Methodology: Bank Rakyat and Conventional Banks' Analysis

Developed by Charnes et al. (1978), DEA was originally intended for use in public sector and not-for-profit settings where typical economic behavioral objectives, such as cost minimization or profit maximization, may not apply. The discussion of efficiency measurement begins with Farrell (1957) who drew his study from the work of Debreu (1951) and Koopmans (1951). Farrell (1957) proposed that efficiency of a firm consists of two components that is (1) technical efficiency, which reflects the ability of a firm to obtain maximal output from a given set of inputs, and (2) allocative efficiency, which reflects the ability of a firm to use the inputs in optimal proportions, given their respective prices and the production technology. These two measures are then combined to provide a measure of total economic efficiency (Coelli et al., 2005).

The productivity of a firm can be defined as the ratio of the output(s) to the input(s). It can be written as:

$$\textbf{\textit{Productivity}} = \frac{Outputs}{Inputs}$$

The Total Factor Productivity (TFP) is a productivity measure involving all factors of

production. The bank will operate either on that frontier, if they are technically efficient, or beneath the frontier if they are not technically efficient. Technical change can be represented by an upward shift in the production frontier. If information on price is available, and with behavioral assumption, such as cost minimization or profit maximization, then there will be allocative efficiency in input selection. This involves selecting that mix of inputs that produces a given quantity of output at minimum cost. Allocative and technical efficiency combine to provide an overall economic efficiency measure. The decision-making units (DMU) in DEA, which perform well is separated from those perform poorly and then nonparametric frontier analysis is use to 'benchmark' the relative performance of production units. Benchmarking is common exercise done by most financial institutions (Berger & Humphrey, 1997).

Two approaches available in DEA are the input-oriented and output-oriented. In input-oriented model, inputs are minimized and the outputs are kept at their current levels. As opposed to input-oriented, output-oriented kept inputs at their current levels and try to maximized outputs quantities. Following Coelli et al. (2005), the choice of orientation should be based on which quantities (inputs or outputs) the managers have most control over, this study choose input-oriented as the management of banks has most control over inputs. This orientation will help determine by how much input quantities be reduce and input slack can be determine to improve efficiency.

MPI evaluates the productivity change of DMUs (banks studied) between two time periods. It can be defined as the product of Catch-up and Frontier-shift terms. Catch-up or recovery is related to the degree in which a DMU improves or worsens its efficiency, (Cooper et al., 2007). Frontier shift (or innovation) is a term which reflects the change

in the efficiency frontiers between the time periods, in this study 2005, 2006, 2007, 2008, 2009 and 2010.

The estimation of total factor productivity (TFP) is obtained from the decomposition of the two components known as technological change (TECHCH) and technical efficiency change (EFFCH). The total factor productivity changes will determine the performance of the banks studied. Technical efficiency change means the banks can produce more by utilizing the existing technology and economic inputs efficiently. Banks with technological change would be the banks with technological advancements and innovations. The discussion on MPI measures the TFP growth between two data points, period's t and t+1 by calculating the ratio of distances of each data point relative to a common technology. Following Coelli, Roa, O'Donnell & Battese (2005), the Malmquist productivity index is defined as:

$$M\ (x_{t+1,}y_{t+1},x_t,y_t) = \frac{d^t(x_t,y_t)}{d^{t+1}(x_{t+1},y_{t+1})} * \left[\frac{d^{t+1}(x_t,y_t)}{d^t(x_t,y_t)} * \frac{d^{t+1}(x_{t+1},y_{t+1})}{d^{t+1}(x_{t+1},y_{t+1})} \right]^{1/2} \quad (1)$$

$$= EC \times TC$$

$$\text{Efficiency Change} \quad = \frac{d^t(x_t,y_t)}{d^{t+1}(x_{t+1},y_{t+1})} \quad (2)$$

$$\text{Technical Change} \quad = \left[\frac{d^{t+1}(x_t,y_t)}{d^t(x_t,y_t)} * \frac{d^{t+1}(x_{t+1},y_{t+1})}{d^{t+1}(x_{t+1},y_{t+1})} \right]^{1/2} \quad (3)$$

A value of M greater than one indicates a positive TFP growth from period t to period t+1 while a value less than one indicates a TFP decline. Technical efficiency change (catch up, EFFCH) measures the change in efficiency between current (t) and next ($t+1$) periods, while the technological change (innovation) captures the shift in frontier technology. The efficiency change (EFFCH) is further decomposed into a pure

efficiency change (PECH) and scale efficiency change (SECH) that reflects the use of optimal (if SECH= 1) or sup-optimal scale (if < 1) of operations by firms as follows:

$$EFFCH = SECH \times PECH \; ; \qquad \text{or}$$

$$M(y_{t+1}, x_{t+1}, y_t, x_t) = TFPCH = (PECH \times SECH) \times TECHCH \tag{4}$$

4.6.9 Second Stage Analysis of Bank Rakyat and Conventional Banks' Analysis

Two analyses were run to further investigate the results obtained from the first stage analysis on Bank Rakyat and other banks. A two-factor ANOVA (without Replication) test was first conducted to see whether there is any significant differences in the efficiency scores (technical, technological, pure technical, scale efficiency and total factor productivity changes), obtained through DEA analysis between the banks analyzed. Two-way or two factor was chosen as all the banks studied went through the same tests. A two-factor Anova without Replication is a form of randomized block design which enables variability of efficiency scores to be partition into variability of scores of individual banks. In this way the efficiency scores are investigated upon without any factor masking the outcome of the scores.

According to Wooldridge (2009), Tobin (1958) proposed Tobit regression model which is a special model where dependent variable is constrained and there are clustering in the observations. Simar & Wilson (2007) are with the opinion that Tobit regression provides consistent estimation in DEA second stage analysis. Running OLS on these data will resulted in biased and inconsistent results. According to Gujerati (2004) Tobit regression model is where information on the regress and is available only for some observations only (censored sample) and is known as censored regression or limited dependent variable regression models.

Values of the regressor can be observed only if regress and data is available. If y is the observe value of dependent variable, in this case this study use y_i^*(latent dependent variable), the standard Tobit model is as follows for observation (bank) *i*:

$$y_i^* = \beta x_i + \varepsilon_i$$

$$y_i = y_i^* \quad \text{if} \quad y_i^* \geq 0$$

$$\text{and} \quad y_i = 0, \text{otherwise} \qquad (5)$$

Where $\varepsilon_i \sim$ N $(0 , \sigma^2)$, x_i and β are vectors of explanatory variables and unknown parameters, respectively, while y_i^* is a latent variable and y_i is the DEA score.

4.7 Empirical Findings

The discussions on empirical findings are in two sections. The first section discussed findings from the standard DEA method efficiency analysis of co-operatives by membership target groups. The second section portrayed the findings from Malmquist productivity index approach in estimating the productivity change of Bank Rakyat, Conventional and Islamic banks.

4.7.1 Findings from Standard DEA Efficiency of Co-operative Membership Target Groups

The information generated by the empirical analysis is employed to analyze the overall efficiency and productivity growth of the co-operative movement by membership target groups. DEA analysis was run twice, first using three (members, asset and equity) and then using two inputs (asset and equity only). The DEA analysis result is important to

identify which of the groups in the movement in Malaysia is most efficient in relation to the other groups. The groups that have been found to be efficient by DEA are with the efficiency measure of 1.

The analysis was run using DEA model with two outputs and three inputs. The result revealed that 16.7 percent of the co-operatives groups are efficient with DEA analysis was run with 2 inputs while DEA with 3 inputs estimated 33.3 percent co-operative being efficient. The difference between the percentages of efficient groups is quite significant. However, as discussed by Ramanathan (2003), this is because the assumption of CRS is relaxed as VRS variables are assumed. The percentage is higher under the VRS method as some co-operatives which are not efficient under the CRS model became efficient when assumption of CRS (convexity constraint) is relaxed. The listing of efficient co-operative groups by CRS and VRS method is in table 4.11.

Table 4.11: List of Efficient Co-operative Membership Groups

Efficient Groups (CRS)	Efficient Groups (VRS)
Affiliation	Bank staffs
Insurance	FELCRA settlers
Village development(KKK)/KEDA	Affiliation
Stevedoring	Insurance
Training Centers	Association
RISDA	Village development (KKK)/KEDA
	Uniformed Personnel
	Government Servant
	Stevedoring
	Training Centers
	RISDA
	Schools

The outcome of analysis showed that efficient co-operatives are with members working in 10 out of the total 36 groups. These are banking, insurance, village development, KEDA, uniformed personnel, government, training centres, schools, FELCRA and

RISDA settlers. Beside these, there appears to be two secondary co-operatives with affiliated co-operative membership and association of co-operatives.

Both CRS and VRS model were run in the analysis as CRS DEA model has its weakness and found to be unsuitable and needed modifications in analysis and in identifying further reasons for inefficiencies faced by DMUs because the TE measure have been found to be disturbed by the existence of scale efficiencies (Coelli, 2005; Ramanathan, 2003).

In this study, the analysis has complied with the extension of CRS DEA model to consider the variable return to scale situation. Thus the usage of VRS specification or Banker Charnes and Cooper DEA model to do a further study on the DEA result has been considered. As various other studies, VRS DEA model was run using the same data.

The ranges of technical efficiency score are as follows;

a) Score 1- the **most efficient** DMU
b) Score between 0.61 to 0.99 – the **intermediate upper** DMU
c) Score between 0.3 to 0.6 - the **intermediate lower** DMU
d) Score below 0.3 - the **least efficient** DMU

Table 4.12 showed the distribution of efficiency result. The efficiency result is use in ranking the groups according to their efficiency outcome. With the efficiency outcome this research is able to identify the various ranges of technical efficiencies score.

Table 4.12: Distributions of Technical Efficiency Scores by CRS and VRS

Efficiency scores	CRS No. Co-operative (%)		VRS No. Co-operative (%)	
	2 inputs *	3 inputs*	2input*	3 inputs*
1 (highest)	4 (11.1)	6 (16.7)	9 (25.0)	12 (33.3)
0.61 to 0.99 (upper intermediate)	1 (2.8)	5 **(13.9)**	6 **(16.7)**	6 **(16.7)**
0.3 to 0.6 (lower intermediate)	10 (27.8)	12 **(33.3)**	11**(30.6)**	7 **(19.4)**
<0.3 (least efficient)	21(58.3)	13 **(36.1)**	10 (27.7)	11 (30.6)
Total	36(100)	36 (100)	36(100)	36 (100)
Mean	.375611	.488361	.541306	.604556
Std. Deviation	.2881837	.3070739	.331971	.3379428
Minimum	.0030	.0110	.0170	.0760
Maximum	1.0000	1.0000	1.0000	1.0000

Note: * DEA analysis run with 2 output and 2 inputs and 2 output with 3 inputs

Referring to the analysis run using two outputs and three inputs, the result revealed that a total of 13.9 percent (estimated by CRS method) and 16.7 percent (estimated by VRS method) are co-operatives which are moderately efficient, with intermediate upper efficiencies. The proportion of co-operatives with intermediate lower efficiency however, is much higher that is, 33.3 percent using the CRS method and 19.4 percent under the VRS estimation. DEA results showed 36.1 percent (CRS method) co-operatives and 30.6 percent (VRS method) are inefficient (weak) with less than 0.3 efficiency score. These are co-operatives among the FELDA and KESEDAR settlers, small industries, KEMAS, fisherman, the general public, statutory agency workers, graduates' producer, drivers, the District Development Co-operative (KPD), farmers and women.

Table 4.13 showed the efficiency scores of DEA analysis run with two outputs and two inputs- asset and equity only (2), and the same two outputs but with three inputs - members, assets and equity (3).

Table 4.13: Efficiencies of Co-operatives by Membership Target Group*

DMUs (Co-op)	TE (2)	TE (3)	PTE(2)	PTE (3)	SE(2)	SE(3)	RTS(2)	RTS (3)
1. Bank staff	0.186	0.471	1.000	1.000	0.186	0.471	drs	Drs
2. Youth RTP	0.271	0.380	0.371	0.395	0.731	0.962	drs	Drs
3.FELCRA settlers	0.540	0.913	0.707	1.000	0.764	0.913	drs	Drs
4.FELDA settlers	0.112	0.242	0.319	0.501	0.351	0.483	drs	Drs
5. Affiliation*	1.000	1.000	1.000	1.000	1.000	1.000	-	-
6. Teachers	0.283	0.390	0.698	0.698	0.406	0.559	drs	Drs
7.Small industries	0.206	0.217	0.219	0.219	0.940	0.988	irs	Irs
8. Insurance*	1.000	1.000	1.000	1.000	1.000	1.000	-	-
9.General welfare	0.137	0.140	0.137	0.141	1.000	0.994	-	Drs
10. KEMAS	0.144	0.251	0.240	0.252	0.599	0.999	drs	-
11. Association	0.471	0.675	0.812	1.000	0.580	0.675	drs	Drs
12. KESEDAR	0.120	0.133	0.127	0.133	0.944	0.996	drs	Drs
13. Landownership	0.335	0.408	0.381	0.409	0.878	0.996	drs	Irs
14.Village development KEDA*	1.000	1.000	1.000	1.000	1.000	1.000	-	-
15.Uniformed Personnel	0.251	0.347	1.000	1.000	0.251	0.347	drs	Drs
16. Teachers Training College	0.636	0.636	0.641	0.641	0.993	0.993	irs	Irs
17. Fisherman	0.197	0.262	0.199	0.267	0.991	0.980	irs	Irs
18. General Public	0.097	0.143	0.339	0.339	0.287	0.422	drs	Drs
19.Government Servant	0.280	0.444	1.000	1.000	0.280	0.444	drs	Drs
20. Statutory Agency Workers	0.057	0.213	0.095	0.300	0.597	0.708	drs	Drs
21. Factory Workers	0.358	0.832	0.573	0.897	0.624	0.928	drs	Drs
22. Estate Workers	0.375	0.508	0.457	0.538	0.820	0.943		Drs
23. Stevedoring*	0.332	1.000	0.448	1.000	0.741	1.000	drs	-
24. Private company Workers	0.212	0.330	0.585	0.585	0.383	0.565	drs	Drs
25. Drivers	0.169	0.232	0.169	0.233	0.999	0.998	-	Irs
26.District Development Co-operative KPD	0.237	0.253	0.271	0.274	0.877	0.921	drs	Drs
27.Longhouse occupants	0.220	0.313	0.323	0.324	0.681	0.967	drs	Drs
28.Producers / graduates	0.003	0.011	0.017	0.076	0.203	0.140	irs	Irs
29. Small businessmen	0.421	0.481	0.602	0.643	0.698	0.748	drs	Drs
30. Pensioners	0.600	0.747	0.677	0.748	0.887	0.999	drs	Irs
31. Farmers	0.212	0.232	0.213	0.233	0.997	0.993		Irs
32. Training Centers*	1.000	1.000	1.000	1.000	1.000	1.000	-	-
33. RISDA*	0.871	1.000	1.000	1.000	0.871	1.000	drs	-
34. Schools	0.575	0.575	1.000	1.000	0.575	0.575	drs	Drs
35. IPT	0.463	0.600	0.716	0.716	0.646	0.838	drs	Drs
36. Women	0.151	0.202	0.151	0.202	1.000	1.000	-	-
Mean	**0.376**	**0.488**	**0.541**	**0.605**	**0.715**	**0.821**		

Note: TE = technical efficiency base on CRS, PTE = Pure technical efficiency base on VRS, SE = scale efficiency = CRS te / VRS te.

*(2) indicate two inputs used in the analysis and (3) indicate three inputs used in the analysis

Referring to table 4.13, the mean score of CRS technical efficiency (of TE (2) and TE (3)) is 0.376 and 0.488 respectively. These scores imply that the co-operatives on the whole should be able to reduce their consumption of all inputs by 62.4 percent (TE2) and by 51.2 percent (TE3) without reducing their output. The percentage of inputs to be

reduced can be calculated for each individual co-operative group in column TE (2) and (3). Note that from the thirteen most inefficient DMUs (which score less than 0.3), these co-operatives in total should be able to reduce their inputs by 74 – 98 percent without reducing their output.

It is also important to take note of the type of members in these groups. The members are land development settlers (FELDA and KESEDAR settlers), small scale entrepreneurs/businessmen (small industries), KEMAS, fisherman, the general public, statutory agency workers, graduates' producer, drivers, rural co-operators (the District Development Co-operative (KPD)), farmers and women.

Following the study done by Bader et al., (2008) this result can also be interpreted by considering the inefficiency of co-operatives. The result suggested that co-operatives have slacks in which the resources are not used efficiently to produce the same outputs. Taking the mean scores this implied that co-operatives on the whole are having inefficiency[9] level of 84.8 percent (PTE2) and 65.3 percent (PTE3) in producing their outputs.

The scale efficiency of the DMU (co-operative groups) is computed as the ratio of CRS efficiency (technical (TE) and scale efficiency (SE)) to its VRS efficiency (pure technical efficiency (PTE)). As in many studies, the TE from CRS DEA is decomposed to one due to scale inefficiency and pure technical inefficiency. Difference in the two TE scores, is an indication of scale inefficiency occurring in the DMUs (Coelli et al., 2005). The result showed that 78 percent of the groups are with scale inefficiency (with 3 inputs) and 81 percent in the analysis with 2 inputs.

[9] Note: E is efficiency. To calculate Inefficiency (IE), IE=(1-E)/E. E.g. when E=0.605, (1-0.605)/0.605=0.653 or 65.3 % inefficiency, E= 0.541, (1- 0.541)/0.541= 0.848 or 84.8 %

The analysis also portrayed the number of co-operatives that are most efficient (TE = 1) and operating at the most productive scale size. Only 6 of the co-operative groups or 17 percent displayed have the most productive scale size. These co-operatives are indicated in the table with asterisk. This investigation found that in the case of 3 inputs analysis, 22 percent (8 co-operatives) and 11 percent (4 co-operatives) of the co-operative operating at the IRS. This means that they are currently operating at a lower scale sizes by operating under IRS whereby these particular co-operatives can achieve greater economies of scale if the volume of operation are increase. Result showed that 56 percent of co-operatives (20 co-operatives) are operating at higher scales size than it should or DRS. Out of this 56 percent, 25 percent (5 groups) are those with the least efficiency scores.

DEA analysis also revealed the co-operative groups that became peers to the groups being analyzed. These groups became the "benchmark group" in calculating the efficiency of other group. The co-operative group highly referred to are the following; affiliation (17 times), training centers (15 times), village development (KKK)/KEDA (13 times), insurance (13 times) and RISDA (12 times).

A striking observation from the result is by VRS method, 67 percent of co-operatives by membership groups are not operating at their most productive scale size. CRS method portrayed 83 percent are not operating at the most productive scale size. Regardless of the method, DEA analysis have identify that more co-operatives are not operating at their optimal scale compared to those operating at optimal scale.

4.7.2 Findings from Second Stage Tobit Regression for Co-operatives' Membership Target Groups

The second stage analysis attempts to investigate if any of the co-operative group characteristics (members' equity, turnover and membership) have an influence on the efficiency result (technical, scale and pure technical efficiency).

The goodness of fit of the models was assessed based on the test for normality of residuals. The results had indicated that all models had a good fit as all the error exhibited were normally distributed with very small p-value. Refer to appendix G of this thesis. Table 4.14 portrayed the co-operative group's Tobit regression results.

Table 4.14: Co-operative Groups Tobit Regression Results

Variables	TE	SE	PTE
Constant	0.0763722	1.28073	-0.422635
LNEquity	-0.1276 (<0.00001)***	-0.0832956 (0.00201)***	-0.109841 (0.00184)***
LNTurnover	0.227749 (<0.00001)***	0.0816879 (0.00813)***	0.228536 (<0.00001)***
LNMembers	-0.132515 (0.00003)***	-0.0456896 (0.15315)	-0.103052 (0.01376)**

Results obtained from data analyzed using Gretl Version 1.1
***Significant at 1 %, ** Significant at 5 %

Tobit Regression results in table 4.14 revealed that equity, turnover and members are statistically significant at alpha 1 percent in influencing technical efficiency (TE), scale efficiency (SE) and PTE of co-operatives groups. Equity and members are negatively correlated to TE but turnover is positively correlated. As in this study co-operative equity and turnover represent co-operative size, thus it can be stated that co-operative size is statistically significant in influencing and determining the efficiency of the co-operative groups. This finding is consistent with the study by Jaforulla & Devlin (1996) on New Zealand dairy industry that showed co-operative farm size had an influenced on

the industry's efficiency. The findings demonstrate that the bigger the co-operatives' turnover the higher the co-operative efficiency scores.

Membership as an independent variable however is found to be statistically significant in explaining TE and pure technical efficiency (PTE) but not statistically significant in explaining SE. As reported by Fulton & Giannakas (2001) co-operative membership size have a negative impact on co-operative success, therefore this result is also consistent with their findings as increased membership have an impact of decreasing both TE and PTE of co-operatives. Table 4.15, 4.16 and 4.17 portrayed the interpretations of Tobit regression coefficient equation for dependent variables TE, SE and PTE scores of co-operative groups.

Table 4.15: Interpretation of Tobit Regression Coefficient in the Analysis of Technical Efficiency (TE) of Co-operative Groups in Malaysia, 2008

Variables	Value	Interpretation
Ln Equity	-0.1276	Holding other independent variables constant, a 1 percent increase in equity will reduce the TE efficiency by 12.76percent.
Ln Turnover	0.227749	Holding other independent variables constant, a 1 percent increased turnover will increased the TE efficiency by 22.7749 percent.
Ln Members	-0.132515	Holding other independent variables constant, a 1 percent increase in members will reduce the TE efficiency by 13.2515 percent.

Table 4.16: Interpretation of Tobit Regression Coefficient in the Analysis of Scale Efficiency (SE) of Co-operative Groups in Malaysia, 2008

Variables	Value	Interpretation
Ln Equity	-0.0832956	Holding other independent variables constant, a1 percent change in equity will reduce the TE efficiency by 8.32956 percent.
Ln turnover	0.0816879	Holding other independent variables constant, a 1 percent increase in turnover will increase the TE efficiency by 8.16879 percent.
Ln Members	-0.0456896	Holding other variables constant, a 1 percent increase in members will reduce the TE efficiency by 4.56896 percent.

Table 4.17: Interpretation of Tobit Regression Coefficient in the Analysis of Pure Technical Efficiency (PTE) of Co-operative Groups in Malaysia, 2008

Variables	Value	Interpretation
Ln Equity	-0.109841	Holding other variables constant, a 100 percent increase in equity will decrease the PTE efficiency by 10.9841 percent.
Ln Turnover	0.228536	Holding other variables constant, a 100 percent increase in turnover will increase the PTE efficiency by 22.8536 percent.
Ln Members	-0.103052	Holding other variables are constant, a 100 percent increase in members will increase the PTE efficiency by 10.3052 percent.

4.7.3 The Malmquist Productivity Index Approach in Estimating the Productivity Change of Bank Kerjasama Rakyat Malaysia Berhad, Conventional and Islamic Banks

Changes in the total factor productivity of the banks can be estimated by the values of technical efficiency change and technological change indices. This is because the total factor productivity is derived from multiplying the technical efficiency change and technological change. The productivity improvements or otherwise, hence can be derived as a result of efficiency gains or loss, technological progress or retrogress or both. The overall efficiency change on the other hand is the product of pure technical efficiency and scale efficiency change. Results in this study are discussed in the following two sections.

4.7.3.1 Findings of the MPI estimates of the Bank Rakyat and conventional banks for the time period 2005-2010

The analysis revealed the efficiency change, technological change, pure technical efficiency, scale efficiency change and the total factor productivity change of all the banks studied. The detail results are provided in the appendix E. The malmquist index estimates of all the bank means for the time period 2005-2010 is presented in table 4.18a and the malmquist index summary of annual means is in table 4.18b. Six out of ten banks had positive total factor productivity (TFP) growth over this period. The TFP growth ranges between 0.1 to 6.7 percent. Four other banks had posted TFP regress ranging from 0.1 to 3.4 percent. All these banks with TFP regression suffered technical efficiency regression. The highest total factor productivity increased occurs in RHB followed by HLB, AMB, PUB, BR and AFB. The top three banks RHB, HLB and AMB had 6.6 percent, 4.6 percent and 3.9 percent increase in total factor productivity respectively. This is followed by PUB with 1.2 percent, BR with 0.3 percent and AFB with 0.1 percent increase in total factor productivity.

Table 4.18a: Malmquist Index Summary of Banks Means (2005-2010)

Bank	Technical Efficiency Change	Technological Change	Pure Technical Efficiency Change	Scale Efficiency Change	Total Factor Productivity change
BR	1.000	1.003	1.000	1.000	**1.003**
MB	0.979	1.007	1.000	0.979	0.986
CIMB	0.963	1.004	0.972	0.990	0.966
RHB	1.049	1.017	1.053	0.996	**1.066**
AMB	1.028	1.012	1.017	1.011	**1.039**
EONB	0.987	1.005	0.993	0.993	0.991
AFB	0.991	1.010	1.005	0.986	**1.001**
ALLIB	0.989	1.010	1.000	0.989	0.999
HLB	1.006	1.038	1.000	1.006	**1.045**
PUB	1.000	1.012	1.000	1.000	**1.012**
Geometric Mean	**0.999**	**1.012**	**1.004**	**0.995**	**1.011**

Results obtained from data analyzed using DEAP Version 2.1

Table 4.18b: Malmquist Index Summary of Annual Means of Banks Studied (2005-2010)

Year	Technical Efficiency Change	Technological Change	Pure Technical Efficiency Change	Scale Efficiency Change	Total Factor Productivity change
2005	-	-	-	-	-
2006	1.006	1.032	1.024	0.982	**1.038**
2007	1.010	0.955	1.014	0.997	**0.965**
2008	1.036	1.013	1.005	1.031	**1.049**
2009	0.989	1.015	0.994	0.995	**1.003**
2010	0.955	1.047	0.982	0.972	**0.999**
Geometric Mean	**0.999**	**1.012**	**1.004**	**0.995**	**1.011**

Results obtained from data analyzed using DEAP Version 2.1

RHB, HLB, AMB, PUB and AFB are top Malaysian banks by asset size and market capitalization (Online Bank Watch, n.d.). RHB, HLB, and AMB exhibited increased in technical efficiency while BR and PUB technical efficiency were stagnant. The main factor that contributes to RHB's TFP growth is mainly from the 5.3 percent increase in managerial efficiency and 1.7 percent increase in technological change. However as

scale efficiency is less than 1, RHB is operating at a sub-optimal scale as compared to HLB, BR, AMB and PUB which are in their optimal scale. HLB managerial efficiency is stagnant but its TFP growth recorded is from the 3.8 percent increase in technology and scale efficiency change.

AMB's TFP growth was from the 2.8 percent increase in technical efficiency which was due to the 1.7 percent increase in managerial efficiency and 1.1 percent scale efficiency as well as technological change (1.2 percent). Although AFB exhibits TFP increase, it suffered technical efficiency regress (decline 0.9 percent). AFB's TFP growth was contributed by 0.5 percent increase in managerial efficiency and 1 percent increase in technological change.

BR increased in TFP is by 0.3 percent growth and interestingly this was only contributed from the 0.3 percent increase in technological change as technical efficiency, pure technical efficiency and scale efficiency components are stagnant.

Interestingly the study also revealed that MB, CIMB, EONB and ALLIB which are top banks in Malaysia suffered TFP regression. The biggest regressed was experienced by CIMB by 3.4 percent. All these banks however have positive technological progress. This finding is consistent with findings by Fadzlan Sufian & Suraya Ibrahim (2005) on OBS[10] and post-merger bank performance in Malaysia where in their study with the inclusion of OBS banks exhibit positive technological progress.

Malmquist index summary of annual means is in table 4.18b. The indices are calculated relative to previous year therefore the results start from 2006. In this study all the banks

[10] OBS referring to off-balance sheet item.

experienced an increase of 1.1 percent TFP on average. This improvement in productivity is the result of the average technological progress (upward shift of the frontier) of 1.2 percent. With the exception of the year 2008, the banks are operating at a sub-optimal scale. On the whole the banks suffered a decline in TFP after 2008 onwards where in 2010 TFP has regressed by 0.1 percent. This experience is consistent with what other economies in the rest of the world are facing, that is the global effect of financial recessions.

4.7.3.2 Findings of the MPI estimates of Bank Rakyat, Islamic banks and conventional banks

Comparing BR, Islamic banks (5 banks) and conventional banks (8 banks) by MPI DEA analysis showed that 9 out of 14 banks studied (64.3 percent) have positive increment in TFP over the 5 year period of study. It was also revealed that 44.4 percent of the banks with TFP's increment are following the Islamic banking system. The bank with the highest TFP growth is CIMBIS (34.3 percent), followed by RHB (6.3 percent), PUB (3.3), MMLTIS and AFB (2.3 percent), RHBIS (1.8), BR and ALLIB (1.6 percent) and AMB (0.8). CIMBIS high TFP growth was contributed by the bank's progress in both technical efficiency change (TE) and scale efficiency change of 36.8 percent. No managerial efficiency change was detected experienced by CIMBIS. It also experienced a regression in technological change by 1.8 percent. This indicates that the TFP growth was from scale efficiency change.

Related to RHB's TFP growth, findings showed that it was the result of progress in technical efficiency (4 percent) in which contributed by 3.9 percent increase in managerial efficiency and 0.1 percent progress in scale efficiency and 2.2 percent increase in technological change.

Further investigation on RHB's Islamic counterpart indicated that RHBIS had experienced progress in TFP by 1.8 percent. This was because of the managerial efficiency progress which was evident by the 4.8 percent increase. However unlike RHB's (conventional), RHBIS's operation is at the sub-optimal level.

As for PUB, it exhibited positive growth in TFP which was mainly contributed by 3.3 percent in scale efficiency. MMLTIS and AFB experienced the same percentage of TFP growth (2.3 percent) with the same pattern of technical efficiency, technological, managerial and scale efficiency change. Both banks had a declined in scale efficiency change which means that these banks are operating at sub-optimal level.

Without considering deposits as output, ALLIB exhibit positive growth in TFP. BR and ALLIB had the same 1.6 percent growth in the TFP however the source to the change is different. As in the first model, technological change progress is still the source for BR's TFP growth. ALLIB managerial efficiency progress of 1.8 percent and 1 percent technological progress had contributed to the TFP growth. In this model ALLIB is still operating at sub-optimal level.

Five banks that exhibited TFP regression are AFBIS (11.6 percent), HLIS (11.5 percent), MB (2.8 percent), HLB (1.2 percent) and EONB (0.1 percent). AFBIS TFP regression was mainly from technological inefficiency, EONB and HLB due to managerial inefficiency and MB from scale inefficiency.

Table 4.19a: Malmquist Index Summary of Bank Rakyat, Islamic Banks and Conventional Banks (14 Banks) 2006-2010

Bank	Technical Efficiency Change	Technological Change	Pure Technical Efficiency Change	Scale Efficiency Change	Total Factor Productivity change
BR	1.000	1.016	1.000	1.000	**1.016**
AFBIS	1.002	0.882	1.000	1.002	0.884
MMLTIS	1.012	1.011	1.059	0.956	**1.023**
CIMBIS	1.368	0.982	1.000	1.368	**1.343**
RHBIS	1.034	0.985	1.048	0.986	**1.018**
HLIS	1.000	0.885	1.000	1.000	0.885
AFB	1.006	1.017	1.015	0.991	**1.023**
EONB	0.982	1.017	0.983	0.999	0.999
PUB	1.033	1.000	1.000	1.033	**1.033**
RHB	1.040	1.022	1.039	1.001	**1.063**
ALLIB	1.005	1.010	1.018	0.988	**1.016**
AMB	1.000	1.008	1.000	1.000	**1.008**
HLB	0.985	1.003	0.954	1.033	0.988
MB	0.985	1.006	1.000	0.967	0.972
Geometric Mean	**1.027**	**0.988**	**1.008**	**1.019**	**1.015**

Results obtained from data analyzed using DEAP Version 2.1

As discussed in the above paragraphs the inclusion of Islamic banks in the model appears to have portrayed slightly different empirical findings in the banking industry performance evaluation in Malaysia. Table 4.19b has the summary of annual means detail.

Table 4.19b: Malmquist Index Summary of Annual Means of Bank Rakyat, Islamic Banks and Conventional Banks 2006-2010

Year	Technical Efficiency Change	Technological Change	Pure Technical Efficiency Change	Scale Efficiency Change	Total Factor Productivity change
2006	-	-	-	-	-
2007	0.963	0.974	0.968	0.995	**0.938**
2008	1.100	0.973	1.016	1.083	**1.070**
2009	1.012	0.995	1.033	0.980	**1.007**
2010	1.038	1.010	1.017	1.021	**1.049**
Geometric Mean	**1.027**	**0.988**	**1.008**	**1.019**	**1.015**

Results obtained from data analyzed using DEAP Version 2.1

What is more important however is it is evident that TFP in both analysis indicated consistent productivity regression in the year 2007. When BR was compared with conventional banks only) in 2007, TFP exhibits only 3.5 percent regression as 1.4 percent managerial efficiency had contributed to the technical efficiency progress in all the banks studied. In the analysis of BR, Islamic and conventional banks the result showed a greater regression in TFP which is 6.2 percent.

Undeniably in 2007 there is an indication of inefficiencies in technical, managerial, technology and all banks are at sub-optimal level of operation. However, TFP progressed to 7 percent as technical efficiency went up to 10 percent, contributed by 1.6 percent managerial efficiency and a positive 8.3 scale efficiency change. TFP annual summary for the second analysis seem to exhibit a slightly higher progress (1.5 percent). This was contributed by technical efficiency of 2.7 percent. Technology change in the second analysis has regressed by 1.2 percent.

4.7.4 The Second Stage Empirical Findings of Bank Rakyat Study

4.7.4.1 Anova Two-Factor without replication

Anova two-way without replication was run with efficiency scores from first stage MPI DEA analysis on Bank Rakyat and conventional banks. The result is as in table 4.20a.

Table 4.20a: Anova Two-Factor without Replication Bank Rakyat and Conventional Banks

ANOVA						
Source of Variation	***SS***	***df***	***MS***	***F***	***P-value***	***F crit***
Rows	0.012825	9	0.001425	7.956425	2.33E-06	2.152607
Columns	0.00211	4	0.000527	2.945134	0.033294	2.633532
Error	0.006448	36	0.000179			
Total	0.021383	49				

Results obtained from data analyzed using Microsoft Excel 2010

Results in the rows and columns showed that F > F crit with P-value < 0.05. This indicates that the results of efficiency scores (Technical Efficiency Change, Technological Change, Pure Technical Efficiency Change, Scale Efficiency Change and Total Factor Productivity change) are different and the scores received by each banks are also different between the banks studied (Bank Rakyat and the conventional banks studied).Anova two-factor without replication was also run with efficiency scores results from the analysis on Bank Rakyat, conventional and Islamic banks. The result is as in table 4.20b.

Table 4.20b: Anova Two-Factor without Replication Bank Rakyat, Conventional and Islamic Banks

ANOVA						
Source of Variation	***SS***	***Df***	***MS***	***F***	***P-value***	***F crit***
Rows	0.244424	13	0.018802	4.86963	1.79E-05	1.913455
Columns	0.014906	4	0.003727	0.965177	0.434513	2.549763
Error	0.200774	52	0.003861			
Total	0.460105	69				

Results obtained from data analyzed using Microsoft Excel 2010

Results portrayed in the rows showed that F > F crit with P-value < 0.05 however, in the columns for analysis of Bank Rakyat, conventional and Islamic banks findings indicated that F < F crit with P-value > 0.05. This confirms that the efficiency scores (Technical Efficiency Change, Technological Change, Pure Technical Efficiency Change, Scale Efficiency Change and Total Factor Productivity change) of all the 14 banks studied are very different but between banks studied the efficiency score are not that different.

4.7.4.2 Tobit regression: Bank Rakyat and Conventional banks

The aim of running Tobit regression is to investigate variables that had influenced the DEA efficiency scores (TFP, TE, Technological change, PTE and SE). The dependent

variables are the efficiency scores. The independent variables are comprised of two groups the endogenous and the exogenous variables.

Endogenous variables are variables considered as proxy of bank characteristics which is loan to asset ratio of banks (loan intensity), banks assets value given by the natural logarithm of total assets. The exogenous group of independent variables is the economic environment that may have an influence on the banks performance. These are the natural logarithm of GDP per capita, natural logarithm of export, unemployment rate in percentage and dummy variables to differentiate co-operative bank (as 1) and non-co-operative banks (as 0).

Tobit regression equations are as follows:

$$\theta_{it} = \alpha_0 + \beta_1 * loan/TA_{it} + \beta_2 * LNTA_{it} + \beta_3 * LNgdppc_t + \beta_4 * LNexport_t + B_5 * Unemployment_t + \beta_6 * Dummy_{it} + \varepsilon_{it} \quad (1)$$

Where dependent variables;

θ_{it} is the total factor productivity (TFP) , technical efficiency change (TEFFCH), technology change (TECHCH), pure technical efficiency (PECH) and scale efficiency(SECH) scores of bank *i* at time *t* extracted from the DEA first stage.

Where independent variables are;

$loan/TA_{it}$.....total loans to total assets of bank *i* in period *t.*

$LNTA_{it}$ ……..natural logarithm of total assets of banks *i* in period *t.*

$LNgdppc_t$ .....natural logarithm of GDP per capita of Malaysia at time *t.*

$LNexport_t$.....natural logarithm of Malaysia's export at time *t.*

$Unemployment_t$ … unemployment in percent at time *t.*

$Dummy_t$.....dummy variable that equals 1 (if co-operative bank) and 0 (if non-co-operative bank) at time *t.*

ε is the random error term of the model.

In investigating factors that determines the MPI DEA results of Bank Rakyat and conventional banks, five Tobit regression models were run using Gretl version 1.1. The regression results are in the following table 4.21 below. The goodness of fit of the models was assessed based on the test for normality of residuals. The results had demonstrated that all models had a good fit as all the error exhibited was normally distributed with very small p-value.

Table 4.21: Tobit Regression Results of Bank Rakyat and Conventional Banks

Variables	**TFP**	**TEFFCH**	**TECHCH**	**PECH**	**SECH**
Constant	-1.52318	2.89453	-6.186	2.60932	4.06643
loan/TA $_{it}$	0.26401 (0.01443)**	0.038791 (0.41748)	-0.0254463 (0.62763)	0.0594652 (0.30228)	0.231905 (0.00140)***
$LNTA_{it}$	-0.0110383 (0.46338)	-0.0113613 (0.08448)*	-0.00324286 (0.65764)	0.00124801 (0.87665)	-0.00861215 (0.39504)
$LNgdppc_t$	-0.203524 (0.47471)	0.207354 (0.26981)	-0.578829 (0.00003)***	-0.0406789 (0.78910)	0.43769 (0.02229)**
$LNexport_t$	0.347654 (0.37348)	-0.260376 (0.30589)	0.910286 (<0.00001)***	-0.0763018 (0.71461)	-0.503433 (0.05538)*
$Unemployment_t$	0.0243545 (0.82590)	-0.0820131 (0.26360)	0.299287 (<0.00001)***	-0.0711872 (0.22871)	-0.208359 (0.00515)***
$Dummy_t$	0.00246809 (0.94430)	0.0178735 (0.04444)**	-0.0109158 (0.52502)	-0.0044228 (0.81469)	0.0137277 (0.56349)

Results obtained from data analyzed using Gretl Version 1.1
*Significant at 10 %, **Significant at 5 %, ***Significant at 1 %

Table 4.21 presented Tobit regression results from the analysis of Bank Rakyat and conventional banks. Taking TFP as the dependant variables, the result revealed that only loan intensity ratio is statistically significant in its effects on TFP. Similarly depicted in table 4.21 banks' asset is statistically significant at 10 percent alpha level and dummy variable (equals 1 if bank is co-operative bank, = 0 otherwise) is statistically significant at 5 percent alpha level in determining the TEFFCH. This means that the status of co-operative bank is important in influencing TEFFCH.

GDP per capita, unemployment and export are all statistically significant at 1 percent

alpha level in influencing the increased in the banks technological change. In the first stage analysis results (depicted in table 4.18a) it was shown that technological change (TECHCH) had progressed by an average of 1.2 percent. Technological change was found to contribute to TFP change in the 10 banks studied.

Tobit regression result also found that none of the independent is statistically significant in influencing the PECH. The non-linear regression result also showed that banks' loan intensity, GDP per capita and export are statistically significant in determining scale efficiency score (SECH). The detail interpretations of the Tobit regression coefficients are in tables 4.22, 4.23, 4.24, 4.25 and 4.26 below.

Table 4.22: Interpretation of Tobit Regression Coefficient in the Analysis of Total Factor Productivity of Bank Rakyat and Conventional Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.26401	Holding other variables constant, an increase in RM1.00 loan intensity will increase the TFP of the banks by 26.401percent.
$LNTA_it$	-0.0110383	Holding other variables constant, a1 percent increase in assets will decrease the TFP of the banks by 1.10383 percent.
LNgdppct	-0.203524	Holding other variables constant, a 1 percent increase in GDP per capita will decrease the TFP of banks by 20.3524 percent.
LNexportt	0.347654	Holding other variables constant, a 1 percent increase in export will increase the TFP of the banks by 34.7654 percent.
$Unemployment_t$	0.0243545	Holding other variables constant, a 1 percent increase in unemployment will increase the TFP of the banks by 2.43545 percent.
Dummyt	0.00246809	Holding other variables constant, the co-operative bank influence on TFPis0.25 percent more than non-co-operative bank.

Table 4.23: Interpretation of Tobit Regression Coefficient in the Analysis of Technical Efficiency Change (TEFFCH) of Bank Rakyat and Conventional Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.038791	Holding other variables constant, an increased in RM1.00 loan intensity will increase the TEFFCH of the banks by 3.8791 percent.
$LNTA_it$	-0.0113613	Holding other variables constant, a 1 percent increase in assets will decrease the TEFFCH of the banks by 1.13613 percent.
LNgdppct	0.207354	Holding other variables constant, a 1 percent increase in GDP per capita will increase the TEFFCH of banks by 20.7354 percent.
LNexportt	-0.260376	Holding other variables constant, a 1 percent increase in export will decrease the TEFFCH of the banks by 26.0376 percent.
$Unemployment_t$	-0.0820131	Holding other variables constant, increased in 1percent in unemployment will decrease the TEFFCH of the banks by 8.20131 percent.
Dummyt	0.0178735	Holding other variables constant, the co-operative bank influence on TEFFCH is 1.78735 percent more than non-co-operative bank.

Table 4.24: Interpretation of Tobit Regression Coefficient in the Analysis of Technology Change (TECHCH) of Bank Rakyat and Conventional Banks

Variables	Value	Interpretation
loan/TA $_{it}$	-0.0254463	Holding other variables constant, an increased in RM1.00 loan intensity will increase the TECHCH of the banks by 2.54463 percent.
$LNTA_it$	-0.00324286	Holding other variables constant, a 1 percent increase in assets will decrease the TECHCH of the banks by 0.324286 percent.
LNgdppct	-0.578829	Holding other variables constant, a 1 percent increase in GDP per capita will decrease the TECHCH of banks by 57.8829 percent.
LNexportt	0.910286	Holding other variables constant, a 1 percent increase in export will increase the TECHCH of the banks by 91.0286 percent.
$Unemployment_t$	0.299287	Holding other variables constant, increased in 1 percent in unemployment will increase the TECHCH of the banks by 29.9287 percent.
Dummyt	-0.0109158	Holding other variables constant, the co-operative bank influence on TEFFCH is 1.09158 percent less than non-co-operative bank.

Table 4.25: Interpretation of Tobit Regression Coefficient in the Analysis of Pure Technical Efficiency (PECH) of Bank Rakyat and Conventional Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.0594652	Holding other variables constant, an increased in RM1.00 loan intensity will increase the PECH of the banks by 5.94652 percent.
$LNTA_it$	0.00124801	Holding other variables constant, a 1 percent increase in assets will increase the PECH of the banks by 0.124801 percent.
LNgdppct	-0.0406789	Holding other variables constant, a 1 percent increase in GDP per capita will decrease the PECH of banks by 4.06789 percent.
LNexportt	-0.0763018	Holding other variables constant, a 1 percent increase in export will decrease the PECH of the banks by 7.63018 percent.
$Unemployment_t$	-0.0711872	Holding other variables constant, increased in 1 percent in unemployment will decrease the PECH of the banks by 7.11872 percent.
Dummyt	0.0044228	Holding other variables constant, the co-operative bank's influence on PECH is0.44228 percent more than non-co-operative bank.

Table 4.26: Interpretation of Tobit Regression Coefficient in the Analysis of Scale Efficiency (SECH) of Bank Rakyat and Conventional Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.231905	Holding other variables constant, an increased in RM1.00 loan intensity will increase the SECH of the banks by 23.1905 percent.
$LNTA_it$	-0.00861215	Holding other variables constant, a 1 percent increase in assets will decrease the SECH of the banks by 0.861215 percent.
LNgdppct	0.43769	Holding other variables constant, a 1 percent increase in GDP per capita will increase the SECH of banks by 43.769 percent.
LNexportt	-0.503433	Holding other variables constant, a 1 percent increase in export will decrease the SECH of the banks by 50.3433 percent.
$Unemployment_t$	-0.208359	Holding other variables constant, increased in 1 percent in unemployment will decrease the SECH of the banks by 20.8359 percent.
Dummyt	0.0137277	Holding other variables constant, the co-operative bank influence on SECH is 1.37277 percent more than non-co-operative bank.

4.7.4.3 Tobit regression: Bank Rakyat, Conventional and Islamic banks

Similarly in the analysis of BR, conventional and Islamic banks, Tobit regression was also used to investigate variables that influenced the DEA efficiency scores (TFP, TEFFCH, TECHCH, PECH and SECH). These efficiency scores are the dependent variables. The independent variables are the GDP per capita, export, unemployment, loan intensity ratio of banks, banks assets value and two dummy variables, the first to differentiate co-operative bank (1) and non-co-operative banks (0) and the second to differentiate Islamic (1) and conventional banks (0).

The Tobit regression equations are shown below:

$$\theta 2_{it} = \alpha_0 + \beta_1 * \text{loan/TA}_{it} + \beta_2 * \text{LNTA}_{it} + \beta_3 * \text{LNgdppc}_t + \beta_4 * \text{LNexport}_t + \beta_5 * \text{unemployment}_t + \beta_6 * \text{dummy}_{it} + \beta_7 * \text{dummy2}_{it} + \varepsilon_{it} \quad (2)$$

Where dependent variables;

θ_{it} is the total factor productivity (TFP), technical efficiency change (TEFFCH), technology change (TECHCH), pure technical efficiency (PECH) and scale efficiency (SECH) scores of bank *i* at time *t* extracted from the DEA first stage and ε is the random error term.

Independent variables are;

loan/TA_{it}……total loans to total assets of bank *i* in period *t.*

LNTA_{it}……..natural logarithm of total assets of banks *i* in period *t.*

LNgdppc_t ..... …. natural logarithm of GDP per capita of Malaysia at time *t.*

LNexport_t ..... natural logarithm of Malaysia's export at time *t.*

Unemployment …..unemployment in percent at time *t.*

Dummy_{it} .....dummy variable that equal 1 (if co-operative bank) and 0 (if non-co-operative bank) at time *t.*

$Dummy2_{it}$ .....dummy variable that equal 1 (if Islamic bank) and 0 (if conventional bank) at time *t.*

ε_{it} .....random error term of the model.

The results of Tobit regression with first stage MPI DEA efficiency score are in tables 4.27. The goodness of fit of the Tobit models was assessed based on the test results for normality of residuals. The results had indicated that all models had a good fit as all the error exhibited was normally distributed with very small p-value (less than 0.05).

Table 4.27: Tobit Regression Results of Bank Rakyat, Conventional and Islamic Banks

Variables	**TFP**	**TEFFCH**	**TECHCH**	**PECH**	**SECH**
Constant	5.49002	0.521489	-3.33825	10.4452	-0.329006
loan/TA $_{it}$	0.175824 (0.41946)	0.856553 (<0.00001)***	0.0644639 (0.39296)	0.504798 (0.00135)***	-0.661421 (0.00890)***
$LNTA_{it}$	0.0513579 (0.08895)*	0.0162233 (0.38413)	0.0139424 (0.18265)	0.0243285 (0.26533)	0.030845 (0.37895)
$LNgdppc_t$	3.97507 (0.16846)	-0.399875 (0.82245)	-1.03286 (0.30175)	2.59805 (0.21339)	1.88181 (0.57446)
$LNexport_t$	-3.27859 (0.23653)	0.251214 (0.88320)	1.01443 (0.29052)	-2.61352 (0.19209)	-1.26078 (0.69503)
$Unemployment_t$	-0.723034 (0.24765)	0.0526465 (0.24765)	0.266826 (0.21823)	-0.54484 (0.228480	-0.383352 (0.59757)
$Dummy_{it}$	-0.143834 (0.16587)	-0.14241 (0.02627)**	0.0297875 (0.40760)	-0.190744 (0.01108)**	0.0474689 (0.69370)
$Dummy2_{it}$	0.147333 (0.04900)**	0.129224 (0.00516)***	-0.0251031 (0.33306)	0.142857 (0.00832)***	0.0299514 (0.73035)

Results obtained from data analyzed using Gretl Version 1.1
*Significant at 10 %, **Significant at 5 %, ***Significant at 1 %

In this second analysis Tobit regression results showed that bank's asset (LNTA) and dummy2 (= 1 if Islamic bank, 0 if conventional bank) are statistically significant in determining the TFP scores of the banks. This result differs from that of the first analysis (Bank Rakyat and conventional banks study) as in the first only loan intensity is significant in determining TFP score.

Following this, the analysis revealed that loan intensity and both dummy variables are statistically significant in determining the TEFFCH scores of the banks studied. In the

second analysis it was found that none of the independent variables is statistically significant in influencing technological change. In contrast to this result however Tobit regression result in the first analysis showed the environmental variables (GDP per capital, unemployment and export) are statistically significant in influencing the technological change. Regarding pure technical efficiency change (PECH) the analysis showed that loan intensity and both dummy variables are statistically significant in influencing PECH. The banks' loan intensity is again found to be statistically significant in determining the scale efficiency change scores (SECH).

The following tables 4.28 – 4.32 gave the interpretation of Tobit regression coefficient in the analysis of total factor productivity, technical efficiency, technology, pure technical efficiency and scale efficiency changes.

Table 4.28: Interpretation of Tobit Regression Coefficient in the Analysis of Total Factor Productivity (TFP) of Bank Rakyat, Conventional and Islamic Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.175824	Holding other variables constant, an increase in RM1.00 loan intensity will increase the TFP of the banks by 17.5824 percent.
LNTA$_i$t	0.0513579	Holding other variables constant, a 1 percent increase in assets will increase the TFP of the banks by 5.13579 percent.
LNgdppct	3.97507	Holding other variables constant, a 1 percent increase in GDP per capita will increase the TFP of banks by 397.507 percent.
LNexportt	-3.27859	Holding other variables constant, a 1 percent increase in export will decrease the TFP of the banks by 327.859 percent.
Unemployment$_t$	-0.723034	Holding other variables constant, a 1 percent increase in unemployment will decrease the TFP of the banks by 72.3034 percent.
Dummyt	-0.143834	Holding other variables constant, the co-operative bank influence on TFP is 14.3834 percent less than non-co-operative bank.
Dummy2it	0.147333	Holding other variables constant, the Islamic bank influence on TFP is 14.7333 percent more than conventional bank.

Table 4.29: Interpretation of Tobit Regression Coefficient in the Analysis of Technical Efficiency Change (TEFFCH) of Bank Rakyat, Conventional and Islamic Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.856553	Holding other variables constant, an increased in RM1.00 loan intensity will increase the TEFFCH of the banks by 8.56553 percent.
$LNTA_i t$	0.0162233	Holding other variables constant, a 1 percent increase in assets will increase the TEFFCH of the banks by 1.62233 percent.
LNgdppct	-0.399875	Holding other variables constant, a 1 percent increase in GDP per capita will decrease the TEFFCH of banks by 39.9875 percent.
LNexportt	0.251214	Holding other variables constant, a 1 percent increase in export will increase the TEFFCH of the banks by 25.1214 percent.
$Unemployment_t$	0.0526465	Holding other variables constant, increased in 1 percent in unemployment will increase the TEFFCH of the banks by 5.26465 percent.
Dummyt	-0.14241	Holding other variables constant, the co-operative bank influence on TFP is 14.241 percent less than non-co-operative bank.
Dummy2it	0.129224	Holding other variables constant, the Islamic bank influence on TFP is 12.9224 percent more than conventional bank.

Table 4.30: Interpretation of Tobit Regression Coefficient in the Analysis of Technology Change (TECHCH) of Bank Rakyat, Conventional and Islamic Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.0644639	Holding other variables constant, an increased in RM1.00 loan intensity will increase the TECHCH of the banks by 6.44639 percent.
$LNTA_i t$	0.0139424	Holding other variables constant, a 1 percent increase in assets will decrease the TECHCH of the banks by 1.39424 percent.
LNgdppct	-1.03286	Holding other variables constant, a 1 percent increase in GDP per capita will decrease the TECHCH of banks by 103.286 percent.
LNexportt	1.01443	Holding other variables constant, a 1 percent increase in export will increase the TECHCH of the banks by 101.443 percent.
$Unemployment_t$	0.266826	Holding other variables constant, increased in 1 percent in unemployment will increase the TECHCH of the banks by 26.6826 percent.
Dummyt	0.0297875	Holding other variables constant, the co-operative bank influence on TEFFCH is 2.97875 percent more than non-co-operative bank.
Dummy2it	-0.0251031	Holding other variables constant, the Islamic bank influence on TEFFCH is 2.51031 percent less than conventional bank.

Table 4.31: Interpretation of Tobit Regression Coefficient in the Analysis of Pure Technical Efficiency (PECH) of Bank Rakyat, Conventional and Islamic Banks

Variables	Value	Interpretation
loan/TA $_{it}$	0.504798	Holding other variables constant, an increased in RM1.00 loan intensity will increase the PECH of the banks by 5.04798 percent.
$LNTA_it$	0.0243285	Holding other variables constant, a 1 percent increase in assets will increase the PECH of the banks by 2.43285 percent.
LNgdppct	2.59805	Holding other variables constant, a 1 percent increase in GDP per capita will increase the PECH of banks by 259.805 percent.
LNexportt	-2.61352	Holding other variables constant, a 1 percent increase in export will decrease the PECH of the banks by 261.352 percent.
$Unemployment_t$	-0.54484	Holding other variables constant, increased in 1 percent in unemployment will decrease the PECH of the banks by 54.484 percent.
Dummyt	-0.190744	Holding other variables constant, the co-operative bank's influence on PECH is 19.0744 percent less than non-co-operative bank.
Dummy2it	0.142857	Holding other variables constant, the Islamic bank influence on PECH is 14.2857 percent more than conventional bank.

Table 4.32: Interpretation of Tobit Regression Coefficient in the Analysis of Scale Efficiency (SECH) of Bank Rakyat and Conventional Banks

Variables	Value	Interpretation
loan/TA $_{it}$	-0.661421	Holding other variables constant, an increased in RM1.00 loan intensity will decrease the SECH of the banks by 66.1421 percent.
$LNTA_it$	0.030845	Holding other variables constant, a 1 percent increase in assets will increase the SECH of the banks by 3.0845 percent.
LNgdppct	1.88181	Holding other variables constant, a 1 percent increase in GDP per capita will increase the SECH of banks by 188.181 percent.
LNexportt	-1.26078	Holding other variables constant, a 1 percent increase in export will decrease the SECH of the banks by 50.3433 percent.
$Unemployment_t$	-0.383352	Holding other variables constant, increased in 1 percent in unemployment will decrease the SECH of the banks by 126.078 percent.
Dummyt	0.0474689	Holding other variables constant, the co-operative bank influence on SECH is 4.74689 percent more than non-co-operative bank.
Dummy2it	0.0299514	Holding other variables constant, the Islamic bank influence on SECH is 2.99514 percent more than conventional bank.

4.8 Discussions and Conclusions

The first part of this chapter analyzed the relative efficiencies of 36 co-operative membership groups using first stage DEA analysis. DEA results have suggested that the performances of co-operatives by membership target groups are not satisfactory. This study revealed that only 16.7 percent of the co-operative groups are efficient by CRS method while estimation by VRS had produced a slightly better efficiency performance of 33.3 percent. On the whole undoubtedly the findings estimated that the groups are having technical inefficiency level of 85 percent for DEA analysis with only 2 inputs and 65.3 percent for technical inefficiency in the analysis with 3 inputs. This means that less than half of the co-operative groups are operating efficiently. Obviously this is not expected as the co-operative movement has already been in existence for over ninety years.

An important finding from this analysis is the identification of co-operative groups that are better-off in terms of efficiency which had been chosen as the benchmark for other co-operatives operating within the frontier. The co-operative target groups highly referred to are those under Affiliation, Training Centers, Village Development (KKK)/KEDA, Insurance and RISDA. Identification of these groups is useful as it will enable further research to be untaken to examine these co-operatives and find out factors that have help them to perform better than the rest of the co-operatives.

Equally important discovery is the fact that close to 50 percent of the less efficient co-operatives are in the rank of lower intermediate and very low efficiency scores. The weak or inefficient co-operatives are predominantly among the FELDA and KESEDAR settlers, small industries, KEMAS, fisherman, the general public, statutory agency workers, graduates, drivers, the District Development Co-operative (KPD), farmers and

women. Also an alarming observation is that a high percentage of co-operatives (67 percent by VRS method and 83 percent by CRS method) are not operating at their most productive scale size or at their optimal scale.

In short, the DEA analysis findings showed that there have been a lot of resources wasted in the operation of co-operatives by target groups. This study provide empirical evidence that the Malaysian co-operative performance is still a concern and needed attention as these groups comprised of predominantly the poor population and those people in the rural areas (e.g. farmers and fishermen).

To further compliment the DEA results of efficiency measure, a non-linear regression model have been employed to determine input variables which are important in influencing the efficiency scores. Tobit regression investigation demonstrated that co-operatives' turnover, equity and members are important variables that influenced efficiency scores of the co-operative groups studied. Turnover, equity and members were revealed to be statistically significant in influencing the technical efficiency and pure technical efficiency scores. Scale efficiency scores however, were influenced by only equity and turnover.

Turnover is also positively correlated with all the three scores which postulate that the higher the turnover of co-operative groups, the greater the efficiency scores. The negative relationship between equity and members with the efficiency scores however, became somewhat a challenge to co-operative performance because as equity and members increases all three efficiency scores decreases. This suggested that co-operatives are less efficient when membership size and equity gets bigger. This result further enforced the perception that co-operatives are facing members' apathy and free

rider problem (Department of Co-operative Development, 2003). As memberships became larger and equity increased, the co-operatives presumely encounter problem in retaining members' loyalty and support towards their co-operative. It appears that co-operative members are not active members but they became members just to catch in on the dividends given out by their co-operative.

There may be all kinds of reasons for inefficiencies in co-operative performances. Among others the reasons could be problems related to 1. management, 2. weakness in the co-operative governance, 3. lack of members' support, 4. imperfect competition, 5. lack of financial resources and others. The identification of specific problems faced by these co-operatives is another issue that needs attention and warrant future research. The scope of the problem is too huge to be tackle in this thesis.

Two policy implications arising from the DEA analysis on the co-operative target groups are firstly the implication on the relenting increase in efforts by the government to set up co-operatives in every community. It is not the number of co-operative that matters but the quality of co-operatives that is the bigger number of efficient co-operatives in the movement is desired. The high percentages of existing inefficient co-operatives need to be monitored and address closely as this will have an impact on the successfulness and achievement of the Second National Co-operative Plan by the year 2015.

Secondly the current co-operatives operating in the movement have not reached their full potential. The inefficiencies have indicated that resources have not been utilized properly and because of this, there is a strong tendency of wastage in input usage. Inputs wastage can be costly not only for the relevant co-operative but also the government. The inefficient co-operatives might have wasted the perfectly good financial grants

given by the government in its effort to help spur a faster economic development among those poor people in the rural areas.

In view of the important role the Bank Rakyat currently played, this chapter had analyzed the productivity growth of the Bank Rakyat and nine other main commercial banks and the productivity growth of Bank Rakyat, conventional and Islamic banks in Malaysia using MPI constructed by means of DEA technologies. MPI is useful as it showed the average productivity growth, the frontier growth (technological change) and the optimal resource utilization (technical efficiency change) of these banks. This research is important as its result can contribute to the enhancing of co-operative study especially in Malaysia and help improves co-operative banks and credit/financial co-operatives in Malaysia. To my knowledge there has not been any similar comparative study research estimating co-operative bank and commercial banks productivity change in Malaysia.

In the period of 2005 until 2010 analysis showed that all banks only managed a small change in the total factor productivity (TFP) growth change. However, although the co-operative bank is the top five banks among six banks with increased TFP, Bank Rakyat only experiences 0.3 percent TFP growth. This increment appeared to be as a result of the 0.3 percent technological change when technical efficiency and pure technical efficiency do not experience any changes in the time period. If compared Bank Rakyat to HLB for example, this bank had the highest percentage of technological change (3.8 percent). This might be an important factor that had helped to change HLB to progress in its total factor productivity (4.5 percent increased). When compared to RHB, the source of growth is from 4.9 percent technical efficiency change (TE), 1.7 percent in technological change and 5.3 percent pure technical efficiency change.

In the second study on Bank Rakyat, conventional and Islamic banks for the period from 2006 to 2010, the investigation estimated that in this 5 year period, 64.3 percent of banks studied had total factor productivity progress and 44 percent of the banks are Islamic banks. Bank Rakyat is at the sixth place among top nine banks. Bank Rakyat source of total factor productivity progress just as in first analysis is again technological progress without any progress in pure technical efficiency and scale efficiency change (this means TE is also stagnant). In this analysis empirical findings have indicated in this period, scale inefficiency dominates pure technical inefficiency implying that the banks have been inefficient in exploiting economies of scale given their scale of operation. The inclusion of other Islamic banks in the study however, suggest that progressive scale efficiency and pure technical efficiency change contributes to the banks overall technical efficiency.

Further analysis of the efficiency scores in first stage analysis using Anova two-factor without replication revealed that although in the first bank study, efficiency scores and the scores achieved by each banks are different, in the case of the second bank study, however, efficiency scores between banks are not that different. This means that the top banks are more or less similar in efficiency performance.

Tobit regression analysis for Bank Rakyat studied showed that banks' loan intensity and assets was found to be statistically significant in determining TFP, TEFFCH, PECH and SECH. As bank's asset was found to be significant in determining efficiency in both studies, the result thus confirm that banks size matters in achieving higher efficiency. Environmental factors which are outside the banks control of banks management such as GDP per capita, unemployment and export performance are statistically significant in

influencing progress in technological and scale efficiency change. Related to loan intensity this finding is consistent with research done by Fadzlan Sufian & Muhd-Zulkhibri Abdul Majid (2007) that indicated a positive and statistically significant relationship between bank's loan intensity with efficiency measure of banks in their study.

This result is consistent with the study on impact of global financial recession on this country's and other developing economy (World Bank Report, 2010). The empirical findings in both analysis indicated that total factor productivity had regressed in 2007. However, instead of the TFP declining after 2008, the banks' analysis with Islamic banks had managed a substantial TFP growth i.e. 0.7 percent (2009) and 4.9 percent (2010). This result is consistent with the increasing trend of technical efficiency level experienced by the Islamic banks in 25 countries in the period 1992-2009, findings from study done by Nor Hayati Ahmad & Mohamad Akbar Noor Mohamad Noor (2011).

As for the status or types of banks, (whether co-operative bank, Islamic or conventional bank) the Tobit regression analysis showed that banks status is statistically significant in determining the technical efficiency and pure efficiency change of the banks studied. With this result, this study revealed that banks' status is important in determining the banks' efficiency. These results are important considering Malaysia's goal is to be Asia's Islamic Financial Hub and an International Islamic Finance Centre (Zeti Akhtar Aziz, 2006; PricewaterhouseCoopers Malaysia, 2008).

This findings however, contradicts the result by study done by Altubas, Evans and Molyneux (2001) where in investigating the agency issues among German banks, their research had found that there is no evidence to suggest that the banks type (private,

public, and mutual (co-operative)) had influenced efficiency. More recent findings by Mohammed Khaled I. Bader, Shamsher Mohamad & Mohamed Ariff (2008) on research comparison between conventional and Islamic banks also suggested no significant differences between these banks.

In comparison to the other banks that were included in this study, Bank Rakyat's loan intensity ratio has been on the higher side (0.7) as compared to other banks which is below 0.7. This is suggesting that Bank Rakyat is taking a higher risk. This would mean that it is more vulnerable to risk as compared to other banks. In 2010 from the total financing and advances given out by Bank Rakyat, 76 percent were geared towards personal financing. Risk incurred by Bank Rakyat on financing was reduced as the banks mode of financing repayment is via salary deduction service provided by Angkasa. Radziah Abdul Latiff (2012) it her study similarly concluded that Bank Rakyat gained in a more efficient credit control and reduced in risks as payments by borrowers were made direct from Angkasa salary deduction. Radziah also pointed out that Bank Rakyat had secured a niche in personal financing sector among the government servants.

This study have provide empirical results that Bank Rakyat have achieved a relatively strong position in productivity performance that is 5th position among top six banks in the first analysis (Bank Rakyat and conventional banks) and 6th among the nine top banks in second analysis (Bank Rakyat, other Islamic and conventional banks). This position no doubt is due to its relentless efforts through the years striving for excellence, providing towards improving its management and operational efficiency, increased investment in human capability enhancement and also the result of transformation from a conventional banking system to a fully Islamic (Syariah) compliant system in 2003.

Bank Rakyat however cannot depend on its status as an Islamic bank to capture clients as all the other nine banks are also Syariah compliant. As a result the banking environment proves to be very competitive and challenging.

Its increase growth in financial performance is the result of continuous investment in retail banking technologies such as ATMs, internet banking, smart cards and wireless banking. With extended product range it is able to provide quality, innovative and greater diversity products to customers. This is done through networks of more than 200 branches located nationwide. With 794,199 individual members and 1,401 co-operative members Bank Rakyat had effectively secured support from non-member customers who made up of 51.2 percent of its total customers. This research had showed that in both models, BR technological change progress was the only source of its total factor productivity growth.

As a testimony to its achievement, the bank had received numerous awards and recognition. Among the awards are the Excellence Award 2008 by the national Award for management Accounting (NAfMA), the Caring Employer Award (Large Corporation) 2008, ranked 12th out of 150 banks worldwide in the list of Asian Banker Research 2008 and the 7th strongest bank in Malaysia by Asian Banker Research. In the ICA Developing 300 Project List, this bank ranked fourth and ranked sixteenth under the Top 500 Islamic Institution category by The Banker magazine.

Bank Rakyat have made a good impact on the co-operative development in Malaysia considering its humble beginning as a co-operative bank set up to help provide services to the “unbanked” population in Malaysia. Those in the lower income bracket, the rural and urban poor that commercial banks considered to be too risky to extend loans. Bank

Rakyat had been reported to have a pre-tax profit and zakat of RM 1.55 billion at the end of Dec 31 2009. This is an increase of 25.6 percent over the previous year. Bank Rakyat has recently sign an agreement with CIMB Investment bank and Maybank Investment and launched its sukuk Islamic medium-term notes worth RM 1 billion (Govind, 2012). This is the first issuance by a co-operative bank.

Bank Rakyat had fulfilled many social obligations and made contributions to the co-operative development by contributing to the Education Trust Fund, the Co-operative Development Provident Fund, establishing a Mentor Mentee programme that provide other co-operatives with consultancy, training and advisory services to enhance their operational efficiency and Rakan Koop (translated as Coop Friend) programme to assist small and medium scale co-operative to upgrade their management competency and diversify their activities.

Despite the achievements, it is still imperative for Bank Rakyat to make investment in upgrading its managerial efficiency while taking advantage of new technology as there is still room for improvements in the efforts of achieving optimal level of operation if it intends to be sustainable and were to achieve customer champion proposition. The key is to adhere to the co-operative model and principles to be competitive while at the same time ensuring growth and efficiency to match the industry norms.

This study is based on the small number of conventional and Islamic banks. Furthermore, as the co-operative bank is only confine to Bank Rakyat therefore the result of this study requires caution in its interpretation. Due to this limitation, the scope of future study could be extended to include the investigation of more banks (Islamic

and co-operative banks) and the consideration of more risk factors and profit ratios in the second stage analysis.

CHAPTER 5

COMMUNITY CO-OPERATIVES: STRATEGIES IN ACHIEVING SUSTAINABLE ECONOMIC LIVELIHOOD IN MARINE PARK ISLANDS

5.1 Introduction

> "Co-operatives are a reminder to the international community that it is possible to pursue both economic viability and social responsibility."
>
> - Ban Ki-moon, UN Secretary General

This chapter investigates the introduction of community co-operatives in the Marine Park Areas (MPA) under the Marine Park Project GOM/UNDP-GEF.[11] This Marine Park project aims at conserving marine biodiversity through enhanced marine park management and inclusive sustainable Island development (DMPM, 2011; UNDP, 2008). This is a joint project between the Malaysian government and the United Nation Development Programme (UNDP) and co-sponsored by Global Environment Facility (GEF). The Department of Marine Park Malaysia has identified Redang, Tioman and Sibu-Tinggi as the three project areas that will be managed and developed sustainably.

This Marine Park co-operative study areas include the main Redang, Tioman and Sibu-Tinggi (RTST) Islands which covers a total area of 17,517 hectares with the total population average change of 4.78-5.6 percent per year. In terms of individual size Tioman is the largest Island (13,509.42 ha), followed by Redang (2,483.58 ha), Tinggi

[11] GOM/UNDP-GEF refers to the Government of Malaysia/ United Nation Development Programme-Global Environmental Facility.

(1524.14 ha) and Sibu (503.29 ha) (Fatimah Kari, Abul Quasem Al Amin, Nurul Huda Mohd Satar & Mohammad Nurul Azam, 2011). RTST Islands are important area for diversity with a total of 221 coral reefs identified in these areas (Harbone, A., Fenner, D., Barnes, A., Beger, M., Harding, S., & Roxburgh, T., 2000). Studies by Harbone, et al. (2000) also indicated that these three RTST MPA Islands are in fair condition, with some sites in "good "condition.

Although there are many healthy areas, large sections have significantly reduced coral cover as the reefs in the marine parks have been affected by many factors including the 1998 coral bleaching. These Islands are facing the threats of declining fish stocks as a result of over exploitation of breeding grounds, destruction of habitat and marine life and degradation of water quality (UNDP, 2010).

5.1.1 Problem Statement

The MPAs were established in Malaysia to protect and conserve the marine ecosystem from damage in line with the sustainable development strategy. Human activities as well as market demand for coastal tourism have resulted in the MPAs environmental degradation and the decline of marine resources. Thus as in many other developing countries unfortunately coastal communities here are forced to rely on severely depleted natural resources where the coastal status are very fragile (Pomery, Ratner, Hall, Pimoljinda & Vivekananda, 2006; Nasuchon, 2009). Due to the growing pressure, ocean ecosystem management has been given central consideration by governments of many countries (Christie, 2006).

The development and growth of MPAs however, faces typical growth – equity conflict as the tourist related sector became the major engine of economic growth. The local community livelihoods were affected. Tourism related income became the only alternative income for the local communities that used to depend heavily on fisheries and small-scale agriculture as a source of income and livelihoods (UNDP, 2008). Although tourism income benefitted some people, not all locals are able to integrate into this "new" economy. Nevertheless, it remain to be a difficult task for those who tried as factors such as ownership, control and participation in economic activities and driver of livelihood sustainability remain the weakest link in the community active participation in the tourism market. In fact on top of the existing problems, market growth for the tourist sector may be limited by environmental constraints and this creates bigger problem as environment was the promoting tourist dollar among people in the MPA (Uyarra, Cote, Gill, Tinch, Viner & Watkinson, 2005).

As such, this market failure and imbalances demanded a corrective economic policy approach with an aggressive and effective intervention to be adopted. The effective policy intervention cannot be an outright hand out especially in the form of cash but more in term of training, skills and education needed to sustain economic status. Co-operative was introduced in MPAs with the economic interests of locals. The introduction is through community participatory approach with community orientated consultative management and empowerment of villagers' concept through alternative livelihood activities. Community co-operative established to run tourism based activities may offer hope for livelihood enhancement in the MPAs, yet the effectiveness of such establishments are still questionable. Many researchers such as Joppe (1996), Jamal & Getz (1999) and Okazaki (2008) have concerns about the effectiveness of community-based tourism (CBT) model as policy intervention to help coastal

communities and have suggested evaluations and assessment on the implementation of model to ensure that community benefits from such programme.

5.1.2 Action Research Approach

Action research (AR) was chosen as research approach because of the complex economic and social problems faced by the population in the existing MPAs studied. Introducing co-operative into the MPAs community for economic and social change is unlikely to be any easier task. AR is the best research approach and option of intervention. The advantages of AR have been discussed by Pettit (2010) and according to him:

> "…. action research can lead to more context-sensitive, adaptive, and innovative understandings and responses. Action research provides a way of representing the perspectives and subjectivities of diverse actors (including those leading the research process) in all their complexity. It can highlight differences, commonalities, and underlying assumptions, rather than assuming that there is a singular, objective version of things"
>
> (Pettit, 2010, page 820).

According to Lewin, as mention in Rowley (2003), it is an alternative method to bring about changes and helping communities. Dick (2002) pointed that AR is a very flexible method most suitable when research involved people and there is a need to understand and make changes at the same time.

AR applies economic theory to draw plans and actions to be taken and then evaluate those actions to determine effectiveness of project. AR is an important method as it is

rigorous, provides deeper understanding of the complexity in co-operative establishment and at the same time it brought changes to the local communities. AR is a unique way of capturing the synergy of findings from other research in the literature and findings in other chapters in this thesis and testing the relevancy of theory in the case of MPA communities. The researcher wish to investigate if co-operative could be adopted successfully as a strategy to uplift the villagers' livelihood. Furthermore, the effectiveness of community co-operatives as a tool for sustainable development programmes can then be assessed. The feedbacks from community, diagnosis of problems encountered and the reflective learning in the research contributes to the co-operative's research synergy.

5.1.3 Purpose of the study

The purpose of this action research is to document the establishment of community co-operative as a development initiative towards achieving a sustainable business development model in the three MPAs.

The specific research objectives are:

1. To assists the locals in setting up community co-operative in their MPA.
2. To find ways to help, empower and prevent the locals from being marginalized in the growth and development of MPAs.
3. To identify the kind of support needed in the early development of the co-operative to ensure that these co-operative can be independent.

The functions of these community co-operatives are to actively incorporate the locals, generate income and employment for them whilst providing source of income,

conserving the environment and attaining sustainable economic livelihood for the islanders.

5.1.4 Significant of study

Undertaking this study and the alternative livelihoods programme through community co-operatives is very important as it can be seen as a balancing trade-off mechanism between losses of income and the conservation needs. In the process of giving indirect compensating scheme due to loss of income, the action plan through economic intervening programme constructed by DMPM and UNDP allows for active and inclusive local community participation which focus strongly on market analysis, potential of product and services been offered.

This study is an attempt to better understand the complexities of introducing co-operative into communities, promote effective development strategy to solve poverty and social exclusion problems in communities. The knowledge and experience gained through conducting this AR will add depth and breadth to the knowledge of community co-operative development.

5.2 Review of Related Literature

Literature review began by discussing tourism and the economy followed by the impact of MPAs on communities and the sustainable livelihood strategies in Marine parks.

5.2.1 Tourism and the Economy

Tourism has been regarded as one of the largest business in the world economy. Mowforth & Munt (2003) had discussed the impact of tourism development on global economy especially on the third world economy and the tourism process and its relationship to sustainable development. Tourism is not just a global phenomenon but its growth and development have become important source of income for many countries such as Australia, Egypt, Greece, Thailand, Indonesia, Bahamas, Fiji and Maldives. Tourism not only brings in money through increased businesses of goods, services and foreign exchange but also had contributed in term of developing their economy by creating employment and small businesses.

Tourism industry accounts for 10 percent of total employment and 11 percent of global GDP. In 2006 this industry is responsible for over 230 million jobs around the world (TIES, 2006). The World Tourism Organization (WTO) had forecast growth in visitor arrivals globally at 3-4 percent for 2010. Over the last decades there has been an increasing trend in the tourism especially in Europe and Asia. Generally there are two types of tourist contributing to the economy. They are mainly tourist with high and middle levels of disposable income.

Another important factor that has significant impact on tourism is the development of newer business concept, technology and infrastructure for example low-cost airlines, modern airport with better facilities and the development of super-large airplanes. These developments have made tourism affordable and accessible to more people worldwide. In relation to this, it has been estimated by WHO[12] that 500,000 people are on airplanes

[12]WHO is World Health Organization

at any time. The usage of internet as marketing tools also became a factor that promotes tourism industry and the sale of other tourism related products.

Tourism industry growth has been positive in Malaysia. According to Badaruddin Mohamed (2002) and Pazim Othman, Mohd Rosli Mohamed & Azhar Harun (2009), tourism is fast becoming the second most important sector for Malaysia's economy. The continuous promotional efforts done by the Ministry of Tourism Malaysia have increased tourism products, services and coverage to also include ecotourism, agro-tourism and home stay programme. The number of tourist arrivals and tourism receipts in Malaysia from 1998 to 2010 is shown in Table 5.2.

Table 5.1: Malaysia: Tourist Arrivals and Receipts 1998- 2010

Year	Arrivals (ml)	% Change	Receipts (RM ml)	% Change
1998	5.5	-	8.6	-
1999	7.9	44	12.3	43
2000	10.2	29	17.3	41
2001	12.7	25	24.2	40
2002	13.2	4	25.8	7
2003	10.5	(20)	21.3	(17)
2004	15.7	48	29.7	39
2005	16.4	4	32.0	8
2006	17.5	7	36.3	13
2007	20.9	19	46.1	27
2008	22.0	5	49.6	8
2009	23.6	7	53.4	8
2010	24.6	4	56.5	6

Source: Tourism Malaysia Corporate website http://www.tourism.gov.my

It was reported by Business Times Malaysia (2003) that in 2002 alone, the tourism industry contributed RM42.6 billion to Malaysia's domestic product (GDP). Based on a 4 percent GDP growth in this year, the amount is estimated to represents some 19.5 percent. Pazim Othman, Mohd Rosli Mohamed & Azhar Harun (2010) found that diverse tourism-related activities is important in boosting small business performances hence uplifting the livelihood of the local poor in the islands.

As mentioned by Fatilah Ismail, Turner & King (2010), the percentage increase was a mere 4 percent in 2002 (after the September 11 attack in 2001) and then as a result of SARS outbreak, the Iraq war and the geopolitical uncertainties worldwide had led the industry to experience a short-term reduction in growth. The decline in tourist arrivals and receipts had improved steadily in 2004 onwards and had shown significant increase in receipts following the 2007 Visit Malaysia Year efforts.

5.2.2 Impact of Marine Park Areas on Communities

The earliest effort to protect marine fisheries and coral reef areas had started in the early 1980s with the establishment of Marine Parks areas (MPA) under the direction of Tun Dr. Mahathir Mohamad. Declined in marine fisheries resources and the importance of protecting coral reef areas where various commercial fish species live, breed, fed and grew had prompted this effort. Coral reef areas are one of the critical habitats as these areas are exposed to various stressors which either occurs naturally or by human activities. The setting up of Marine Parks is provided for under Part 41 through 45 of the Fisheries Act, 1985. The principal goal of establishing Marine Parks in the country is to protect, conserve and manage in perpetuity representative marine ecosystems of significance, particularly coral reefs and their associated flora and fauna, so that they remain undamaged for future generations (Marine Park Malaysia, 2010).

Following the establishment of MPAs, a total of forty islands are declared protected area. The islands consist of the Redang Island Archipelago and Perhentian Island Archipelago off Terengganu waters, Payar Island Archipelago, Kedah, Tioman Island Archipelago, Pahang, Tinggi Island Archipelago, Johor and the Federal Territory of

Labuan Archipelago. According to the first schedule of the Marine Parks Malaysia Order 1994 the limit of any area or part of an area established as a marine park shall be at a distance of two nautical miles seaward from the outermost points of the islands specified.

The emergence of MPAs as a conservation strategies introduces the challenging task of managing Malayasia rich bio-divesrity resources. The policy announcement provide a landmark in the country commitment to enhance conservation efforts in meeting the conservation strategies. As in many other policy changes, conservation policies had also exposed the Island population to changes and shocks that had increased the populations vulnerability especially the poor. In line with such conservation effort, designing economic policies and alternative livelihood remain to be an important matter in making sure that marine park community benefit significantly from conservation through marine park strategies (DMPM, 2011).

There has been an increased in public interest on impact of marine parks and reserves on communities they served. Results from various researches on the impact of MPA on communities are found to be varied with pro and cons of such interventions. Norlida Hanim Mohd Salleh, Redzuan Othman & Nurul Fahana Aini Harun (2010) studied the impact of marine parks on local community in Redang and Tioman and found that the livelihoods of both communities are satisfactory in terms of human, physical and social assets but they are lacking in financial and natural assets. They also found that the community in Tioman was better than in Redang in terms of sustainable livelihood because of their different geographical background. Tioman community benefitted as their houses are close to the tourism industry developed giving them a lot of

opportunities to engage in income generating activities. MPA and tourism development have brought significant change to the livelihoods of communities in these Islands.

The investigation on Sibu and Tinggi island by Azima Abdul Manaf, Mohd Samsuddin & Mustaffa Omar (2010) however portrayed a different senario where the establishment of MPA had a negative impact on the villagers so much so that out-migration to main land had increased tremendously creating a host of economic and social problems. Should MPA establishment be blamed and be regarded as the migration push factor especially among the young generations? As suggested by researchers in Iran, in order to improve the development of this island, efforts to revitalise the situation should consider the potential and limitation of the community based activities related to ecotourism (Taboli & Yadollahi, 2011).

Taylor & Buckenham (2003) did a study on New Zealand marine reserves and showed that there are initial negative impacts on commercial and recreational fishing and over time the impacts are related to increase in visitors which in turn increased activities and demand for various related infrastructure such as road, parking and waste facilities and tourism related businesses. They stressed on the importance of co-operation between management of marine reserves and local community. Recently, in relation to coastal marine ecosystems in the Western India ocean, Cinner & David (2011) pointed out the pertinent need of understanding the socio-economic needs and concern of the community and stakeholders to ensure the success of biodiversity conservation project. The IMM, CFDO and CBNRM LI. (2005)[13] project in Cambodia proposed a livelihood diversification approach to help the poor local community.

[13] Joint project undertook by the IMM which is a UK based research, development and consultancy group, CFDO – Community Fisheries Development Office, Phnom Penh and the Cambodia and CBNRM LI – Community Based Natural Resource Management in Cambodia.

5.2.3 Sustainable Livelihood Strategies in Marine Park

There appears to be an extensive debate regarding the MPAs effectiveness in conservation strategies and its contribution towards marine resourses sustainability (Christie, 2006). The focus of debate have been on the success, complexities and also the challenges faced by MPAs in managing and achieving its objectives (Christie, Pollnac, Oracion, Sabonsolin, Diaz & Pietri, 2009; Fatimah Kari, Nurul Huda Mohd Satar & Abul Quasem al-Amin, 2010). The objectives as stated by the Department of Marine Park Malaysia (DMPM), on the formation of Marine Park includes:

1. To conserve and protect the biological diversity of the marine community and its habitats.
2. To upgrade and conserve the natural habitats of endangered aquatic species.
3. To establish management zones for the conservation of aquatic flora and fauna.
4. To establish zones of recreational use consistent with its carrying capacity.
5. To manage and develop capacity building in public awareness programme.

The policy perscription to enhance socio-economic status of Marine park comumunity hinges on the sustainable alternative livelihood (SALA) as the framework of analysis. This approach address the whole range of policy issues relevant to the specific community such as access to finance, markets, poverty, vulnerability and personal security as well as to health and education. Following this, the economic policies and alternative livelihood activities should be developed so as to generate and support job

creation, employment and income enhancement among for the community. Community based tourism with emphasis on responsible tourism may offer hope for livelihood enhancement (Hausler, 2008). The vehicle for promoting economic and alternative livelihood activities is Community Based Ecotourism (CBET) run by the community co-operatives.

CBET is not new as it has also been promoted by the six Greater Mekong Sub-region (GMS) since 1992 (Khanal & Babar, 2007). The experience of GMS with regard to CBET's success is that planning and development approach must be bottom-up approach with the community involvement and participation in planning, decision-making and management of the eco-sites, natural resources, protected areas and national parks.

Rehabilitation of the communities in MPAs as in other coastal communities in other developing world is a delicate and complicated matter as it requires addressing the fundamental social economic and environmental reforms which will affect their livelihoods and not merely giving them jobs (Pameroy, Ratner, Hall, Pimoljinda & Vivekanandan, 2006). As many other researchers also pointed out, there are concerns about the effectiveness of community-based tourism model as policy intervention (Joppe,1996; Jamal & Getz ,1999; and Okazaki, 2008)

This research intends to emulate and learn from past successes and use community co-operative as a platform for promoting economic and alternative livelihood activities. As discussed in Zeuli & Radel (2005) co-operatives can be introduce as a strategy that "compliments contemporary community development paradigm" (p 43). However, in Asian countries the important role of participatory and community based organisations

like co-operative in promoting tourism is still relatively new and have not been well received (Verma, n.d). Moreover, co-operative involvement in travel and tourism or specifically in ecotourism in Malaysia is new as compared to other activities such as agriculture, credit, finance, consumer, and industry or housing. Some co-operative have listed travel and tourism as part of their activities or services provided for members but for some co-operative in Malaysia the involvement in travel agent business is through setting subsidiary company.[14]

Establishing co-operative in MPAs to provide sustainable livelihood is plausible because it is a unique socio-economic organization based on the concept of human development and sustainable development. With this embedded concept, values and principles in the operation and management, it poses the ability to unite and organize local residents as workers and entrepreneurs to participate in their very own ecotourism programme which will benefit them socially and economically.

As a democratic controlled organisation, co-operative will give villagers a better chance to participate in the decision-making process. This is important as it will also give them opportunity to negotiate conditions and prices with their clients, customers, suppliers, banks etc. The possibility of this happening in other enterprise in the community would be very minimal (Zeuli & Cropp, 2004). Co-operative democratic nature proves to be an advantage as it has the capability to empower men and women in any societies. The empowerment came through the concerted action of the people themselves and will result in creating more opportunities through joint initiatives and at the same time enhance social protection of both community and environment through mutual help.

[14] Note that Co-operative Societies Act 1993 (Act 502) & Regulations , 2008 defined subsidiary as follows, "subsidiary" of a co-operative society means a company, as defined in the Companies Act 1965, in which such co-operative society controls the composition of the Board of Directors or more than half of the voting power, or holds more than half of the issued share capital, and includes a subsidiary, as defined in that Act, of such a company

An effective community co-operative can act as a bridge between their informal economy and the formal sector (Malaysia tourism industry) thus greatly enhancing member's job quality and income thus contribute to reduce the income inequality between regions in Malaysia. In short it is a community business entity set up by the locals benefitting the local economy and their environment and will be successful when it is well organized, financed, managed, and governed by a committed membership (Zeuli & Cropp, 2004).

Co-operative business is in line with the ecotourism industry needs as it is owned and democratically controlled by people (members), who uses its services and received benefits equitably distributed on the basis of use (Frederick, 1997). Co-operative business model however is diverse and had been adapted universally. For co-operative to be successful it must begin and continue with economically and politically active membership.

Co-operative development and success depends heavily on the members understanding, accepting and practicing the co-operative difference and advantage. Members need to recognize and appreciate that co-operative is different from private or public business enterprises. They should realize that the differences promote co-operative advantages. As discussed by Zeuli (2002), the strength of Ecotourism Community co-operative model arises from the following factors:

a. **Community interest**: As it is owned and controlled by community residents, therefore co-operative can ensure that their own objectives are met and are more likely to promote community growth than any other local or non-local businesses. Interested residents and the co-operative Board of Directors should

equip themselves with knowledge and skills in managing ecotourism business. Study tour to successful ecotourism co-operative such as KOPEL will also be beneficial.

b. **Flexible Profit Objectives**: Co-operatives do not have to focus on making high profits for their stakeholders as their objectives are set by their members themselves. Many community co-operative objectives are simply to serve the local needs rather than to maximizing profits.

c. **Financial Advantages**: Co-operatives are eligible to apply for loans and grants from agencies that support co-operative development. In Malaysia government loans and grants are given to co-operatives through the MCSC, Bank Rakyat and Bank Persatuan.

5.3 Methodology

5.3.1 Researcher's Background and Role

The researcher has a background in development studies and had conducted research related to co-operative before. Apart from being an academician and teaching undergraduate level co-operative course at the University of Malaya, the researcher is a representative to the National Co-operative Consultative Council under the MCSC since 2005.

The researcher played the role of a complete observer in this study. The researcher observes without participating in the activities conducted (Creswell, 2009). The purpose

of being a complete observer is not to intrude and make participants feel uncomfortable in co-operative discussions, planning and decision-making process. In AR, power relations between research participants and researcher are equal. This results in the researcher not having control, status and authority over the people being studied (Neuman, 2011).

In the effort of conducting AR, the researcher has teamed up and worked with DMPM consultants to undertake the MPAs surveys, attended dialogues, meetings, and workshops with villagers as well as discussions with the directors of the Malaysia Co-operative Societies Commission (MCSC) Terengganu and Pahang and UNDP staffs.

The researcher was given permission to attend the meetings held for co-operative members as an observer and to observe and document the decision-making process in the three islands.

5.3.2 Research Data

Data for this study were gathered from various primary and secondary sources. Secondary sources are from reports from DMPM, UNDP and consultants. Primary sources are data collected from fieldwork in the three islands. Data are from observation notes, discussions and interactions with the community in the fields, survey done after workshops, dialogues, interviews, discussions with community leaders, UNDP consultants and photos taken at fieldwork. Data collected will be used to answer the research objectives.

DMPM in collaboration with the United Nation Development Program (UNDP) had actively conducted workshops, dialogues, meetings and trainings for the island community in their attempt to introduce and impart knowledge about conservation through marine park strategies. Through following these sessions the researcher was able to observe and record the behavior of participants to better understand the process of establishing co-operative, the peoples' situation and problems. This understanding is important to enable correct interventions and approach are taken to address the issues.

5.3.3 Research Strategy

This study incorparate co-operative business model as an effort to institutionalize conservation effort that will also enhance income and employment oppotunities among the marine park community. The introduction and implementation of community co-operative's model follows the Umbrella Strategy (figure 5.1) and Mutual Incentive Theory (MIT) , in figure 5.2 and 5.3.

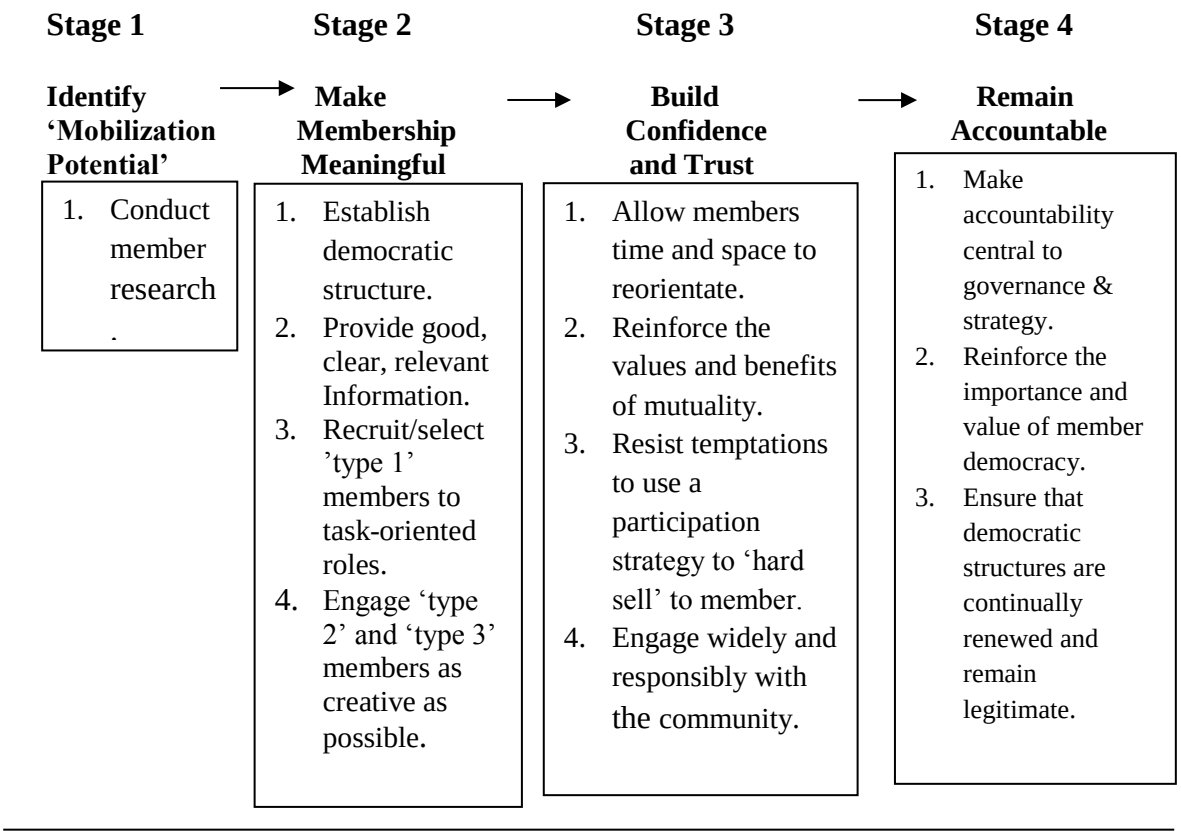

Figure 5.1: Umbrella Strategy for Promoting Co-operative and Member Involvement
Source: Adapted from Birchall & Simmons (2004)

These strategy and theory are developed from the social exchange theory as proposed by Birchall and Simmons (2004) in their study of consumer co-operatives in United Kingdom. Stage one of the strategy begins with identifying and mobilizing co-operative membership potential. Stage one is the starting point of AR whereby it is the process of establishing the co-operative by the local community. Participation by locals in any development projects has been widely accepted as an essential component of development (Bessette, 2004). While it is still dubious on the method of participation, the achievement of this community project as well as in any other sustainable development objectives hinges on the intensity of local participation (Bass, Clayton & Pretty, 1995). Unarguably the greater the local participation and support for the project, the higher its achievement levels.

Stage two is regarding making the membership meaningful. This stage is related to the co-operative's goal which is to put people first. That is the co-operative purpose is to cater to the needs of their co-operative members who are also members of the community. Based on the co-operative law, regulations and principles, co-operative is a democratic organization. By virtue of this democratic structure, members through the co-operative meetings will make many decisions related to the direction of their own co-operatives and decide on the people to be elected as the co-operative Board of Directors (BOD). Members' most critical task is electing competent and effective BOD.

BOD will be given mandate to manage the co-operative on behalf of other members. Decision-making done by BOD must be based on the community's benefits and not for any individual's benefits only. Birchall & Simmons (2004) had classified three types of co-operative members which is the type 1 or "true believers", the type 2 or the supporter which formed the "support club" and type 3, those who vaguely believe in the ethos of the co-operative.

The strategy continues from stage two to stage three. In the third stage, making efforts to make membership meaningful and building members' confidence and trust became an important strategy. The co-operative (through the BOD), need to play this role of building confidence and trust among membership as to get their members' support and loyalty. A strategy to encourage members' participation in co-operative is crucial. The strength in members' involvement will reflect the general support and satisfaction of members towards their co-operative. BOD must be responsible and build good relationship based on trust with the other members. They have to work as a team and speak with one voice so as not to undermine their co-operative goals.

The last stage stress on making the co-operative accountable. Unlike the ordinary members, co-operative BOD carry weighty responsibilities and face liability if they fail in their duties. BOD need to play the role in developing the co-operative's strategy and operational plan, implement and monitor the co-operative progress. They may also be responsible for any changes or rivisions of plans. As leaders, BOD are accountable to other members.

The Mutual Incentive Theory (MIT) of motivation is equally important in this study to enhance participation. MIT stressed on the two social-psychological theories of motivation which is the individualistic and the collectivistic approach. Refer to figure 5.2 for elaborations.

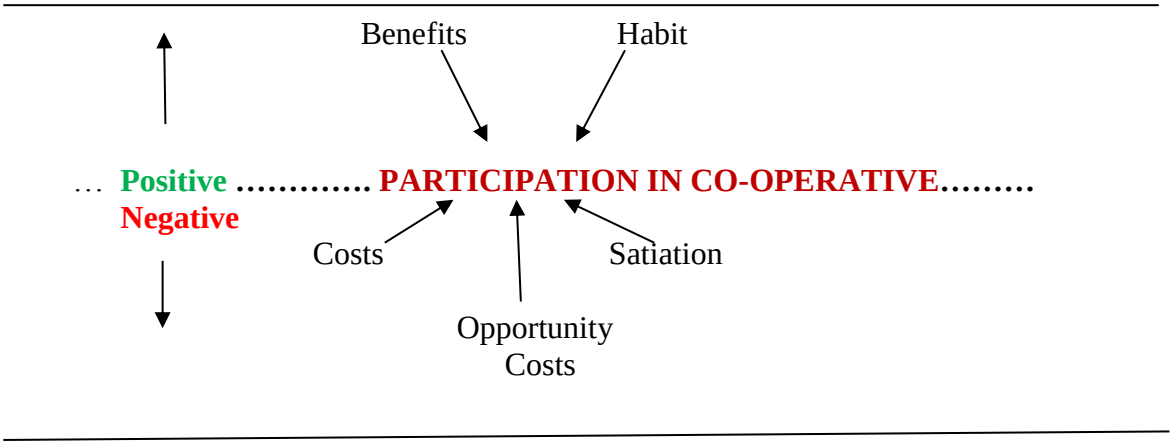

Figure 5.2: Individualistic Incentives
Source: Adapted from Birchall & Simmons (2004)

Individual's decision whether to participate or not in the co-operative is influenced and motivated by the positive (benefits and habits) and negative incentives (costs and satiation). There is an interaction between rewards (positive) and punishment (costs), depending on which is stronger (positive or negative) in the end this will determine the individual's final decision. The true believers, the supporters and those who vaguely believe in the ethos of the co-operative are groups of people that need to be identified in stage 1 and recruited in stage 2.

Social psychologist such as Argyle (1991), Mansbridge (1990) as cited in Birchall & Simmons (2004) believed that collectivistic approach is from the theories of co-operation. The collectivistic approach is different from the first approach as this approach interprets human behavior based on the assumption that individual's participation is being motivated by three variables that is 1. shared goals 2. shared values and 3. sense of community as in the figure 5.3.

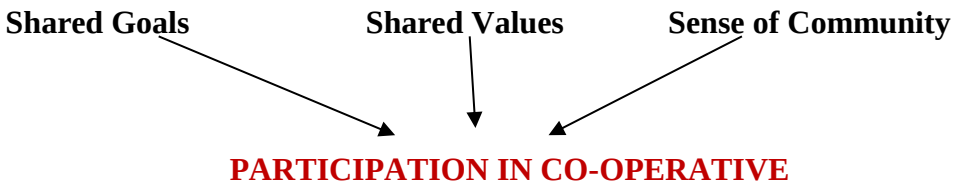

Figure 5.3: Collectivistic Incentives
Source: Adapted from Birchall & Simmons (2004)

Shared goals mean that individuals got together and discussed their common needs, issues and challenges, come to a consensus, agreed upon the needs and then unanimously and collectively decide the common goal/goals. Shared values are positive values arising from the sense of responsibility to participate and strived to achieve their common goals. Sense of community is sense of belongingness within the community in which individuals care, respect and love each other, their community and the environment. Community participation can be enhanced by effective communications between researchers, practitioners, local communities and other stakeholders (Bessette, 2004).

5.3.4 Action Research Process

There are many variations in the action research process followed by researchers since the version proposed by Kemmis & McTaggart in 1988 (Burns, 2005). As in figure 5.4,

the process involved four main processes which is 1. Plan, 2. Action, 3. Observation and 4. Reflection.

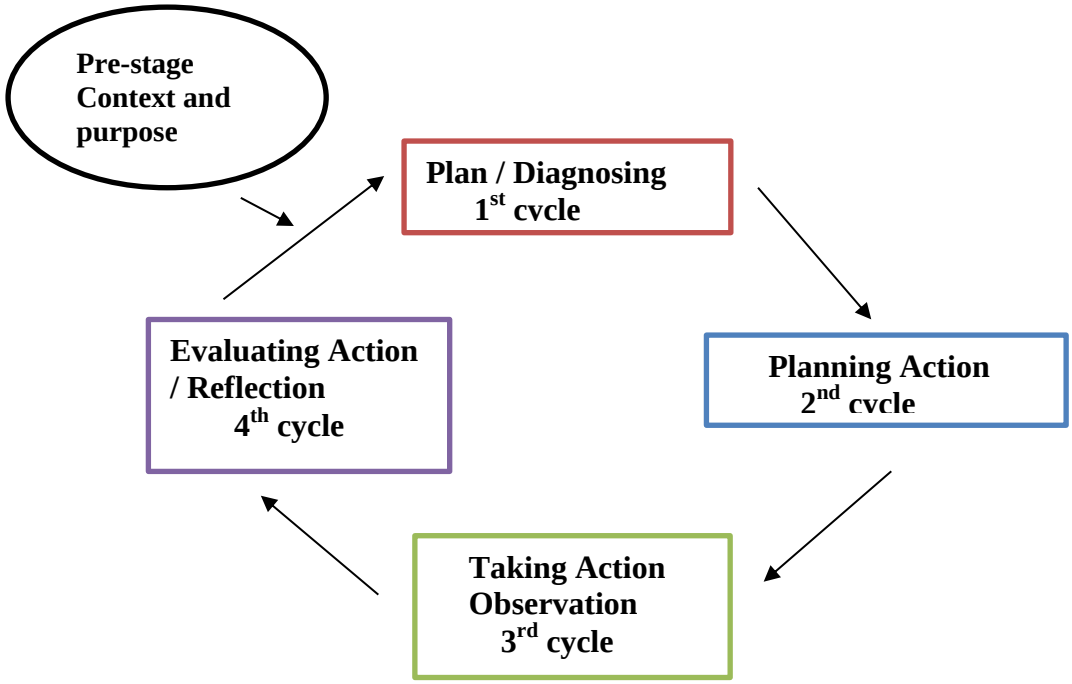

Figure 5.4: The Action Research Cycle
Source: Rowley (2003).

This research process starts with the initial Pre-stage context and purpose of research. It is at this stage where the context and purpose of research are first established. The first AR cycle is the planing and diagnosing cycle in which all the issues and problems identification will be discovered and reviewed. Secondly is the planning action cycle in which planning the proposed intervention is involved. The third cycle is where implementations of the plan, interventions and observations will proceed, and lastly the evaluating action where the outcomes and achievements are evaluated. This is one cycle of action research which will either be repeated again, readjusted and continued or stopped depending on the outcomes and achievements of research.

5.3.4.1 Pre-stage: context and purpose

In establishing the context and purpose of this research, a socio-economic profiling of Redang, Tioman and Tinggi Island were undertaken. Data on the basic socio-economic profile of the Redang, Tioman and Tinggi islanders were collected from July 2009 to February 2010, conducted by project consultants and their team through surveys. These surveys and the data collected are crucial informations that will be the basis of this AR. Data gathered are helpful in the process of planning the establishment of co-operative, identifying and stocktaking of potential members and drawing out the activity as stated in various stages in the Umbrella strategy.

A total of 549 respondents (204 respondents are from Redang, 300 from Tioman and 45 from Tinggi Island) were interviewed in the survey. Tinggi has the least respondents as the population in the villages in Tinggi is very small. The survey showed majority of the respondents are less than 50 years male. Refer to table 5.2.

Table 5.2: Age and Gender Profile of Respondents in Percentage

Age (years)	Redang	Tioman	Tinggi
≤ 20	6.9 %	5.7 %	35.6 %
21 – 30	23 %	18%	22.2%
31 – 40	20.1 %	14%	20%
41– 50	23 %	25.7%	20%
51– 60	14.7 %	20 %	13.3%
> 60	12.3 %	16.6%	13.3 %
Female	30.9%	20.7%	15.6%
Male	69.1%	79.3%	84.4%
N	**204**	**300**	**45**

Source: First Survey, UNDP (2010)

Table 5.3: Education Level in Percentage

Education level	Redang	Tioman	Tinggi
University education	0	6.3%	0
Diploma	2.2%	15.6%	7 %
Secondary education	47.6%	48.1%	48%
Primary education	36.10%	28.1%	42%
Religious School	0%	0.6%	3%
No basic education	14.10%	0.6%	0
N	**204**	**300**	**45**

Source: First Survey, UNDP (2010)

Table 5. 4: Employment Pattern

Employment (by sector)	Redang	Tioman	Tinggi
Self employed	16.8 %	13.10 %	22.6 %
Government/Civil servant	1.8 %	26.3 %	6.5 %
Fisherman	19 %	14 %	6.5 %
Private sector	51.3 %	10 %	16.1 %
Other related hospitality industry	11.10 %	36.3 %	48.4 %
N	**204**	**300**	**45**

Source: First Survey, UNDP (2010)

A majority of the respondents have primary and secondary school education. Comparatively between the Islands, Redang had quite a big percentage of those that did not have any basic education at all.

As indicated in table 5.4, it was found that Tinggi Island has the highest percentage of self-employment and people working in related hospitality industry. Tioman had 36.3 percent employment in the hospitality related industry and the highest employment in the government sector. Redang Island has the least percentage of people working in hospitality related industry but highest percentage of fisherman. The percentage of self-employed is also high in Redang.

Table 5.5: Percentage Income Level (RM/month)

Level of Income	Redang	Tioman	Tinggi
Less than RM500/month	5	10.8	0
RM501-1,000	60	29.7	14.3
RM1,001-1,500	15	24.3	0
RM1,501-2,000	15	16.2	42.8
RM2,001-2,500	5	5.4	0
RM2,501-3,000	0	2.7	14.3
➢ RM3,000	0	10.8	28.6
N	**204**	**300**	**45**

Source: First Survey, UNDP (2010)

Similarly, the low income level remain a living reality among the respondent as almost 60 percent of Redang community and 29.7 percent in Tioman reported a monthly income of between RM500 - RM1000, while in Tinggi, the bulk of the respondent earns between RM1,501 – RM2,000. A large majority of Tioman Island's respondents (about 81 percent) earned less than RM2,000 per month. The trend is somewhat similar to Redang where the main distribution centers around RM500 to RM1,500 per month. Compared to 60 percent of Redang's respondents, only about 29.7 percent of Tioman's respondents earned between RM500 to RM1,000 per month. Refer to table 5.5.

An important aspect noted is related to the hard core poverty (income of less than RM572 per month). About 10.8 percent of Tioman's respondents are in hard-core poverty category. This rate is higher than percentage recorded in Redang or Tinggi Island. Another interesting figure is that, also in Tioman 10.8 percent of the respondents are in the upper income bracket (earning more than RM3,000 per month). Comparatively, no one in Redang admits that they earn more than RM2,500 per month.

Therefore, income distribution in Tioman Island is in wider spread than Redang Island although both shows clustering in the lower income group category. By just taking into consideration income to measure poverty, the hard-core poverty and those in low income category (less than RM1,500 per month) in all the three islands are considered high especially considering that poverty incidence in 2009 in Malaysia is 3.8 percent and hard-core is 0.1 percent in Johor, 0.3 percent in Pahang and 0.5 percent in Terengganu (Ragayah Mat Zin, 2011).

The question of economic vulnerabality become crucial as these groups are likely to fall below the poverty threshold level. Age and level of existing assets do increase the economic risk among community. Factors such as education, employment in main sectors such as tourism and asset ownership may mitigate the degree of vulnerability in income (Fatimah Kari et al., 2011). The survey result among fishermen showed that about 58 percent are willing to go for alternative income generating (AIG) as a means of sustaining their livelihoods (Table 5.6).

Table 5.6: Willingness to Find Alternative Income Among Fishermen

	Frequency	**%**
Valid 0	36	40.4
1(Yes)	52	58.4
2 (No)	1	1.1
Total	89	100.0

Source: First Survey, UNDP (2010)

As for tourism, many of the operators have vertical and horizontal integration within the industry and this may be the reason why tourism may be a good “hedge” against income variation. The types of alternative employment other than fishing in the three islands are tourism related which are chalet operation, boat and renting of snorkeling and diving equipment, restaurant, crafts and provision or retail shops.

The locals in the MPAs studied have two problems. First, the local community lacks the financial resources and finds it difficult to gain access to start up fund to finance prospective business activities and small loan from financial institutions require collateral to hedge against risk and default. Such condition does not augur well among small business operators in the community. As such, a new financing mechanism is needed to make sure that depth, breath and length of funding serves the needs of small business operators. New lending mechanism and financial engineering need to be design to be more market friendly where shared joint liability between creditors and lenders must be developed as part of the financing scheme.

Secondly, inadequate and inexperience in skills and knowledge to operate and be competitive in the tourism related industry. Thus capacity building among those interested locals is absolutely necessary. Workshops and seminars with regard to market analysis and development need to be conducted for the local community. Such requirement will need to be designed together with the funding requirement of prospective small entrepreneur among the community.

5.4 The Community Co-operative: A Vehicle for Community Business Consultative Model

5.4.1 The Community Co-operative Model: Planning/Diagnosing (First cycle)

Community co-operatives will be the alternative grass root enterprises formed in the villages with the endeavor to promote sustainable development through income generating projects. Members should decide on the type of activities and businesses which are most appropriate for them and their co-operatives. Most importantly, these activities should be related to efforts in eradicating problems confronting them. The implementation of co-operative's activities should follow these strategies:

1. Intervention and monitoring by the local agency and team of promoters within the community.
2. Taking into perspective the problems and need of the disadvantaged groups.
3. Incorporating the locals and their specific talents and expertise.
4. Human development, training and technical assistance.
5. Ongoing educational and skill enhancement process.
6. Appropriate technology development.
7. Adequate fund to finance programs and projects.
8. Political neutrality to ensure continuity through changes in government.
9. Address the environmental and natural resource issues.

Two types of co-operative models were proposed for the MPAs. The co-operative models were presented and discussed in the State Steering Committee meeting involving the Marine Park Management Plans in Kuantan on the 9th November 2010.

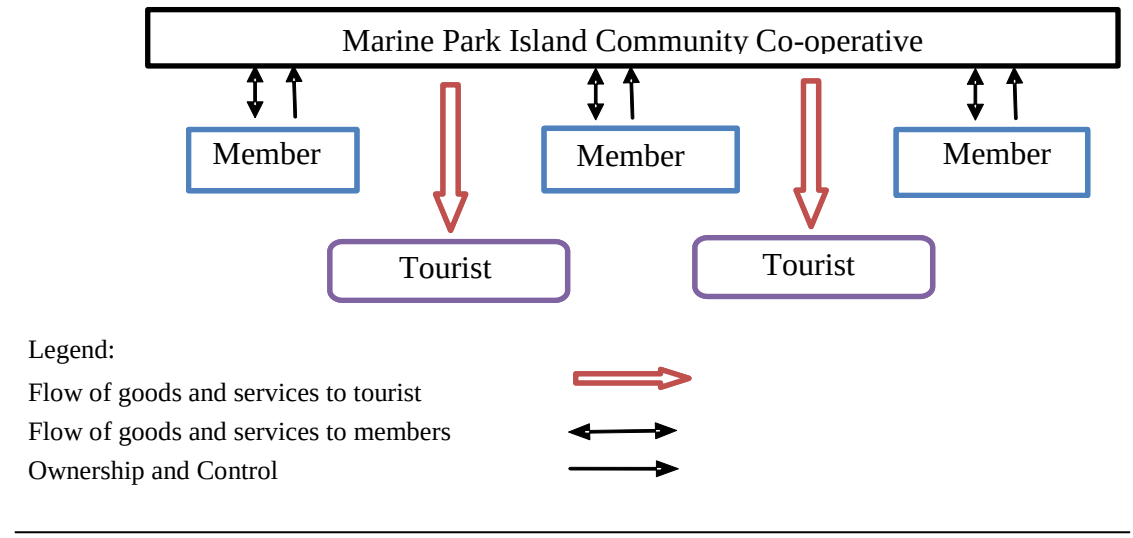

Figure 5.5a: First Model: Marine Park Island Community Co-operative

Figure 5.5a is the first co-operative model where the co-operative was to initiate business activities to generate a steady stream of income for the co-operative. The operational business activities will be manned by its members as workers and management of this establishment. Members and others in the community benefited from employment creation, dividend on shares from business profit and as suppliers to the co-operative business.

An example of such activities is the setting up of a traditional chalet and homestay concept of businesses. Co-operative will identify suitable land to be developed and make necessary applications to the authorities concerned. The co-operative will develop land and transform it into a traditional chalet resort. Workers and managers of the resorts will be among co-operative members and any eligible members can become suppliers to the resort. Such activities may be in supplying food items, laundry services, tour guide services and others. Other potential activities that co-operative can start is opening handicraft shop selling crafts produce by members and the community.

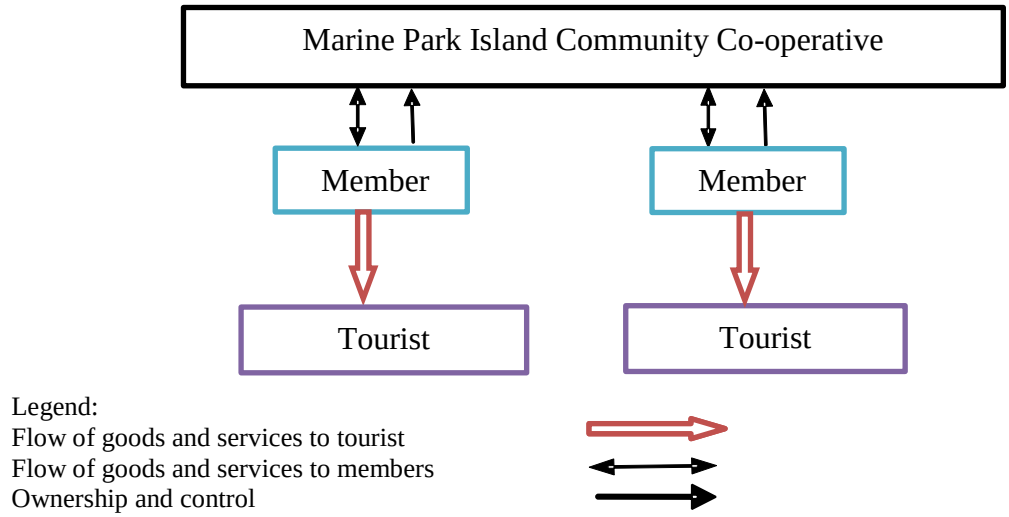

Figure 5.5b: Second Model: Marine Park Island Community Co-operative

The second model (in figure 5.5b) is a business concept whereby co-operative members will own businesses whilst the co-operative will assist in the development of their business. Members will operate the businesses as their own entity whilst co-operative will use their net-working and establishment to promote members' business. In return, co-operative will also generate direct and indirect revenue from helping members in their business. However, the employment creation will not be created by the co-operative but directly by its members' business.

An example of such activities is homestay services activity offered by residents who are co-operative members. Co-operative can play a role by facilitating loans with low interest for members to upgrade their houses and set up web page to market their business. Co-operative could provide seamless travel itineraries for tourist. The revenue for co-operative comes from commissions received from each ecotourism tourist paid by homestay owner or from a markup of the total package price. Co-operative can also get income from boat transport services bringing in tourist from mainland to the island.

Co-operative may own the boats or in instances where members own the boats service, co-operative promote boats services belonging to members. Other examples of activities that co-operative could organize are trips or events within the home stay program which are suitable and agreeable by members of the community such as beach dinner, picnic for families, educational jungle walk or trekking, snorkeling, cultural shows, handicrafts making, traditional cake making activity and others. All these programme must be promoted and advertise widely through the conventional media or the internet.

Educational events related to ecotourism are activities that could be organized by co-operative in both of the models. Such activities might be in the form of replanting of mangrove, trees, bird viewing and fish or other animal feeding activities. These activities can generate revenue to co-operative and its members. Members can participate as tour guides or resource person in these activities.

The involvement of co-operatives in the preservation and conservation of environment is crucial. Co-operatives should promote activities that enhance social responsibilities such as cleaning beaches, rivers, public parks or other public areas through mutual co-operation or “gotong royong”. These events can also include tourists but, such events should not generate revenue. It should be an avenue to bring people in the community together and strengthen social ties. The fundamental needs of the Marine Park community include a clear and tangible mechanism that can be used as a “consultative vehicles” to enable economic program and business plan to be implemented and generate employment and income among the community.

5.4.2 Planning Action: Second Cycle of Action Research

The researcher and consultants visited the state MCSC directors in Kuantan (on the 29th October 2010) and Kuala Terengganu (on the 7th November 2010) to discuss the establishment of the co-operatives. From the conversations, it was certain that the directors met were aware of the importance of these community co-operatives and were receptive and supportive to the community co-operative proposal in MPAs.

Among matters discussed are factors that might constitute to possible problems in the process of establishing co-operatives such as community empowerment, lack of interest and support from locals, ignorance in co-operative concepts among villages and leaders. Full co-operation and positive feedbacks were given to us. Officers' in-charge of the respective area will be helping the villagers in the setting up of co-operative.

The application for co-operative's formation was made simple and free using the downloadable forms from the MCSC official website. Instructions given are clear with MCSC contact person's number. The team conveyed all the relevant information to the villagers.

Following this, preparation to establish co-operative began. The process of identification of villagers to lead the effort, started with discussions with the village leaders. The consultants with the help of DMPM staff got the volunteers names, identity card numbers, other related information and their signatures to complete the application forms and send the forms to the respective MCSC office.

Getting volunteers are difficult in all the three Islands. It was especially hard in Tinggi and Redang islands initially as there are not many people willing to give up their time to be involved in the co-operatives. Apart from that more villagers are willing to be just the ordinary members and prefer to be followers. From discussions with villagers, the researcher found out that opportunity costs that they have to bear as members of co-operative are mainly the reason.

Factors that discouraged them from volunteering are difficulty to take leave from their employment or their busy schedule in the case of self-employed. In minimizing the opportunity costs and ensuring a good turn up for co-operative meetings, the meetings are scheduled after work or during the weekend. Besides work related issues, some villagers are reluctant to be BOD because they felt too shy, inadequate in term of knowledge or incapable to be in the co-operative management team because of lack of experience.

The process of establishing the new co-operatives follows all the MCSC guidelines. According to the Co-operative Societies Act 1993, co-operative must consists of at least fifty individuals, the individual is qualified for membership under section 26 and is not disqualified for membership under section 27 (Law of Malaysia, 2008). The whole process of establishing the co-operatives took roughly about a month from the date of application.

The co-operative law requires all co-operatives to establish a pro-tem committee which comprise of at least 10 people. This pro-tem committee needs to identify their co-operative's activities, prepare co-operative's by-laws and register new members of the

co-operative. The MPAs personnel helped with most of the paper work for the co-operative establishment.

The Community Consultative Committee (CCC) was established following a meeting held on 27 January 2011 (UNDP, 2011). The CCC in all the MPAs had played their role in communicating with other villagers regarding of the new co-operative establishment. All three co-operatives have a minimum of fifty local members. After registration has been approved, co-operative must conduct the first preliminary general meeting (PGM).

Up to this point of AR process, all the MPAs have established community co-operatives in their community. The co-operatives are:

1. Koperasi Penduduk Pulau Tinggi Mersing Berhad (KPTMB) for Tinggi Island.
2. Koperasi Penduduk-Penduduk Pulau Tioman Rompin Berhad (KPTRB) for Tioman Island.
3. Koperasi Pelancongan Penduduk Pulau Redang Berhad (KPPRB) for Redang Island.

All the co-operatives have had their preliminary general meetings (PGM) held in their respective villagers on the 8th March 2011 for KPTRB, 17th March 2011 for KPTMB and 31stMarch 2011 for KPPRB. As required by the co-operative law, an officer from MCSC was present in these meetings. The officer had given advices and support in the conduct of the PGM to the villagers. The researcher had attended the meetings with co-operative members to observe and document the decision-making process in the three co-operatives.

The meetings started off with a villager proposing a person among them to be the meeting chairperson. The second meeting agenda is the decision on the establishment of the co-operative. It was in this meeting that the co-operative was formally proposed and the villagers unanimously agreed with the establishment of their co-operative.

PGM of co-operatives in all the three islands had followed the co-operative law and democratic procedures. This is very important as this concurred with the democratic member control which is the second co-operative principle. The members had exercised their democratic power and played a part in making decisions on matters such as in deciding and accepting the by-laws of their co-operative, the fee, minimum and maximum amount of shares that their co-operative imposed on membership, the numbers of BOD, their rights and liabilities and the limit to the amount that co-operative could borrow from outside sources. Co-operatives followed the one member one vote policy. In this meeting all members have exercise their rights by voting in the decision-making of their co-operative. They then decided on the management of the co-operative and elected their co-operative Board of Directors (BOD).

Photos of the PGM held in Tioman, Tinggi and Redang Islands are in figure 5.5, 5.6 and 5.7 in the appendix H of this thesis. List of BOD's names from the three Island is also in appendix H. Encouraging turnouts and supports were given by villagers during the PGM of the three co-operatives. Apart from the adults the researcher observed that some villagers even brought their children along. The good turnouts indicated that villagers are serious about setting co-operative in their Island.

Besides an officer from MCSC, representatives from DMPM and UNDP were also present to show support for the meeting. Relatively equal numbers of men and women

have attended the meetings. Men and women in the communities seem to have equal opportunity in the participation and decision-makings related to their co-operative activities. Participants were given opportunity to interact and ask questions during meeting. The questions asked by them are questions related to the role and future of co-operative, benefits from having co-operative, high cost of living in the Island and funds for their co-operative.

5.4.3 Taking Action: The Third Cycle of Action Research

The action research cycles came to a third cycle in April 2011. Following the PGM, other follow-up meetings took place to discuss the next course of actions. The meetings were focused on the future directions of their co-operatives. Based on this meeting, the consultants had helped the BOD to develop their co-operative business plan. The goals, objectives, marketing plan and strategy, financial and human resources plan were stated clearly in the co-operatives' business plan.

5.4.3.1 Koperasi Penduduk-Penduduk Pulau Tioman Rompin Berhad (KPTRB)

The Island CCC, UNDP consultants and pro-tem committee members met on the 25 April 2011. The SME bank representative was also invited to give inputs in the meeting. Meeting between CCC and the co-operative members began at 8.30am and finished at 11.30 am.

Matters arising from the meetings were related to the future of their co-operative, co-operative business plan, and how the co-operative is going to help them and their community. The representative of SME bank suggested a master plan of co-operative

business activities. In coming with the plan, various problems encountered were discussed and then participants proposed ways to solve these problems.

Co-operative members want their co-operative to solve problems of high cost of living. They suggested that they could buy the basic necessities in bulk thereby reducing the price of goods through co-operative. Cost of foodstuffs and other goods are expensive because transportation costs of bringing in goods to the island are high. One chalet operator told the researcher that he spent RM10,000 monthly on cost of transporting goods required in his business. Despite his business currently making profits, he has to find ways to reduce his operating costs as the number of tourists both local and foreign fluctuates, he received complaints from customers of the high cost of food in the island and he is vulnerable to many risks in the hospitality business.

The villagers have decided to divide their plan into two phases. The first phase will be their cargo boat project to solve the high cost of transporting goods into their Island. In the first phase the co-operative will also be involved in the mineral water trading business. The co-operative will be supplying mineral water to business operators and consumers at a cheaper price. Other businesses proposed by members are setting up bread, noodles and batik factories. Phase two of the co-operative plan involved the co-operative ownership and managing of two ferry services. The members also plan that that co-operative should secure external loan when the business became financially strong to enable investment in bigger business.

Members had discussed ways to promote and advertise their co-operative. At the moment with only fifty members and with RM100 share contribution from each member, their co-operative will only have RM5,000. They had discussed ways to

encourage other residents' participation in the co-operative at great length. In trying to accumulate more capital, this became an important topic. A local businessman has volunteered to be in-charge of the co-operative promotion and road shows to advertise their co-operative to the Islanders.

5.4.3.2 Koperasi Pelancongan Penduduk Pulau Redang Berhad (KPPRB)

On the 12th May 2011, KPPRM, the Redang Island's co-operative members and their CCC met to discuss the next course of action after their successful PGM. The meeting took place at their community hall, Kampung Baru, Redang. The Redang villagers are from the new village settlement. Most of them used to be fishermen and used to stay in the village by the sea. Unfortunately, their settlement was confronted with beach erosion. As a result of the erosion, the government moved them further down the main land to the new village. This new village is a small village with a community hall, a primary school, a police station and a small health clinic.

Again this group had focused around the directions of their co-operative as they want to start activities that could generate income fast. They were more concerned about the economic benefits as they felt that with economic benefits they will be able to uplift their wellbeing and then organized other social activities.

The members wanted to have a "keropok lekor" business. They believe that there is demand for "keropok lekor" in Redang. Besides local consumptions, visitors to Redang and tourist resorts will be their customers. "Keropok" is a local delicacy which is also synonym with the Terengganu state and they will not have problem marketing it as there is always a demand for "keropok". Currently this demand was met by bringing in "keropok" from the main land. As with other foodstuffs (rice, flour, cooking oil, eggs

and others) all these food items are brought over from main land making it very expensive. They also believe that they have the knowhow and skill to make “keropok” but they lack capital, raw materials are expensive, machinery to process fish and they require a factory. Starting this project is also good as it is incorporating local indigenous knowledge and skill in the process.

Redang co-operative members and CCC also proposed the setting up of a bread and cake factory. This is to cater to the needs of the villages as bread costs three times more expensive on the Island. Apart from helping to reduce the price of food, a factory would create jobs for the villagers. The villagers believe that having a factory managed by the co-operative would provide employment for their local youth and women. Related to these industries they also want to set up an ice factory. Ice factory will produce ice for fishermen’s usage and for shops and restaurants in Redang. Ice is needed to keep their catch fresh. The Co-operative Art and Crafts Shop is another idea that they wish to pursue. Since the Island is frequented by a lot of tourists, this shop will be selling local crafts to visitors.

5.4.3.3 Koperasi Penduduk Pulau Tinggi Mersing Berhad (KPTMB)

The follow-up meeting for Tinggi co-operative took place on the 26 May 2011 at Tg Balang, Tinggi Island. KPTMB Tinggi Island has a very limited population and the least number of tourists’ visitation. Those villagers that stayed behind in the island were related to each other, have strong bonds with the island natural surroundings and love their village very much. The village leader’s place, Chalet Tok Mok’s is the center of activities and at the same time an ideal meeting place. Tok Mok is well respected by all the villagers, very discipline and hard working person. However he only prefers to be

ordinary member and has declined to hold any posts in the co-operative. His decline to be part of the pro-tem committee meant that there are not many left for co-operative BOD.

Those that attended the meeting were passionate with the "old ways" of making a living by fishing and have decided for a recreational reef project. They are appealing to DMPM to allocate a special area to build artificial reefs as habitat for fishes and other marine life. Members will manage and control the access to area and takes care of the environment and marine conservation aspects through the co-operative. They have targeted better income generated from this reef project in a few years after the starting of project for members. They have also proposed homestay programme to be undertaken by the villagers and managed by the co-operative in the effort of catering for future increase in number of tourist coming to their Island. Apart from this, another related activity will be to offer nature experience activities by their co-operative.

After going through the meetings with the villagers and recalling from the notes and observations from the meetings, the researcher realized that there are many problems to be solved in order to realize the co-operative goals. The three communities have different challenges and resources at their disposal are varied. The task ahead all of us seemed huge and daunting.

As discussed in the literature review there are many examples of successful community co-operative. An example of a successful community ecotourism co-operative already established in Sabah that can be emulated by Tioman, Tinggi and Redang Islands is the Batu Puteh Community Ecotourism co-operative or KOPEL (Koperasi Pelancongan Mukim Batu Puteh, Kinabatangan Berhad). This co-operative is located at the central of

the Lower Kinabatangan River, Eastern Sabah. It comprises of Batu Putih, Mengaris, Perpaduan and Singgah Mata villages. The co-operative provide homestay package, boat service, cultural show and event, tourist tour guide, forest and lake conservation. The co-operative is an effort formed to amalgamate a number of separate village ecotourism associations such as MESCOT[15], Miso Walai Homestay, Mayo do Talud Boat Service, Wayon Tokou Nature Guide Service, MESCOT Culture Group, and the Tukun Tokou Handicrafts Associations.

Without doubt, this co-operative will only be successful provided there is total involvement and commitment from all community concerned. Apart from that, this project must mobilize local leaders, resources and local indigenous knowledge and give consideration towards the needs of local businesses as well as residents. Social and political will power is needed in ensuring their success especially as the goals are at providing more job opportunities and reduces income poverty. With the help from the consultants each of the co-operatives got their business plan ready. Each co-operative received RM30,000 as seed capital allocated by the UNDP to start off their co-operative activities.

[15]MESCOT is a community-based conservation and ecotourism initiative established in 1997 in the Lower Kinabatangan River region of Sabah, Malaysian Borneo. This region and its lowland rainforests are recognized as critical for conservation of biodiversity in Sabah. Sadly, due to over-logging, land conversion to palm oil, deforestation and forest fires, this area has been severely degraded and fragmented and the wildlife is in danger.

5.4.4 Making the Membership Meaningful

This section is also related to the third cycle of this action research. The “true believers” are those villagers in the Community Consultative Committee (CCC) and those that have been elected as BOD. As pointed by Birchall (2004) these are the key players in the success of the co-operative and they will influence the process underway from here. It is very important to support and motivate them to ensure that they are able to play their role effectively and for them to feel that membership in the co-operative is meaningful.

Although all the three co-operatives established had potential, leaving the co-operatives in the hands of the locals without guidance and help in the early co-operative establishment would result in co-operative failure. The success requires a huge commitment from the BOD and the CCC. The challenge is to ensure that these people are focused on their co-operatives objectives, business goals and targets. They need to see clearly their purpose and as a team, strive to achieve these goals.

Therefore in line with the fifth co-operative principle, education, training and information, the UNDP consultants and researcher believed that focusing on educating the BOD, members and enhancing their understanding and capabilities are the best solution. The ability of these co-operatives to functions, developed and enforced social cohesion in the community relies on the membership and leadership (Zeuli & Radel, 2005). Lack of local leadership is clearly a problem especially in Tinggi Island as the population is very small as a result of out-migration. Yet, co-operative members are social capital which can strengthen the co-operative.

With the view of tackling the human capital problem, efforts to enhance co-operative members' knowledge and understanding of co-operative management and administrations especially among the "true believers" are done firstly through capacity building programme.

The researcher had contacted the Co-operative College of Malaysia (CCM), Consultation Center in Petaling Jaya, Selangor to arrange for workshops on building villagers' knowledge and understanding and management of co-operatives. Lecturers from the CCM were invited to become part of our team in conducting these workshop sessions. It is absolutely necessary to increase community support for the co-operative. The BOD has to identify and update their co-operative membership. They have to find ways to get the widest participation from others in their community. Those people are regarded as type 2 member that is people who support and believe in co-operative but are not in the BOD and type 3 (have not participate but very keen and interested in co-operative) people need to be recruited into the co-operative.

5.4.5 Evaluating Actions and Reflections: Fourth Cycle

It is important to evaluate actions and consider whether this is a right decision taken in AR. This requires an evaluation of the actions taken in the previous cycle (third cycle). The team had organized training workshops to fill the knowledge vacuum among villagers regarding co-operative. In all the workshops conducted participants are asked to fill the evaluation forms by the consultants.

5.4.5.1 Findings from the Co-operative Trainings Conducted for Tioman, Tinggi and Redang Island.

The co-operative management and administrative training workshop was conducted for Tioman and Tinggi on the 20-22 July 2011 at the Persona resort, Tekek village, Tioman. This workshop was held at the same place as both islands are closely located. As for Redang Island the co-operative training was on the 27-29th July 2011 at their Community Hall, Kampung Baru, Redang. These trainings served to be part of the compulsory course requirement imposed by MCSC on new co-operatives. Consultants and researcher had also attended these sessions. The researcher's discussion with villagers during workshop revealed that villagers have very limited knowledge about managing co-operative.

A total of 21 participants from Tioman and Tinggi had attended these sessions. The participants comprises of 14 men and 7 ladies. As for the age of participants attended are less than 30 years old (31.6 percent), 31-50 years old (36.8 percent) and more than 51 years old (31.6 percent). For Redang workshop, a total of 23 participants went for their training. The gender composition is 6 men and 17 ladies. Their age-group are less than 30 years old (5 percent), 31-40 years old (30 percent), 41-50 years old (45 percent) and more than 51 years old (20 percent).

The participants gave feedback and rate their level of satisfaction on a survey form distributed to them after the workshop session. The participants were asked about their knowledge on the topics before and after workshop.

More than eighty percent of participants felt that informations received during the training are relevant to their needs. All participants are satisfied with the overall quality

of the training. They also agreed that the information disseminated to them is easy to understand.

This high percentage of satisfied participant is important as these participants' positive reaction meant that efforts to inculcate co-operative knowledge are on the right tract. It is very important to ensure that this group of type 1 co-operators fully understood the philosophy and concept of co-operative as they have important roles to play in their co-operative. They became the link between co-operative and the other villagers (non-members who may or may not support the co-operative). After they went back to their village, they are supposed to spread the co-operative knowledge to others.

The participants are asked to indicate their level of knowledge about the topics discussed before and after completing the training. Table 5.8 and displayed the participant's level of understanding and knowledge on topics that were discussed in the workshop.

Table 5.7: Participants Level of Understanding and Knowledge about Co-operative

	Tioman and Tinggi		**Redang**	
Topics	**Before workshop**	**After workshop**	**Before workshop**	**After workshop**
Co-operative background and co-operative concepts	14 %	90.5 %	13 %	83 %
Role and responsibilities of BOD	19 %	90.5 %	17 %	91.3 %
Laws and Regulation of Cooperative Meetings	10 %	86 %	13. %	91.3 %
Financial Management of the Co-operatives	10 %	86 %	26.1%	95.7 %
Administration and Supervision of Co-operatives	14%	95.2 %	17%	91.3%
Entrepreneurship in Co-operatives	10 %	86%	26.1%	87%
N	21	21	23	23

Before attending the workshop the participants' understandings of co-operatives were low. However, after attending the workshop their understandings have improved. This is

a major positive shift that the researcher and consultants are hoping for as knowledge and understandings of co-operative are key elements of co-operative success.

Knowledge about the role and responsibilities of BOD of co-operative is important for co-operative progress. The researcher and team are confident that with knowledge participants will be motivated and they will have the confidence to play their part as BOD in their co-operatives. With knowledge instilled, the participants will be empowered to run and manage their co-operative according to the rules and regulations of the Co-operative Law.

As a registered organization co-operative must be run based on the Co-operative Societies Act 1993 and the by-laws. The understandings of co-operative laws and regulations are important as this provides guidelines and ensure transparencies on the control and running of the co-operatives. As a democratic organization, the co-operative requires a majority of decision-makings to be done by members themselves through attending their co-operative meetings. Knowledge in the procedures of meetings therefore, is important. The goal is to make sure that co-operative values which comprise of honesty, trustworthiness and transparency are practice by members in the management of their co-operative.

Equally important in the administration of co-operative is knowledge in financial management. Related to financial management, entrepreneurialship skill is also fundamental in creating opportunities through income generating activities. The participants need to establish that entrepreneurship need not be individual but it can be through their co-operative thus benefiting everyone. The workshop discussed about the opportunities and challenges of being an entrepreneur and the future sustainability of the

business within the participants' business environment and their geographical distance from the mainland. In the workshop, the instructor had linked co-operative's roles with the spirit of entrepreneurship. The participants' knowledge about entrepreneurship is equally low before attending the workshop but had increased significantly after attending the workshop.

The participants felt that this training workshop had met their expectations. They definitely will recommend this workshop to others because they felt good and responsible for their co-operatives. They wished to share the experience with others. The participants had also suggested that more training should be conducted in the near future. The researcher believes that these workshops have successfully imparted knowledge about co-operative organization, management and co-operative law, and regulations among the participants. This has greatly reduced their fears on co-operative business failure and increases their confidence in the co-operative.

C. Second Training for Tioman and Tinggi Island Co-operative Members

Another training workshop was conducted on the 20-22th September 2011. This second workshop was held in Salang Pusaka, Kampung Baru, Salang, Tioman Island. The training was focused on decision-making processes in co-operative, accounting and record keeping.

A total of 27 participants had attended the trainings. They comprise of 16 men and 11 ladies. Regarding age of participants, 31.6 percent of the participants are below 30 years old, 36.3 percent from 31-50 years old and another 31.6 percent are above than 51 years old.

The responses from the participants are displayed in table 5.10 below. It was disclosed that majority (96.3 percent) of the participants felt that information received during the training are relevant. All participants felt that the presentations of the instructors are of quality and informative. All participants are satisfied with the training facilities and the overall quality of the training. They also agree that the information disseminated to them is easy to understand. The researcher believes that the usage of multimedia and various examples from other co-operatives by instructors during training has helped the participants in the understanding.

Table 5.8: Participants Level of Understanding and Knowledge of Co-operative Workshop Topics

Topics	Before workshop	After workshop
Co-operative decision-making process	37 %	93 %
Co-operative Accounting	19 %	96 %
Record Transaction Method in Book keeping	15 %	88 %
Co-operative Law	19 %	96 %
N	27	27

The participants have indicated their level of knowledge about the topics on co-operative decision-making, accounting, transaction methods in book keeping and co-operative law before and after completing the training. Table 5.10, showed participants' responses regarding topics presented to them during workshop.

As BOD, they would have to make decision on matters related to co-operative. As most participants have no experience in co-operative before, this training is considered crucial. Before the workshop 37 percent of the participants had some knowledge about decision-making process in co-operative, whereas after the workshop, about 93 percent had indicated that they now have good knowledge on the topic. Before attending the workshop, the percentage of participants having knowledge about accounting is only 19

percent. After the attending workshop, the percentage of participant with knowledge regarding accounting has increased to 96 percent.

The participants' response towards knowledge about record transaction method in the book keeping after workshop has reached to 88 percent in contrast to only 15 percent before attending workshop. Although this is a big different between before and after workshop, the researcher felt that future workshop should stress upon familiarizing the participants on intermediate and advance record keeping, cash flow information management and financial presentation. An adequate knowledge on accounting and book keeping is crucial as these people will be responsible for their co-operative financial and business transactions. The researcher found that those participants who knew most about record transaction in book keeping have basic knowledge about book keeping during their secondary schooling.

Topic discussed and related to participants on co-operative law was perceived as important by them. A majority of them felt that they have learned a lot from the workshop. The researcher felt that other legal acts should be incorporated in the workshop especially business law such as contracts, consumer protection and environmental acts. They hope this type of workshop will be carried out continuously for the benefits and welfare of Tioman folks.

D. Third Training Workshop on Organizing Co-operative Meetings for Tioman and Tinggi Islands Co-operatives.

At the end of October, a third training related to organizing co-operative meetings was conducted among members. It was held from the 28-30th October 2011 at Peladang Inn, Tekek Village, Tioman Island.

A total of 21 participants (13 men and 8 ladies) from Tioman and Tinggi Island co-operatives members attended the training. The participants comprised of those who are less than 20 years old (33.3 percent); between 21-30 years old (19 1 percent); between 31-40 years (14.3 percent); between the age of 41-50 years (14.3 percent) and 19 1 percent was more than 51 years old.

The participants were asked to indicate their level of knowledge about the topics in table 5.11 before and after completing the training. Before the workshop only about 10 percent of the participants know matters regarding Annual General Meeting (AGM). However after attending the workshop, about 95 percent of the participant acknowledged that they had good knowledge on AGM.

Table 5.9: Level of Understanding and Knowledge of Participants about Co-operative Workshop Topics

Topics	Before workshop	After workshop
Introduction to Co-operative AGM	10 %	95 %
How to prepare for AGM	10 %	95 %
Managing & controlling Co-op AGM	5 %	95 %
Understanding the Actions after AGM	24 %	90 %
Preparing AGM minutes	19 %	100%
N	21	21

Regarding participants response on knowledge about AGM preparation, majority had no knowledge at all about matters related to AGM preparation. The workshop has been

successful in helping members to understand the importance of AGM and how to prepare this once a year event.

A successful AGM relies on competent BOD and management team to handle the AGM. Due to the heterogeneous membership, organizing and conducting AGM can be a complicated matter. A majority responded they knew about the management and control of AGM (while meeting is in progress) after attending workshop.

Equally important is on the participants' responses toward knowledge about actions (what need to be done) after the AGM. Before attending the workshop, about 24 percent of the participants knew a little about this topic but after workshop 90 percent have good knowledge. The participant's feedback on AGM minute preparation before attending the workshop revealed that 19 percent knew about AGM minute preparations. Nevertheless, after attending the workshop all the participants have good knowledge about this topic. Finally, all participants felt that after the workshop, they are confident in handling their forthcoming AGM.

The aim of this training is to prepare participants to organize their co-operative AGM, to conduct AGM effectively and successfully and to understand the ramification of failure to conduct and document their AGM. The training has successfully inculcated the importance in managing and conducting proper AGM according to co-operative laws and regulations. The workshop also tried to motivate participants to work together as a team for the success of their co-operative. In the process of team building, participants were given tasks to complete in groups. Participants had to work and finish the task given by lecturer during training. Group problem solving, collective decision-making, group dynamic enhancement and leadership exercise were also the focus of the workshop. In all the workshops that the participants went to, the aim is to promote the

collectivistic incentives which comprise of their shared goals and values. These goals will then strengthen their sense of community. Photographs were taken to document the activities. These photographs are in appendix H of this thesis.

5.4.6 Evaluating the Co-operatives Performance

After over a year of establishment, an evaluation of the three co-operatives' performances was undertaken. The researcher and the UNDP consultant had a discussion on the progress of the three co-operatives since the inception of the co-operatives by taking into account the progress and performances of the co-operative business and social activities. The performance evaluation also consider various observations and experiences that the researcher gained through interactions with villagers and MPAs officials during visits, meetings, various trainings and workshops that were conducted previously.

A key performance index (KPI) was constructed to measure the co-operative's performance. This KPI is used to evaluate co-operative success (or failure) in relations to the achievements of these co-operatives. Five key factors related to co-operative performance are used as KPI indicators. These factors are the leadership quality in the community, community involvement in co-operative project, progress in term of membership size, the number of activities in progress based on their business plan and the entrepreneurial skills among co-operative members.

The indicators considered and the marks allocated are as follows:

1. Leadership quality……..5 marks maximum
2. Community involvement……5 marks maximum
3. Current membership size……5 marks maximum
4. Number of activities progressing……5 marks maximum
5. Entrepreneurial Skills……..5 marks maximum

Total ……25 marks maximum

Each indicator is given five marks maximum. The marks are given based on the following scales:

1……Very Poor
2……Poor
3……Good
4……Very Good
5……Excellent

Table 5.10: KPI Achievement of the Three Co-operatives: Total Marks and Percentage

Indicators	Tioman Co-operative	Redang Co-operative	Tinggi Co-operative
Leadership quality	5	3	1
Community involvement	4	3	2
Current membership status	5	4	2
Number of activities progressing	4	3	0
Entrepreneurial Skills	5	3	1
Total marks	23	16	6
% achieved	92 %	64 %	24 %

Both table 5.10 and figure 5.6 showed Tioman co-operative achieving the highest score followed by Redang and Tinggi co-operatives. In all aspects of the indicators Tioman scored very well. This is very different with Tinggi co-operative that performed poorly. None of the activities proposed took off. The failure in execution of their plan and activities is the result of very poor leadership, poor community involvement and very poor entrepreneurial skills.

The co-operatives biggest challenge is not in their establishment but in moving forward together, executing their plan, progressing efficiently and achieving a socially inclusive society. The result of co-operative performance indicates that all three co-operatives have gone through different progress path. Only Tioman and Redang co-operatives are progressing.

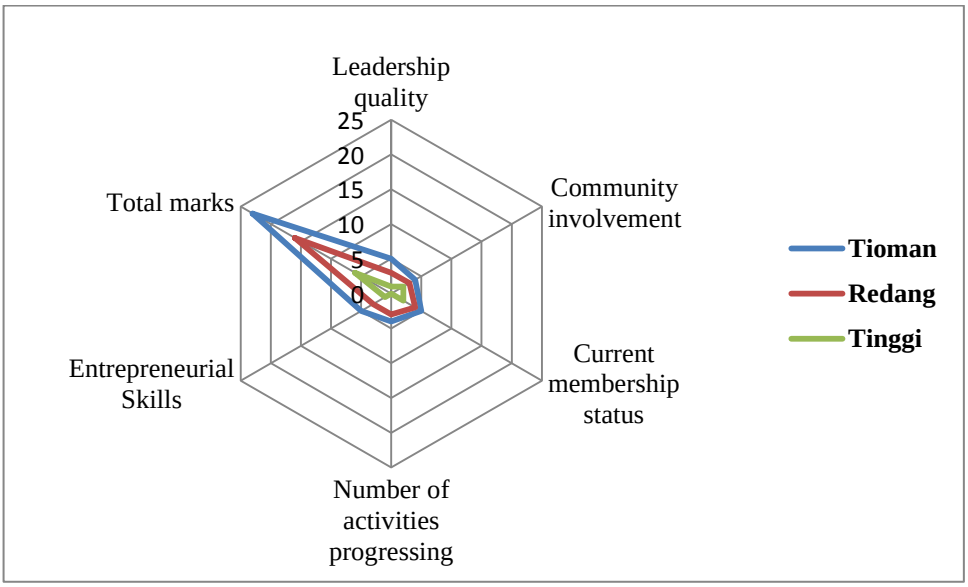

Figure 5.6: Co-operative's KPI Values Relative to Center Point

Although the three islands went through the same establishment process, received the same financial and non-financial support, not all co-operatives succeeded. Tioman co-operative is successful whereas Redang co-operative is progressing moderately. The researcher, DMPM and UNDP have considered Tinggi co-operative as failed. The villagers in Tinggi have decided to discontinue their co-operative activity. The consultant and the marine park authority were informed about this decision in early 2013 by the villagers themselves. This is a huge setback on the community and stakeholders. The UNDP consultant has verified the prognosis of Tinggi co-operative's failure.

In terms of membership size, Tioman currently has over 200 co-operative members since their membership drive programme. Tioman is the only co-operative that took the initiative to increase members by doing membership roadshows and campaigns, thus had increase their type 2 and 3 members. Tioman's BOD have shown dedication and succeeded in communicating with a much wider people in their community. Redang's membership has a slight progress as now the members have increased to about 60 members since the inception. Redang have no membership drive programme hence mainly depends on the word of mouth which is inefficient in communicating and recruiting more members.

On paper Tinggi still have 50 members as required by MCSC for co-operative establishment. With regard to Tinggi co-operative BOD, they have a change of heart and had become reluctant in promoting their own co-operatives. Lack of support, dedication and commitment from the village head and elders had caused the community co-operative to collapse. Without leadership, those from Tinggi that went for the co-operative course and training were keen in pursuing their own interests and benefits as oppose to achieve their co-operative goals. As discussed in figure 5.3 the negative individualistic incentive in Tinggi co-operative are stronger than the positive thus, resulting in the members to decline participating in co-operative (Birchall & Simmons, 2004).

5.4.6.1 Reflections on the Co-operative Success Factors: Leadership Quality and Entrepreneurial Skills

In all three Islands, this research revealed that community values and sense of belongingness had led to conformity of the Island society to form the co-operative they needed. As discussed in the above paragraphs, various help, support and assistance were given to all the co-operatives to ensure success and sustainability of these co-operatives. However, these factors alone are not enough for the co-operatives to perform successfully.

When all the efforts of developing and building human capabilities have been done equally for the co-operatives, the researcher was left to look for other factors to explain the reasons for Tinggi co-operative's failure. Could it be the size of the island and population that matters? Tioman has the added advantage as the island is the biggest in term of size, has many villages and with bigger populations. The main villages involved in the research are Mukut, Tekek and Juara village. It is apparent that from these three villages, Tioman has more community leaders and members that are already involved in business related to tourism and hospitality. Tioman co-operative have progressed ahead Redang co-operative because Tioman have more local leaders or type 1 members as compared to Redang. The leadership and entrepreneurship are two factors contributing to Tioman's co-operative success. Having gone through courses in co-operative management and administration, law and regulations, book keeping and accounts have further enhanced the members' entrepreneurial spirits. These courses helped them acquired skills and knowledge for their own business and for the efficient co-operative management.

The Tioman communities have proven that they could work together and formed their co-operatives and execute their business plans. The co-operative have utilized the RM30,000 capital provided to their co-operative by the UNDP. Tioman's co-operative currently has started their water mineral trading and distributions business. The co-operative mineral water business (sourced from Kuantan) are doing well and are now sold widely in their members' shops, restaurants , chalets and resorts at cheaper price than other mineral water. Besides mineral water business, Tioman have also started their noodle, bread and cake production. Members that took courses in noodle, bread and cake making were given equipment and machine and have started their productions in Juara and Tekek villages. There are high demand for these food items from both the locals and tourists. Tioman co-operative BOD are in the process of running the ferry services to villages that have no ferry services such as to Mukut village.

Redang is smaller than Tioman both in term of size and populations. Redang's villagers involved with our co-operative programme are mainly from one sleepy "Kampung Baru" village. Similarly for Redang's co-operative those members went for skill enhancement courses, were assisted and are currently operating their business and are now marketing their bread and cakes products through the co-operatives. Although the initiatives are there to work as a team and making a difference in their income generating activities, the impact that Redang folks made is slightly slower than in Tioman. From observation, the reason may be due to the fact that co-operative activities are mostly handled by the women who are housewives. Commitments from the men are lacking as they would rather work in the private sectors such as in the existing Berjaya resorts, other resorts in Pasir Panjang village or work in the main land Kuala Terengganu.

Tinggi Island is smallest in terms of size and population. In the case of Tinggi Island co-operative, the village involved is only Kampung Tanjung Balang with very small population. Other villagers do not want co-operative from the start of the programme. Although the local leader (who is the village head), at first seemed supportive of the co-operative initiative but, from the start he was not willing to be part of the BOD therefore, it can be deduce that he was actually hiding his contention and was not revealing his disagreement with the co-operative initiative to others. Lack of leadership skills among the pro-tem committee has created problems for the co-operative. Although they have their business plan and RM30,000 has also been allocated for their co-operative activities, yet due to lack of entrepreneurial skills and unwillingness of the BOD to take responsibility to start their plans and business activities, their co-operative failed to progress. Members from Tinggi that went to various courses and workshops have choosen to given up on the idea of co-operative. They may have gained knowledge, skills and were empowered but are not strong enough to work together as a team for their community sake.

5.4.6.2 Reflections on the Co-operative Success Factors: Community Involvement

Participations in the co-operative (newly established) were motivated from their individuals sense of individualistic incentives and collectivistic incentives. This study found that those that had participated believed that he or she will benefit from co-operative activity and programmes. It was also observed that among the three island community, the spirit of co-operation is highest in Tioman and moderate in Redang.

It is from this spirit rose collectivistic incentives such as sense of community, shared values and common goals. Co-operative activities in the islands have promoted

economic and social inclusion. The existence of co-operative provides job and business opportunities to those individuals who are interested and willing to be engaged in various income generating activities that co-operative have planned. As a matter of fact, in Tioman and Redang (to a certain extent) co-operatives have helped play a positive role in intensifying this collective spirit which has become irrelevant and less intense due to factors such as modernization and globalization especially among the younger generations on the Island.

The researcher found that most participants from all three Tioman, Redang and Tinggi Islands were overwhelmed to be given opportunity to learn and gain new knowledge. The activities related to co-operative became a platform for social inclusion among all the communities. Empowerment through human capacity buildings enable many to embark on economic activities that will prevent them from being marginalized in the MPA. This should have transformed into new hope for better livelihood for them and their future generations in all islands instead of just Tioman and Redang.

5.5 Discussions, Recommendations and Conclusions

The community co-operatives were established successfully because firstly the locals believed that co-operative will be good for them. Based on the survey done on the community, 85 percent of those in business are in favor of community co-operative. This is also in accordance to Birchall and Simmons (2004) shared goals, shared values and sense of community. The business community especially in Tioman Island shared their common goals of attempting to expand their business and to compete with their competitors who are not the indigenous people of the island. They felt that being an

indigenous and the original people of the island, they were left behind in the terms of economic opportunities due to lack of capital, knowledge, training and skills.

This research had showed that establishing the three co-operatives is not a difficult process as the government through MCSC encourages and promotes new co-operatives in Malaysia. However, not all established co-operative continue to become successful co-operatives. There are many factors influencing the success of a jointly owned community enterprise such as these co-operatives. Factors that have influenced the success of Tioman and Redang co-operatives are the correct strategy of involving the local communities in the decision-making process right from the start, assisting them through human capabilities enhancement programmes, empowerment, entrepreneurial spirits, leadership qualities and local community commitments.

Promotion of eco-tourism service activities relating to tourism industry is an important component of income generation activity among the islands with the existing small operators. However, promoting and advertising their own business can be a problem as they do not have the expertise in information technology and web base skills to promote their tourism related business to outside market. Currently, they depend so much on word of mouth among regular guests to attain the business revenues as compared to bigger operators who have international marketing linkages. Therefore, through co-operative, the small operators (as members and owner of co-operative) are able to co-operate instead of competing against each other and channel their efforts to increase their level of income through strategic collaboration and compete with bigger operators.

With regard to their business sustainability, the researcher recommends that continuous training be given to Tioman and Redang co-operatives to improve their members

interpersonal and communication skills, information technology skills, community project management and others. The business training modules should stress on utilizing and enhancing local indigenous skills and knowledge. Incorporating this into the module might encourage creativity and innovative products which are unique to the particular Island. This activities could be organized by the co-operative themselves. The capacity building modules should reach as large number of people as possible. This is important as most of the members are have low education background and have not been exposed to such modules. Although help should still be given on education, promotion, advisory services and audit of accounts by the MCSC and the CCM, the independence and autonomy of these co-operatives must be respected so as to encourage independent and self-reliant co-operatives.

The researcher would like to stress that access to dependable and adequate sources of finance is an essential pre-condition for successful co-operative but financial assistance alone from the government however, can also turn out to be a negative factor in the co-operative development. It is also difficult for co-operative to accumulate capital from membership as majority of islanders have low income level. On the other hand government subsidies may lead to massive government interventions so much so that co-operative may lose its autonomy. Again the issue of fairness comes into the equation and needed consideration since public funds should not only benefit a relatively small number of active co-operators, where as they could be used to improve the economic position of the large group of low income people in general. Therefore, it is suggested that the nature of assistance should be temporarily. This should be given during the early establishment. Sustainable livelihood project objectives will only be achieved through an independent and self-reliant co-operative. Permanent external assistance (government or private) will not promote self-help and self-reliance in co-operatives.

There is a need to revisit these co-operatives to follow up on their progress. The researcher will continue evaluating the progress of these co-operatives and investigate the impact of these co-operatives on the sustainability of the MPAs. Marine Park Island community co-operatives have a very strong potential to play a positive role in the Island economic and social development.

CHAPTER 6

SUMMARY AND CONCLUSIONS

6.1 Introduction

The objective of this thesis is to analyse the performances and efficiency of co-operatives in Malaysia. This objective has been translated into four specific objectives in four separate chapters. Chapter two gave a review of the co-operative movement and the role played in the economy. This is followed by the second essay in chapter three which investigated co-operative members' participation and support towards their co-operative. Following this is the third essay in chapter four which focused on the analysis of overall efficiency and productivity growth of co-operative based on membership target groups and an analysis of the co-operative bank. The co-operative bank's performance was compared to other local conventional and Islamic banks in Malaysia.

Another research focus is on understanding the role of co-operative and members that are involved. With this view point, this research adopted an action research approach which is a qualitative research practice. Incorporated in chapter five are the efforts in starting a co-operative and challenges faced by the community in establishing a community co-operative in each of the three MPAs. These co-operatives were for the people, proposed by them to provide practical solutions to help solved issues and problems currently faced by them.

6.2 Summary of Main Conclusions

6.2.1 Main Findings from Chapter Two: Research objective is to Review the Co-operative Movement and the Co-operative Role in Malaysia's Development.

There have been moderate but steady growth and development of co-operative in Malaysia as a result of the country's buoyant economic growth and conducived environment. Government support is particularly important for the majority of micro and small co-operatives existence and survival. Realization of existing problems and challenges within the co-operative movement prompted the introduction of Second National Co-operative Plan (NCP2). There is a need to further enhance the strength, efficiency, and reforms of the co-operative movements to further boosted the movement's contribution in economic development.

As a third sector in the economy, the co-operatives' role is to promote rural and urban economic growth. There is a strong emphasis by the government on the role of co-operative in poverty eradication and the creation of Bumiputra entrepreneurial community. Co-operative movement became a useful medium for rural and agricultural development. The movement played a role in institutionalized rural economy by pooling and collectively managed small farmers' inputs and created opportunity for them to improve their economic and social conditions. The benefits of co-operative arises from (a) integrating producers/consumer against middlemen, landlords and buyers, b) releasing saving resources from the rural community and (c) adopting superior organization that could be managed in a least cost manner by the people themselves.

Although the role of government is important, government interventions could lead to overdependence of co-operative on government support. It is imperative that Malaysian

government should only play the supervisory role to ensure co-operative autonomy, integrity, independence and sustainability. The development of co-operative movement remains as crucial link in enhancing rural industrialization while linking rural-urban growth which could contribute towards the long run growth of the nation.

6.2.2 Main Findings from Chapter Three: Research Objective is to investigate the Co-operative Members' Participation and Support.

The investigation on co-operative members' participation and support in Selangor and Kuala Lumpur concluded that co-operative membership was favourable to the older age (45 years and above) and not to the younger generations (25 years or less). If this phenomenon does not change, then in future, co-operative will faced potential shortage of younger members that should be the successor to the present co-operative management. As a result, there will be implications on the governance and decision-making in co-operatives. This phenomenon must be addressed and efforts to attract young people into co-operative should be enhanced. It is crucial especially when co-operative movement was intended to support community development and create employment.

The study pointed out that individual's occupation has an influenced on membership preferences. The analysis revealed that those working in the private sector are less likely to become members as compared to government servants. However this research also showed that those who are self-employed, pensioner, unemployed and those having no fixed job are more likely to join co-operative. Thus this study concluded that although it is heartening that co-operative is favoured by workers in the government sector, efforts to encourage people from other sectors such as private sector and among the self-employed to become members should be intensified by co-operative management.

The analysis showed that frequency of co-operative AGM attendance and duration of co-operative membership are statistically associated with members' share increment. The result revealed that members that attended AGM diligently were found to be 4 times more likely to increase their co-operative shareholding. Thus, share increment and holding have a positive relationship with AGM attendance. Members are inclined to shoulder group responsibility, be committed and supported their co-operative when their shareholdings in the co-operative are higher.

This study however, saw members' poor reaction towards increasing shareholdings in their co-operatives. This negative reaction has serious implication for co-operatives with heavy reliance on members for finance. Poor financial achievements experienced by members could be the cause of this reaction. Co-operatives also faced free-rider problems and because of this, members are not reliable financial sources for co-operatives. They under-invest in their co-operatives.

This research has provided empirical evidence that members are satisfied with their co-operatives and co-operatives were perceived by members and non-members as reliable and beneficial organizations. Co-operative performance and progress clearly depends on their members' participation, support and trust. An effective governance and management of co-operative may depend on the youthful, skilled, innovative and technological savvy membership working in all sectors.

6.2.3 Main Finding from Chapter Four: Research Objectives are to analyse the Overall Eefficiency and Productivity Growth of co-operative Movement Based on Membership Target Groups and Bank Rakyat, Conventional and Islamic banks in Malaysia.

Result from this research has provided empirical evidence on the efficiency of co-operatives' group performance. First stage DEA results revealed that performances of co-operatives by membership target groups in 2008 was not satisfactory as 67 percent of the co-operative target groups are inefficient. Almost half of the inefficient groups have very low efficiency scores. This analysis identified the inefficient co-operatives among the FELDA and KESEDAR settlers, small industries, KEMAS, fisherman, the general public, statutory agency workers, graduates, drivers, the District Development Co-operative (KPD), farmers and women.

These co-operative groups are not operating at their most productive scale size or at their optimal scale. If these co-operatives were operated and managed more efficiently, the co-operatives should be able to reduce their consumption of all inputs by 62.4 percent (in the case of two inputs) and by 51.2 percent (three inputs) without reducing their output. This means that co-operative resources have been wasted in their operations. Results from this study have suggested that efforts should be targeted towards efficiency improvement to help co-operative become more viable and competitive.

The second stage analysis disclosed that turnover and equity are statistically significant in influencing technical, scale and pure technical efficiency scores. Members were revealed to be statistically significant in determining technical and pure technical efficiencies only. It was found that the higher the turnover of co-operative target group, the greater the technical efficiency scores while equity became a challenge to co-operative performance because as members' equity increases, the technical efficiency

decreases. It was found that the bigger the membership's size, the less technical and pure technical efficiency experienced by the co-operatives as the coefficients were negative.

These results had further enforced the perception that co-operatives are facing members' apathy and free rider problem (Department of Co-operative Development, 2003). Members joined the co-operatives for financial gains only (such as to benefit from dividends given out by their co-operative) but are not willing to participate actively in co-operative.

The analysis on Bank Rakyat and conventional banks however, showed that all the banks only managed a small change in the TFP growth. Taking this as empirical evidence with regard to co-operatives' performance, there is a need for co-operative to improve their efficiency especially as their members are poor and from rural areas.

This study has provided empirical proof that Bank Rakyat has achieved a relatively strong position in productivity performance. Although the co-operative bank is among the top five banks of ten banks studied, it only experiences 0.3 percent TFP growth. The TFP increment experienced by the banks studied in both analyses were from the technological change only. Bank Rakyat was at sixth place among top banks with the inclusion of other Islamic banks (14 banks) in the study (second analysis, period 2006 - 2010). In the second analysis, it was estimated that progressive scale efficiency and pure technical efficiency change had contributed to the overall banks technical efficiency.

Tobit regression analysis showed that TFP of banks are positively influenced by banks' loan intensity. Bank's asset was found to be statistically significant in determining

technical efficiency scores in the first analysis (BR and 9 conventional banks), thus bank's size matters in achieving higher technical efficiency. Environmental factors outside the banks control such as GDP per capita, unemployment and export performance are statistically significant in influencing progress in technological and scale efficiency change.

Loan intensity, GDP per capita, unemployment and export are statistically significant variables in influencing the banks scale efficiency in this investigation. This result is consistent with the impact of global financial recession on this country and other developing economy (World Bank Report, 2010). The empirical findings in both analysis indicated that total factor productivity regression happened in 2007. However, instead of the TFP declining after 2008, the banks in the second analysis had managed a substantial TFP growth i.e. 0.7 percent (in 2009) and 4.9 percent (in 2010). This result is consistent with the increasing trend of technical efficiency level experienced by the Islamic banks in 25 countries in the period 1992-2009 as discussed by Nor Hayati Ahmad & Mohamad Akbar Noor Mohamad Noor (2011).

Tobit regression for the second bank analysis showed that banks' asset and the status (whether Islamic or conventional bank) are statistically significant in determining the TFP of the banks studied. Technical efficiency was found to be determined by loan intensity and banks' status (co-operative or non-co-operative bank and Islamic and conventional bank). The analysis with pure technical efficiency change as dependent variable similarly revealed that banks' status is important in determining efficiency. These results are important considering Malaysia's goal is to be Asia's Islamic Financial Hub and an International Islamic Finance Centre (Zeti Akhtar Aziz, 2006; PricewaterhouseCoopers Malaysia, 2008).

Findings from the second analysis however, contradicts the result of study done by Altubas, Evans and Molyneux (2001) where in investigating the agency issues among German banks, their research had found that there is no evidence to suggest that the banks type (private, public, and mutual (co-operative)) had influenced efficiency. Similarly, recent findings by Mohammed Khaled I. Bader, Shamsher Mohamad & Mohamed Ariff (2008) on research comparison between conventional and Islamic banks also suggested no significant differences between these banks.

The investigation on factors that influenced technological change in the two analyses gave two contrasting results. In contrast to the first analysis, technological change in the second analysis was not influenced by any variables. Tobit regression on efficiency scores from the second analysis revealed that bank loan intensity influenced both pure technical efficiency and scale efficiency. This finding is consistent with findings by Fadzlan Sufian & Muhd-Zulkhibri Abdul Majid (2007) which suggest positive and statistically significant relationship between banks' loan intensity with efficiency scores.

In comparison to other banks included in this study, Bank Rakyat's loan intensity ratio was on the higher side as compared to other banks, suggesting that it is taking a higher risk than other banks. However, this risk has been reduced by the banks mode of financing repayment via salary deduction service provided by Angkasa.

6.2.4. Main Finding from Chapter Five: Research Objective is to document the Establishment of Community Co-operative as a Development Strategy in the Three Marine Park Areas.

Community co-operative in Redang, Tioman and Tinggi Islands MPAs was introduced with the intention of helping villagers overcome their loss of income and as a strategy of alternative livelihoods. Despite having a fairly matured tourism industry among MPAs,

the dichotomous nature of the industry, market segregation based on industry size, intense competition among operators were problems faced by the people in MPAs. Community co-operative became a platform in achieving socio-economic goals. Promotion of services activities related to tourism industry were to be an important component of income generation activities among small operators.

The decision on co-operative establishment was done based upon bottom-up participatory approach where villagers were consulted during meetings among the villagers, local leaders, DMPM and UNDP officials. The participatory approach method has proven to be effective as it had helped to instill co-operation and motivated the people involved to work collectively towards their mutual goals. The establishment follows strictly the co-operative law and democratic principles. The co-operative democratic principles were experienced by the members first hand. The villagers participated in the PGM, and the recruitment of type 1 members (pro-tem committee) had played an important role.

All three community co-operatives were established because the locals believed that co-operative will be good for them. However, performance and achievement of the three co-operatives differs significantly. Lack of dedicated local leaders to lead and start the proposed plan and activities in Tinggi Island had caused the co-operative to fail. The root problem is lack of members' commitment. Members want to gain benefits but are unwilling to shoulder the responsibilities in the co-operative. On the other hand, co-operatives establishment in Tioman and Redang have benefited the community. Although Tioman co-operative progress and performed ahead of Redang, both co-operatives still faced with the bigger challenges of making their co-operative efficient and sustainable.

Factors that have influenced co-operatives success in the island communities are the strategy of involving local communities in the decision-making process, assistance through human capabilities enhancement programmes, empowerment, entrepreneurial spirits, leadership qualities and local community commitments.

Capacity and capability building became the key factor introduced to the villagers in the effort to help the new co-operatives to face these challenges. These programmes however, are not sufficient to secure co-operative success. Local leadership quality, willingness to bear the opportunity costs, the spirit of co-operation and understandings among participants are the core factors that helped in the process of establishing the co-operatives and kept the co-operative progressing. To ensure co-operatives sustainability, there is a need for continuous business training modules and education. This is so important as most members are with low education background and have not been exposed to such modules prior to the setting up of MPAs and the introduction of co-operative.

6.3 Policy Implications

Research results from various studies in this thesis have implications on the current and future government policy with regard to co-operative development in Malaysia. At the state level, the high percentage of weak and inefficient co-operatives will have an impact on the success and achievement of the Second National Co-operative Plan by the year 2015. Relenting increase in efforts by the government to set up co-operatives in every community may be wasted if the number of efficient co-operatives is not increase. Strict enforcement of co-operative law to ensure compliance to co-operative principles

and law to improve efficiency in business, increase sustainability and possibility of success and achievement of the Second National Plan by year 2015 is mandatory. Co-operative policy must target the younger generations and those in the private sector for co-operative continued progress, growth and development. It is not the number of co-operative or size of membership that matters but the number of efficient co-operatives (quality). Efficient co-operative does not depend on the size of capital and have huge number of membership. Small and medium size co-operatives can also become efficient provided it is governed efficiently and have strong members' commitment.

The current co-operative movement in Malaysia has not reached their full potential. The movement's sustainability and progress depends on the improvement in all co-operatives' performance efficiencies. The results of this thesis showed that even the co-operative bank which is the biggest contributor to the movement only managed a moderate place among the top local banks. There is still room for improvement for the co-operative bank. These inefficiencies have indicated that resources have not been utilized properly. Because of this inefficiency, there is a strong tendency of wastage in input usage. Inputs wastage can be costly not only for the relevant co-operative but also for the government. The third National Co-operative Plan (after 2015) must focus on improving co-operatives' efficiency in all sectors. Monitoring, offer help and incentive to weak and inefficient co-operatives can reduce inefficiencies and improve the co-operatives' performance. These actions will also improve public perception on co-operative role in economic and social development.

Finally at the co-operative level there is a need to encourage and increase youth and private sector workers membership as this study found that co-operatives have difficulty attracting members from the younger age group and people from private sectors. Co-

operatives management must recognize the importance of membership loyalty and participation for their co-operative success. Apart fron this, co-operative's management must stress on improving their management efficiency as co-operative progress can only be achieve through efficient business enterprise thus creating a truly self help and independent social enterprise.

6.4 Directions for Future Research

These researches have contributed to the development of analysis in performance and efficiency of the Malaysian co-operative movement. Quantitative and qualitative analysis employed in the thesis have contributed to the knowledge and development of analysis in performance evaluation and efficiency of the co-operative movement. These researches have also filled the void in co-operative research in Malaysia. DEA have provided an important alternative analysis on co-operative performance evaluation in Malaysia and provide the first comparative results of co-operative bank and non co-operative banks and empirical results on the analysis of co-operative members group.

Related to these analyses are some of the issues that affect co-operative performance such as the leadership quality, membership support, share contributions, governance and government interventions. Results from the investigation on co-operative members' participation and support in chapter three could be further strengthen by including more co-operatives from different states into the research. Beside co-operative from other states, in future the researcher would like to suggest an extension of the model by focusing on the BOD of co-operatives as respondent.

There are several related areas worth investigating in future which is related to the DEA analysis of co-operative performance. From the point of view of methodology to enhance the analysis, future study should include other co-operative bank and Islamic banks as DMUs and expand the panel data for longer period. Aside that, this thesis only consider economic output in the analysis, therefore future research will gain breadth and depth in knowledge by including social output such as the contribution of "zakat" (alms) as output in the equation.

Finally there is a need to follow up and continue with the action research in chapter five. The researcher proposed future study to enhance the establishment of the community co-operatives by attending the coming AGM of these co-operatives, undergo detail study on the impact of programmes carried so far and to address the leadership and member commitment problem encountered by the community co-operative in the respective MPAs studied.

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APPENDIX A

Research Questionnaires
Co-operatives Survey, Peninsular Malaysia, 2008

Reference No: _____

Name of Interviewer: _____

Date and Time of Interview: _____

Name of Co-operative: _____

Address of Co-operative: _____

Respondent's Name: _____

Respondent's Address: _____

_____

Questions To All Respondents

(A) Respondent's Background

1. What is your age?
   _____ years

2. What is your race?

Malay	1	Indian	3	
Chinese	2	Others	4	
		(please indicate)_____		
		_____		

3. Sex

Male	1	Female	2	_____

4. Marital status

Bachelor	1	Divorcee	3	
Married	2	Widower	4	_____

5. Number of household including your self.
   _____ person

6. Heighest education level that you have achieved.

No formal education	1
Completed Religious school	2
Completed primary school	3
Lower secondary school (SRP/LCE)	4

Upper secondary school (SPM/MCE) 5
Higher education (college/ university) 6
Others (please indicate) 7
_____

7. Work category.

Self employed 1
Government servant 2
Private sector 3
Pensioner 4
(please specify year: _____)
No fixed job 5

8. Amount of income per month.
Less than RM 500 1
RM501 to less than RM1000 2
RM1001 to less than RM1500 3
RM1501 to less than RM2000 4
RM2001 to less than RM2500 5
RM2501 to less than RM3000 6
More than RM3000 7

9. Income from OTHER household (permonth).

Husband/wife RM _____
Children RM _____
Other family members staying together RM _____

10. Please indicate your membership of the following formal organizations and whether do you hold any post?
codes: Yes = 1 No = 2

	Membership	Post held
Parent teachers association	_____	_____
Political party	_____	_____
Youth organization	_____	_____
Co-operative society	_____	_____
others (specify)_____	_____	_____

_____

Questions for Co-operative Members

(B) Membership in Co-operative

1.1 Are you a member of co-operative?
Yes ____ No, proceed to answering questions from section C

1.2 Indicate main reasons as to why you have become a co-operative member?

To be in an association _____
Influenced by friends _____
To use co-operative facilities _____
To get benefits from co-operative _____
Supporting government project _____
Confident with co-operative _____
Others (please indicate)_____

_____
_

1.3 How long have you been a member of this co-operative?

less than 1 year ____
1 to less than 3 years ____
3 to less than 5 years ____
5 years and above ____

1.4. Amount of share capital/ subscription capital when first joined the co-operative?

Share capital RM_____
Subscription capital RM_____

1.5 What is the amount of share capital/subscription capital that you own now?

Share capital RM _____
Subscription capital RM _____

1.6 Methods of increasing investment in co-operative?

1. Income deduction by employer _____
2. Through ANGKASA _____
3. Own initiative _____
4. No increment _____

Reasons:_____
_ _____

1.7 Are you a member of other co-operatives?

Yes ____ No ____

(B II) Knowledge About Co-operative

2.1 From your knowledge, who is the owner of this co-operative?

Government _____
Manager _____
Board of Director _____
Member _____
Not sure _____

2.2 Do you know any of the following personnel in your co-operative?

1. Yes 2. No 3. Not sure

i. Co-operative chairman _____

ii. Secretary _____
iii. Treasurer _____
iv. Other board of directors _____
v. Manager _____
vi. staff of co-operative _____

Please fill in the codes below

For a correct answer 1
For an incorrect answer 2

2.3 Any body is eligible to become a member of co-operative. _____

2.4 All members of the Board of Directors are elected by members at the Annual General Meetings. _____

2.5 Every member's share capital will earn dividend. _____

2.6 Every member who wants to join the co-operative must subscribe at least _____ shares worth _____. _____

2.7 Dividend on members' shares is to be paid by the Government. _____

2.8 Dividend can only be paid when the co-operative makes profit. _____

2.9 Financial statements of the co-operative must be presented to the members at every general meeting. _____

2.10 Every member has the right to vote at the co-operative Annual General Meeting. _____

2.11 Co-operative accounts must be officially audited by the auditors from the Department of Co-operative Development before they can be presented to the members. _____

2.12 The decision on dividend payments is made by the Board of Directors. _____

2.13 Every member is required to subscribe additional shares annually. _____

(B III) Members' support

3.1 Have you ever been involved in any of these activities in the last 5 years:
a) attend the annual general meeting
Never ___ 2 - 3 times ___
Once ___ 4 - 5 times ___

b) attended any gathering organized by co-operative (talks, seminars, courses, etc.)

No	Year	Organiser	Period	Field
1				
2				
3				

(ii) If No, Why _____
_____

(C I) Co-operative Services

3.2 Do you shop at the co-operative store?
Yes ___ No ___
Average in 1 month .....times

3.3 Method of purchases:
1) Cash ____ 2) Credit ____ 3) both ____

3.4 What is the average amount spend at the co-operative store in a month?
RM.....per month

3.5 What are the types of goods you normally buy?
(i) Perishable ____
(ii) Non perishable ____
(iii) electrical goods ____
(iv) others (please indicate) _____
_____

3.6 Do you shop at other supermarket?
Yes ____ No ____
Reasons? _____
_____

Satisfaction with the co-operative
Please fill in the codes below

Do not know	0
Most satisfied	1
Not satisfied	2
Moderate	3
Satisfied	4
Very Satisfied	5

3.7 Indicate your opinion regarding the benefits offered by your co-operative
1. Price ____
2. Assortment of goods ____
3. Service of goods ____
4. Availability of credit ____
5. Operating hours ____
6. Rate of dividends ____
7. Patronage rebate ____
8. Reliability ____

9. Location ____
10. Parking facilities ____
11. Others _____
_____

(C II) Attitudes And Perceptions Towards Co-operative

3.8 Indicate your agreement/disagreement on a five - point scale

1. Membership uplifts the family's standard of living.
Highly disagree — Highly agree
0 1 2 3 4

2. Being a member enable you to utilise facilities and benefits offered by co-operative.
Highly disagree — Highly agree
0 1 2 3 4

3. Members should increase their shares in co-operative.
Highly disagree — Highly agree
0 1 2 3 4

4. Share subscription with the co-operative is a long term investment.
Highly disagree — Highly agree
0 1 2 3 4

5. Share subscription with the co-operative is a lucrative investment.
Highly disagree — Highly agree
0 1 2 3 4

6. Co-operative always co-operate and help members.
Highly disagree — Highly agree
0 1 2 3 4

7. Co-operative is capable of venturing into various business activities.
Highly disagree — Highly agree
0 1 2 3 4

8. Co-operative's are not capable of being independent without government/government agency's assistance.
Highly disagree — Highly agree

0 1 2 3 4

9. As an ordinary member of a co-operative means lack of choices and limited freedom in making decision.

Highly disagree				Highly agree
0	1	2	3	4

10. Co-operative has a bright future in the country's development.

Highly disagree				Highly agree
0	1	2	3	4

11. Co-operative has an important role in helping members and community uplift their wellbeing in the development process.

Highly disagree				Highly agree
0	1	2	3	4

12. Co-operative can help the country become more developed by embarking into business with global market potencial.

Highly disagree				Highly agree
0	1	2	3	4

3.9 Do you have any suggestions for the improvement of this co-operative ?

_____

_____

APPENDIX B

Logistic Regression Analysis Results in Chapter 3

I. Logistic Regression

Case Processing Summary

Unweighted Cases		N	Percent
Selected Cases	Included in Analysis	326	85.8
	Missing Cases	54	14.2
	Total	380	100.0
Unselected Cases		0	.0
Total		380	100.0

a If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
nonmember	0
1=member	1

Categorical Variables Codings

		Frequency	Parameter coding		
			(1)	(2)	(3)
a7occ3	gov sector	89	.000	.000	.000
	private sector	133	1.000	.000	.000
	self,pen,unem,nofxedjob	60	.000	1.000	.000
	student	44	.000	.000	1.000
AGECAT	lowest thru 25	136	.000	.000	
	25.01 thru 45	144	1.000	.000	
	45.01 thru HIGHEST	46	.000	1.000	

Block 0: Beginning Block

Iteration History

Iteration		-2 Log likelihood	Coefficients Constant
Step 0	1	451.331	-.086
	2	451.331	-.086

a Constant is included in the model.

b Initial -2 Log Likelihood: 451.331

c Estimation terminated at iteration number 2 because parameter estimates changed by less than .001.

Block 1: Method = Forward Stepwise (Likelihood Ratio)

Iteration History

Iteration		-2 Log likelihood	Coefficients Constant	AGECAT(1)	AGECAT(2)
Step 1	1	370.431	-1.176	1.649	2.568
	2	369.062	-1.342	1.823	3.028
	3	369.055	-1.350	1.831	3.067

a Method: Forward Stepwise (Likelihood Ratio)

b Constant is included in the model.

c Initial -2 Log Likelihood: 451.331

d Estimation terminated at iteration number 3 because log-likelihood decreased by less than .010 percent.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	82.275	2	.000
	Block	82.275	2	.000
	Model	82.275	2	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	369.055	.223	.298

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.000	1	1.000

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95.0% C.I.for EXP(B) Lower	Upper
Step 1	AGECAT			65.707	2	.000			
	AGECAT(1)	1.831	.273	45.077	1	.000	6.241	3.657	10.652
	AGECAT(2)	3.067	.462	44.079	1	.000	21.482	8.686	53.128
	Constant	-1.350	.212	40.519	1	.000	.259		

a Variable(s) entered on step 1: AGECAT.

APPENDIX C

Factor Analysis Results in Chapter 3

II. Factor Analysis Results

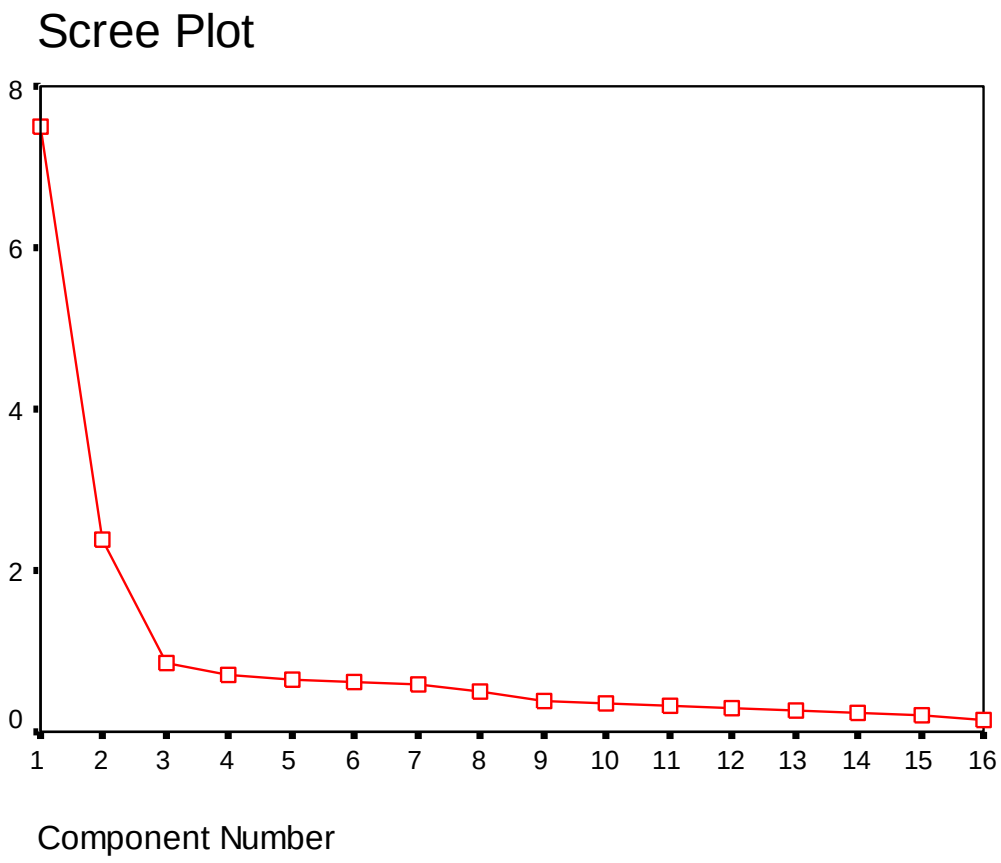
KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.896
Bartlett's Test of Sphericity	Approx. Chi-Square	1432.596
	df	120
	Sig.	.000

Total Variance Explained

	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.504	46.898	46.898	7.504	46.898	46.898	4.971	31.070	31.070
2	2.390	14.940	61.839	2.390	14.940	61.839	4.923	30.769	61.839
3	.848	5.298	67.137						
4	.695	4.342	71.479						
5	.643	4.018	75.497						
6	.610	3.815	79.312						
7	.577	3.606	82.917						
8	.501	3.129	86.047						
9	.380	2.373	88.420						
10	.353	2.203	90.624						
11	.332	2.073	92.697						
12	.295	1.844	94.541						
13	.276	1.723	96.264						
14	.231	1.445	97.709						
15	.208	1.297	99.006						
16	.159	.994	100.000						

Extraction Method: Principal Component Analysis.


Scree Plot
8
6
4
2
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
Component Number

Rotated Component Matrix

	Component	
	1	2
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_kualiti barang / perkhidmatan	**.797**	
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_kebolehpercayaan	**.797**	
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_kadar dividen	**.794**	
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_harga barangan	**.773**	
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_kepelbagaian barangan	**.771**	
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_lokasi kedai	**.758**	
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_sikap jurujual	**.708**	
pandangan anda terhadap barangan / perkhidmatan yang ada di koperasi ini_kemudahan kredit	**.654**	
pembelian saham koperasi merupakan satu pelaburan yang menguntungkan		**.797**
koperasi mempunyai peranan yang penting untuk membantu anggota dan masyarakat meningkatkan taraf hidup ketika negara kita sedang membangun		**.794**
pembelian saham koperasi merupakan satu pelaburan jangka panjang		**.774**
koperasi mempunyai masa depan yang cerah dan cemerlang di dalam arus pembangunan negara kita		**.771**
menjadi anggota koperasi membolehkan saya mendapat faedah dan kemudahan dari koperasi		**.766**
koperasi selalu bekerjasama dalam membantu anggota koperasi		**.750**
koperasi berupaya menceburi pelbagai bidang perniagaan		**.689**
menjadi anggota koperasi membantu meningkatkan taraf hidup keluarga		**.659**

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 3 iterations.

Component Transformation Matrix

Component	1	2
1	.710	.704
2	-.704	.710

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Reliability

****** Method 1 (space saver) will be used for this analysis ******

–

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Reliability Coefficients

N of Cases = 146.0 N of Items = 16

Alpha = .9225

APPENDIX D

Co-operative Target Groups 2008
DEA Result in Table 4.13, Chapter 4

Results from DEAP Version 2.1
Instruction file = KS8.cmd
Data file = KS8-dta.txt
Input orientated DEA (3 inputs)
Scale assumption: VRS
Slacks calculated using multi-stage method
Unbounded objective function
Unbounded objective function

EFFICIENCY SUMMARY:

firm	crste	vrste	scale	
1	0.471	1.000	0.471	drs
2	0.380	0.395	0.962	drs
3	0.913	1.000	0.913	drs
4	0.242	0.501	0.483	drs
5	1.000	1.000	1.000	-
6	0.390	0.698	0.559	drs
7	0.217	0.219	0.988	irs
8	1.000	1.000	1.000	-
9	0.140	0.141	0.994	drs
10	0.251	0.252	0.999	-
11	0.675	1.000	0.675	drs
12	0.133	0.133	0.996	drs
13	0.408	0.409	0.996	irs
14	1.000	1.000	1.000	-
15	0.347	1.000	0.347	drs
16	0.636	0.641	0.993	irs
17	0.262	0.267	0.980	irs
18	0.143	0.339	0.422	drs
19	0.444	1.000	0.444	drs
20	0.213	0.300	0.708	drs
21	0.832	0.897	0.928	drs
22	0.508	0.538	0.943	drs
23	1.000	1.000	1.000	-
24	0.330	0.585	0.565	drs
25	0.232	0.233	0.998	irs
26	0.253	0.274	0.921	drs
27	0.313	0.324	0.967	drs
28	0.011	0.076	0.140	irs
29	0.481	0.643	0.748	drs
30	0.747	0.748	0.999	irs
31	0.232	0.233	0.993	irs
32	1.000	1.000	1.000	-
33	1.000	1.000	1.000	-
34	0.575	1.000	0.575	drs
35	0.600	0.716	0.838	drs
36	0.202	0.202	1.000	-
mean	0.488	0.605	0.821	

Note: crste = technical efficiency from CRS DEA
vrste = technical efficiency from VRS DEA
scale = scale efficiency = crste/vrste
Results from DEAP Version 2.1

Instruction file = ks3.cmd
Data file = ks3-dta.txt
Input orientated DEA (2 inputs)
Scale assumption: VRS
Slacks calculated using multi-stage method
Unbounded objective function
Unbounded objective function
Unbounded objective function

EFFICIENCY SUMMARY:

firm	crste	vrste	scale	
1	0.186	1.000	0.186	drs
2	0.271	0.371	0.731	drs
3	0.540	0.707	0.764	drs
4	0.112	0.319	0.351	drs
5	1.000	1.000	1.000	-
6	0.283	0.698	0.406	drs
7	0.206	0.219	0.940	irs
8	1.000	1.000	1.000	-
9	0.137	0.137	1.000	-
10	0.144	0.240	0.599	drs
11	0.471	0.812	0.580	drs
12	0.120	0.127	0.944	drs
13	0.335	0.381	0.878	drs
14	1.000	1.000	1.000	-
15	0.251	1.000	0.251	drs
16	0.636	0.641	0.993	irs
17	0.197	0.199	0.991	irs
18	0.097	0.339	0.287	drs
19	0.280	1.000	0.280	drs
20	0.057	0.095	0.597	drs
21	0.358	0.573	0.624	drs
22	0.375	0.457	0.820	drs
23	0.332	0.448	0.741	drs
24	0.212	0.585	0.363	drs
25	0.169	0.169	0.999	-
26	0.237	0.271	0.877	drs
27	0.220	0.323	0.681	drs
28	0.003	0.017	0.203	irs
29	0.421	0.602	0.698	drs
30	0.600	0.677	0.887	drs
31	0.212	0.213	0.997	irs
32	1.000	1.000	1.000	-
33	0.871	1.000	0.871	drs
34	0.575	1.000	0.575	drs
35	0.463	0.716	0.646	drs
36	0.151	0.151	1.000	-
mean	0.376	0.541	0.715	

Note: crste = technical efficiency from CRS DEA
vrste = technical efficiency from VRS DEA
scale = scale efficiency = crste/vrste

DEA Result in Chapter 4

Summary of peers from DEA analysis

SUMMARY OF PEERS:

firm	peers:
1	1
2	33 5 32 14
3	3
4	5 19 1 33
5	5
6	19 5
7	32 8 5 14
8	8
9	32 14 33 8
10	14 33 8
11	11
12	14 32 33 8
13	14 32 5 8
14	14
15	15
16	32 8
17	5 14 32 8
18	33 15 19 5
19	19
20	1 3 5
21	3 23 14
22	14 5 33 32
23	23
24	1 5 33 19
25	14 5 32 8
26	32 33 8
27	5 14 32 33
28	8 5
29	14 11 33
30	5 32 8
31	5 32 8
32	32
33	33
34	34
35	33 5 32
36	14 5 32 8

PEER COUNT SUMMARY:

(i.e., no. times each firm is a peer for another)

firm	peer count:
1	3
2	0
3	2
4	0
5	17
6	0
7	0
8	13
9	0
10	0
11	1
12	0
13	0
14	13
15	1
16	0
17	0
18	0
19	4
20	0
21	0
22	0
23	1
24	0
25	0
26	0
27	0
28	0
29	0
30	0
31	0
32	15
33	12
34	0
35	0
36	0

APPENDIX E

Malmquist DEA Results Analysis on Bank Rakyat and Conventional banks

Results from DEAP Version 2.1
Instruction file = Em1.cmd
Data file = Em1-dta.txt
Input orientated Malmquist DEA

DISTANCES SUMMARY

year = 1

firm no.	crs te rel to tech in yr ********** t-1	t	t+1	vrs te
1	0.000	1.000	1.008	1.000
2	0.000	0.946	0.944	1.000
3	0.000	0.885	0.844	0.897
4	0.000	0.748	0.732	0.753
5	0.000	0.873	0.904	0.920
6	0.000	1.000	1.045	1.000
7	0.000	0.944	0.941	0.976
8	0.000	0.945	0.934	1.000
9	0.000	0.970	0.857	1.000
10	0.000	1.000	0.994	1.000
mean	0.000	0.931	0.920	0.955

year = 2

firm no.	crs te rel to tech in yr ********** t-1	t	t+1	vrs te
1	1.023	1.000	1.128	1.000
2	0.906	0.918	0.975	1.000
3	0.856	0.840	0.927	0.939
4	0.781	0.781	0.833	0.817
5	1.126	1.000	1.131	1.000
6	1.053	1.000	1.107	1.000
7	0.946	0.916	1.004	1.000
8	0.920	0.907	0.994	1.000
9	1.150	1.000	0.952	1.000
10	1.131	1.000	0.986	1.000
mean	0.989	0.936	1.004	0.976

year = 3

firm no.	crs te rel to tech in yr ********** t-1	t	t+1	vrs te
1	0.819	0.807	0.849	1.000
2	0.873	0.942	0.902	1.000
3	0.859	0.905	0.890	0.905
4	0.917	0.966	0.955	0.973
5	0.965	1.000	1.033	1.000
6	0.934	1.000	0.956	1.000
7	0.877	0.910	0.912	1.000
8	0.885	0.930	0.915	1.000
9	1.050	0.988	1.099	1.000
10	1.064	1.000	1.113	1.000
mean	0.924	0.945	0.962	0.988

year = 4

firm no.	crs te rel to tech in yr ********** t-1	t	t+1	vrs te
1	1.125	1.000	1.015	1.000
2	1.008	0.977	0.976	1.000
3	0.966	0.940	0.921	0.984
4	1.009	0.947	0.936	0.977
5	1.044	1.000	1.011	1.000
6	1.028	0.922	0.921	0.967
7	1.017	0.988	0.967	1.000
8	1.021	1.000	0.976	1.000
9	1.011	1.000	0.962	1.000
10	0.968	1.000	1.062	1.000
mean	1.020	0.977	0.975	0.993

year = 5

firm no.	crs te rel to tech in yr ********** t-1	t	t+1	vrs te
1	1.058	1.000	1.024	1.000
2	0.932	0.919	0.862	1.000
3	0.898	0.885	0.829	0.919
4	1.001	0.979	0.886	0.988
5	1.010	0.984	0.927	0.988
6	0.944	0.947	0.939	0.981
7	0.974	0.955	0.895	1.000
8	1.019	1.000	0.945	1.000
9	1.054	1.000	1.027	1.000
10	1.035	1.000	0.999	1.000
mean	0.992	0.967	0.933	0.988

year = 6

firm no.	crs te rel to tech in yr ********** t-1	t	t+1	vrs te
1	1.040	1.000	0.000	1.000
2	0.905	0.852	0.000	1.000
3	0.714	0.732	0.000	0.780
4	1.005	0.949	0.000	0.977
5	1.111	1.000	0.000	1.000
6	0.981	0.935	0.000	0.967
7	0.964	0.902	0.000	1.000
8	0.966	0.894	0.000	1.000
9	1.035	1.000	0.000	1.000
10	1.084	1.000	0.000	1.000
mean	0.980	0.926	0.000	0.972

[Note that t-1 in year 1 and t+1 in the final year are not defined]

MALMQUIST INDEX SUMMARY

year = 2

firm	effch	techch	pech	sech	tfpch
1	1.000	1.007	1.000	1.000	1.007
2	0.971	0.994	1.000	0.971	0.965
3	0.950	1.034	1.048	0.907	0.982
4	1.044	1.011	1.085	0.962	1.055
5	1.146	1.043	1.087	1.054	1.195
6	1.000	1.004	1.000	1.000	1.004
7	0.970	1.018	1.025	0.947	0.988
8	0.960	1.013	1.000	0.960	0.972
9	1.031	1.141	1.000	1.031	1.176
10	1.000	1.067	1.000	1.000	1.067
mean	1.006	1.032	1.024	0.982	1.038

year = 3

firm	effch	techch	pech	sech	tfpch
1	0.807	0.949	1.000	0.807	0.765
2	1.026	0.934	1.000	1.026	0.958
3	1.077	0.928	0.964	1.117	0.999
4	1.237	0.943	1.191	1.039	1.167
5	1.000	0.924	1.000	1.000	0.924
6	1.000	0.919	1.000	1.000	0.919
7	0.994	0.937	1.000	0.994	0.931
8	1.025	0.932	1.000	1.025	0.955
9	0.988	1.057	1.000	0.988	1.044
10	1.000	1.039	1.000	1.000	1.039
mean	1.010	0.955	1.014	0.997	0.965

year = 4

firm	effch	techch	pech	sech	tfpch
1	1.240	1.034	1.000	1.240	1.282
2	1.037	1.038	1.000	1.037	1.077
3	1.038	1.022	1.087	0.955	1.062
4	0.980	1.038	1.004	0.976	1.017
5	1.000	1.005	1.000	1.000	1.005
6	0.922	1.080	0.967	0.954	0.996
7	1.086	1.013	1.000	1.086	1.101
8	1.075	1.019	1.000	1.075	1.095
9	1.012	0.953	1.000	1.012	0.965
10	1.000	0.933	1.000	1.000	0.933
mean	1.036	1.013	1.005	1.031	1.049

year = 5

firm	effch	techch	pech	sech	tfpch
1	1.000	1.021	1.000	1.000	1.021
2	0.941	1.007	1.000	0.941	0.948
3	0.942	1.017	0.934	1.009	0.958
4	1.035	1.017	1.011	1.023	1.052
5	0.984	1.007	0.988	0.996	0.991
6	1.027	1.000	1.014	1.012	1.026
7	0.966	1.021	1.000	0.966	0.986
8	1.000	1.022	1.000	1.000	1.022
9	1.000	1.047	1.000	1.000	1.047
10	1.000	0.987	1.000	1.000	0.987
mean	0.989	1.015	0.994	0.995	1.003

year = 6

firm	effch	techch	pech	sech	tfpch
1	1.000	1.007	1.000	1.000	1.007
2	0.926	1.065	1.000	0.926	0.986
3	0.826	1.021	0.848	0.974	0.844
4	0.969	1.082	0.989	0.980	1.048
5	1.016	1.086	1.012	1.004	1.103
6	0.988	1.028	0.986	1.002	1.016
7	0.945	1.067	1.000	0.945	1.009
8	0.894	1.069	1.000	0.894	0.956
9	1.000	1.004	1.000	1.000	1.004
10	1.000	1.042	1.000	1.000	1.042
mean	0.955	1.047	0.982	0.972	0.999

MALMQUIST INDEX SUMMARY OF ANNUAL MEANS

year	effch	techch	pech	sech	tfpch
2	1.006	1.032	1.024	0.982	1.038
3	1.010	0.955	1.014	0.997	0.965
4	1.036	1.013	1.005	1.031	1.049
5	0.989	1.015	0.994	0.995	1.003
6	0.955	1.047	0.982	0.972	0.999
mean	0.999	1.012	1.004	0.995	1.011

MALMQUIST INDEX SUMMARY OF FIRM MEANS

firm	effch	techch	pech	sech	tfpch
1	1.000	1.003	1.000	1.000	1.003
2	0.979	1.007	1.000	0.979	0.986
3	0.963	1.004	0.972	0.990	0.966
4	1.049	1.017	1.053	0.996	1.067
5	1.028	1.012	1.017	1.011	1.039
6	0.987	1.005	0.993	0.993	0.991
7	0.991	1.010	1.005	0.986	1.001
8	0.989	1.010	1.000	0.989	0.999
9	1.006	1.038	1.000	1.006	1.045
10	1.000	1.012	1.000	1.000	1.012
mean	0.999	1.012	1.004	0.995	1.011

[Note that all Malmquist index averages are geometric means]

Results from DEAP Version 2.1

Instruction file = BIS.cmd
Data file = BIS-dta.txt
Input orientated Malmquist DEA

DISTANCES SUMMARY

year = 1

firm no.	crs te rel to tech in yr t-1	t	t+1	vrs te
1	0.000	1.000	0.999	1.000
2	0.000	0.654	0.954	1.000
3	0.000	0.578	0.564	0.599
4	0.000	0.285	0.296	1.000
5	0.000	0.801	0.806	0.829
6	0.000	1.000	1.458	1.000
7	0.000	0.878	0.869	0.879
8	0.000	0.994	0.967	1.000
9	0.000	0.865	0.853	1.000
10	0.000	0.811	0.788	0.837
11	0.000	0.856	0.860	0.865
12	0.000	1.000	1.046	1.000
13	0.000	0.689	0.683	0.784
14	0.000	0.961	0.937	1.000
mean	0.000	0.812	0.863	0.914

year = 2

firm no.	crs te rel to tech in yr t-1	t	t+1	vrs te
1	0.977	0.949	0.941	0.960
2	0.450	0.517	0.674	1.000
3	0.605	0.585	0.591	0.647
4	0.355	0.359	0.389	0.692
5	0.834	0.833	0.883	0.883
6	0.958	1.000	1.303	1.000
7	0.831	0.831	0.797	0.855
8	0.965	0.954	0.915	0.964
9	0.868	0.858	0.894	1.000
10	0.820	0.806	0.773	0.873
11	0.763	0.773	0.741	0.800
12	1.035	1.000	1.009	1.000
13	0.648	0.640	0.667	0.716
14	0.783	0.761	0.773	1.000
mean	0.778	0.776	0.811	0.885

year = 3

firm no.	crs te rel to tech in yr t-1	t	t+1	vrs te
1	1.043	1.000	0.970	1.000
2	0.672	0.754	0.876	1.000
3	0.605	0.603	0.604	0.713
4	0.518	0.568	0.612	0.581
5	0.864	0.900	0.899	1.000
6	0.881	1.000	1.203	1.000
7	0.888	0.852	0.847	0.893
8	0.962	0.922	0.895	0.933
9	0.842	0.874	0.872	1.000
10	0.902	0.865	0.854	0.906
11	0.857	0.822	0.797	0.867
12	1.042	1.000	1.009	1.000
13	0.644	0.663	0.660	0.718
14	0.915	0.896	0.901	1.000
mean	0.831	0.837	0.857	0.901

year = 4

firm no.	crs te rel to tech in yr t-1	t	t+1	vrs te
1	1.031	1.000	1.024	1.000
2	0.648	0.647	0.634	1.000
3	0.602	0.602	0.590	0.723
4	0.990	1.000	0.935	1.000
5	0.722	0.700	0.718	0.917
6	1.021	1.000	1.005	1.000
7	0.909	0.911	0.893	0.939
8	0.944	0.916	0.939	0.936
9	0.930	0.925	0.902	1.000
10	0.892	0.897	0.881	0.946
11	0.791	0.767	0.786	0.825
12	1.006	1.000	0.977	1.000
13	0.671	0.668	0.650	0.672
14	0.840	0.827	0.834	1.000
mean	0.857	0.847	0.841	0.926

year = 5

firm no.	crs te rel to tech in yr t-1	crs te rel to tech in yr t	crs te rel to tech in yr t+1	vrs te
1	1.015	1.000	0.000	1.000
2	0.672	0.660	0.000	1.000
3	0.617	0.606	0.000	0.753
4	1.097	1.000	0.000	1.000
5	0.893	0.915	0.000	1.000
6	1.005	1.000	0.000	1.000
7	0.917	0.899	0.000	0.932
8	0.903	0.926	0.000	0.935
9	1.007	0.984	0.000	1.000
10	0.966	0.949	0.000	0.975
11	0.854	0.875	0.000	0.928
12	1.019	1.000	0.000	1.000
13	0.672	0.649	0.000	0.650
14	0.825	0.839	0.000	1.000
mean	0.890	0.879	0.000	0.941

[Note that t-1 in year 1 and t+1 in the final year are not defined]

MALMQUIST INDEX SUMMARY

year = 2

firm	effch	techch	pech	sech	tfpch
1	0.949	1.015	0.960	0.988	0.963
2	0.790	0.773	1.000	0.790	0.611
3	1.013	1.029	1.080	0.938	1.042
4	1.258	0.975	0.692	1.817	1.227
5	1.039	0.997	1.065	0.976	1.037
6	1.000	0.811	1.000	1.000	0.811
7	0.946	1.005	0.972	0.974	0.951
8	0.959	1.020	0.964	0.995	0.978
9	0.992	1.013	1.000	0.992	1.005
10	0.994	1.023	1.043	0.953	1.017
11	0.902	0.991	0.925	0.975	0.894
12	1.000	0.994	1.000	1.000	0.994
13	0.929	1.010	0.914	1.017	0.939
14	0.791	1.028	1.000	0.791	0.813
mean	0.963	0.974	0.968	0.995	0.938

year = 3

firm	effch	techch	pech	sech	tfpch
1	1.053	1.026	1.041	1.012	1.080
2	1.459	0.827	1.000	1.459	1.207
3	1.030	0.997	1.102	0.935	1.027
4	1.581	0.918	0.840	1.883	1.451
5	1.081	0.951	1.133	0.954	1.028
6	1.000	0.822	1.000	1.000	0.822
7	1.025	1.043	1.045	0.981	1.069
8	0.967	1.043	0.968	0.999	1.008
9	1.019	0.961	1.000	1.019	0.979
10	1.073	1.042	1.038	1.034	1.119
11	1.063	1.043	1.084	0.981	1.109
12	1.000	1.016	1.000	1.000	1.016
13	1.036	0.965	1.002	1.033	1.000
14	1.177	1.003	1.000	1.177	1.181
mean	1.100	0.973	1.016	1.083	1.070

year = 4

firm	effch	techch	pech	sech	tfpch
1	1.000	1.031	1.000	1.000	1.031
2	0.858	0.929	1.000	0.858	0.796
3	0.999	0.998	1.015	0.985	0.997
4	1.762	0.958	1.720	1.024	1.688
5	0.778	1.016	0.917	0.849	0.790
6	1.000	0.921	1.000	1.000	0.921
7	1.069	1.002	1.052	1.016	1.070
8	0.994	1.031	1.003	0.991	1.024
9	1.058	1.004	1.000	1.058	1.062
10	1.036	1.004	1.044	0.993	1.041
11	0.934	1.031	0.951	0.982	0.963
12	1.000	0.999	1.000	1.000	0.999
13	1.008	1.005	0.936	1.077	1.013
14	0.923	1.005	1.000	0.923	0.928
mean	1.012	0.995	1.033	0.980	1.007

year = 5

firm	effch	techch	pech	sech	tfpch
1	1.000	0.995	1.000	1.000	0.995
2	1.020	1.019	1.000	1.020	1.040
3	1.007	1.019	1.042	0.966	1.026
4	1.000	1.084	1.000	1.000	1.084
5	1.306	0.976	1.090	1.198	1.275
6	1.000	1.000	1.000	1.000	1.000
7	0.988	1.020	0.993	0.995	1.007
8	1.010	0.976	0.999	1.012	0.986
9	1.064	1.024	1.000	1.064	1.090
10	1.059	1.018	1.031	1.026	1.077
11	1.141	0.976	1.125	1.014	1.114
12	1.000	1.021	1.000	1.000	1.021
13	0.971	1.032	0.967	1.005	1.002
14	1.015	0.987	1.000	1.015	1.002
mean	1.038	1.010	1.017	1.021	1.049

MALMQUIST INDEX SUMMARY OF ANNUAL MEANS

year	effch	techch	pech	sech	tfpch
2	0.963	0.974	0.968	0.995	0.938
3	1.100	0.973	1.016	1.083	1.070
4	1.012	0.995	1.033	0.980	1.007
5	1.038	1.010	1.017	1.021	1.049
mean	1.027	0.988	1.008	1.019	1.015

MALMQUIST INDEX SUMMARY OF FIRM MEANS

firm	effch	techch	pech	sech	tfpch
1	1.000	1.016	1.000	1.000	1.016
2	1.002	0.882	1.000	1.002	0.884
3	1.012	1.011	1.059	0.956	1.023
4	1.368	0.982	1.000	1.368	1.343
5	1.034	0.985	1.048	0.986	1.018
6	1.000	0.885	1.000	1.000	0.885
7	1.006	1.017	1.015	0.991	1.023
8	0.982	1.017	0.983	0.999	0.999
9	1.033	1.000	1.000	1.033	1.033
10	1.040	1.022	1.039	1.001	1.063
11	1.005	1.010	1.018	0.988	1.016
12	1.000	1.008	1.000	1.000	1.008
13	0.985	1.003	0.954	1.033	0.988
14	0.967	1.006	1.000	0.967	0.972
mean	1.027	0.988	1.008	1.019	1.015

[Note that all Malmquist index averages are geometric means]

APPENDIX F

Anova Banks Results Bank Rakyat and Conventional banks

Anova: Two-Factor Without Replication

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
BR	5	5.006	1.0012	2.7E-06
MB	5	4.951	0.9902	0.000162
CIMB	5	4.895	0.979	0.000305
RHB	5	5.181	1.0362	0.00083
AMB	5	5.107	1.0214	0.000142
EONB	5	4.969	0.9938	4.52E-05
AFB	5	4.993	0.9986	9.83E-05
ALLIB	5	4.987	0.9974	7.73E-05
HLB	5	5.095	1.019	0.000434
PUB	5	5.024	1.0048	4.32E-05
TE	10	9.992	0.9992	0.0006
Tech	10	10.118	1.0118	0.000103
Pech	10	10.04	1.004	0.000422
Sech	10	9.95	0.995	9.22E-05
TFPch	10	10.108	1.0108	0.000925

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	0.012825	9	0.001425	7.956425	2.33E-06	2.152607
Columns	0.00211	4	0.000527	2.945134	0.033294	2.633532
Error	0.006448	36	0.000179			
Total	0.021383	49				

Bank Rakyat, Conventional and Islamic banks

Anova: Two-Factor Without Replication

SUMMARY	*Count*	*Sum*	*Average*	*Variance*
1	5	5.032	1.0064	7.68E-05
2	5	4.77	0.954	0.004202
3	5	5.061	1.0122	0.001367
4	5	6.061	1.2122	0.040919
5	5	5.071	1.0142	0.000799
6	5	4.77	0.954	0.003968
7	5	5.052	1.0104	0.000155
8	5	4.98	0.996	0.000206
9	5	5.099	1.0198	0.000327
10	5	5.164	1.0328	0.000549
11	5	5.037	1.0074	0.000144
12	5	5.016	1.0032	1.92E-05
13	5	4.963	0.9926	0.000827
14	5	4.912	0.9824	0.000362
eff	14	14.434	1.031	0.00982
tech	14	13.844	0.988857	0.002124
pech	14	14.116	1.008286	0.000715
sech	14	14.323	1.023071	0.010277
tfpch	14	14.271	1.019357	0.01131

ANOVA

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Rows	0.244424	13	0.018802	4.86963	1.79E-05	1.913455
Columns	0.014906	4	0.003727	0.965177	0.434513	2.549763
Error	0.200774	52	0.003861			
Total	0.460105	69				

APPENDIX G

Table 4.14-4.17: Co-operative Group Tobit Regression Results

Model 1: Tobit, using observations 1-36
Dependent variable: TE
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	0.0763722	0.215018	0.3552	0.72245	
LNEQ	-0.1276	0.0269886	-4.7279	<0.00001	***
LNTO	0.227749	0.0308912	7.3726	<0.00001	***
LNMEM	-0.132515	0.0320118	-4.1396	0.00003	***

Chi-square(3)	60.94822	p-value	3.69e-13
Log-likelihood	9.761147	Akaike criterion	-9.522294
Schwarz criterion	-1.604699	Hannan-Quinn	-6.758841

sigma = 0.184504 (0.0217441)
Left-censored observations: 0
Right-censored observations: 0
Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 17.1867
with p-value = 0.000185332

Results obtained from data analyzed using Gretl Version 1.1,
***Significant at 1 %

Model 2: Tobit, using observations 1-36
Dependent variable: PTE
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	-0.422635	0.280981	-1.5041	0.13255	
LNEQ	-0.109841	0.0352681	-3.1144	0.00184	***
LNTO	0.228536	0.040368	5.6613	<0.00001	***
LNMEM	-0.103052	0.0418324	-2.4635	0.01376	**

Chi-square(3)	32.76006	p-value	3.62e-07
Log-likelihood	0.128794	Akaike criterion	9.742412
Schwarz criterion	17.66001	Hannan-Quinn	12.50586

sigma = 0.241107 (0.0284147)
Left-censored observations: 0
Right-censored observations: 0
Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 0.123977
with p-value = 0.939894

Results obtained from data analyzed using Gretl Version 1.1,
** Significant at 5 %, ***Significant at 1 %

Table 4.14- 4.17: Tobit Regression Result, using observations 1-36

Model 3: Tobit, using observations 1-36
Dependent variable: SE
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	1.28073	0.214833	5.9615	<0.00001	***
LNEQ	-0.0832956	0.0269653	-3.0890	0.00201	***
LNTO	0.0816879	0.0308646	2.6467	0.00813	***
LNMEM	-0.0456896	0.0319842	-1.4285	0.15315	

Chi-square(3)	24.89480	p-value	0.000016
Log-likelihood	9.792201	Akaike criterion	-9.584402
Schwarz criterion	-1.666808	Hannan-Quinn	-6.820950

sigma = 0.184345 (0.0217253)
Left-censored observations: 0
Right-censored observations: 0

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 11.3993
with p-value = 0.00334714

Results obtained from data analyzed using Gretl Version 1.1
** Significant at 5 %, ***Significant at 1 %

Model 1, Tobit Regression Bank Rakyat and Conventional Banks (using 50 observations)

Dependent variable: TFP
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	-1.52318	3.2019	-0.4757	0.63428	
LNgdppc	-0.203524	0.284716	-0.7148	0.47471	
loan/TA	0.26401	0.107919	2.4464	0.01443	**
LNTA	-0.0110383	0.015053	-0.7333	0.46338	
LNexport	0.347654	0.390635	0.8900	0.37348	
Unemply	0.0243545	0.110718	0.2200	0.82590	
Dummy	0.00246809	0.0353279	0.0699	0.94430	

Chi-square(6)	11.46940	p-value	0.074908
Log-likelihood	58.67160	Akaike criterion	-101.3432
Schwarz criterion	-86.04701	Hannan-Quinn	-95.51832

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 8.52047
with p-value = 0.014119

Results obtained from data analyzed using Gretl Version 1.1, **Significant at 5 %

Model 2QML, Tobit Regression, Bank Rakyat and Conventional Banks (using 50 observations)

Dependent variable: TE
QML standard errors

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	2.89453	2.08912	1.3855	0.16589	
loan/TA	0.038791	0.0478431	0.8108	0.41748	
LNexport	-0.260376	0.254302	-1.0239	0.30589	
Unemply	-0.0820131	0.0733619	-1.1179	0.26360	
LNgdppc	0.207354	0.187904	1.1035	0.26981	
Dummy	0.0178735	0.00889284	2.0099	0.04444	**
LNTA	-0.0113613	0.00658525	-1.7253	0.08448	*

Chi-square(6)	5.858813	p-value	0.439191
Log-likelihood	89.04162	Akaike criterion	-162.0832
Schwarz criterion	-146.7871	Hannan-Quinn	-156.2584

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 48.3461
with p-value = 3.1753e-011

Results obtained from data analyzed using Gretl Version 1.1,
*Significant at10 %, ** Significant at 5 %

Model 3, Tobit Regression, Bank Rakyat and Conventional Banks (using 50 observations)

Dependent variable: Tech
Standard errors based on Hessian

	Coefficient	***Std. Error***	***z***	***p-value***	
Const	-6.186	1.55646	-3.9744	0.00007	***
LNTA	-0.00324286	0.00731734	-0.4432	0.65764	
loan/TA	-0.0254463	0.0524601	-0.4851	0.62763	
LNgdppc	-0.578829	0.138402	-4.1822	0.00003	***
Unemply	0.299287	0.0538208	5.5608	<0.00001	***
LNexport	0.910286	0.18989	4.7938	<0.00001	***
Dummy	-0.0109158	0.0171731	-0.6356	0.52502	
Chi-square(6)	35.34225	p-value		3.70e-06	
Log-likelihood	94.73808	Akaike criterion		-173.4762	
Schwarz criterion	-158.1800	Hannan-Quinn		-167.6513	

Test for normality of residual –
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 12.7593
with p-value = 0.00169571

Results obtained from data analyzed using Gretl Version 1.1, ***Significant at 1 %

Model 4, Tobit Regression, Bank Rakyat and Conventional Banks (using 50 observations)

Dependent variable: PTE
Standard errors based on Hessian

	Coefficient	***Std. Error***	***z***	***p-value***
const	2.60932	1.71033	1.5256	0.12710
LNTA	0.00124801	0.0080407	0.1552	0.87665
loan/TA	0.0594652	0.0576461	1.0316	0.30228
LNgdppc	-0.0406789	0.152084	-0.2675	0.78910
Unemply	-0.0711872	0.0591413	-1.2037	0.22871
LNexport	-0.0763018	0.208661	-0.3657	0.71461
Dummy	-0.0044228	0.0188707	-0.2344	0.81469

Chi-square(6)	6.942266	p-value	0.326219
Log-likelihood	90.02463	Akaike criterion	-164.0493
Schwarz criterion	-148.7531	Hannan-Quinn	-158.2244

Test for normality of residual –
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 28.7191
with p-value = 5.80403e-007

Results obtained from data analyzed using Gretl Version 1.1

Model 5, Tobit Regression, Bank Rakyat and Conventional Banks (using 50 observations)

Dependent variable: SE
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	4.06643	2.15385	1.8880	0.05903	*
LNTA	-0.00861215	0.0101258	-0.8505	0.39504	
loan/TA	0.231905	0.072595	3.1945	0.00140	***
LNgdppc	0.43769	0.191523	2.2853	0.02229	**
Unemply	-0.208359	0.0744779	-2.7976	0.00515	***
LNexport	-0.503433	0.262772	-1.9159	0.05538	*
Dummyy	0.0137277	0.0237643	0.5777	0.56349	

Chi-square(6)	18.87836	p-value	0.004374
Log-likelihood	78.49594	Akaike criterion	-140.9919
Schwarz criterion	-125.6957	Hannan-Quinn	-135.1670

Test for normality of residual –
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 12.4477
with p-value = 0.00198164

Results obtained from data analyzed using Gretl Version 1.1
*Significant at 10 %, **Significant at 5 %, ***Significant at 1 %

Tobit Regression, Bank Rakyat, Conventional and Islamic Bank (using 56 observations)

Dependent variable: TFP2
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	5.49002	10.4067	0.5275	0.59782	
Loan/TA	0.175824	0.217779	0.8074	0.41946	
LNTA	0.0513579	0.0301937	1.7009	0.08895	*
LNgdppc	3.97507	2.88641	1.3772	0.16846	
Unemply	-0.723034	0.625425	-1.1561	0.24765	
LNexport	-3.27859	2.76978	-1.1837	0.23653	
Dy	-0.143834	0.103807	-1.3856	0.16587	
Dy2	0.147333	0.0748429	1.9686	0.04900	**

Chi-square(7)	10.73325	p-value	0.150685
Log-likelihood	30.66054	Akaike criterion	-43.32108
Schwarz criterion	-25.09291	Hannan-Quinn	-36.25405

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 20.8401
with p-value = 2.98284e-005

Results obtained from data analyzed using Gretl Version 1.1
*Significant at 10 %, ** Significant at 5 %

Model 2: Tobit Regression, Bank Rakyat, Conventional and Islamic Bank (using 56 observations)

Dependent variable: TE2
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
Const	0.521489	6.42479	0.0812	0.93531	
Loan/TA	0.856553	0.13445	6.3708	<0.00001	***
LNTA	0.0162233	0.0186406	0.8703	0.38413	
LNgdppc	-0.399875	1.78198	-0.2244	0.82245	
Unemply	0.0526465	0.386118	0.1363	0.89155	
LNexpt	0.251214	1.70998	0.1469	0.88320	
Dummy	-0.14241	0.0640872	-2.2221	0.02627	**
Dummy2	0.129224	0.0462056	2.7967	0.00516	***
Chi-square(7)	48.66191	p-value		2.64e-08	
Log-likelihood	57.66875	Akaike criterion		-97.33750	
Schwarz criterion	-79.10934	Hannan-Quinn		-90.27048	

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 6.38695
with p-value = 0.0410291

Results obtained from data analyzed using Gretl Version 1.1
Significant at 5 %, * Significant at 1 %

Model 3 Tobit Regression, Bank Rakyat, Conventional and Islamic Bank (using 56 observations)

Dependent variable: techn2
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*
const	-3.33825	3.606	-0.9257	0.35458
Loan/TA	0.0644639	0.0754617	0.8543	0.39296
lnasset	0.0139424	0.0104623	1.3326	0.18265
lngdppc	-1.03286	1.00016	-1.0327	0.30175
Unemply	0.266826	0.216714	1.2312	0.21823
lnexpt	1.01443	0.959748	1.0570	0.29052
Dummy	0.0297875	0.0359698	0.8281	0.40760
Dummy2	-0.0251031	0.0259335	-0.9680	0.33306

Chi-square(7)	27.17048	p-value	0.000311
Log-likelihood	90.01240	Akaike criterion	-162.0248
Schwarz criterion	-143.7966	Hannan-Quinn	-154.9578

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 28.8143
with p-value = 5.53426e-007

Results obtained from data analyzed using Gretl Version 1.1

Model 4, Tobit Regression, Bank Rakyat, Conventional and Islamic Bank (using 56 observations)

Dependent variable: PTE2
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
const	10.4452	7.52797	1.3875	0.16528	
Loan/TA	0.504798	0.157535	3.2043	0.00135	***
LNTA	0.0243285	0.0218413	1.1139	0.26533	
LNgdppc	2.59805	2.08796	1.2443	0.21339	
Unemply	-0.54484	0.452417	-1.2043	0.22848	
LNexport	-2.61352	2.00359	-1.3044	0.19209	
Dummy	-0.190744	0.0750914	-2.5402	0.01108	**
Dummy2	0.142857	0.0541394	2.6387	0.00832	***

Chi-square(7)	16.12896	p-value	0.023964
Log-likelihood	48.79495	Akaike criterion	-79.58989
Schwarz criterion	-61.36173	Hannan-Quinn	-72.52287

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 44.4999
with p-value = 2.17258e-010

Results obtained from data analyzed using Gretl Version 1.1,
** Significant at 5 %, *** Significant at 1 %

Model 5, Tobit regression, Bank Rakyat, Conventional and Islamic Bank (using 56 observations)

Dependent variable: SE2
Standard errors based on Hessian

	Coefficient	*Std. Error*	*z*	*p-value*	
const	-0.329006	12.0833	-0.0272	0.97828	
Loan/TA	-0.661421	0.252863	-2.6157	0.00890	***
LNTA	0.030845	0.0350579	0.8798	0.37895	
LNgdppc	1.88181	3.35141	0.5615	0.57446	
Unemply	-0.383352	0.726182	-0.5279	0.59757	
LNexport	-1.26078	3.216	-0.3920	0.69503	
Dummy	0.0474689	0.120531	0.3938	0.69370	
Dummy2	0.0299514	0.0869001	0.3447	0.73035	

Chi-square(7)	12.84679	p-value	0.075931
Log-likelihood	22.29591	Akaike criterion	-26.59183
Schwarz criterion	-8.363663	Hannan-Quinn	-19.52481

Test for normality of residual -
Null hypothesis: error is normally distributed
Test statistic: Chi-square(2) = 33.2998
with p-value = 5.87534e-008

Results obtained from data analyzed using Gretl Version 1.1
*** Significant at 1 %