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MICROFINANCE PERFORMANCE IN MALAYSIA

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Abstract

Microfinance Performance in Malaysia

by

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A microcredit programme was introduced to Malaysia in 1987 as one of the poverty eradication strategies in the country. Amanah Ikhtiar Malaysia (AIM) was the first microfinance institution established followed by Yayasan Usaha Maju (YUM) and The Economic Fund for National Entrepreneurs Group (TEKUN). These three microfinance institutions are subsidised by the government. However, the effectiveness of the microfinance subsidised system implemented by Malaysia is not well documented. This research measures the effectiveness of Malaysia's subsidised microcredit system by assessing the impacts of microcredit loans on the borrower's microenterprise, household, and the borrower. In addition, this research examines the determinants of loan repayment problems among the TEKUN and YUM borrowers.

The impact of microcredit loans on borrowers is measured based on the Household Economic Porfolio Model (HEPM). The logistic regression is employed to analyse the factors that influence borrowers with loan repaymnent problems. Both primary and secondary data are used in the analysis. Primary data are collected through a survey of borrowers using a structured questionnaire; secondary data are obtained from the three Malaysian microfinance institutions and Bank Nagari in Padang, West Sumatra, Indonesia.

The results showed that micrcocredit loans have significantly increased the borrower's microenterprise's revenue, the household's income and provided social (more involvement in business and family decisons and increased self-esteem) and economic security (increased personal savings, more optimistic in facing the future and increased effectiveness in coping with negative shocks). However, microcedit loans are not effective in building the borrower's assets at either the microenterprise or household level. The logistic regression results showed that both TEKUN and YUM shared similar findings where borrowers involved in agricultural types of business activity encountered problems in repaying loans. However, both TEKUN

and YUM results were different regarding borrowers' ages' contribution to loan repayment problems. Older borrowers in the age group 46 to 55 years old had significant loan repayment problems in TEKUN. In contrast, younger borrowers in the age group 18 to 25 years old had significant loan repayment problems in YUM. In addition, TEKUN borrowers who paid weekly loan repayments and YUM borrowers who paid more than RM201 a week loan repayments encountered problems in repaying their microcredit loans.

Keywords: Malaysia**,** microcredit, household economic portfolio model, logistic regression.

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Chapter 1
Introduction

1.1 Overview of the Malaysian Economy

Malaysia is a multi-ethnic country with three distinct ethnic groups; *Bumiputra[1]*, Chinese and Indian. Malaysia gained independence from British rule in 1957. After receiving independence and a colonial inheritance of a well-developed infrastructure and efficient management, Malaysia experienced rapid economic growth (Menon, 2009). In the 1970s, the Malaysian economy was predominantly based on mining and agriculture then, in the 1980s, a transition began towards the industrial sector, which led to Malaysia's growth. Among the countries in East and Southeast Asia, Malaysia's per-capita income, levels of literacy and health care are well ahead of its neighbours (Menon, 2009). Since 1976, Malaysia has recorded an annual growth of Gross Domestic Product (GDP) of over 5% except during the recession of 1985-1986, the 1997 Asian financial crisis and also in 2001 and 2002 (see Table 1.1).

Table 1.1: Gross Domestic Product (GDP) growth of Malaysia, 1970-2007

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
	6.0	5.8	9.4	11.7	8.3	0.8	11.6	7.8	6.7	9.3	7.4
GDP Growth	**1981**	**1982**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**
	6.9	5.9	6.3	7.8	-1.1	1.2	5.4	9.9	9.1	9.0	9.5
	1992	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
	8.9	9.9	9.2	9.8	10.0	7.3	-7.4	6.1	8.9	0.3	4.1
	2003	**2004**	**2005**	**2006**	**2007**						
	5.7	7.2	5.2	5.9	5.4						

Source: EPU (2010)

The rapid growth of the economy between 1957 and 1970 was due to the government promoting foreign and domestic investment, especially in the manufacturing sector (Esfahani, 1994). As a result, investment in GDP rose from about 13%, in 1955, to over 20%, in 1970 (Esfahani, 1994). Despite the economic growth, the economic status of the *Bumiputras* did not improve. Although the average income of Malaysia was higher than its neighbours, large income disparities existed between the Malays and Chinese, inherited from the colonial period (Jomo, 2004) (see Table 1.2).

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[1] *Bumiputra* is a Malay word that refers to the Malays and Indigenous people in Malaysia.

Table 1.2: Mean monthly gross household income (RM) in Malaysia by ethnicity and residential strata, 1970-2004

	1970	1974	1976	1984	1987	1989	1992	1995	1997	1999	2002	2004
Malaysia	264	362	505	1,098	1,083	1,169	1,563	2,020	2,606	2,472	3,011	3,249
Ethnicity												
Bumiputra	172	242	345	844	868	940	1,237	1,604	2,038	1,984	2,376	2,711
Chinese	394	534	787	1,552	1,488	1,631	2,196	2,890	3,378	3,456	4,279	4,437
Indian	304	408	538	1,107	1,105	1,209	1,597	2,140	2,896	2,702	3,044	3,456
Strata												
Urban	428	570	843	1,573	1,488	1,606	2,050	2,589	3,357	3,103	3,652	3,956
Rural	200	269	385	842	881	957	1,009	1,326	1,704	1,718	1,729	1,875

Source: EPU (2010)
Note: 1 RM = 0.30 USD

Between 1970 and 1990, the Malaysian government introduced the New Economic Policy (NEP) that undertook social and economic development in the country (Jomo, 2004). The main objective of the NEP was to eradicate poverty and restructure the society of the country (Jomo, 2004). It was hoped that the NEP would eliminate the identification of race with economic function; for example, Chinese in the business sector, Malays in agriculture and Indians in rubber plantations (Jomo, 2004). Among the actions taken were increased investment in education and training of the poor to enable them to acquire the skills needed to enter high wage employment and the promotion of income-generating projects such as the establishment of three agricultural land authorities, namely: Federal Land Development Authority (FELDA), Federal Land Consolidation and Rehabilitation Authority (FELCRA) and Rubber Industry Smallholders Development Authority (RISDA) (Jomo, 2004).

FELDA and FELCRA are government agencies involved in the resettlement of rural poor into smallholder farms on newly developed areas, especially palm oil plantations (RISDA on rubber plantations). During the NEP period, in 1987, Amanah Ikhtiar Malaysia (AIM) introduced a microcredit programme to the country. The main objective of AIM is to reduce poverty among *Bumiputras* by granting small loans to borrowers involved in income generating activity. Overall, the NEP successfully reduced the country's poverty level from 52.4%, in 1970, to 17.7%, in 1990 (Roslan, 2006). After the NEP, economic and social development of the country was continued, from 1991 to 2000, by the National Development Policy (NDP) framework.

The NDP continued the policies of the NEP to reduce racial imbalances in the economic sector (Menon, 2009). In addition, in the NDP, the private sector played a supportive role, with the government, in the social and economic development of the country (Menon, 2009). Because of this, much of the public sector was privatised, such as energy (electricity) and telecommunication. With this transformation from the public sector into private profit-

oriented organisations, the private sector provided an efficient service to the people (Esfahani, 1994). The NDP successfully led Malaysia to achieve higher economic growth, more than 8% from 1990-1996 (see Table 1.1). However, economic growth contracted to 7.4%, in 1998, as a result of the 1997 Asian financial crisis (Menon, 2009). Malaysia was resilient in response to the crisis and, by 2000, the GDP had grown to 8.9% (Menon, 2009).

The NEP and NDP were replaced by Vision 2020. Vision 2020 provides a framework for the long term objective of Malaysia becoming a fully developed nation by 2020. In realising Vision 2020, there are nine challenges that need to be addressed: (1) establishing a united Malaysian nation; (2) creating a psychologically liberated, secure and developed Malaysian society; (3) developing a mature democratic society; (4) forming a community that has high morals, ethics and religious strength; (5) establishing a matured liberal and tolerant society ; (6) establishing a scientific and progressive society; (7) establishing a fully caring society; (8) establishing a fully caring society; (9) establishing a prosperous society (Islam, 2010). Overall, the NEP, NDP and the first half of Vision 2020 development planning successfully reduced poverty in the country (see Tables 1.3 and 1.4), achieved positive growth in GDP (see Table 1.1), increased the income of the *Bumiputras* (see Table 1.2) and reduced unemployment (see Table 1.5).

Table 1.3: Incidence of poverty in Malaysia by ethnicity and residential strata (1984-2007)

	1984	1987	1989	1992	1995	1997	1999	2002	2004	2007
Malaysia	20.7	19.4	16.5	12.4	8.7	6.1	8.5	6.0	5.7	3.6
Ethnicity										
Bumiputra	28.7	26.6	23.0	17.5	12.2	9.0	12.3	9.0	8.3	5.1
Chinese	7.8	7.0	5.4	3.2	2.1	1.1	1.2	1.0	0.6	0.6
Indian	10.1	9.6	7.6	4.5	2.6	1.3	3.4	2.7	2.9	2.5
Strata										
Urban	8.5	8.5	7.1	4.7	3.6	2.1	3.3	2.3	2.5	2.0
Rural	27.3	24.8	21.1	21.2	14.9	10.9	14.8	13.5	11.9	7.1

Source: EPU (2010)

Table 1.4: Incidence of hard-core poverty in Malaysia by ethnicity and residential strata (1984-2007)

	1984	1987	1989	1992	1995	1997	1999	2002	2004	2007
Malaysia	6.9	5.1	3.9	2.9	2.0	1.4	1.9	1.0	1.2	0.7
Ethnicity										
Bumiputra	9.9	7.4	5.8	4.4	3.2	2.2	2.9	1.6	1.9	1.0
Chinese	2.2	1.4	0.8	0.4	0.3	0.1	0.2	0.1	0.0	0.1
Indian	1.9	1.8	1.2	0.5	0.3	0.2	0.3	0.3	0.3	0.3
Strata										
Urban	2.4	1.9	1.3	1.0	0.9	0.4	0.5	0.3	0.4	0.3
Rural	9.3	6.7	5.2	5.1	3.6	2.5	3.6	2.6	2.9	1.4

Source: EPU (2010)

Table 1.5: Unemployment rate in Malaysia, 1984- 2007

Year	1984	1987	1989	1992	1995	1997	1999	2002	2004	2007
Unemployment rate	5.0	7.3	5.7	3.7	3.1	2.5	3.4	3.5	3.5	3.2

Source: EPU (2010)

1.2 Microcredit Programmes in Malaysia

Poverty reduction became a major objective in Malaysian development plans following the development of NEP and NDP. As a result, the incidence of poverty in Malaysia has fallen over the years (see Tables 1.3 and 1.4). Although the overall poverty incidence in Malaysia has been reduced; there are still outstanding issues that need to be addressed. First, the *Bumiputra* still represent the largest ethnic group among those living in poverty and, secondly, the incidence of hard-core poverty in rural areas is still high (see Tables 1.3 and 1.4).

Inspired by the microcredit programme in Bangladesh, as pioneered by Muhammad Yunus, Malaysia introduced a microcredit programme as one poverty eradication programme in the country. Despite the need to eradicate poverty, especially among *Bumiputra,* the microcredit programme also hoped to reduce the dependency of poor people on the government by promoting the concept of self reliance (Roslan, 2006). In microcredit programmes, the poor are given credit to start an income-generating activity.

The first microfinance institution in Malaysia was Amanah Ikhtiar Malaysia (AIM), established in 1987. AIM provides microcredit services throughout Malaysia (Peninsular, Sabah and Sarawak). Meanwhile, in 1987, the state of Sabah established its own microfinance institution called Yayasan Usaha Maju (YUM), with a focus on providing microcredit loans to the poor people of Sabah. Both YUM and AIM replicate the Grameen Bank microcredit model. The third microfinance institution in Malaysia is The Economic Fund for National Entrepreneurs Group (TEKUN), established in 1998. TEKUN provides microcredit services throughout Malaysia. AIM and YUM are poverty-oriented institutions, in that they give microcredit loans only to people who live at, or below, the country's poverty line (see Table 1.6). TEKUN provides microcredit loans to both poor and not-so-poor people[2]. AIM applies a group lending scheme, whereas YUM and TEKUN apply individual lending schemes.

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[2] Not-so-poor people refer to the people who live above the National Poverty Line (see Table 1.6).

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AIM is a Non Government Organisation (NGO), whereas YUM and TEKUN are government organisations under the Ministry of Agriculture and Agro-Based Malaysia, respectively. All are subsidised microfinance institutions. They receive full financial support from the government in terms of grants and soft loans (Roslan, 2006). The charges for microcredit loans are very low and, as a result, the three microfinance institutions have not achieved financial sustainability since their establishment (Roslan, 2006).

Table 1.6: Malaysia's national poverty line by region

Region	Overall Poverty		Hard-core Poverty	
	Gross PLI (RM)	Per Capita PLI (RM)	Gross PLI (RM)	Per Capita PLI (RM)
Peninsular Malaysia	661	152	398	91
Sabah (East Malaysia)	888	173	503	97
Sarawak (East Malaysia)	765	167	482	105

Source: EPU (2010)
PLI: Poverty Line Income

1.3 Research Problem Statement

Some researchers claim that relying on subsidies can undercut a microfinance institution's scale and efficiency. Morduch (2006) argues that subsidised credit may not only undermine the financial performance of microfinance institutions, but also can undermine the social impacts by limiting the scale and quality of the subsidies allocated. In addition, according to Robinson (2001a), subsidised resources will lead to: (i) rent-seeking behaviour on the part of borrowers; and (ii) high default rates since subsidies lead to lower repayment levels because the borrowers often perceive credit as disguised donations. Subsidised credit is also subject to political interference, such as when relatives and supporters of political leaders receive preferential treatment. Thus, many poor are denied credit because of selection bias. Subsidised microfinance systems also prevent the development of sustainable microfinance institutions, due to low charges on loans and discouragement to mobilise deposits (Robinson, 2001a).

According to the Consultative Group to Assist the Poor (CGAP)[3], microfinance institutions need to achieve financial sustainability in order to reach significant numbers of poor people

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[3] CGAP is the microfinance research institute.

(CGAP, 2004b). The CGAP Donor Guidelines on Good Practice in Microfinance also state that microfinance institutions should finance themselves after 7-10 years of operation (CGAP, 2004a). These two guidelines show that subsidies should only provide temporary start-up support and that microfinance institutions should finance themselves thereafter and achieve financial self-sufficiency.

The critics of subsidy assistance to microfinance institutions and borrowers are well documented but, for the last 20 years, the Malaysian government has subsidised its microfinance institutions. The government claims that this is part of its social obligation to the poor to elevate them from poverty. But there is also a political motive behind such subsidies (Kasim, 2000).

In this study, the performance of a microfinance institution is measured in terms of the impact of the microcredit loans on the borrower's life. This study investigates if there are any significant changes in the borrower's business, household and individual development after receiving a microcredit loan. A major criticism of subsidised microfinance systems is their high default rates (Morduch, 2006; Robinson, 2001a). This notwithstanding, according to the AIM management report as at 31 July, 2009, AIM recorded repayment rates of 98.98% (AIM, 2009). This is a good achievement for a subsidised microfinance institution. However, TEKUN and YUM did not record such a good repayment performance. For example, in 2009, TEKUN recorded an 85% repayment rate, with RM 225 million worth of loans outstanding since 1999 (Berita Harian, 2009). As at 31 December, 2008, YUM's repayment rate stood at 90.72% (YUM, 2009). Therefore, this study will investigate the factors leading to TEKUN's and YUM's repayment problems.

This study will also compare Malaysia's microfinance institutions' lending systems with the Grameen Bank in Bangladesh and People's Bank (*Bank Perkreditan Rakyat*-BPR) in Indonesia. The Grameen Bank and BPR are non-subsidised microfinance institutions. This study uses the Grameen Bank for comparison because Malaysia adopted the Grameen Bank model and the Grameen Bank is also the world's leading example of the microfinance framework. In contrast, BPR in Indonesia, has a unique microfinance system and has a long history in micro-lending practices since Dutch colonial times during the 1890s (Jay, Richard, Johnston, & Widjojo, 2007). This study chose BPR in Padang province in West Sumatra, Indonesia, because the customs and economic activities of the people in the province are similar to Malaysia

1.4   Research Objectives

The research objectives in this research are to:

1. Provide an overview of Malaysian microfinance institutions and their services and to compare the Malaysian microfinance lending system with the Grameen Bank in Bangladesh, and People's Bank (*Bank Perkreditan Rakyat*-BPR) in Indonesia;

2. Investigate the impact of microcredit loans on the borrower's business, household and individual for each of the microfinance institutions (AIM, TEKUN and YUM);

3. Examine the determinants of the loan repayment problem among the borrowers in TEKUN and YUM; and

4. Provide policy implications from the research findings.

1.5   Contribution of the Research

This research expects to contribute to the development of the microfinance sector in Malaysia. To date, there are no studies on the impact of microcredit loans on YUM and TEKUN borrowers and only one study in the literature on the impact of microcredit loans on AIM borrowers. However, this was a small scale study by Ismail (2001) of 60 AIM borrowers. Thus, this research will be the first large scale study on the impact of microcredit loans on borrowers from subsidised microfinance institutions (AIM, TEKUN and YUM).

In addition, this is the first study to investigate the factors that influence loan repayment problems among TEKUN and YUM borrowers. Examination of the determinants of the loan repayment problems among TEKUN and YUM borrowers will benefit these two institutions in understanding the factors that lead borrowers to default or miss their loan repayments. This understanding may improve their repayment collection scheme and future profit margins.

Since the study is conducted on subsidised microfinance institutions, it will fill a gap in the microfinance literature about how the different lending designs adopted by subsidised microfinance institutions play a role in determining the institutional performance and success.

1.6   Outline of this Thesis

The rest of this thesis is organised as follows: Chapter 2 presents an overview of the relevant literature on the impact of microcredit and the determinants of loan repayment performance. Chapter 3 provides the background of microfinance institutions in Malaysia and compares microcredit lending systems between Malaysia, Bangladesh (Grameen Bank) and Indonesia (BPR). Chapter 4 discusses the empirical models, the estimation technique and data collection methods. Chapter 5 presents and discusses the empirical results. Chapter 6 summarises the major findings and policy implications, followed by the limitations of the research and suggestions for future research.

Chapter 2

Literature Review

2.1 Introduction

This chapter provides an overview of subsidies in microfinance, the impact and performance of microfinance and loan repayment issues. Section 2.2 provides a definition of microfinance. Section 2.3 discusses the history of microfinance. Sections 2.4 and 2.5 discuss the characteristics of Grameen Bank microfinance and microfinance providers, respectively. The issue of subsidies in microfinance are discussed in section 2.6. Section 2.7 discusses the performance measurement of microfinance institutions and section 2.8 reviews previous studies on the impact of microfinance. Section 2.9 reviews previous studies on repayment issues in microcredit loans.

2.2 Definition of Microfinance

Microfinance can be defined as financial instruments, such as loans, savings, insurance and other financial products that are tailored only to the poor. Microfinance is created in the economy for the economic benefit of the poor and to alleviate poverty. Before microfinance, the poor had difficulty accessing commercial financial institutions because of a lack of collateral and unverified credit histories. Robinson (2001a, p. 9) provided a formal definition of microfinance as:

> *Microfinance refers to small scale financial services primarily credit and savings-provided to people who farm or fish or herd; who operate small enterprises or small business enterprises where goods are produced, recycled, repaired, or sold; who provide services; who work for wages and commissions; who gain income from renting out small amounts of land, vehicles, draft animals, or machinery and tools; and to other individuals and groups at the local levels of developing countries, both rural and urban.*

Microcredit is the lending side of microfinance. Microcredit loans help the poor to be involved in income generating activities that allow them to accumulate capital and improve their standard of living (Littlefield, Morduch, & Hashemi, 2003). As quoted by the late Milton Friedman, Nobel Prize winner in Economics 1976, "The poor stay poor not because they are

lazy but because they have no access to capital" (Smith & Thurman, 2007, p.1). This is true since many poor people around the world are already benefiting from microfinance.

By providing access to financial services, microfinance plays an important role in the fight against poverty. For example, income generation from a business helps not only the business activity to expand but also contributes to household income and improves food security, children's education, and empowers women. For example, microcredit in Bangladesh has empowered women by increasing their contribution to the household income and asset accumulation, which significantly improved the living standard of the family (Khandker, Samad, & Khan, 1998). Thus, microcredit emerges as a tool for promoting the economic and social development of the poor.

2.3   The History of Microfinance

Previously, microfinance was known as rural finance or informal finance. Rural finance and informal finance have similar characteristics and practices as microfinance, because they involve small loans that are normally tailored to the poor. The term "microfinance" became popular and widely used with the establishment of Grameen Bank by Muhammad Yunus in the 1970s.

Rural finance was practised in Ireland and Germany in the 16th and 17th centuries (Steinwand, 2001). In Germany, Friendrich Wilhelm Raiffeisen created a credit cooperative, which is one tool of the microfinance provider, after the "hunger year" of 1846 (Hollis & Sweetman, 1998). The credit cooperative provided loans to poor farmers in rural areas and, by 1910, it had successfully served 1.4 million farmers in Germany and been replicated in Ireland and Northern Italy (Morduch, 1999a).

The credit cooperative model, known as the "Raiffeisen Model", was replicated by the British and Dutch during their colonial eras in India and Indonesia. Bank Rakyat in Indonesia (BRI), one of the successful microfinance institutions in the world today, is based on the "Raiffeisen Model" (Seibel, 2005).

In contrast, informal finance is popular among Asian countries. It is called by different names in different countries. For example, informal lending is called "Hui" in China, "Chit funds" in India, "Arisan" in Indonesia and "Paluwagan" in the Philippines (Seibel, 2005). However, the rapid development of formal microfinance started in Bangladesh in the 1970s. It was initiated by Muhammad Yunus, a Bangladeshi economist who was conscious of the hardship the poor

faced, especially the women, in his country (Yunus, 2007a). Muhammad Yunus began the practice of microlending by giving out collateral-free loans from his own pocket to women villagers in Jobra who were involved in income generating activities such as weaving bamboo stools and making pots (Yunus, 2007a).

Muhammad Yunus believed that the capitalist banking system could not resolve the poverty predicament of his country. In 1976, after finally convincing the people of the validity of his ideas, he set up a bank called the Grameen Bank (Bank of the Villages – in Bangla) (Yunus, 2007a). The Grameen Bank offers easy and small credit to poor women without requiring collateral. In the beginning, many were pessimistic about the success of the Grameen Bank since giving loans without requesting any financial security is a risky venture.

However, Muhammad Yunus successfully proved that even without collateral, the Grameen Bank could succeed and be a realistic strategy in changing poor people's lives. The credit the bank offers not only improves the women's economic status but also empowers their lives. With microcredit, the women become an income contributor to the family and this has increased their self-worth. The women borrowers also become more financially independent and have the confidence to participate in community organisations. For his outstanding efforts in shaping the modern industry of microfinancing, Muhammad Yunus and the Grameen Bank were awarded the Nobel Peace Prize in 2006 (Yunus, 2007a).

2.4 Characteristics of the Grameen Bank

One important feature of microfinancing initiated by Muhammad Yunus, the founder of the Grameen Bank, is that it does not require any collateral. However, this type of financing is risky. In order to reduce the risk, microfinancing has initiated some innovative and unique characteristics. Among the innovations are flexible and frequent loan repayment instalments, involvement in small disbursement of loans, the requirement for compulsory savings and the imposition of joint liability lending (Yunus, 2007a).

With flexible loan instalments, borrowers may repay their loan weekly, monthly or seasonally, over a year. Weekly instalments are most widely applied in microcredit loan products whereas monthly and semi-annual instalments are usually imposed for credit products that focus on seasonal ventures, such as agriculture. Weekly repayments are scheduled for small scale businesses, such as petty trading since such businesses tend to generate a daily or weekly revenue flow (Yunus, 2007a).

This frequent collection of revenue enables borrowers to repay their loan in weekly instalments. In addition, the frequent loan instalment system also means that credit officers will meet borrowers regularly, thus providing early warning signals to credit officers about emerging repayment problems before they happen (Jain & Mansuri, 2002).

Another prominent characteristic of the Grameen Bank microfinance system is group lending (Yunus, 2007a). In group lending, borrowers are grouped into five to ten people. The members of the group are responsible for choosing the borrowers they want in their group. Thus, a borrower who wants to be in a particular group must be reliable and have a good business performance so that she can meet the loan repayment schedule. This is because each borrower in the group is responsible for repaying the loan if one of them defaults on the loan (Yunus, 2007a).

The group lending approach develops social collateral in order to mitigate morally hazardous behaviour among the borrowers, such as not repaying their loans (Yunus, 2007a). Group lending applies a stepped loan system whereby the amount of the next loan given is contigent on the performance of the borrowers' repayments on the previous loan (Yunus, 2007a). This approach educates the borrowers how to use credit effectively and cultivates their creditworthiness.

The main objective of the group lending innovation is to transfer the responsibilities from the microfinance institution's staff to the borrowers (Beatriz & Morduch, 2005). In conventional financial institutional practice, client selection, client performance monitoring and enforcement are administered by bank staff. However, in microfinance, these responsibilities are assumed by the borrowers. The studies by Chowdury (2005), Armendariz de Aghion (1999), Banerjee, Besley and Guinnane (1994), Stiglitz (1990) and Varians (1990) showed that the joint liability feature in group lending is efficient in promoting loan repayments among the members of a group even in the absence of physical collateral.

Another characteristic of the Grameen Bank's microfinancing is compulsory savings (Yunus, 2007a). As originally proposed by the Grameen Bank, compulsory savings are required by microfinance institutions as a condition for obtaining the loan. Each member must contribute to the group savings, regardless of whether they have a loan (Yunus, 2007a). Members with larger loans are required to contribute more to the group and the payments are collected during the weekly meetings. The savings from the group fund can be borrowed by group members for economic consumption or emergency purposes (Yunus, 2007a).

2.5   Microfinance Providers

In general, microfinance institutions can be divided into three types: group lending, village banking and individual lending. Each microfinance institution adheres to basic microlending principles such as servicing the poor and imposing frequent loan repayment instalments.

2.5.1   Group lending design

Group lending is a well-known microfinance institution design. The group lending microfinance institution model, designed by Muhammad Yunus, has been replicated in over 40 countries, including both developing and developed countries. These include Malaysia, Thailand, the Philippines, Vietnam, Sri Lanka, India, China, Mali, Honduras, Bolivia, Chile, Tanzania, the United States and Canada (Hulme, 2008).

The group lending design is an effective mechanism to reach the poorest but it does not necessarily lead to the microfinance institution achieving financial sustainability (Hartarska, 2005). In addition, based on experience in China, group lending microfinance institutions recorded nearly 100% repayment rates (Park & Ren, 2001). A similar experience is shared by Malaysia. Amanah Ikhtiar Malaysia, which applies group lending design, recorded higher repayment rates (98.98%) than TEKUN (85%) and YUM (90.72%), which apply individual lending design (AIM, 2009; Berita Harian, 2009; TEKUN, 2009).

2.5.2   Village banking design

Village banking is the second microfinance institutional design. Indonesia was the first country to initiate the village banking type of microfinance institution. It was introduced by the Dutch in the 1890s (Jay et al., 2007). The People's Bank (*Bank Perkreditan Rakyat*-BPR) is modelled on the village banking framework. In practice, the village bank belongs to the villagers, is run by the villagers and the services offered are for the benefit of the villagers (Cull, Demirguc-Kunt, & Morduch, 2007).

In the village banking model, the villagers manage their own funds, disburse and deposit all funds, resolve loan repayment problems and manage discipline among members. This is different from the Grameen Bank's group lending practice where the funds belong to the bank, and the bank itself is responsible for managing and disbursing the funds to the villagers.

Modern village banking was introduced by John Hatch in 1984, with the establishment of The Foundation for International Community Assistance (FINCA) (FINCA, 2009). FINCA is considered an influential microfinance organisation in the world today and offers its services widely in Latin America, the Caribbean, Africa, Eastern Europe, the Caucasus and Central Asia (Painter & MkNelly, 1999). FINCA received funding from the United States Agency for International Development (USAID) and private donors to finance programmes all over the world (FINCA, 2009).

2.5.3   Individual lending design

The third category of microfinance institution is individual lending. An individual-based lending institution normally uses standard bilateral lending contracts between a lender and a single borrower, which is similar to commercial lending practices. The only major difference is that the loan offered is much smaller than commercial financial institutions. In addition, some microfinance institutions that apply the individual lending model also impose frequent loan repayments, such as weekly payments.

Among microfinance institutions that apply the individual lending design are Banco Sol in Bolivia and Bank Rakyat in Indonesia. A microfinance institution in this category normally imposes higher interest rates, which tend to achieve financial self sufficiency, and does not rely on subsidies or donations (Morduch, 2000). The objective of the business is profit making and not social; this contrasts with what has been practised by the Grameen Bank.

Studies by Cull et al. (2007) and Hartarska (2005) on the importance of microfinance institutional designs with respect to the trade-off between financial performance and depth of outreach (reach only the poorest) show that individual based types of institution seem to have higher profits since they focus more on breadth of outreach (numbers of borrowers) rather than depth of outreach (reach only the poorest).

Bhatt and Tang (2001) clarified that a variety of microfinance institutional designs was important in providing microfinance services to the poor in a particular country. However, one type of microfinance institution design does not mean it will fit well for all countries. For example, the group lending design is more effective in reaching the poorest in Bolivia, whereas, in Cameroon, the individual lending design is more effective (Zeller & Meyer, 2002b). The prominent characteristics of group lending, village banking and individual lending designs are shown in Table 2.1.

Table 2.1: A comparison of microfinance group lending, village banking and individual lending designs.

Characteristic	Group lending	Village banking	Individual lending
Example	Grameen Bank - Bangladesh	People's Bank (*Bank Perkreditan Rakyat-BPR*)-Indonesia	Banco Sol - Bolivia
Target borrower	Poor people	Poor people	Not-so-poor people
Type of business	Social business	Social business	Commercial business
Loan management (e.g., loan distribution, repayment collection)	By microfinance institution's staff	By villagers	By microfinance institution's staff

2.6 Subsidies in Microfinance

Conducting a microfinance business is costly since giving small scale loans incurs high transaction costs. The poor cannot provide collateral to commercial financial institutions to obtain a loan. The reasons why commercial financial institutions do not engage in micro-lending include the risks and higher transaction costs involved. Many established microfinance institutions are financed by the government in the form of subsidies and donations in their early stages of development.

Subsidies can be defined as the opportunity cost of the subsidised resource; subsidised resources are funds that are priced below the opportunity cost of those funds (Schreiner, 2003). According to Schreiner (2003), there are six kinds of subsidised resources: direct grants, public paid-in capital, revenue grants, discounts on soft debt, discounts on expenses and discounts on the true profit.

Schreiner (2003) defined the direct grant type of subsidy as a cash gift, such as computers, furniture or vehicles, that are counted as assets on the balance sheet. Public paid-in capital, in contrast, comes from the sale of shares to donors, whereas private paid-in capital comes from the sale of shares to private entities. Revenue grants are cash gifts from government donations and the discount on soft debt subsidy is the opportunity cost of the soft debt minus what the microfinance institution paid.

Schreiner (2003) defined discounts on expenses as costs absorbed by donors, which the microfinance institution does not record as expenses; for example, technical help, exemptions

from reserve requirements, no deposit insurance, coverage of organisational costs and feasibility studies, debt guarantees, fees for consultants, training for loan officers and travel for workers. The true profit, the sixth form of subsidised funds, can be calculated by subtracting grant profits from accounting profits. Overall, these subsidised resources can be categorised according to the type of grants, either in cash or non-cash forms (see Table 2.2).

Table 2.2: Categories of subsidised funds for microfinance institutions

Subsidised funds	Grant	Cash/non-cash
Direct grant		
Public paid-in capital	Equity	Cash
Revenue grant		
Discount on soft debt	Profit	
Discount on expenses		Non-cash
True profit	Equity	

Source: Adapted from Schreiner (2003, p. 45).

Subsidised credit programmes are derived from the supply-leading finance theories that emerged in the late 1940s and 1950s after World War II (Robinson, 2001d). The supply-leading finance theory emerged from the belief that farmers need more capital than they could save and also that farmers could not pay the full cost of credit (Lewis, 1955, as cited in Robinson, 2000d, p.140). Thus, governments at that time supplied the capital to the people in terms of credit and technology. According to Robinson (2001d), after World War II there was wide use of highly intensive modern agricultural technologies that poor farmers could not afford. Thus, poor farmers were given credit at below market rates with the hope they could use the new technology and increase the country's agricultural productivity.

Adams (1984) highlighted other reasons why governments provided subsidies in terms of charging very low interest rates on the loans given. The government believed that charging a higher interest rate was forbidden in the Holy Bible and the Holy Talmud. Governments also believed that there was nothing wrong in giving farmers cheap credit since the governments also received cheap money from foreign donors. According to Adams, governments underestimated the farmers' ability to make borrowing decisions.

Governments believed that farmers would borrow money only if the cost of borrowing was lower. Therefore, governments believed they needed to subsidise credit as an incentive to encourage farmers to borrow money and increase their production. These assumptions were made by governments but were not supported by any evidence (Adams, 1984).

Based on such assumptions over the decades, subsidised agricultural credit proliferated in many credit programmes, including microfinance. However, according to Morduch (2000), subsidised agricultural, as well as microfinance, credit documented disappointing results nearly universally. One of the drawbacks of subsidised credit programmes is that they lead to rent-seeking behaviour by the borrowers because they often perceive credit as disguised donations (Robinson, 2001d; Adams, 1984). Thus, in many cases, subsidised credit programmes had higher default rates.

Subsidised credit programmes also often experienced political interference, including buying political support (Adam, Graham, & Von Pischke, 1984). The Social Development Fund of Zimbabwe, the Argentine Provincial Banks of Argentina, Regional Rural Banks of India and Rural Credit Cooperatives of China are among the examples of politicised microcredit programmes that charged very low interest rates, with no action taken over late repayments and loan defaulters were forgiven (Robinson, 2001c).

Criticisms of subsidised microfinance programmes have been documented in many studies (Robinson, 2001c; Morduch, 2000; Adam et al., 1984). Many subsidised microcredit programmes ended up with non-poor borrowers, undermined savings mobilisation and the inability of microfinance institutions to achieve financial self-sustainability.

However, some scholars also believed that subsidies will help microfinance institutions reach more poor people. For example, a study on microfinance institutions in Latin America showed that the more subsidies and donations they received, the more poor people they reached (Zeller & Meyer, 2002b). Such beliefs create a conflict over the role of subsidies and how microfinance institutions should finance them. Murdoch (2000) called this conflict a "microfinance schism". There are two parties in this schism; the institutionalist and the welfarist.

The welfarists believe that there is nothing wrong with subsidising microfinance institutions. Subsidised microfinance institutions can achieve sustainability without achieving financial self-sufficiency (Morduch, 2000). The welfarist believes that if the microfinance institution focuses on achieving financial self-sufficiency the very poor people will not be reached. They advocate that the microfinance institution should work on providing microfinance services to only the poorest and reach as many as possible instead of focusing on achieving financial self-sufficiency. There is nothing wrong in giving subsidies to microfinance institutions if the objective in lifting the poor out of poverty is achieved (Woller, Gary, Dunford, Christopher, & Woodworth, 1999).

According to Woller et al., (1999), if the social return on the investment of the microfinance institution is higher than alternative investments, then that particular microfinance institution will not be considered a subsidised microfinance institution. However, if the social return is less than alternative investments, then that particular microfinance institution will be considered a subsidised institution and investors need to discontinue financing it.

The institutionalists have a different view. The founders of the institutionalist paradigm are a group of researchers from Ohio State University's Rural Finance Program. This paradigm has grown since the 1980s (Brau & Woller, 2004; Zeller & Meyer, 2002a). For institutionalists, achieving financial self-sufficiency is important for microfinance institutions in order to give better service to the poor (Morduch, 2000). Microfinance institutions need to finance themselves rather than depend on subsidies or donations. Since profit is the main objective, many microfinance institutions that focus on achieving financial self-sufficiency concentrate on providing microfinance services to as many borrowers as they can (poor and not so poor) beside the poorest (Morduch, 2000). This is because reaching the poorest alone incurs higher transactions costs.

In addition, microfinance investors also have a similar view as the welfarists and institutionalists. There are two types of investors in the microfinance industry, the social investor and the selfish investor (Woller et al., 1999). Social investors can be divided into two groups. The first group comprises investors who seek solely the social improvement of the poor as a return from the investment. They want to ensure that with the money invested they have lifted the poor from poverty and improved their standard of living. The second group comprises investors who seek both social and financial returns (capital gains). Selfish investors can also be categorised as investors who are concerned only about the financial return from their investment.

However, Hulme and Mosley (1996b) state that it does not matter whether the microfinance institution operates according to a welfarist or instutionalist framework, or what are the investors' motives. The important factor is whether the microfinance institution and the investor provide positive changes to the lives of the poor.

2.7 Performance of a Microfinance Institution

Measuring the performance of a microfinance institution is about examining progress and determining whether the goals of microfinance have been met. The important goal of

microfinance is to improve the standard of living of the poor and lift them out of poverty. However, according to Schreiner (1996), the performance of microfinance differs according to the perspective of the borrowers, society, donors, the microfinance institution's staff and investors.

The borrower measures the performance of microfinance institutions by their repeated use of microfinance products to gain benefits. For example, with microcredit loans, borrowers are able to improve their businesses, provide healthy food for their families, provide better education for their children and also empower their personal life (Schreiner, 1996). Society, like the borrowers, also measures the performance of microfinance.

Donors, on the one hand, measure the performance of microfinance using market leverage. 'Market leverage' is the gain that the microfinance institution has achieved with the donations given (Schreiner, 2003). For example, with donations, outreach to the poor will increase and the microfinance institution will be considered more stable and efficient in delivering the services.

On the other hand, the staff consider that a microfinance institution has performed well once it achieves financial self-sufficiency (Schreiner, 2003). Staff members are more concerned with financial self-sufficiency of the microfinance institution because they feel that they will still have a job when the donors leave. Lastly, a good performance for a microfinance institution, according to investors, is when the microfinance institution achieves high profitability from the investors' investment (Schreiner, 2003).

The approach taken to measure the performance of microfinance programmes can be divided into three developmental phases (Zeller & Meyer, 2002b). The first phase is when the subsidised credit policy is widely implemented. During this phase, the indicator of a good microfinance programme is the number of the poorest being served. The microfinance institution does not worry about its financial performance since it is fully supported by goverment subsidies. The approach is similar to the welfarist view, which claims that the performance of microfinance institutions should be assessed especially in terms of their social impact on the poor and whether the microfinance institution has achieved its poverty reduction objective (Morduch, 2000).

However, in the 1980s, when many failed subsidised rural credit and microfinance programmes were documented, the issue of sustainability arose. Institutionalists claimed that, in order that microfinance institutions achieved sustainability, they should focus on profits by charging higher interest rates. Thus, the indicator of good performance in microfinance

shifted to an institution's ability to achieve financial self-sufficiency (Woller & Woodworth, 2001; Morduch, 2000).

Based on the CGAP guidelines, five core areas need to be taken into consideration when measuring the performance of microfinance institutions: (i) Outreach, *(How many clients are being served?)*; (ii) Client poverty level *(How poor are the clients?)*; (iii) Collection performance *(How effective is the microfinance institution in collecting its loan?)*; (iv) Financial sustainability *(Is the microfinance institution profitable enough to maintain and expand its services without continued support from subsisided donor funds?)*; (v) Efficiency *(How well does the microfinance institution control its administrative costs?)* (CGAP, 2007, p.1).

According to Zeller and Meyer (2002), there are three important criteria that microfinance insitutions need to examine in delivering their services and these criteria should also be used in measuring their performance. The criteria are: (i) outreach, (ii) financial sustainability and (iii) welfare impact. The measurement of the microfinance programmes' performance should consider whether the three criteria are achievable. Zeller and Meyer (2002) called this the triangle of microfinance (see Figure 2.1).
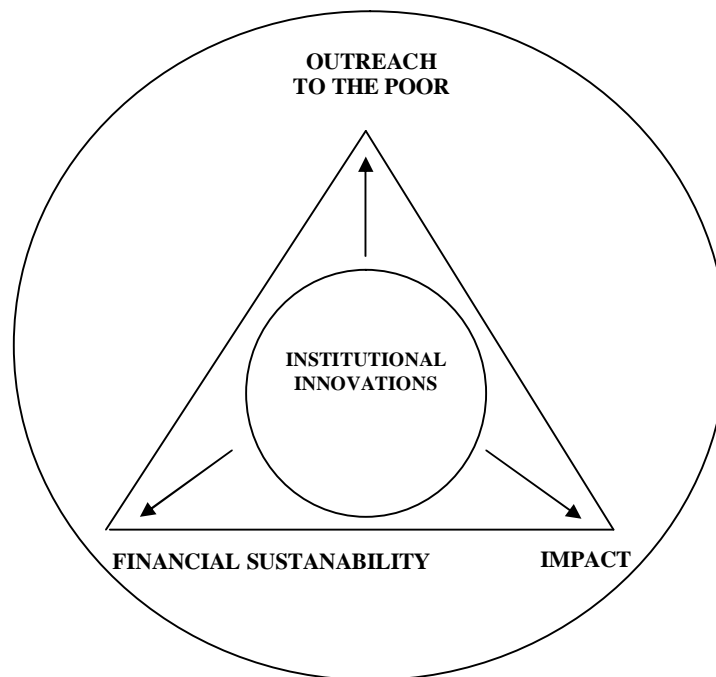
Figure 2.1: The triangle to measure the performance of microfinance institutions
Source: Adapted from Zeller and Meyer (2002, p. 6)

According to Zeller and Meyer (2002), the inner circle of the Triangle of Microfinance represents the microfinance institution's innovations in technology, policy, organisation and management that affect how well each objective (outreach, impact and financial sustainability) is met. However, there is a trade-off in meeting the objectives of achieving financial sustainabilty, reaching the poorest and, at the same time, ensuring a positive impact on the borrower. Many believe that it is impossible for a microfinance institution to achieve financial sustainability and, at the same time, reach higher numbers of the poorest (Hartarska, 2005; Zeller & Meyer, 2002; Park & Ren, 2001)

The basic judgment about this belief is that reaching the poorest means the microfinance institution charges a low interest rate because the poorest cannot afford to pay a high interest rate while the microfinance institution incurs higher transaction costs (Park & Ren, 2001). Hartarska (2005) also stressed that there is no "win-win" situation for a microfinance insitution between reaching only the poorest and achieving financial sustainability. The microfinance institution either reaches only the poorest, charges low interest rates and is subsidised or reaches the not-so-poor borrower, charges higher interest rates and achieves financial sustainability.

2.7.1   Measuring outreach

Outreach means the number of poor served, including the number of women clients, how well the microfinance institution reaches the poorest and the variety of financial services available. There are six variables in measuring the outreach dimensions: breadth, depth, length, scope, cost and worth (Navajas, Schreiner, Meyer, Gonzales-Vega, & Meza, 2000). In their study, Navajas et al. (2000) combined a measurement of financial sustainability with the outreach dimension of the microfinance institution (see Table 2.3).

Table 2.3: Outreach dimensions, definitions and indicators for microfinance institutions

Outreach Dimensions	Definition	Indicators
Breadth	The number of clients reached.	▪ Number of loans to clients ▪ Number of financial accounts
Depth	The value that society attaches to the net gain of a given client.	▪ Average loan size ▪ Percentage of female clients ▪ Percentage of rural clients ▪ Borrowers' education (less is preferred) ▪ Borrowers' ethnicity (minorities are preferred) ▪ Types of housing (small are preferred)

Length	Assessment of financial performance-profitability and portfolio quality.	▪ Financial self-sufficiency ▪ Operational self-sufficiency ▪ Return on assets adjusted ▪ Average loan size to GNP per capita ▪ Real growth portfolio yield ▪ Capital costs to assets ▪ Labour costs to assets ▪ Loans to assets ▪ Donations to loan portfolios ▪ Average loan size
Scope	The number of types of products and services offered to clients.	▪ Loans ▪ Savings ▪ Insurance ▪ Other
Cost	The sum of price costs and transaction costs to clients.	▪ Price costs ▪ Transaction costs
Worth	The value clients place on products and services.	▪ Increase in profits ▪ The drop-out rate: repeat purchases

Source: Navajas et al., (2000).

2.7.2   Measuring financial sustainability

Measurement of the financial sustainability of a microfinance institution is similar to the measurement proposed by Navajas et al. (2000), as shown in the third component of Outreach (length) (see Table 2.3). However, this measurement has been expanded by other researchers (see Table 2.4).

Table 2.4: Financial performance indicators for microfinance institutions

Indicator
1. Portfolio at risk
2. Provision expense ratio
3. Risk coverage ratio
4. Write-off ratio
5. Operating expense ratio
6. Cost per client
7. Personnel productivity
8. Credit officer productivity
9. Funding expense ratio
10. Cost of funds ratio
11. Loan loss reserves

Sources: Cull et al. (2007), Gutirez-Nieto et al. (2005), Tucker (2001).

The financial performance measurements shown in Tables 2.3 and 2.4 are generally applicable to unsubsidised microfinance institutions. Yaron (1992) introduced an additional measurement specifically for subsidised microfinance institutions, called The Subsidy Dependence Index (SDI). The SDI measurement was then expanded by Schreiner (1999).

The SDI is a measurement of self-sufficiency for subsidised financial institutions. It is the percentage change in the yield on lending with everything else held constant, which makes the subsidy equal to zero.

The computation of SDI is based on Shreiner and Yaron's (1999) framework, given as :

$$SDI = \frac{S}{LP.n}$$

where:

S	=	annual subsidy received by the microfinance institution calculated from
		$S = A(m-c) + [(E*m) - p] + K$
A	=	microfinance institution concessionary borrowed funds outstanding
M	=	interest rate that the microfinance institution would assume to pay for borrowed funds if access to concessionary funds were eliminated
C	=	weighted average annual concessionary rate of interest actually paid by the microfinance institution on its average annual concessionary borrowed funds outstanding
E	=	average annual equity
P	=	reported annual profit before tax (adjusted for loan loss provisions and inflation)
K	=	the sum of all other annual subsidies received by the microfinance institution (such partial or complete coverage of the microfinance institution's costs by the State or Federal Government)
LP	=	average annual outstanding loan portfolio of the microfinance institution
n	=	weighted average yield earned on loan portfolio of the microfinance institution.

A high SDI value indicates low financial sustainability for the microfinance institution whereas a low SDI value indicates a higher financial sustainability. The index value also suggests how much the average interest rate would have to be increased to compensate for a complete and immediate subsidy elimination (Shreiner & Yaron, 1999).

Schreiner (2003), Morduch (1999b) and Hulme and Mosley (1996a) used the SDI framework to examine the level of subsidy dependence of the Grameen Bank. Schreiner (2003) also examined the SDI of Banco Sol Bolivia. In addition, the SDI model has been applied in non-MFI institutions, such as cooperative and NGO agencies in Nigeria and commercial banks in Fiji, by Sharma Alufohai, (2006) and Uriam (2003), respectively.

2.7.3   Welfare impact of microcredit

The measurement of the welfare impact of microfinance on the borrowers is essential in determining the success of microfinance programmes. Many researchers measuring the performance of microfinance concentrated solely on the welfare impact on the borrowers (business, household and individual); for example, Afrane (2002), on microfinance borrowers in Ghana and South Africa, Copestake et al. (2001) in Zambia, and Coleman (1999) in Thailand (see Table 2.5). Some researchers concentrated solely on outreach, for example, Navajas et al. (2000) in Bolivia, and others on financial performance, such as Adongo and Stork (2005) on microfinance institutions in Namibia and Tucker (2001) on microfinance institutions in 17 Latin American countries.

Some studies focused on both financial performance and outreach in measuring the performance of microfinance institutions; for example, Cull et al. (2007) on microfinance institutions from 49 developing countries, and Kereta (2007) in Ethopia (see Table 2.5). Park and Ren (2001) measured the performance of microfinance institutions on the outreach, financial performance and the welfare impact of microcredit on the poor. Details of the impact of microcredit on borrowers are discussed in the next section.

Table 2.5: Summary of studies measuring microfinance institutions' performance

Performance indicator	Study by	Country of study
Welfare impact	Afrane (2002)	Ghana and South Africa
	Coleman (1999)	Thailand
	Copestake, Bhalotra and Johnson (2001)	Zambia
	Dunn and Arbuckle (2001)	Peru
	Mosley (2001)	Bolivia
	Nader (2008)	Cairo
	Pitt and Khandker (1998)	Bangladesh
	Zaman (1999)	Bangladesh
	Hossain and Diaz (1997)	Philippines
Outreach	Navajas et al. (2000)	Bolivia
Financial performance	Adongo and Stork (2005)	Namibia
	Tucker (2001)	17 Latin American countries
Outreach and financial performance	Cull et al. (2007)	49 developing countries
	Kereta (2007)	Ethiopia
	Lafourcade Isern, Mwangi and Brown (2005)	African countries
	Gary and Woller (2002)	13 village banks (various countries)
Outreach, financial performance and welfare impact	Park and Ren (2001)	China

2.8 Impacts of Microcredit Loans on the Borrowers

Measuring the impact of microcredit loans on borrowers is essential in determining the success of microfinance programmes. The donors and government, for instance, need to know the performance of the microfinance programmes in order to justify their investment in terms of improving the socio-economic position of the borrowers. The impacts of microcredit loans on the borrowers can be economic or social.

The impact of microcredit loans can also be classified into: (1) intermediate outcomes and (2) end outcomes (Khalily, 2004a). Intermediate outcomes include changes in the borrower's income, consumption, expenditure, asset accumulation, savings, children's education, nutritional intake and employment. Meanwhile, poverty alleviation is the end outcome of microcredit programmes. Overall, the impact of microcredit loans on the borrowers is on their businesses, households and personal lives. The success of the microcredit programme is shown by positive changes in the borrower's business, household and personal life.

The main objective of microcredit loans is to encourage the poor to get involved in income generating activities such petty trading businesses. Microcredit loans allow the poor to buy raw materials or invest in high-yielding varieties that yield higher production and output (Islam, 2007). Increases in production will also lead to increases in business income and this leads to poverty reduction (Islam, 2007).

A study by Khandker (1998b), who surveyed 1800 households in 86 villages in Bangladesh, found that microcredit loans had a positive impact on the borrowers' income, employment, consumption, asset accumulation and savings. The author also found that 5% of the respondents managed to leave the poverty category each year.

The positive findings of the impact of microcredit loans on microenterprises were also found by other researchers in various studies of Bangladesh microcredit programmes, such as Husain (1998), Hashemi and Zaman (1998) and Schuler and Riley (1996). Those authors found that microcredit programmes have led to poverty reduction and better living conditions for the poor.

In Malaysia, the borrower's type of business activity is important in determining the impact of microcredit loans. A study by Ismail (2001) on 60 AIM members showed that borrowers involved in small business activities generated higher business revenue than those involved in agricultural activities.

It is also believed that growth in the business resulting from microcredit loans will also increase employment levels (Dunn & Arbuckle, 2001). Dunn and Arbuckle's study on the impact of microcredit programmes in Peru showed that microcredit not only made a positive impact on the microenterprise net-revenue but also on employment generation.

Similar findings were documented for microcredit programmes in the Philippines. Hossain et al. (1997) evaluated the Grameen Bank microcredit programme replication in the Philippines and showed that microcredit borrowers had substituted self-employment for wage employment. The employmnent opportunities created by the microenterprise also benefitted the community (Woller & Parsons, 2002).

The impact on borrowers also depends on how efficiently they use the funds. The impact is less if the borrowers use microcredit loans for personal consumption than if they invest in productive ventures (MacIsaac, 1997). The worse-off borrowers typically used microcredit loans for personal consumption whereas better-off borrowers invested their microcredit loans in business development.

Microcredit loans not only had a direct impact on the microenterprise by increasing the profitability and stability of the business, but microcredit loans could also indirectly impact household income and welfare (Dunn & Arbuckle, 2001). The impact on household welfare includes house condition, household appliances, food expenditure and children's education.

Studies on the impact of microcredit loans on household level in Bangladesh by Khandker (2005), Pitt and Khandker (1998) and Zaman (1999) showed that microcredit loans improved the borrower's consumption, food spending and children's education. However, different countries documented different impact results. For example, the study of microcredit borrowers in Peru by Dunn and Arbuckle (2001) showed that microcredit loans increased the borrower's household income and food consumption but not expenditure on household appliances and children's education. A study by Mosley (2001) on microcredit borrowers in Bolivia showed that richer borrowers enjoyed a larger positive impact than the poor. A similar result was reported in Thailand by Coleman (2002) who also documented that microcredit loans had a larger impact on richer borrowers. However, micrcocredit loans can also make the borrowers' lives worse off. This happened when borrowers borrowed to repay existing loans from other informal lenders (Islam, 2007).

Microcredit loans do not only improve the economic status of the borrower but also empower female borrowers. In Bangladesh, for instance, men have priority and are dominant in every aspect of life. Yunus (2007a) believed that women can obtain equal social and economic status in the society and need not be treated as a burden to the family if they could get a chance to borrow money and have their own income. Hulme (2000), Khandker et al. (1998), Husain (1998) and Mustafa et al. (1996) showed that microcredit programmes in Bangladesh have empowered female borrowers in terms of participating in family decision making and increasing their personal savings.

The variables used in measuring women's empowerment in previous research included: (i) the control over loans, income and savings (Dunn & Arbuckle, 2001; Pitt & Khandker, 1998; Goetz & Gupta, 1996); (ii) the women's mobility, ability to make purchases and make decisions and the women's legal and political awareness (Dunn & Arbuckle, 2001; Hashemi, Schuler, & Riley, 1996); and (iii) women's control over household assets and knowledge regarding family control (Garikipati, 2006; Dunn & Arbuckle, 2001; Zaman, 1999).

The positive impact of microcredit loans on female borrowers was also recorded in other microcredit programmes in different countries. For example, a study by Kevane and Wydick (2001) on the performance of female and male microentrepreneurs in Guatemala showed no significant difference between male and female borrowers in generating business sales. The study also showed that microenterprises belonging to female borrowers were more stable and had higher rates of employment generation than male borrowers. The microfinance programme drop-out rates were very low among female borrowers compared with men. A similar positive impact of microcredit loans on women's empowerment was found among women in Cairo (Nader, 2008), South Africa and Ghana (Afrane, 2002).

2.8.1 Techniques used in microcredit impact studies

According to Hulme (2000), micrcocredit impact studies can be categorised into three approaches. The first is a scientific approach, also known as the quantititative method. The scientific method involves large scale sample surveys, a longitudinal study, incurs higher costs and, usually, requires a higher standard of econometric analysis (Hulme, 2000). Examples of microcredit impact studies that applied the scientific method include Mahjabeen (2008), Morris and Barnes (2005), Coleman (1999), Khandker (1998a), Husain (1998) and Mustafa et al. (1996).

The second approach uses the humanities' traditional method, also known as the ethnographic or qualitative method. Interviews are the key technique in this method. A study that uses this method can only be conducted on a small scale (for example, see Hietalathi and Linden, (2006). However, some researchers combined both the qualitative and scientific methods in order to achieve better findings, for example, Dunn and Arbuckle (2001) in Peru, Nader (2008) in Cairo and Afrane (2002) in Ghana and South Africa.

The third approach is the participatory learning and action approach (PLA). This is action-oriented research. This kind of research can be conducted with a quantitative or qualitative approach (Hulme, 2000). However, the technique is less extensive than the other two and involves simple statistical analysis.

2.8.2 Impact assessment limitations

The accuracy of an impact assessment study is questionable if the following problems exist in the study: (i) fungibility of the fund; (ii) selection bias; and (iii) endogeneity of the programme placement (Khalily, 2004a).

The fungibility of funds occurs when the researcher fails to separate the uses of microcredit loans from other funds that have been borrowed (Khalily, 2004a). This can be one drawback in a microcredit impact assessment study. If the borrower borrows money only from one microfinance institution, the results of the impact assessment for the particular microcredit loan on the borrower would be reliable. However, if the borrower also borrows money from other sources as well as the microfinance institution, the impact of the microcredit loan could be overestimated. The separation of the borrower's funds in an impact assessment study is impossible because the funds are mixed up if borrowers have invested the money in their business (Hulme, 2000).

Selection bias and endogeneity of the programme placement occurs when the microcredit impact study compares a treatment group (borrowers) and the control group (non-borrowers) in order to see whether there are life development differences between the two groups. The objective is to test whether the microcredit borrowers perform better than non-microcredit borrowers or vice versa. Among the studies that used this method are Nader (2008), Dunn and Arbuckle (2001) and Coleman (1999). Hulme (2000) asserted that the important criteria for chosing the non-borrowers are their location, economics, physical as well as social environment and they should be matched with the borrowers. If the researcher fails to meet these criteria, then selection bias will occur and the comparison would not be fair. Alfrane

(2002) stated that it is difficult to obtain non-borrowers who have similar characteristics to the borrowers.

Alfrane, in his study on the impact assessment of microfinance interventions in Ghana and South Africa, used a "before and after" approach. In this approach, the impact of the microcredit loan on the borrowers is measured based on the performance, i.e., whether the borrowers' business and life has been positively changed, remained the same or negatively changed after they receive the microcredit loans.

Khalily (2004b) stated that the issue on fungibility of funds in a microcredit impact assessment study is more serious than just selection bias and endogeneity issues. According to Khalily (2004b), the Household Economic Portfolio Model (HEPM) model proposed by Assessing the Impact of Microenterprise Services (AIMS) can address the issue of fungibility of funds in microcredit impact assessment studies.

The HEPM recommended that a microcredit impact assessment study should be conducted on three different aspects of a borrower's life. The first is the borrower's business, the second is the borrower's household and the third is the borrower's personal attitudes. The main idea of the HEPM framework (see Figure 2.2) is to avoid overestimating one particular aspect of the borrower's life.

The HEPM framework is based on Chen and Dunn's (1996) study. The first component in the HEPM framework is household resources. The resources belonging to a household include: (i) human (*time, labour power, skills*), (ii) physical (*land, buildings, tools, raw materials*) and (iii) financial (*cash and liquid savings*). These resources belong, either individually or collectively, to the members of the household. The household could borrow or obtain money either from a formal or informal financial institution or from a social network.

With the resources available, the household will convert them into household activities. The activities could be: (i) production (*income generating activity, household maintenance activity and outside work*); (ii) consumption (*food, clothing, medical services, liqour, ceremonies and amusements*); and (iii) investment (*real property, physical stores of wealth, productive assets, strengthened social networks and improvement in human capital through training and education*). The income generated from these activities will flow into the household resources.

The HEPM framework is operationalised by taking into consideration all aspects of the borrower's household activities. The HEPM framework suggests a micrcocredit impact assessment study should be conducted on all components of a borrower's life (*microenterprise, household and individual*) since each of the components is related to the other.
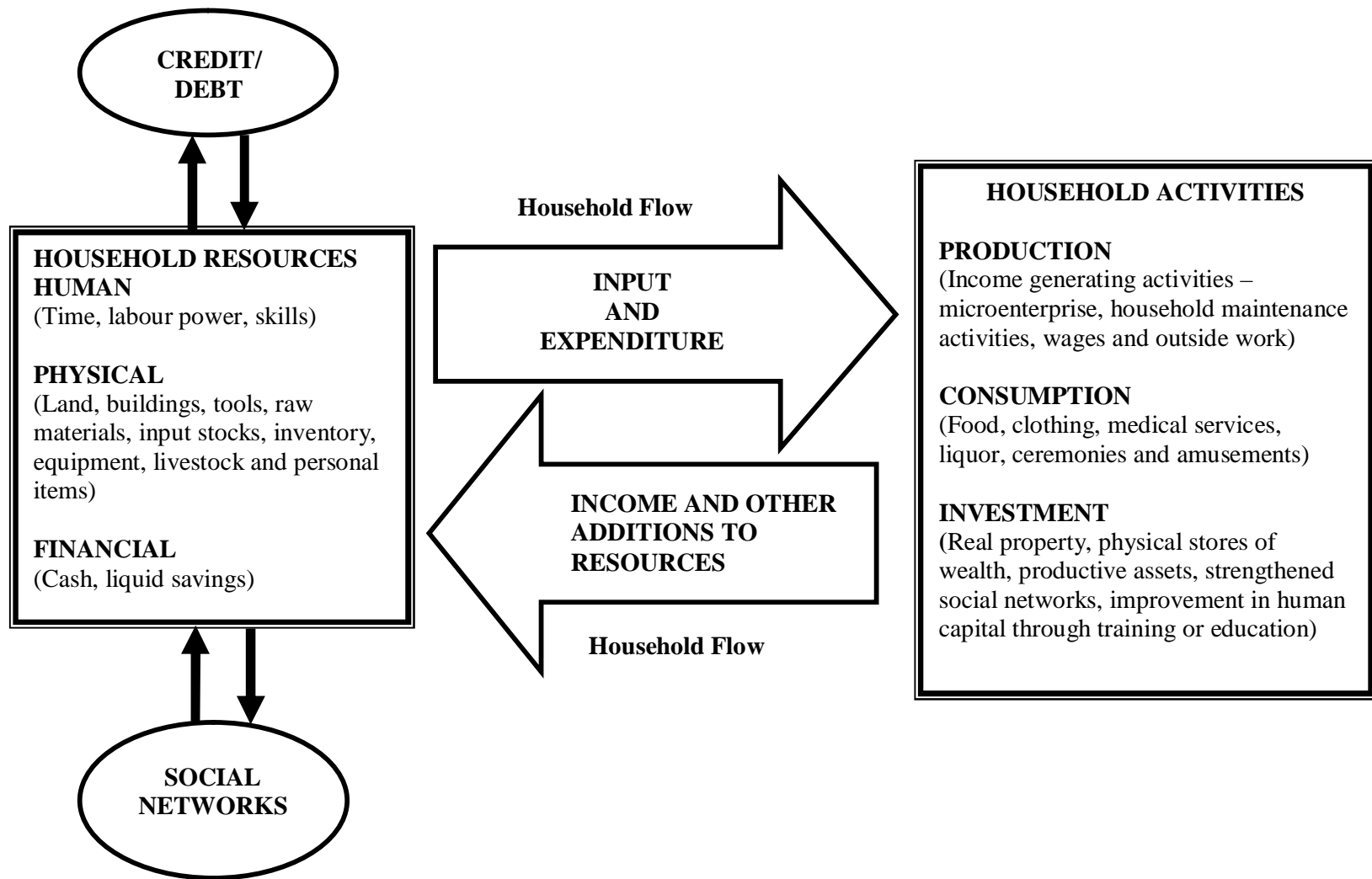
Figure 2.2: The Household Portfolio Economic Framework for assessing the impact of microcredit loans
Source: Adapted from Chen and Dunn (1996, p. 24)

2.9 Microcredit Loan Repayment Issue

Apart from measuring the performance of a microfinance institution, the capability of borrowers to repay their microcredit loans is another issue that needs attention. Borrowers can either repay their loan or choose to default. Borrower defaults may be voluntary or involuntary (Brehanu & Fufa, 2008). According to Brehanu and Fufa (2008), involuntary defaults of borrowed funds could be caused by unexpected circumstances occurring in the borrower's business that affect their ability to repay the loan. Unexpected circumstances include lower business revenue generated, natural disasters and borrowers' illness. In contrast, voluntary default is related to morally hazardous behaviour by the borrower. In this category, the borrower has the ability to repay the borrowed funds but refuses to because of the low level of enforcement mechanisms used by the institution (Brehanu & Fufa, 2008).

Research has shown that a group lending mechanism is effective in reducing borrower defaults (Armendariz de Aghion, 1999). In group lending, the loan is secured by the co-signature of members within the group and not by the microfinance institution. Each member will put pressure on the others in the group to meet the loan repayment schedule. Thus, group sanction is important in discouraging defaults among members in microfinance (Van Tassel, 1999).

Studies on the effectiveness of the group-lending mechanism include Ahlin and Townsend (2007) on Thailand's microcredit borrowers and Olomola (2000) on Nigeria's microcredit borrowers. In addition, Sharma and Zeller (1997) and Zeller (1998) undertook studies on Bangladesh and Madagascar microfinance borrowers, respectively, examining the impact of group characteristics, lender characteristics and community characteristics on loan default rates. The repayment behaviour among borrowers in the group-lending model was also investigated by Wydick (1999). The author investigated the impact of social ties, group sanctions and peer monitoring on loan repayment behaviour among Guatemalan microfinance borrowers.

Bhatt and Tang (2002) conducted a study to investigate the determinants of loan repayments in microcredit programmes that applied the group lending approach, but took a different approach. Bhatt and Tang looked at the borrower's socio economic variables instead of the elements of group lending for their influence on loan repayment behaviour. The borrower's socio-economic variables included gender, educational level, household income and characteristics of the business (type of business, years in business, etc.). In their study, they found that a higher education level was significant and positively related to better repayment

performance. Conversely, female borrowers, level of household income, type of business and borrower's experience had no significant effect on repayment behaviour.

Most previous research that investigated the issue of loan repayment defaults in microcredit concentrated more on the effectiveness of group lending in discouraging defaults. However, little study has been conducted on the issue of the credit worthiness of the individual lending design applied by microfinance institutions. Research on the determinants of loan repayment defaults in individual-based lending schemes can be found only for rural banks or semi-formal financial institutions.

Chaudhary and Ishafq (2003) examined the credit worthiness of 224 rural borrowers in Pakistan. Using logistic regression, they found that borrowers with higher educational levels, involved in a non-farm business activity, who were using the loans for investment and were female had a higher probability of repaying their loan. The study found that the subsidised interest rate level did not have a significant effect on repayment behaviour among rural borrowers in Pakistan. They concluded that a subsidised interest rate was not the best way to ensure good repayment by borrowers.

The determinants of loan repayment rates for agricultural loans were investigated by Brehanu and Fufa (2008). Using probit and logit regression, they conducted a study on the determinants of repayment performance among small-scale farmers in Ethiopia. In the study, they found that borrowers with larger farms, higher numbers of livestock and farms located in a rainfall area had a higher capacity to repay loans, since all those factors increased the farmers' productivity and income. The study also found that borrowers who had extra business income and were experienced in using agricultural technology had a good repayment performance.

Roslan and Abd Karim (2009) investigated microcredit loan repayment behaviour in Malaysia. They conducted a study on microcredit loan borrowers from AgroBank Malaysia. AgroBank is a commercial institution specialising in loans to borrowers involved in agricultural business. Apart from giving large-scale loans, it also provides small-scale loans, such as microcredit loans, to borrowers. In their research, they found that male borrowers and borrowers who had a longer duration for repayments had a higher probability of defaulting. Borrowers involved in non-production oriented business activities such as in the service or the support sectors who had training in their particular business and who borrowed higher loans had lower probabilities of defaulting.

Okorie (1986) studied the repayment behaviour in one agricultural corporation in Nigeria. The author's results from interviews with borrowers showed that the nature of the loan, either cash or in kind (seeds, fertilizer and equipment) can influence the borrowers' repayment behaviour. He found that borrowers who received a loan in kind had higher repayment rates than borrowers who received a cash loan. This was because many borrowers misused the cash, diverting it into personal consumption instead of investing in making their business productive. Regular visits by the loan officer to the borrowers' business site and higher profits generated by the borrowers also contributed to higher repayments by borrowers.

Overall, the loan repayment performance can be influenced by three factors: borrower characteristics, business characteristics and loan characteristics (see Table 2.6).

Table 2.6: Key factors affecting the loan repayment performance of microcredit loans

Groups	Determinant factors	Study by
Borrower characteristics	Gender	Chaudhary and Ishfaq (2003) Roslan and Abd Karim (2009)
	Educational level	Bhatt and Tang (2002) Chaudhary and Ishfaq (2003)
Business characteristics	Business type	Chaudhary and Ishfaq (2003) Roslan and Abd Karim (2009)
	Business profit	Okorie (1986)
	Training and experience	Brehanu and Fufa (2008) Roslan and Abd Karim (2009)
	Extra business income	Brehanu and Fufa (2008)
Loan characteristics	Loan size	Roslan and Abd Karim (2009)
	Repayment period	Roslan and Abd Karim (2009)
	Use of loan	Chaudhary and Ishfaq (2003)
	Nature of loan (cash or in kind)	Okorie (1986)
	Level of monitoring from the institution	Okorie (1986)

Chapter 3
The Malaysian Microfinance System and a Comparison with the Grameen Bank and Bank Perkreditan Rakyat

3.1 Introduction

This chapter provides background information about microfinance in Malaysia and compares the lending systems with the Grameen Bank and the People's Bank (*Bank Perkreditan Rakyat*-BPR). Section 3.2 provides an overview of microfinance institutions in Malaysia. Section 3.3 discusses the background of Amanah Ikhtiar Malaysia (AIM) followed by The Economic Fund for National Entrepreneurs Group (TEKUN) and Yayasan Usaha Maju (YUM) in sections 3.4 and 3.5, respectively. Section 3.6 provides a summary of Malaysia's microfinance system. Section 3.7 compares Malaysia's microfinance system with the Grameen Bank and People's Bank (*Bank Perkreditan Rakyat*-BPR). Section 3.8 provides a summary of the microfinance lending systems.

3.2 Overview of Microfinance Institutions in Malaysia

Malaysia has four microfinance institutions, namely, Amanah Ikhtiar Malaysia, Yayasan Usaha Maju, Economic Fund for National Entrepreneurs Group and the People's Credit Cooperation (KKR). Both the AIM and YUM, established in 1987, were modelled on the Grameen Bank framework. TEKUN was established in 1998 and KKR in 1974.

AIM is a non-government organisation (NGO) whereas YUM and TEKUN are under the Ministry of Agriculture and Agro-based Industry Malaysia, respectively. KKR is a credit union, or co-operative, belonging to rubber plantation workers in Selangor State. AIM is the dominant microfinance institution in Malaysia.

This study will examine only AIM, YUM and TEKUN since they provide significant microfinance services to the poor throughout country and receive full support from the government. KKR is excluded because it provides microfinance services to only a small number of people.

3.3 Amanah Ikhtiar Malaysia

Amanah Ikhtiar Malaysia was the first microfinance institution in Malaysia and the largest Grameen Bank replication outside Bangladesh (McGuire, Conroy, & Thapa, 1998). It was developed in 1988, under the Trustee Incorporation Act 258 (revised 1981) (Chamhuri & Quinones, 2000). AIM is a poverty-oriented microfinance institution that provides loans only to the poor.

Selangor, in Peninsular Malaysia, was the site of the pilot project of the Grameen Bank concept, known as "Project Ikhtiar". The pilot project was conducted by two social scientists, Dr David Gibbons and Professor Sukor Kasim from the Universiti Sains Malaysia. "Project Ikhtiar" was successful and showed that a group lending system similar to the Grameen Bank model can be applied in Malaysia. AIM's micro lending services have been widely offered throughout Malaysia.

AIM has had a convoluted development over the years, experiencing a mission breakdown from 1992 to 1999 when the original objective of AIM to assist the poor was distorted by political motives (Kasim, 2000). This breakdown began in 1992 when the existing members in top management were replaced with new members who wanted AIM to be a mechanism to attract political supporters (Kasim, 2000). The breakdown included leakage from loans to not-so-poor people with the introduction of two new loan schemes (Kasim, 2000). The new loan schemes were "Skim Pinjaman Nelayan" (SPIN) loans for fishermen and "Skim Khas Ibu Tunggal" (SKIT) loans to single urban mothers (Kasim, 2000). The SPIN and SKIT participants were given very large amounts for their first loans (RM10,000) and this led to uncollectible loans since the borrowers could not afford to repay them (Kasim, 2000)

In addition, the loans were not cost-effective and were more like charity-loans (Conroy, 2002). The loss of direction resulted in managerial disarray and AIM recorded the highest non-loan repayments in the institution's history. In order to cover the cost of uncollectible loans, management increased administration fees from zero, at the beginning, to 19% (Conroy, 2002). The increased loan administrative fees contributed to higher drop-out rates among the borrowers who were significantly poor (Conroy, 2002). Following this, in 2003, major reforms were made in AIM and the institution underwent a change to a new management that struggled to re-establish AIM as a viable institution.

From 2004, the new management team struggled to restore AIM to its original objective. Many efforts have been made to improve the efficiency of the operation, loan repayment

collection and to attract more borrowers. As a result, AIM has had 59,971 new members with an average of 4998 new members every month (Chan, 2010). AIM also introduced additional microcredit loan schemes for economic and social purposes and maintained the policy of charging a low management fee. Today, AIM is the leading microfinance institution in Malaysia.

3.3.1 AIM's loan schemes

The loan schemes offered by AIM can be divided into three categories. The first is loans for economic purposes, the second is for non-economic purposes and the third is for recovery. The urban micro loan in the economic category is a new loan scheme introduced by AIM. This loan scheme is tailored to poor and low-income earners living in urban areas. With this loan scheme, it is hoped that the poor can set up small businesses to increase their income and have a better life in the city. Each loan group has different eligible loan amounts and duration of instalments (see Table 3.1).

AIM offers loans to borrowers involved in various types of legal business activities. The AIM borrowers' major business activities include small businesses, agriculture, manufacturing, animal husbandry, fishing and services. As of December 2007, small business activity received most financing from AIM. As of 31 July 2009, AIM had 222,559 borrowers with RM3,328,694,213 in total loans disbursed, with a recorded 98.98% loan repayment performance (see Table 3.2)

As part of making loans to its members, AIM is concerned about members who face difficulties in their lives, for example, death, accidents, chronic disease, destruction of their house or project due to fire and natural disasters. In recognition of these disasters, AIM has established the Welfare and Well Being Fund for AIM members. The funds are collected from the members and are for the use of members and their families (see Table 3.3).

Table 3.1: AIM's loan schemes

Loan Schemes		Detail	Amount- in *Ringgit Malaysia* (RM)	Instalment
Economic (General loan)	I-Mesra	Continuously	2,000-20,000	25-150 weeks
	I-Srikandi	Continuously	2,000-20,000	25-150 weeks
	I-Wibawa	Short term loan	5,000	24 weeks
	Urban micro loan	Continuously	3,000-20,000	12-100 weeks
Non-Economic (Social loan)	I-Bistari	Educational loan	5,000	50-100 weeks
	I-Sejahtera	Multipurpose loan	10,000	50-100 weeks
Recovery Loan	I-Penyayang	Provide for those who had a project failure because of health problems or natural disasters.	1,000 –5,000	12 – 50 weeks
Management fees: 10% for all types of loans Group Savings: RM1 –RM15 per week Grace Period: 1 week after receiving the loan				

Source: AIM (2009)

Table 3.2: AIM's achievements as of 31 July, 2009

Total borrowers	222, 559
Total branches	86
Total staff	1416
Total loans disbursed	RM3,328,694,213
Repayment rate	98.98%

Source: AIM (2009)

Table 3.3: Welfare and well being fund for AIM members

Schemes/Type of Benefit	Rate of award (RM)	
(A) Death		
i. Member	500	
ii. Husband	500	
iii. Children under care aged below 18 years (except children who are still studying or disabled)	250	
(B) Ward admission due to accident or chronic disease. (member or husband only- minimum two days and maximum 20 days in one year).	30 per day	
(C) Contribution for costs of chronic disease treatment only. (member and husband only - treatments such as surgery)	Maximum 500 in a life time	
(D) Destruction of own house caused by fire (unintentional) or natural disaster (flood, storm and others).	House on land	water/squatter/long house
i. Total destruction (100%)	10,000	4,000
ii. More than half destroyed	7,000	3,000
iii. Less than half destroyed	4,000	2,000
(E) Destruction of rented/lodging house	According to the damage – maximum 2,000	
(F) Total destruction of the project (to AIM loan sponsored only- caused by natural disasters (not inclusive of drought) and fires (unintentional)	20 per cent of current economic loan (whichever is lower)	
(G) Halal loan (for members who are not eligible to be covered by insurance (members who are above 75 years old)	Maximum 2,000	

Source: AIM (2009)

3.4 Yayasan Usaha Maju

The second Grameen-modelled microfinance institution in Malaysia is Yayasan Usaha Maju, located in Sabah. Sabah is east of Peninsular Malaysia and forms the north east part of Borneo. Sabah is the second largest state in Malaysia after Sarawak (Sabah, 2009). There are 32 officially recognised ethnic groups in Sabah, with Kadazan the largest group, followed by Bajau and Murut (Sabah, 2009). Sabah's economy traditionally relied heavily on timber exports and some agricultural products such as cocoa and rubber (Sabah, 2009).

In 1970, Sabah was one of the richest states in Malaysia but by 2007 it was recorded as one of the poorest (Sabah, 2009). In the Ninth Malaysia Plan (2006-2010), Sabah's poverty was three times higher than the national average caused by the inequitable distribution of wealth between the State and Federal governments (Sabah, 2009).

YUM began in 1988 as a "Project Usaha Maju" initiated by the Grameen Trust Fund and the Rural Development Corporation (Chamhuri & Quinones, 2000). Project Usaha Maju was successful in lifting its members out of poverty. The state government of Sabah decided to institutionalise Project Usaha Maju and form Yayasan Usaha Maju on June 30, 1995. YUM is registered as a foundation under the Trustee (Incorporation) ordinance 1951 chapter 148 of Sabah (YUM, 2009).

YUM is under the purview of the Ministry of Agriculture and Agro-based Industry Malaysia. The core role of YUM is to provide loans to the poor and hard-core poor and to complement government efforts to alleviate poverty in Sabah (YUM, 2009). YUM's lending system is similar to that of AIM, since both are poverty-oriented institutions. The only difference is that YUM uses an individual lending system rather than AIM's group lending system. The reason YUM uses an individual lending system is because its borrowers live far apart even though they live in the same village. Due to the geographical conditions, it is difficult for the borrowers to meet each other often. Peer monitoring will not work effectively in such a situation.

3.4.1 YUM's loan schemes

YUM has two loan schemes, namely, "General Loan" and "Short-Term Loan". Each loan scheme has different eligible loan amounts and duration of loan instalments (see Table 3.4).

As of 31 December 2008, YUM had 8,252 borrowers with a total of RM 46,070,700 in loans disbursed and a 90.72% repayment rate. Table 3.5 shows the YUM achievements as of 31 December, 2008.

Table 3.4: YUM's loan schemes

Characteristics	General Loan Scheme	Short-Term Loan Scheme
Loan size	• RM 500 – RM 20,000. • Maximum loan for borrower in hard-core poverty group is RM 10,000.	RM 100 – RM 5,000
Type of activities	• Vegetable cultivation • Fruit farming • Cattle farming (livestock and fishery) • Grocery shops, food stalls, vegetable vendor • Hair salon, motor workshops, tailoring • Craftsmanship	This type of loan is offered only to hawkers. The purpose of this loan is to limit the role of 'loan sharks' in giving capital to hawkers.

Instalment Periods	a. Loan value = RM 500 – RM 900
	  Instalments = 50 weeks
	b. Loan value = RM 1,000 – RM 5,400
	  Instalments = 50 -100 weeks
	c. Loan value = RM 5,500 – RM 7,400
	  Instalments = 50 -150 weeks
	d. Loan value = RM 7,500 – RM 8,900
	  Instalments = 50-200 weeks
	e. Loan value =RM 9,000 – RM 20,000
	  Instalments = 50 -250 weeks
		Loan value = RM 100 – RM 5,000
		instalments: 50 weeks
		instalments are three times per week (Monday, Wednesday and Friday).

Management fees	: General loan scheme	= 10% every 50 weeks
	Short-term loan scheme	= 18% every 50 weeks
Compulsory Savings	: 2% of total loan	
Grace Period	: General loan scheme = 2 weeks after receipt of the loan	
	Short-term loan scheme = 1 week after receipt of the loan	

Source: YUM (2009)

Table 3.5: YUM's achievements as of 31 December, 2008

No of borrowers	8,252
No of branches	20
No of staff	165
Loans disbursed	RM 46,070,700
Repayment rate	90.72%

Source: YUM (2009)

3.5   The Economic Fund for National Entrepreneurs Group

The third microfinance institution in Malaysia is The Economic Fund for National Entrepreneurs Group (TEKUN) established on 9 November 1998. TEKUN is different from AIM and YUM. It provides loans to both poor and not-so-poor people. The main objective of TEKUN is to provide easy and quick loans to *Bumiputra* and Indian entrepreneurs. Since 2008, TEKUN has expanded its services to provide business opportunities and business skills training to its borrowers and to develop networking among innovative and progressive entrepreneurs from all over Malaysia. TEKUN is under the purview of Ministry of Agriculture and Agro-Based Malaysia.

3.5.1   TEKUN's loan scheme

TEKUN offers six financing schemes to micro-entrepreneurs. The value of the loans ranges from RM500 to RM50,000. TEKUN offers loans to both male and female small-medium scale entrepreneurs aged between 18 and 65 years old. The modes of loan repayment are weekly, monthly or semi-annually, depending on the types of business involved and TEKUN management's decisions. Management fees are 4% of the loan. This new fee charge started in August 2008; it was previously 8%. Apart from their loan repayments, each borrower is also encouraged to put savings into TEKUN at a minimum value of 5% of the annual payment, from their repayments. The details of TEKUN's loan schemes are documented in Table 3.6.

TEKUN provides its services to the both Peninsular and East Malaysia and has set up offices according to parliamentary divisions. As of August 2009, TEKUN had 150,131 borrowers with RM1,377,371,300 value of loans disbursed (see Table 3.7).

TEKUN is experiencing a crisis in loan repayments. As stated by the Minister of Agriculture and Agro-Based Industry, Datuk Noh Omar, in Berita Harian (national newspaper) on 8 July 2009, TEKUN recorded a non-performing loan rate as high as 15% with a value of RM225 million uncollectible loans that had accumulated since 1999 (Berita Harian, 2009). The

minister also mentioned that TEKUN has difficulty in disbursing loans to new borrowers because it does not have enough capital. TEKUN launched the campaign "Let's Pay Back the Loan" to its borrowers on July 1, 2009 (TEKUN, 2009). Discounts were given as an incentive to borrowers to repay loans. Recently, TEKUN management blacklisted defaulters who continued to ignore loan repayment reminders.

Table 3.6: TEKUN's loan schemes

Loan Scheme	Type of business activity finance	Loan size (RM)	Instalment
General Loan	• Manufacturing • Retailing • Services • Farming • Animal husbandry • Fishery • Tourism • Education • Transportation	500 - 50,000	Periods: 1 month to 5 years -weekly -monthly -semi-annually
	Management fees: 4% Compulsory Savings: 5 % of annual repayment Grace Period: Flexible – according to project		

Source: TEKUN (2009)

Table 3.7: TEKUN's achievements as of 31 July, 2009

Total borrowers	150,131
Total branches	194
Total staff	920
Total loan disbursed	RM 1,377,371,300
Repayment rate	85.0%

Source: TEKUN (2009)

3.6 Summary of the Malaysia Microfinance System

Malaysian microfinance institutions (AIM, YUM and TEKUN) have different types of lending systems and provide services to different strata of people. AIM and YUM offer loans to the poor and hard-core poor women, whereas TEKUN gives loans to both poor and not-so-poor men and women borrowers. AIM uses a group lending scheme, whereas TEKUN and YUM use an individual lending scheme.

Microfinance institutions in Malaysia offer only microcredit loans and no other microfinance services such as microsavings or microinsurance. This limited financial service is due to restrictions based on the Malaysia Banking and Financial Act 1989 that states *"No person*

shall carry on banking services, including receiving deposits on current account, deposit account, savings account or no other similar account, without a licence as a bank or financial institutions" (McGuire et al., 1998, p. 9). Furthermore, within the restrictions of Muslim law (*Sharia Law*)[4], interest cannot be charged on loans in Malaysia, therefore it has been replaced with management fees.

Both AIM and YUM impose weekly loan instalments for all kinds of business activities regardless of their revenue cycle. They impose one to two week grace periods for the borrowers involved in agricultural businesses. TEKUN, in contrast, imposes a weekly loan instalment system for small business activities and monthly or seasonal loan instalments for some small business activities and agricultural businesses such as farming, fisheries and animal husbandry. TEKUN allows borrowers involved in agricultural businesses to choose the duration of grace periods based on their harvest or production times. Among the three microfinance institutions, only AIM has taken the initiative to provide welfare benefits to its borrowers and families in order to reduce the burden on borrowers in cases of emergency and disasters. Table 3.8 compares the three microfinance institutions.

In a recent development in the microfinance industry in Malaysia, Bank Negara Malaysia (The Central Bank), in 2007, gave a mandate to several banking institutions in the country to offer microcredit loans (Bank Negara Malaysia, 2010). This was due to the realisation that, of the existing half million small medium enterprises in the country, 80% were microenterprises (Bank Negara Malaysia, 2010). Nine banks are involved: Bank Simpanan Nasional, Bank Rakyat, AgroBank, Alliance Bank, AMBANK, CIMB Bank, EONCAP Islamic Bank, Public Bank, and United Overseas Berhad (Bank Negara Malaysia, 2010). The size of the microcredit loan given is between RM1,000 to RM50,000 with no collateral (Bank Negara Malaysia, 2010). The interest rate charged is based on the Bank Lending Rate (BLR) plus 0.50%. As of 2010, the BLR is 6.30%, so the interest charged on microcredit loans is 6.80% (Bank Negara Malaysia, 2010). This rate is slightly higher than the management fee charged by TEKUN, at 4%, but lower than AIM, at 10%, and YUM, at 10-18%.

The microcredit loans offered by commercial banks are guaranteed by the Credit Guarantee Cooperation (CGC). The CGC is a government agency that provides guarantees on lending by other financial institutions to small and medium enterprises that have no track record or collateral to obtain credit facilities from the financial institutions (Bank Negara Malaysia,

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[4] Sharia law is a Muslim or Islamic law. It covers both civil and criminal justice as well as regulating personal and moral conduct of individuals based on the Holy Quran and Prophet Muhammad's teachings (Esposito, 2003).

2010). With this development, the opportunity for microfinance borrowers in the country to access a credit facility has widened.

Table 3.8: Summary of Malaysia's microfinance institutions' lending systems

Characteristic	AIM	TEKUN	YUM
Target borrower Service outreach	Female only All Malaysia	Both female and male All Malaysia	Female only Sabah only
Loan eligibility	People who live at or below the poverty line	People who live at or below the poverty line and not-so-poor people	People who live at or below the poverty line
Lending design	Group lending	Individual lending	Individual lending
Loan size	Min: RM1,000 Max: RM20,000	Min: RM500 Max: RM50,000	Min: RM100 Max: RM20,000
Loan instalment	Weekly	Weekly, monthly and seasonally.	Weekly
Grace periods	1 week after receiving the loan	Flexible - according to the project	1-2 weeks after receiving the loan
Management charge	10%	4%	10% per 50 weeks for General Loan Scheme. 18% per 50 weeks for Short-Term Loan Scheme.
Compulsory savings	RM1-RM15 per week	5% from annual repayment	2% from the loan

3.7   A Comparison of Microfinance Lending Systems

This section compares the Malaysian microfinance institution's lending systems and products offered by the Grameen Bank of Bangladesh and the People's Bank (*Bank Perkreditan Rakyat*-BPR) in Indonesia. Malaysia replicated the Grameen Bank model that is the leading example of the microfinance framework in the world. BPR in Indonesia has a unique microfinance system and has a long history in microlending practices since the Dutch colonial time of the 1890s[5] (Jay et al., 2007).

One of the major differences between Malaysian microfinance institutions and the Grameen Bank and BPR is that the Malaysian microfinance institutions are subsidised. Microfinance institutions in Malaysia also only offer microcredit loans and no other microfinance products.

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[5]BPR in Indonesia serves only poor borrowers compared with the Bank Rakyat Indonesia (BRI) that offered microfinance services to both poor and not-so-poor borrowers. The BPR in Indonesia can be classified into three categories: BPR established as a limited liability company and in private ownership; BPR registered as a cooperative; and BPR established by the commercial bank as their subsidiary division (Conroy, 2003).

The Grameen Bank, in contrast, apart from offering microcredit loans as a core products, also offers microsavings, microinsurance and pension funds to its borrowers, and BPR offers microcredit loans and microsavings to its borrowers. Malaysian microfinance institutions do not offer microsavings facilities because taking deposits is legally restricted (Siwar & Abd. Talib, 2001; McGuire et al., 1998)[6].

The Bank Nagari-BPRs in West Sumatra, Indonesia[7] has a unique way to attract deposit savings from its borrowers. Each borrower needs to put some savings in the BPR before being able to start borrowing. The borrowers can request a loan only if the amount of the loan requested is less than their savings. Some borrowers said that they are comfortable with placing their savings into the BPR because sometimes they wanted to save only 1,000 Rp (less than USD 1) and they felt embarrassed to go to a commercial bank just to deposit that amount. Besides depositing their savings in the banks, the borrowers' savings can also be collected by the BPR's staff (Bank Nagari, 2009).

BPR realised that not all borrowers are able to go to the bank regularly because of business and family commitments as well as transportation constraints. Therefore, BPR staff took the initiative go to the borrower's house or business premises on a daily or weekly basis to collect the savings. This is an almost unique aspect of the BPR system; a similar system has been applied by Bank Rakyat Indonesia (BRI). This shows that microfinance providers in Indonesia place considerable emphasis on savings. This approach was recommended by Robinson (2001b) and Morduch (2000) whereby microfinance institutions emphasised savings mobilisation as a way to achieve financial self-sufficiency.

Grameen Bank is the only microfinance institution among Malaysian microfinance institutions and BPR that offers microinsurance policies to its borrowers. In realising the higher climatic risk faced by the agricultural activities, microinsurance not only reduces the burden on the borrowers when a disaster happens but also saves the financial accounts of the Grameen Bank from deficits caused by uncollectible loans. Other microfinance products offered by Grameen Bank are a pension fund and scholarships to the outstanding of borrowers children. The pension fund is to help the poor build a nest egg for their old age. Among the

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[6] This restriction is based on the Malaysia Banking and Financial Act 1989 that states only bank and financial institutions are allowed to take deposits from borrowers.

[7] Bank Nagari was established in 12 March 1962, by the West Sumatra regional government with the objective of providing financial services to the local people of West Sumatra (Bank Nagari, 2009). The Bank Nagari's headquarters are located in Padang, the capital of the West Sumatra. Bank Nagari not only acts as a commercial financial institution but also plays a role as one of the microfinance providers in the province.

subsidiary microfinance products offered, the Grameen Bank pension fund savings programme is the most successful programme in the Grameen Bank (Yunus, 2007b). In 2007, total deposits in the pension fund amounted to USD 400 million, which represented 53% of the total deposits in the bank (Yunus, 2007b).

AIM and YUM impose weekly loan payments on all types of businesses, both small and agricultural businesses, regardless of their business revenue cycle (AIM, 2009; YUM, 2009). Both AIM and YUM also impose one and two week grace periods, respectively, to agricultural types of businesses (AIM, 2009; YUM, 2009). Unlike YUM and AIM, TEKUN gives reasonable grace periods to borrowers involved in agricultural businesses. For example, a one-year grace period is given for cattle farming activities, six months for fishponds and poultry farming and one year for fruit and vegetable farming (TEKUN, 2009). According to TEKUN, the duration of the grace period given to the borrowers is based on harvesting cycles (TEKUN, 2009).

The Grameen Bank and BPR lending contracts are more flexible than the Malaysian microfinance institutions, especially AIM and YUM. Both Grameen Bank and BPR loan repayment modes, duration, amount, grace periods and interest rates charged are tailored to the nature of the borrowers' businesses and are based on the borrowers' affordability. They do not impose similar loan contracts on all borrowers or business types as do Malaysian microfinance institutions.

For example, in the Grameen Bank the borrowers involved in dairy farming are allowed to pay their loans according to the milking cycle (Yunus, 2007b). Thus, with the Grameen Bank, loan repayments are based on the cash flow cycle of the borrowers' businesses (Islam, 2007). In terms of loan products, Grameen Bank offers four different loan products with four different interest rates and the loans are flexible. In a flexible loan, borrowers who cannot pay the loan according to the original repayment schedule are allowed to extend the repayment schedule (Yunus, 2007b).

Similar practices are applied by the BPR in Indonesia. There are many BPRs in one district and the types of loans offered by the BPRs are also different from others (Bank Nagari, 2009). The microfinance services offered are tailored to the needs of the borrowers in a particular village in the district. Before the BPR grants a particular loan, it conducts market research, such as the amount of repayment and interest rate that can be afforded by the borrower or the nature of cash flow cycle that will be generated by the business. This ensures that the loan contracts will not burden the borrowers (Bank Nagari, 2009). Since there are many BPRs in

one particular district, there is competition among them in terms of the types of loan offered, interest rates on savings and the attractiveness of the loans to the borrowers (Bank Nagari, 2009).

Muhamad Yunus, in his book *Creating a World without Poverty: Social Business and the Future of Capitalism* (Yunus, 2007b, p. 74), stressed that if any commercial banks wanted to participate in a microcredit business, they needed to create a subsidiary microcredit division in their bank. This microcredit subsidiary division must have separate management from the bank itself. This principle has been applied in West Sumatra by the Bank Nagari, which is also a commercial bank. The BPRs set up by the Bank Nagari have a separate management from the bank. However, Malaysian commercial banks that offer microcredit loans do not use this system; there is no separate subsidiary microcredit division created by those banks.

Bank Nagari set up BPRs in particular districts and villages so are they easily accessible by the poor (Bank Nagari, 2009). In the beginning, Bank Nagari provided capital, management and information technology (IT) support to the BPRs which, in turn, hired eligible local people as staff (Bank Nagari, 2009). Other than receiving capital from the Bank Nagari, the villagers welcome public shares in the BPR and, as a return each year, they receive dividends from the profits generated by the BPR (Bank Nagari, 2009).

The opportunity to contribute capital by the villagers gave a feeling to them that the BPR belonged to their village and they gave full support to ensure its survival. After several years of operation, and once the Bank Nagari is confident that the BPR could operate alone, the BPR is given autonomous status by Bank Nagari (Bank Nagari, 2009). However, BPRs still need to report their operational and financial performance to the Bank Nagari and, in some circumstances, Bank Nagari still gives professional advice. Even though the BPRs and Bank Nagari are separate entities, BPRs still play a role in promoting Bank Nagari's financial services, such as Hajj savings, money transfers and pawn services to their borrowers (Bank Nagari, 2009). The establishment of the Bank Nagari BPRs is not only for channelling microfinance services to the poor in rural areas but also serves as part of Bank Nagari's social business. Giving local communities the autonomy to run the BPRs by themselves provides a good incentive for the local people to save. Table 3.9 summarises the similarities and differences of the Malaysian microfinance institutions, the Grameen Bank and the BPR.

Table 3.9: Comparison of Malaysian microfinance institutions, Grameen Bank and the BPR system

	Malaysian Microfinance Institutions (AIM, TEKUN YUM)	**Grameen Bank**	**BPR**
Type of institution	Subsidised	Unsubsidised	Unsubsidised
Source of operation	(i) Management fees (ii) Government grants and soft loans	(i) Interest rates (ii) Savings	(i) Interest rates (ii) Savings (iii) Investment from borrower and local people
Lending design	AIM: Group lending TEKUN: Individual lending YUM: Individual lending	Group lending	Individual lending
Product offered	Microcredit	Microcredit Microsaving Microinsurance Pension fund	Microcredit Microsaving
Lending contracts			
(i) Interest rate	Fixed for all kinds of loan schemes.	Different for each loan scheme	Different for each loan scheme
(ii) Repayment mode	AIM and YUM: weekly to all kinds of businesses and borrowers. TEKUN: weekly mostly to small businesses and monthly/seasonally to agricultural businesses	Flexible according to borrower's business revenue cycle.	Flexible according to borrower's business revenue cycle.
(iii) Grace periods	AIM: 1 week YUM: 2 weeks TEKUN: According to harvesting cycle.	According to harvesting cycle	According to harvesting cycle

3.8 Summary of Microfinance Lending Systems

Malaysian microfinance institutions offer limited microfinance products and have a standardised lending contract. The Grameen Bank and BPR have more variety in their microfinance products and flexible lending contracts. Furthermore, the Grameen Bank and BPR are unsubsidised microfinance institutions, thus they need to offer a variety of microfinance products to generate revenue from the services. The revenue generated is used to support their operational and lendable funds. This operation is different from the Malaysian microfinance institutions whose operation is fully subsidised by the government. Therefore, there is no incentive from such institutions to offer any other microfinance products apart from microcredit loans to finance their operation.

However, the microfinance products such as microinsurance and pension funds are important benefits to borrowers. Microinsurance, for example, can give protection to the borrower's business, especially an agricultural business, which is exposed to climatic factors. Pension funds can reduce the borrower's financial burden during old age. Therefore, the Malaysian microfinance institutions should consider introducing microinsurance and pension funds to support their borrowers. The lending flexibility in the Grameen Bank and BPR contracts provides more flexibility to borrowers in repaying their loans and the Malaysian microfinance institutions could adopt such a lending scheme. The discussion in Chapter 5 provides evidence about whether the microfinance institutions' (TEKUN and YUM) lending contracts such as their repayment period, repayment amount and mode of repayment, have any impact on borrowers' capability to repay their loans.

Chapter 4
Research Methodology and Data

4.1 Introduction

This chapter discusses the research methodology and data. Sections 4.2 and 4.3 provide a description of the study area and sample selection, respectively. Data sources and data descriptions are discussed in section 4.4. The approach for the microcredit impact assessment study and the investigation of the determinants of loan repayment problems are discussed in sections 4.5 and 4.6, respectively.

4.2 Description of the Study Area

AIM and TEKUN provide microcredit services throughout Malaysia and have a large number of borrowers. AIM, for example, as of 31 July 2009, had 222,559 borrowers (AIM, 2009), whereas TEKUN, as of 31 August 2009, had 150,131 borrowers (TEKUN, 2009). For this research, three regions in Peninsular Malaysia were chosen to conduct the survey questionnaire with AIM and TEKUN borrowers.

The selected regions were Selangor and Melaka (West Malaysia), Kelantan (East Malaysia) and Kedah (North Malaysia). Both AIM and TEKUN borrowers were selected from these three regions. This provided an adequate representative population of AIM and TEKUN borrowers in Malaysia. The surveys were conducted in several districts in the selected regions. In the west, the surveys were conducted in the Kuala Langat district of Selangor, and the Teluk Mas and Masjid Tanah districts in Melaka. In the east, four districts in Kelantan were chosen: Tumpat, Tanah Merah, Pasir Mas and Kota Bharu. The survey was also conducted in four districts in Kedah: Kuala Muda, Padang Terap, Kota Setar and Langkawi Island.

YUM borrowers were surveyed in the state of Sabah, where the institution is located. Three districts in Sabah were chosen for the survey: Kota Kinabalu, Kota Belud and Kota Marudu.

As of 30 June 2008[8], AIM had 19,609 borrowers in West Malaysia (including Selangor, Johor and Melaka states), 34,215 borrowers in Kelantan (East Malaysia) and 28,994 borrowers in Kedah (North Malaysia) (AIM, 2009). Similarly, as of August 2009, TEKUN had 15,238 borrowers in Selangor (West Malaysia), 15,261 borrowers in Kelantan (East Malaysia) and 14,049 borrowers in Kedah (North Malaysia). YUM had 8,252 borrowers in Sabah as of February 2009. There were 698 borrowers in Kota Kinabalu, 983 in Kota Belud and 787 in Kota Marudu (YUM, 2009).

4.3   Sample Selection

This study selected seasonal borrowers who would provide a better understanding of and sufficient information about the impact of microcredit on borrowers. This study randomly selected borrowers in various microcredit loan schemes (economic purposes only), such as small businesses, services, plantations, animal husbandry, fishery and manufacturing.

This study used a stratified sampling procedure where the population (borrowers) was divided into subgroups or strata (seasonal borrowers) (Zikmund, 2003). According to Mendenhall, Reinmuth and Bearer (1993), in calculating the satisfactory sample response, this study required 383, 383 and 367 borrowers from AIM, TEKUN and YUM, respectively (see Appendix 1). To overcome sample attrition, the sample size must be larger than the calculated sample responses required. Response rates, based on survey questionnaires in previous research, were normally between 60% and 90% (see Coleman, 1999; Husain, 1998. Taking an 80% estimated response rate, the calculated working sample sizes for this study were 479 for AIM, 479 for TEKUN and 460 for YUM.

4.4   Data Sources and Data Description

This study used both primary and secondary data. Primary data were collected through a survey using a closed-ended questionnaire. Before the survey was administered, a pre-test of the questionnaire was conducted with 100 microcredit borrowers (50 AIM, 50 TEKUN)[9] to evaluate the clarity, consistency and appropriateness of the survey questions. Based on the

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[8] These are the latest data available for AIM.
[9] A pre-test questionnaire was not conducted on YUM borrowers since YUM is located in Sabah (Borneo Island), whereas the selected borrowers of AIM and TEKUN for the pre-test questionnaire were from Peninsular Malaysia. The high transportation costs and time constraints were the reasons a pre-test was not conducted with YUM borrowers.

comments and suggestions from the pre-test sample, the survey questions were amended. The survey field work started in May 2009 and continued to July 2009.

The survey questionnaire was divided into four sections. The first and second sections were designed to gather information about the background and impact of microcredit loans on the borrower's microenterprise and household, respectively. The third section focused on the impact of the microcredit loan on the borrower's personal life. The final section captured information about the borrower's demographics and socio-economic characteristics (see Appendix 2).

Closed-ended questions were used to simplify the respondents' answers and this saved a lot of time in the survey. Most participants took approximately 30 to 40 minutes to complete the questionnaire. They either filled in the questionnaire at the time of the survey or took the questionnaire home and the researcher collected the completed questionnaire the next day or the following week.

This study employed different approaches in administering the survey to borrowers. For AIM and YUM borrowers, the surveys were conducted during the borrowers weekly meeting in the village. Every week, staff from the two institutions meet the borrowers at a community centre in the village to collect loan repayments. The meetings comprised 30 to 50 borrowers.

For TEKUN borrowers, the survey was conducted either in the TEKUN office, when the borrowers came and paid their loans, or at the borrowers' business premises. TEKUN management at selected branches provided a room to conduct the survey with the borrowers.

Secondary data were obtained from the microfinance institutions. The data collected included the background of the institution, the total number of borrowers and staff, branches and the repayment records. The three microfinance institutions (AIM, TEKUN and YUM) were strict about giving out some information regarding the institution. As a result, this study could not access their financial statements in order to evaluate the financial performance of the institutions.

4.5 Microcredit Impact Study

This study examined the impact of microcredit loans on borrowers by applying the Household Economic Portfolio (HEP) framework introduced by AIMS[10] in 1996. The framework was used by Dunn and Arbuckle (2001) to assess the impact of microcredit loans in Peru. The framework suggested that the impact assessment study should be conducted at three levels: (i) microenterprise level; (ii) household level; and (iii) individual level.

The HEP framework was chosen for this study because it can resolve the fungibility problem common in microcredit impact assessment studies. The fungibility of funds, as discussed in the literature review, occurs when the researcher cannot separate the use of microcredit funds from one particular microfinance institution from sources of additional loans (Khalily, 2004). This produces a problem when a microcredit impact study is conducted solely on the microenterprise, household or individual, because it causes over-estimation of the impact. In order to overcome the fungibility of funds problem, this impact study combines the impact of microcredit on the microenterprise, household and individual borrowers in one study. Since some microcredit borrowers in Malaysia also borrowed additional loans from other sources, the HEP framework is appropriate for microcredit impact assessment in this study.

This study also used a "before" and "after" approach in examining the impact of microcredit loan on the borrowers. This is similar to Afrane's (2002) study. This study did not use a control group (non-borrowers) since this research was conducted on a large scale. Since this study was of three different microfinance institutions (AIM, TEKUN and YUM), selecting non-borrowers who are in the similar location, economic, physical and social environment as the borrowers would be time consuming and costly. This approach avoided selection bias in the study and is supported by Hulme (2000) who stated that the type of approach taken by a researcher in a microcredit impact assessment study depended on the researcher's budget, availability of human resources and research timing.

In the "before" and "after" approach, borrowers were asked whether their businesses, as well as their household conditions and their personal life, had improved two years after they received a microcredit loan. In the survey questionnaire, the borrowers were given three choices: the microcredit loan had a positive (increase) impact; did not have any impact (remained the same); or had a negative impact (decrease) on the business performance, as well as the household and individual development, after they received the microcredit loans.

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[10] AIMS stands for Assessing the Impact of Microenterprises Services

In order to operationalise the HEP framework, the study tested several hypotheses. The hypotheses are divided into three levels: (i) Microenterprise level; (ii) Household level; and (iii) Individual level.

(i) Microenterprise Level:

Hypothesis 1: Microcredit loans increase the microenterprise's revenue.

Hypothesis 2: Microcredit loans increase the microenterprise's fixed assets.

Hypothesis 3: Microcredit loans increase the microenterprise's employment level.

(ii) Household Level:

Hypothesis 4: Microcredit loans increase the borrower's household income.

Hypothesis 5: Microcredit loans increase the borrower's household assets.

Hypothesis 6: Microcredit loans increase the borrower's expenditure on children's education.

Hypothesis 7: Microcredit loans increase the borrower's expenditure on food.

(iii) Individual Level:

Hypothesis 8: Microcredit loans increase the borrower's control of business and family decision making[11].

Hypothesis 9: Microcredit loans increase the borrower's self-esteem.

Hypothesis 10: Microcredit loans increase the borrower's personal savings.

Hypothesis 11: Microcredit loans has a buoyant effect on the borrower's attitude towards the future.

Hypothesis 12: Microcredit loans increase the borrower's effectiveness in coping with negative shocks.

The microenterprise's revenue is the gross monthly business revenue received by the borrower. The microenterprise's fixed assets consist of land, premises, tools and equipment. As discussed in the literature review, the growth and profitability of the business that resulted from the microcredit loan is associated with an increase in the microenterprise's fixed assets and employment levels (Islam, 2007; Hossain & Diaz, 1997). Before the borrowers received the microcredit loan, many rented or leased pieces of land to carry out their business activities because they could not afford to buy land. In addition, they had been operating in old, poor business premises with limited tools and equipment. It is hypothesised that, after they received the microcredit loan, they are now able to afford to buy a piece of land, improve the

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[11] This hypothesis is tested only on women borrowers in AIM and YUM institutions.

existing premises or shift to better business premises, increase their tools and equipment and number of employees hired (Chen & Dunn, 1996).

The household's income is the gross monthly income received by the borrower's household. The household's fixed assets consist of the borrower's house, household appliances, personal land, farm land and livestock. The indirect impact of microcredit loan on the household is hypothesised to improve the borrower's housing conditions (bigger and more comfortable); increase the number of household appliances, such as televisions, refrigerators and stoves, to enhance their standard of living; and increase their personal land, the family's farm and their livestock holdings (Nader, 2008; Coleman, 2006; Dunn & Arbuckle, 2001; Khandker et al., 1998).

The household's increase in income is also hypothesised to increase the borrower's spending on children's education by sending the children to private tuition, buying extra books and purchasing a computer to allow the children to access technology and, at the same time, enhance their learning opportunities (Dunn & Arbuckle, 2001). The increase in the household's income will also result in increased family spending on food (Khandker, 2005; Zaman, 1999). This implies they are spending more money to provide sustainable healthy diets for the family compared with before receiving the microcredit.

In terms of the impact of microcredit on the borrower's empowerment, five important variables were measured. The variables are: the borrower's control over resources and income, their self- esteem, personal savings, attitude towards the future and their effectiveness in coping with negative shocks (Chen & Dunn, 1996). The control over resources and income is measured by examining the women borrowers' influence in decision making about the resource allocations in their businesses and households (Chen & Dunn, 1996). In the survey, women borrowers were asked whether they made decisions on their own or whether others, such as spouse or business partner, helped them make the decisions.

In relation to gender in Malay/Muslim society (AIM and TEKUN borrowers) and in the indigenous ethnic group in Sabah (YUM borrowers), men usually have greater control over decision-making. This study investigates whether women borrowers have a greater voice in business and family decisions after they received a microcredit loan.

Since the microcredit loan is used to improve the business, outcomes from the business will help the borrower contribute to the household and the community (Woller & Parsons, 2002). Thus, it is hypothesised this will result in an increase in borrower's self-esteem.

A microcredit loan also has an impact on the borrower's personal savings (Hulme, 2000; Goetz & Gupta, 1996). It is hypothesised that any increase in income from the business after receiving the microcredit loan will increase the borrower's personal savings. The stability and growth of the business are hypothesised to provide future security and confidence to the borrowers (Hashemi et al., 1996). It is also hypothesised that the growth will increase the borrower's effectiveness in coping with the negative shocks such as an increase in goods and fuel prices, increased competition, having a serious illness or a business reversal (Chen & Dunn, 1996; Dunn & Arbuckle, 2001).

4.6 Determinants of the Loan Repayment Problem

4.6.1 Empirical framework

According to the literature, the determinants of loan repayment default are a function of the borrower's characteristics, business characteristics and loan characteristics. This study examines the determinants of loan defaults among the borrowers from TEKUN and YUM. However, the study could not access information on loan defaulters of the two institutions since the information is private and confidential. Therefore, as an alternative, in the survey questionnaire borrowers were asked whether they had missed loan repayments more than four times since they received the microcredit loans two years previously. This approach is similar to Sexton (1977), who classified borrowers who missed any repayments as bad borrowers. It is believed that the borrowers who faced problems in repaying their loans are more likely to default in the future. Thus, this study investigates the determinants of the loan repayment problem among the microfinance borrowers.

4.6.2 Estimation techniques

The determinants of the loan repayment problem model are analysed using logistic regression. The loan repayment model is as follows (Gujarati, 1995):

Loan repayment problem = f (Borrower characteristics, business characteristics,

$$\text{microcredit loan characteristics)} \qquad (4.1)$$

$$P_i = E\left(Y_i = 1 \mid X_{ij}\right) = \frac{1}{1+e^{-z_i}} = \frac{1}{1+e^{-\left(\alpha + \sum_j \beta_j X_{ij} + \varepsilon_i\right)}} \qquad (4.2)$$

Where:

Y_i is equal to 1 if the borrower missed loan repayments more than four times in the two years since receiving the microcredit loan (having a repayment problem); 0 if the borrower never missed a loan repayment (not having a repayment problem); and

P_i is the estimated probability of a loan repayment problem (high value of P_i implies a high loan repayment problem risk);

$$Z_i = \alpha + \sum_j \beta_j X_{ij} + \varepsilon_i$$

Z_i is the probability of a loan repayment problem,

α and β_j are an intercept term and parameter, respectively.

X_{ij} are the vectors of borrower characteristics, business characteristics and microcredit loan characteristics; and

ε_i is the error term.

Equation 4.2 represents the cumulative logistic distribution function. If P_i is the probability of having loan repayment problem, then the probability of not having loan repayment problem or $(1 - P_i)$ is given by:

$$\left(1 - P_i\right) = \frac{1}{1 + e^{z_i}} \tag{4.3}$$

Therefore, the odds in favour of having a loan repayment problem or $\dfrac{P_i}{1 + P_i}$ can be written as:

$$\frac{P_i}{1 + P_i} = \frac{1 + e^{z_i}}{1 + e^{-z_i}} = e^{z_i} \tag{4.4}$$

Taking the natural log, equation 4.4 becomes:

$$Z = \ln\left(\frac{P_i}{1 - P_i}\right) = \alpha + \sum_j \beta_j X_{ij} + \varepsilon_i \tag{4.5}$$

Where Z_i is the natural logarithm of the odds ratio in favour of having a loan repayment problem.

The model is a binary choice model so the use of the ordinary least squares estimation technique is inappropriate (Maddala, 1983). Thus, to obtain efficient parameter estimates, the maximum likelihood estimation technique is applied to the logistic regression. The likelihood function L for the model is given by (Maddala, 2001):

$$L=\prod_{Y_i=1} P_i \prod_{Y_i=0} (1-P_i) \qquad (4.6)$$

From equation 4.5, the probability of having a loan repayment problem can be obtained by the following equation (Greene, 1997):

$$P_i=\text{Prob}\left(Y_i=1 \middle| X_{ij}\right)=\frac{e^{z_i}}{1+e^{z_i}} \qquad (4.7)$$

4.7 Explanatory variables

Dependent variable

The dependent variable for the logit model takes a value of "1" for borrowers who missed a loan repayment more than four times in the two years since they received the microcredit loan and "0" if they never missed a loan payment.

Independent variables

The independent variables used in the logit model are:

X_1	=	Gender (+): gender of borrower (1=male, 0=female)
X_2	=	Marital status (+): marital status of the borrower (1=single, 0=married)
X_3	=	Educational level (-): educational level of borrower (1= higher than primary school, 0= lower than primary school)
X_4	=	Business type (+): type of business conducted by borrower (1=agricultural type of business, 0=small business)
X_5	=	Extra income (-): existence of borrower's extra income (1=yes, 0=otherwise)
X_6	=	Repayment period (+): loan term period (1=more than 1 year, 0=less

than 1 year)

X_7 =   Repayment mode (+): weekly mode of payment paid by the borrower (1=yes, 0=otherwise)

X_8 =   Extra loan (+): existence of borrower's extra loan (1=yes, 0=no)

X_9 =   Age: a vector of dummy variables indicating age group between borrowers [where $X_{9(1)}$= 1 for 18-25 years old, 0=otherwise; $X_{9(2)}$=1 for 26-35 years old, 0=otherwise; $X_{9(3)}$= 1 for 36-45 years old, 0=otherwise; $X_{9(4)}$= 1 for 46-55 years old, 0=otherwise]

X_{10} =   Number of dependants: a vector of dummy variables indicating number of dependants in the borrower's household [where $X_{10(1)}$= 1 for 1-2 people, 0=otherwise; $X_{10(2)}$=1 for 3-4 people, 0=otherwise; $X_{10(3)}$= 1 for more than 4 people, 0=otherwise]

X_{11} =   Business revenue: a vector of dummy business revenue indicating amount of revenue received by borrowers [where $X_{11(1)}$= 1 for less RM1,000, 0= otherwise; $X_{11(2)}$=1 for RM1,001-RM2,000, 0=otherwise; $X_{11(3)}$= RM2,001-RM3,000, 0=otherwise; $X_{11(4)}$= RM3,001-RM4,000, 0=otherwise; $X_{11(5)}$= More RM4,000, 0=otherwise]

X_{12} =   Repayment amount: a vector of dummy repayment amount indicating amount of payment paid by weekly [where $X_{12(1)}$= 1 for less than RM100, 0=otherwise; $X_{12(2)}$=1 for RM101-RM150, 0= otherwise; $X_{12(3)}$=1 for RM151-RM200, 0=otherwise; $X_{12(4)}$= More RM201, 0=otherwise]

The positive and negative signs in parentheses in the above Table indicate the hypothesised relationship between the variable and the loan repayment problem. For example, *Educational level* (-) is hypothesised to negatively affect the loan repayment problem. The *Education* variable of the borrower indicates the literacy of the borrower. It is hypothesised that a borrower with a higher educational level would be negatively associated with a loan repayment problem (Chaudhary & Ishfaq, 2003; Bhatt & Tang, 2002). This is because the educated borrower is able to manage the business well, comprehend information, keep business records and conduct a cash flow analysis (Bhatt & Tang, 2002).

Chaudhary and Ishfaq's (2003) and Roslan and Abd Karim's (2009) studies showed that a male borrower is more likely to have a loan repayment problem and become a defaulter. Thus, it is hypothesised that male borrowers are less responsible and disciplined in repaying loans[12]. The *Marital Status* dummy variable indicates whether the borrower is single or married. Marriage often refers to maturity and responsibility. It is hypothesised that a single borrower

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[12] This hypothesis is tested only on TEKUN's borrowers since the borrowers are male and female.

would be less responsible, since there is no spouse or children to financially support. Thus, they might not need to maintain a good relationship with the microfinance institution in order to improve their chances of getting future loans compared with married borrowers (Peng, Li, Lv & Zhou, 2009). Therefore, a single borrower is associated with a higher probability of having a loan repayment problem.

The *Type of Business* dummy variable indicates the borrower's type of business. It is either an agricultural or a small business activity. It is hypothesised that an agricultural business would be associated with a lower cycle of cash flow than a small business (Chaudhary & Ishfaq, 2003). This might contribute to a higher probability of a loan repayment problem. It is also believed that the borrower who has *Extra Income* apart from the microcredit loan business will have a higher capability to repay their microcredit loan (Brehanu & Fufa, 2008). Thus, a borrower who has extra income is hypothesised to be negatively associated with having a loan repayment problem.

The *Repayment period* dummy variable shows whether the borrower has more or less than a one year loan period. It is hypothesised that the borrower who has a longer loan period, which also means that they have a longer commitment to repay the loan, contributes to a positive relationship of having a loan repayment problem (Roslan & Abd Karim, 2009). The *Repayment mode* dummy variable shows whether the borrower pays weekly or monthly loan repayments. The mode of loan repayment imposed by the microfinance institution can contribute to loan repayment behaviour (Derban, Binner & Mullineux, 2005). For example, TEKUN allows borrowers to choose their mode of loan repayment. According to TEKUN management, many borrowers involved in retail business choose to repay their loan on a weekly basis and many always missed the loan repayment schedule. This study investigates whether a weekly loan repayment schedule contributes to the loan repayment problem, especially to the borrower who receives a lower business revenue cycle[13].

The *Extra Loan* dummy variable indicates the commitments of loan repayments faced by the borrower. The existence of an extra loan apart from the microcredit loan will influence the capability of borrowers to repay their microcredit loan. An extra loan means additional responsibility in meeting loan repayments apart from the microcredit loan. Based on the questionnaire survey, this study found that many Malaysian microfinance borrowers borrowed from more than one microfinance institution. This study examines whether the

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[13] This hypothesis is tested only on TEKUN borrowers since TEKUN imposed weekly and monthly mode of loan repayment while YUM only imposed a weekly loan repayment.

borrowers confront their loan repayment when borrowing extra loans. It is hypothesised that the borrower who has an extra loan is positively associated with a loan repayment problem.

The *Age* variable refers to the age of the borrower. The age of the borrower reflects the borrower's ability to repay the loan. For example, older borrowers are believed to be more responsible than younger borrowers. Thus, an older borrower will be associated with a lower probability of loan repayment problems (Brehanu & Fufa, 2008). The number of *Dependants* in the borrowers' household also influences the ability of borrowers to repay the microcredit loan. The more dependants they have, the more responsibility they have in terms of expenses for food, clothes, education, medical and other expenses. Thus, it is hypothesised that the borrower who has many dependants will have a higher probability of having a problem in paying back the microcredit loan (Brehanu & Fufa, 2008).

Monthly business revenue (*Business Revenue*) reflects the borrower's ability to repay the loan. It is hypothesised that a lower business revenue is associated with a higher probability of a loan repayment problem (Okorie, 1986). The *Repayment Amount* dummy variable indicates the amount of weekly loan repayments. YUM imposes weekly loan repayments to all kinds of the borrowers regardless of the borrowers' cash flow cycle. As discussed by Derban et al. (2005), the unfavourable loan product's characteristics for certain kind of borrowers such as the mode of loan repayment and the amount of loan instalment, can influence borrowers to not repay loans. Thus, this study examines whether the level of weekly loan repayments has any impact on the YUM and TEKUN borrowers' ability to repay their loan. It is hypothesised that the borrower who makes high loan repayments is associated with a higher probability of a loan repayment problem.

Chapter 5
Research Results and Findings

5.1 Introduction

This chapter discusses the empirical findings of the impact of microcredit loans on the borrowers and the determinants of the loan repayment problem model. Section 5.2 presents the main characteristics of the borrowers and microcredit loans. Section 5.3 discusses the results of the impact of microcredit loans on the borrowers. The results of the determinants of loan repayment problem model are discussed in Section 5.4.

5.2 Characteristics of Borrowers and Microcredit Loans

This section discusses the characteristics of the borrowers sampled in each of the microfinance institutions, including their demographics and socio-economic characteristics. The discussion is based on the data collected from the questionnaires.

There were 470 AIM, 350 TEKUN and 377 YUM respondents. However, some survey questionnaires were incomplete and the information given by the respondents was insufficient for further analysis. Only 391 questionnaire respondents from AIM (80% response rate), 204 from TEKUN (43% response rate) and 268 from YUM (59% response rate) were useable in this study.

Both AIM and YUM offers loans only to women whereas TEKUN offers loans to both women and men. Table 5.1 shows 52.5% of TEKUN borrowers were women and 47.5% were men. The AIM (44.5%) and TEKUN (44.1%) borrowers mostly belonged in the 36-45 years age group and the greatest proportion of YUM borrowers (33.6%) belonged in the 26-35 years age group. YUM borrowers were generally younger than AIM and TEKUN borrowers.

The survey results showed 57.5%, 10.8% and 56.8% of the AIM, TEKUN and YUM borrowers, respectively, had less than primary school education. Primary school education in Malaysia is the basic education level received by a person. A person stays in primary school from age 7 to 12 years. However, not everyone has received the basic education, especially the older generation. Conversely, 42.5%, 89.2% and 43.2% of the AIM, TEKUN and YUM

borrowers had received education higher than primary school level. This shows that TEKUN borrowers were more educated than AIM and YUM borrowers.

All AIM (100%) and TEKUN (100%) borrowers were Malay, whereas most YUM borrowers (46.3%) belonged to the Kadazan group, the largest ethnic group in Sabah. Most borrowers from the three microfinance institutions were married (AIM = 93.1%, TEKUN=91.7%, YUM= 87.7%) at the time of the survey. Borrowers had quite a number of children. For instance, 39.6% of AIM borrowers had 3-4 children and 40.2% had more than four children. At least 33.3% of the TEKUN borrowers had 3-4 children and 31.4% had more than four children. Most YUM borrowers had more than four children (51.5%) (see Table 5.1).

In terms of the numbers of children in school, most borrowers had 1-3 children still in school (AIM=74.9%, TEKUN=62.8%, YUM=63.4%) at the time of the survey. In terms of the number of children studying in college or in university level, only 23.8%, 19.1% and 21.6% of AIM, TEKUN and YUM borrowers, respectively, had at least 1-2 children studying at college or university. For AIM, TEKUN and YUM, 73.1%, 79.4% and 76.1% of borrowers, respectively, did not have any children studying in college or university (see Table 5.1). The number of borrowers who did not have children studying in colleges or university was much higher. This showed that many Malaysian microfinance borrowers' children did not receive higher education.

Table 5.1: Profiles of the respondents from the three microfinance institutions AIM,TEKUN and YUM

	AIM N₁ =391		TEKUN N₂ = 204		YUM N₃ =268	
	Count (N₁)	% of N₁	Count (N₂)	% of N₂	Count (N₃)	% of N₃
Demographic						
Gender						
Female	391	100.0	107	52.5	268	100.0
Male	-	-	97	47.5	-	-
Total		100.0		100.0		100.0
Age (in years)						
18-25	7	1.8	9	4.4	85	31.7
26-35	91	23.3	39	19.1	90	33.6
36-45	174	44.5	90	44.1	73	27.2
46-55	119	30.4	66	32.3	20	7.5
Total		100.0		100.0		100.0
Educational Level						
Lower than Primary school	225	57.5	22	10.8	156	56.8
Higher than Primary school	166	42.5	182	89.2	116	43.2
Total		100.0		100.0		100.0
Ethnic Group						
Malay	391	100.0	204	100.0	57	21.3
Chinese						
Indian						
Kadazan					124	46.3
Bajau					40	14.9
Dusun					33	12.3
Rungus					14	5.2
Total		100.0		100.0		100.0
Marital Status						
Single/Never married	5	1.3	9	4.4	17	6.3
Married	364	93.1	187	91.7	235	87.7
Divorced/Separated	22	5.6	8	3.9	16	6.0
Total		100.0		100.0		100.0
Number of Children						
0	8	2.0	21	10.3	20	7.5
1-2	71	18.1	51	25.0	48	17.9
3-4	155	39.6	68	33.3	62	23.1
More than 4	157	40.2	64	31.4	138	51.5
Total		100.0		100.0		100.0
Number of Children in School						
0	35	9.0	52	25.5	58	21.6
1-3	293	74.9	128	62.8	170	63.4
More than 3	63	16.1	24	11.8	40	14.9
Total		100.0		100.0		100.0
Number of Children in College/University						
0	286	73.1	162	79.4	204	76.1
1-2	93	23.8	39	19.1	58	21.6
More than 2	12	3.1	3	1.5	6	2.3
Total		100.0		100.0		100.0
Household Members						
3-4	90	23.0	73	35.8	58	21.6
5-6	151	38.6	71	34.8	95	35.4
More than 6	150	38.4	60	29.4	115	42.9
Total		100.0		100.0		100.0

Table 5.1: Profiles of the respondents from the three microfinance institutions
AIM,TEKUN and YUM (cont.)

	AIM $N_1 = 391$		TEKUN $N_2 = 204$		YUM $N_3 = 268$	
	Count (N_1)	% of N_1	Count (N_2)	% of N_2	Count (N_3)	% of N_3
Number of Dependants in Household						
1-2	66	16.8	83	40.7	61	22.8
3-4	166	42.4	72	35.3	110	41.0
More than 4	159	40.7	49	24.0	97	36.2
Total		100.0		100.0		100.0
Number of Income Earners in Household						
1-2	352	90.0	175	85.8	224	83.5
3-4	34	8.7	28	13.8	42	15.7
More than 4	5	1.3	1	0.5	2	0.7
Total		100.0		100.0		100.0

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The survey results also showed that all borrowers had 3-6 members living in their household. The borrowers also had 1-4 members who were dependant or not contributing any income to the household (see Table 5.1). The survey results showed that most borrowers had only one or two income earners in their household (AIM=90.0%, TEKUN=85.8% and YUM=83.5%). This showed that the AIM, TEKUN and YUM borrowers needed to financially support quite a number of members in the family.

This study only surveyed seasonal borrowers and not first time borrowers who had similar borrowing patterns in terms of the number of times borrowed and the amount of money borrowed (see Table 5.2). This borrowing pattern is important, since the number of times borrowed and the amount of money borrowed influenced the magnitude of the microcredit loan impact on borrowers. From the survey results, over half of the AIM (62.1%), TEKUN (63.2%) and YUM (63.4%) borrowers had borrowed a microcredit loan four times. Meanwhile, the highest proportion of AIM (30.4%), TEKUN (36.8%) and YUM (36.6%) borrowers borrowed between RM 5,001 and RM 10,000.

Table 5.2: Characteristics of microenterprises and microcredit loans from the three microfinance institutions AIM, TEKUN and YUM

	AIM		TEKUN		YUM	
	N_1 =391		N_2 = 204		N_3 =268	
	Count (N_1)	% of N_1	Count (N_2)	% of N_2	Count (N_3)	% of N_3
Times of Borrowing						
Twice	14	3.6	5	2.5	12	4.5
3 Times	96	24.5	50	24.5	56	20.9
4 Times	243	62.1	129	63.2	170	63.4
More than 4 Times	38	9.7	20	9.8	30	11.2
Total		100.0		100.0		100.0
Amount of Money Borrowed						
Less than RM 5,000	61	15.6	21	10.3	45	16.8
RM5,001-RM10,000	119	30.4	75	36.8	98	36.6
RM10,001-RM15,000	96	24.6	44	21.6	57	21.3
RM15,000-RM20,000	42	10.7	27	13.2	26	9.7
RM20,000-RM25,000	23	5.9	8	3.9	5	1.9
More than RM25,000	50	12.8	29	14.2	37	13.8
Total		100.0		100.0		100.0
Type of Business						
Small Business	258	65.9	119	58.3	169	63.1
Agricultural Business	133	34.1	85	41.7	99	36.9
Total		100.0		100.0		100.0
Owner of the Business						
Borrower	164	41.9	117 [73(M)] [44(W)]	57.4 [35.8] [21.6]	115	42.9
Borrower's Spouse	49	12.5	9(W)	4.4	24	9.0
Business Partner	3	0.8	3	1.5	5	1.9
Borrower and Spouse	165	42.2	69	33.8	122	45.5
Borrower and Business Partner	8	2.0	5	2.5	1	0.4
Borrower, Spouse and Business Partner	2	0.5	1	0.5	1	0.4
Total		100.0		100.0		100.0
Have Other Sources of Credit?						
Yes	80	20.5	81	39.7	55	20.5
No	311	79.5	123	60.3	213	79.5
Total		100.0		100.0		100.0
Other Sources of Credit						
AIM	-	-	14	17.3	12	21.8
TEKUN	19	23.7	-	-	5	9.0
YUM	-	-	-	-	-	-
Commercial Banks	5	6.3	12	14.8	-	-
Pawnshops	18	22.5	8	9.9	20	36.5
Friends and Relatives	38	47.5	47	58.0	18	32.7
Total		100.0		100.0		100.0
Amount of Additional Credit						
Less than RM 5,000	38	47.5	35	43.3	35	63.6
RM5,001-RM10,000	23	28.7	19	23.4	15	27.3
RM10,001-RM15,000	11	13.7	13	16.0	2	3.6
RM15,000-RM20,000	5	6.3	5	6.2	1	1.8
RM20,000-RM25,000	2	2.5	2	2.5	2	3.6
More than RM25,000	1	1.3	7	8.6	-	-
Total		100.0		100.0		100.0

Table 5.2: Characteristics of microenterprise and microcredit loans from the three microfinance institutions AIM, TEKUN and YUM (cont.)

	AIM		TEKUN		YUM	
	N₁ =391		N₂ = 204		N₃ =268	
	Count (N₁)	% of N₁	Count (N₂)	% of N₂	Count (N₃)	% of N₃
Monthly Business Revenue						
Less than RM1,000	78	19.9	39	19.1	156	58.2
RM1,001-RM2,000	139	35.5	61	29.9	81	30.2
RM2,001-RM3,000	75	19.2	59	28.9	19	7.1
RM 3,000-RM4,000	49	12.5	35	17.2	12	4.5
More than RM4,000	50	12.8	10	4.9	-	-
Total		100.0		100.0		100.0
Monthly Household Income						
Less than RM 1,000	61	15.6	31	15.2	140	52.2
RM1,001-RM2,000	155	39.6	63	30.9	94	35.1
RM2,001-RM3,000	86	22.0	41	20.1	22	8.2
RM 3,000-RM4,000	44	11.3	31	15.2	7	2.6
More than RM4,000	45	11.5	38	18.6	5	1.8
Total		100.0		100.0		100.0
Subsidiary Income Apart From Microcredit Based Business						
Yes	176	45.0	124	60.8	190	70.9
No	215	55.0	80	39.2	78	29.1
Total		100.0		100.0		100.0
Repayment Mode						
Weekly	391	100.0	86	42.2	268	100.0
Monthly	-	-	118	57.8	-	-
Total		100.0		100.0		100.0
Repayment Period						
Less than 1 year	253	64.7	65	31.9	137	51.1
More than 1 year	138	35.3	139	68.1	131	48.9
Total		100.0		100.0		100.0
Weekly Repayment Amount						
Less than 100	98	25.1	15	7.4	20	7.5
101-150	124	31.7	43	21.1	160	59.7
151-200	57	14.6	68	33.3	41	15.3
More than 201	112	28.6	78	38.2	47	17.5
Total		100.0		100.0		100.0
Missed Payment More Than 4 times						
Yes	10	2.6	90	44.1	112	41.8
No	381	97.4	114	55.9	156	58.2
Total		100.0		100.0		100.0

Over half of the borrowers from the three microfinance institutions were involved in small business activities (65.9% =AIM, 58.3%=TEKUN, 63.1%=YUM) rather than agricultural activity. In terms of business ownership, 41.9% the AIM women respondents owned their businesses and 42.2% of them shared the business with their spouse. A similar pattern was reported for YUM borrowers (see Table 5.2). With regard to TEKUN borrowers, 57.4% of the respondents, comprising 35.8% male borrowers and 21.6% women borrowers, owned their business and 33.8% operated with their spouse. The pattern of women borrowers sharing their business with their spouse showed that there were some women borrowers who played a role in contributing capital to their family business through microcredit loans.

The proportion of spouses who owned and operated a business (12.5%-AIM, 4.4%-TEKUN, 9.0%-YUM) revealed that some women borrowers obtained microcredit loans for their husbands' businesses. Table 5.2 also shows that 20.5%, 39.7% and 20.5% of the AIM, TEKUN and YUM respondents, respectively, requested an additional loan apart from the microcredit loan. They borrowed from other microfinance institutions, commercial banks, pawnshops or friends and relatives. The survey results showed that 23.7% of AIM borrowers borrowed an additional loan from TEKUN, whereas 17.3% of TEKUN borrowers borrowed from AIM. YUM borrowers also obtained additional microcredit loans from AIM (21.8%) and TEKUN (9.0%). In addition, a large number of AIM (47.5%) and TEKUN (58.0%) borrowers had also borrowed additional funds from friends and relatives. A large number of YUM borrowers received additional funds through pawning (36.5%). This showed that the microcredit loans were not sufficient and the borrowers needed to find other sources of capital to finance their businesses. In terms of the amount of additional loans borrowed, the greatest proportion of AIM (47.5%) TEKUN (43.3%) and YUM (63.6%) borrowers borrowed less than RM5,000. However, the additional funds borrowed were for smaller amounts than the microcredit loans.

The borrowers' monthly business revenue was divided into four levels (see Table 5.2). Table 5.2 shows that 35.5% of the AIM borrowers received RM1,001 to RM2,000 monthly business revenue, whereas 12.8% received over RM4,000 business revenue per month. In terms of the TEKUN borrowers, 29.9% received between RM1,001 to RM2,000 and 28.9% received between RM2,001 to RM3,000 business revenue per month. Similarly, over half of YUM borrowers (58.2%) received less than RM1,000 business revenue per month. Overall, TEKUN borrowers received a higher monthly business revenue than AIM and YUM borrowers. The survey also showed that the AIM and TEKUN borrowers received higher monthly business revenue than YUM borrowers.

Over half of the YUM borrowers still received less than RM1,000 monthly business revenue after they had received the microcredit loan. For monthly household income, the survey results showed that greatest proportion of AIM borrowers (39.6%) received between RM1,001 to RM2,000 per month and 11.5% received over RM4,000 per month. For TEKUN borrowers, 30.9% received between RM1,001 and RM2,000 per month and 18.6% received over RM4,000 per month. Most YUM borrowers (52.2%) received less than RM1,000 per month. For monthly household income, AIM and TEKUN borrowers received similar incomes. Like the borrowers' monthly business revenue, AIM and TEKUN borrowers recorded higher monthly household income than YUM borrowers. Over half of the YUM borrowers received less than RM1,000 monthly household income. The poverty line income for Sabah[14] is RM888, so there is the possibility that the YUM borrowers still lived in or under the Malaysia's national poverty line even after receiving the microcredit loans.

Borrowers from the three microfinance institutions also had subsidiary income apart from the microcredit-based business. The survey results showed that 45.0%, 60.8% and 70.9% of AIM, TEKUN and YUM borrowers, respectively, had other sources of income besides the income from the microcredit-based business. All borrowers from AIM and YUM made loan repayments weekly, since these institutions imposed weekly loan repayments for all types of microcredit loans. In contrast, TEKUN imposed weekly and monthly loan repayments; 42.2% of the borrowers paid on a weekly basis and the rest (57.8%) paid monthly.

Table 5.2 shows that over half of the AIM borrowers (64.7%) had a less than one year and 35.3% had a more than a one year repayment period. TEKUN had 31.9% and 68.1% of borrowers with less and more than one year repayment periods, respectively. With YUM borrowers, 51.1% had less than a one year and 48.9% had more than a one-year repayment period. The repayment amount was divided into four levels with a minimum of less than RM100 and a maximum of over RM201 (see Table 5.2). Overall, the greatest proportion of AIM (31.7%) and YUM (59.7%) borrowers paid RM101-150 loan repayments weekly. However, the greatest proportion of TEKUN borrowers (33.3%) paid RM151-200 loan repayments per week. This is because TEKUN provides larger loans than AIM and YUM. Finally, with missed repayments, only 2.6% of the AIM borrowers had missed their loan repayments more than four times in the last two years since they had received the microcredit loan. In contrast to the AIM borrowers, 44.1% and 41.8% of the TEKUN and YUM borrowers, respectively, had missed their loan repayments more than four times in the last two years since they received the microcredit loan.

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[14] The YUM microfinance institution is located in Sabah.

Overall, AIM, TEKUN and YUM borrowers shared very similar demographic profiles. However, TEKUN borrowers were more educated and YUM borrowers were slightly younger. In terms of socio-economic profile, TEKUN borrowers received higher monthly business revenue and household income than AIM and YUM borrowers. In contrast, AIM and TEKUN borrowers received higher monthly business revenue and household income than YUM borrowers.

5.3 The Impact of Microcredit Loans on the Borrowers

5.3.1 Microcredit impact on the microenterprise

This section begins with a discussion of the impact of microcredit loans on the microenterprises of the borrowers from the three microfinance institutions. The χ^2 test was used to test whether there were any significant differences between those who had an increase in microenterprise revenue, fixed assets and the number they employed compared with those who did not show any changes after they had received the microcredit loans.

Table 5.3 presents the results of the impact of microcredit loans on the AIM, TEKUN and YUM borrowers' microenterprises. Two years after receiving the microcredit loan, 74.0% of the AIM borrowers had increased their business revenue, but 24.0% earned a similar level of revenue. The χ^2 test showed that the proportion of borrowers who experienced increased business revenue was significantly higher than those who did not have any change; hence we can concluded that microcredit loans increased the microenterprise's revenue for AIM borrowers. This result is similar to studies on microfinance borrowers in Bangladesh by Khandker (1998b), South Africa and Ghana by Afrane (2002) and in Peru by Dunn and Arbuckle (2001), who also found that microcredit loans increased the borrowers' microenterprise revenue.

In terms of a microenterprise's fixed assets, this study found that microcredit loans produced a significant increase only in the borrower's tools and equipment, since the proportion of borrowers who had increased their microenterprise tools and equipment (61.9%) was significantly higher than those who had no change (38.1%).

In contrast, the proportion of borrowers who had not increased their land holdings (79.3%) was significantly higher than those who had an increase (20.7%). The borrowers whose business premises were in a similar condition to the state before they received the microcredit loans (82.4%) were significantly more than those who had increased or improved their

business premises (17.1%). These findings showed that even with a significant increase in the microenterprise's revenue, there was only a marginal positive impact on the microenterprise's fixed assets. This result contradicts the findings of Dunn and Arbuckle (2001) and Khandker (1998b) who found microcredit loans significantly increased the microenterprise's fixed assets.

The proportion of borrowers who had generated new employment in the microenterprise was lower (39.9%) than the borrowers who did not generate any new employment (59.5%) after they received the microcredit loans. An increase in employment is an indication that the business has been growing and required more workers (Hossain & Diaz, 1997). This study showed that with the significant increase in microenterprise's revenue the number of workers in the microenterprise had increased only marginally.

Table 5.3: Microcredit loans' impact on AIM, TEKUN and YUM borrowers' microenterprises

	AIM $N_1=391$	TEKUN $N_2=204$	YUM $N_3=268$
	% of N_1	% of N_2	% of N_3
Revenue Trends			
Increase	74.0**	61.3**	70.1**
Remain the same	24.0	37.7	23.1
Decrease	2.0	1.0	6.7
Fixed Asset: Tools and Equipment			
Increase	61.9**	52.9	45.9
Remain the same	38.1	47.1	51.9
Decrease	-	-	2.2
Fixed Asset: Land			
Increase	20.7**	10.3**	9.0**
Remain the same	79.3	89.7	90.3
Decrease	-	-	0.7
Fixed Asset: Premises			
Increase	17.1**	10.3**	8.2**
Remain the same	82.4	85.3	91.4
Decrease	0.5	4.4	0.4
Employment			
Increase	39.9**	38.2**	16.8**
Remain the same	59.5	60.8	80.2
Decrease	0.5	1.0	3.0

Note: **, represent 5% significance level.

Table 5.3 shows 61.3% of TEKUN's borrowers had significantly increased their business revenue compared with 37.7% of the borrowers who recorded no change in revenue from before they received the microcredit loans. Thus, microcredit loans had a positive impact on the microenterprise's revenue for TEKUN's borrowers.

For TEKUN borrowers microenterprise's fixed assets, Table 5.3 shows no significant difference between the borrowers' microenterprises that had increased their tools and equipment and those who reported no change. This implies that there were few increases in the microenterprise's tools and equipment after borrowers received microcredit loans. After receiving the loans, the proportion of borrowers who had no change in their microenterprises' land holdings (89.7%) was significantly higher than proportion that had an increase in land holdings (10.3%). The results also showed that for the microenterprise's premises only 10.3% of the borrowers had improved or moved to better business premises, whereas 85.3% operated in the same business premises as before they received the microcredit loan. The findings were similar for the AIM borrowers (except for tools and equipment), in that there was only a marginal increase in TEKUN microenterprise's fixed assets after receiving the microcredit loans.

The results in the Table 5.3 show that the proportion of TEKUN borrower's microenterprises that reported no changes in their number of employees (60.8%) was significantly higher than microenterprises that had more employees (38.2%) after they received the microcredit loans. This showed that the microcredit loans had only a marginally positive impact on the microenterprise's level of employment for TEKUN borrowers.

Table 5.3 also shows the microcredit loans impact on YUM borrowers' microenterprises. The results showed that 70.1% of the borrowers recorded an increase in their microenterprise's revenue after they received the microcredit loans. This increase was significantly higher than for the borrowers who had no increase in their business revenue (23.1%). Thus, microcredit loans helped YUM borrowers increase their microenterprise's revenue.

The results also showed that there was no significant difference between borrowers who had an increase in tools and equipment and those who reported no change. This implied there were not many increases in the microenterprise's tools and equipment after the borrowers received the microcredit loan. As with the TEKUN borrowers, the results showed that microcredit loans had only a marginal positive impact on YUM borrowers' microenterprise's fixed assets. Table 5.3 shows that the proportion of YUM's borrowers who had no change in their microenterprise' land holdings (90.3%) was significantly higher than the proportion of

borrowers who had an increase in their land holdings (9.0%). A similar pattern also showed in the microenterprises' premises; where only 8.2% of the borrowers had improved or moved to a better business premises, whereas 91.4% of them still operated in the same condition premises as before they received the microcredit loan. The results showed a marginal positive impact for YUM microenterprises' fixed assets but it was much smaller than AIM and TEKUN microenterprises. Microcredit loans also did not have a huge impact on the microenterprise's employment level. After the borrowers received microcredit loans, only 16.8% generated new employment and 80.2% did not.

5.3.2 Summary of the microcredit impact on the microenterprise

As hypothesised, after borrowers received microcredit loans there should be an increase in their microenterprise's profitability and growth. Among the indicators of the microenterprise's growth are increases in the microenterprise's business revenue and fixed assets such as land holdings, tools and equipment, improved business premises' condition and numbers of workers employed (Islam, 2007; Hossain & Diaz 1997).

Based on the results of the impact of microcredit loans on the microenterprise, microcredit loans had a significant positive impact only on the AIM, TEKUN and YUM borrowers' microenterprises' business revenue. However, microcredit loans did not have a significant positive impact on the borrowers' microenterprises' fixed assets and the level of employment generated. The numbers of borrowers' microenterprises that had no change in their land holdings, tools and equipment, improved business premises and number of workers was larger than the borrowers' microenterprises that showed such increases.

This study surveyed seasonal borrowers who had borrowed microcredit loans more than twice. They also received additional loans from other funding sources. However, the microcredit loans and extra loans they received did not make a positive impact on the growth of the microenterprise.

Furthermore, among the AIM, TEKUN and YUM borrowers, only AIM borrowers' microenterprises showed a significant positive impact on their microenterprises' tools and equipment. TEKUN and YUM borrowers, in contrast, did not show a significant positive impact on any of their microenterprises' fixed assets and level of employment. Based on the borrowers' monthly business revenue after they received the microcredit loans, TEKUN borrowers received a higher monthly business revenue than AIM and YUM borrowers (see

Table 5.2). However, there was still no significant positive impact on the growth of TEKUN borrowers' microenterprises in terms of fixed asset accumulation or level of employment.

Overall, microcredit loans have a greater impact on AIM borrowers' microenterprises (showed significant increases in their tools and equipment) than TEKUN and YUM borrowers (showed a marginal increased in all fixed assets). In addition, microcredit loans had less impact on YUM borrowers' microenterprises than AIM and TEKUN borrowers.

The reasons there were no significant positive impacts on the borrowers' microenterprises growth could be because the increases in revenue were still insufficient or there was a possibility of the mis-use of loans among the borrowers. For example, most YUM borrowers (see Table 5.2) received a monthly business revenue of less than RM1,000 after they received the microcredit loan. Thus, the business revenue received might be insufficient for them to accumulate more business assets.

In addition, during the fieldwork, the staff from the three microfinance institutions mentioned that not all borrowers made full use of the money borrowed. According to the microfinance institutions' staff, there were many cases when the staff visited the borrowers' business premises two weeks after the borrowers received the microcredit loan and found there was no increase in the microenterprises' stock or new equipment as they had stated in the business proposal. Even though the microfinance institutions requested receipts of payment as a proof that the money had been spent according to their business proposal, the fact was that a borrower can get a receipt from any shop and they can even buy the receipts.

Based on observations of the borrowers during the fieldwork, this study also found that many microfinance borrowers in Malaysia lacked the knowledge to manage their business income. Many did not know how to allocate the business income received between their business investment and personal consumption. Many borrowers allocated a large portion of their income for personal consumption and only a little to their businesses. Many used the businesses to financially support their daily living expenses and made little effort to grow their businesses. This is the reason why, even with a significant increase in the borrower's microenterprise revenue, there was no significant impact on the microenterprises' overall fixed assets or business growth.

5.3.3 Microcredit loans' impact on the household

This section discusses the impact of microcredit loans on the borrower's household. The variables used for measuring the impact were: household income, fixed assets (house, household appliances, personal land, farm land and livestock), expenditure on children's education and food. The χ^2 test was used to test whether the proportion of those who had an increase in the household's income, fixed assets, children's education and food expenditure was significantly different from those who reported no change (remained the same).

Table 5.4 shows that microcredit loans had a positive impact on the AIM borrower's household income; 89.8% reported an increase in the household's income after they received the microcredit loans compared with only 9.5% who received a similar amount of income as before. Thus, a microcredit loan increased a borrower's household income. The findings support Mahjaben (2008) and Nader (2008) who showed that microcredit loans increased household income on the microfinance borrowers in Bangladesh and Egypt, respectively[15].

In terms of the household's fixed assets, compared with other fixed assets, only household appliances showed a significant increase. The survey results showed 67.0% of borrowers reported a significant increase in their household appliances after they received the microcredit loans whereas only 30.2% showed no change.

The results in Table 5.4 showed there was no significant difference between the proportion of borrowers who reported their houses either increased or improved in size and value after they received the microcredit loans and borrowers who reported no change in the condition of their houses from before they received the microcredit loans. This implied there were no significant increases in borrower's house after the borrower received a microcredit loan. Microcredit loans contributed only marginally to an increase in a household's land holdings. Only 14.6% of the borrowers showed an increase in their household's land holdings compared with 85.4% that showed no change. However, most households (94.9%) reported no change and only 5.1% of borrowers showed an increase in their farmland holdings after they received the microcredit loans. Most borrowers (83.4%) also reported no change in livestock holdings and only 16.6% reported an increase after they received the microcredit loan. The findings showed that even with an increase in household income, there was only a marginal positive impact reported in AIM borrower's household fixed assets.

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[15] Even though this study showed similar findings to Mahjaben (2008) and Nader (2008), both studies, however, were conducted on unsubsidised microfinance institutions in Bangladesh and Egypt, respectively, and the borrowers' characteristics were different from the Malaysian microfinance institutions.

Table 5.4 Microcredit loans' impact on AIM, TEKUN and YUM borrowers'
households

	AIM $N_1=391$	TEKUN $N_2=204$	YUM $N_3=268$
	% of N_1	% of N_2	% of N_3
Household income trends			
Increase	89.8**	78.4**	55.6**
Remain the same	9.5	20.6	37.3
Decrease	0.8	1.0	7.1
Fixed Asset: Household's appliances			
Increase	67.0**	46.5	41.8*
Remain the same	30.2	52.0	56.0
Decrease	2.8	1.5	2.2
Fixed Asset: House			
Increase	48.6	22.5**	19.4**
Remain the same	51.4	73.5	77.2
Decrease	-	4.0	3.4
Fixed Asset: Household's land			
Increase	14.6**	6.9**	7.8**
Remain the same	85.4	93.1	91.4
Decrease	-		0.7
Fixed Assets: Household's farm			
Increase	5.1**	1.5**	19.0**
Remain the same	94.9	98.5	80.2
Decrease	-	-	0.7
Fixed Assets: Household's livestock			
Increase	16.6**	3.9**	7.1**
Remain the same	83.4	96.1	88.8
Decrease	-	-	4.1
Children's Education Expenditure			
Increase	68.0**	40.2**	33.2**
Remain the same	28.4	59.8	60.8
Decrease	3.6	-	6.0
Household's Food Expenditure			
Increase	71.4**	40.2**	34.0**
Remain the same	27.6	59.3	64.2
Decrease	1.0	0.5	1.9

Note: *, **, represent 10% and 5% significance level, respectively.

In contrast, microcredit loans had a positive impact on the borrowers' children's education and family expenditure on food. The proportion (68.0%) showing an increase in the borrowers' expenditure on their children's education after they received the microcredit loans was significantly higher than those who reported no change (28.4%). A similar pattern was also seen in the family's food expenditure where 71.4% showed a significant increase in their family's food expenditure after they received the microcredit loans compared with those who reported no change (27.6%).

Table 5.4 also shows the impact of microcredit loans on TEKUN borrowers' households. The results show that microcredit loans had a positive impact, i.e. increased the borrowers' household income. The data show that 78.4% of borrowers reported a significant increase in their household income after they received the microcredit loans and only 20.6% reported no change. Thus, microcredit loans increased the borrowers' household income.

This study found there was no significant difference between the proportion of borrowers who reported an increase in their household appliances and those borrowers who reported no change. Microcredit loans also had only a marginal positive impact on TEKUN borrowers' household fixed assets. For example, only 22.5% of borrowers showed an increase in their house size or value compared with 73.5% who still lived in similar housing conditions. Almost all borrowers reported no change in land (93.1%), farmland (98.5%) or livestock (96.1%), after they received the microcredit loan.

The results also showed that microcredit loans had only a marginal positive impact on TEKUN borrowers' households' children's education or food expenditure. Over half of the borrowers reported no change (59.8%) and only 40.2% showed an increase in their children's educational expenditure after receiving the microcredit loan. The results also showed 59.3% reported no change in family food expenditure compared with 40.2% who reported increased family food expenditure after receiving the microcredit loan.

Table 5.4 also shows the impact of microcredit loans on YUM borrowers' households. Microcredit loans had a positive impact on household income. The results showed 55.6% of the borrowers reported an increase in their household income and 37.3% reported a similar income after they received the microcredit loans.

For all household fixed assets, the proportion of borrowers' households that reported no change in their fixed assets (household appliances: 56.0%; house: 77.2%; land: 91.4%; farm land: 80.2% and livestock: 88.8%) after they received a microcredit loan was significantly higher than those who reported an increase (household's appliances: 41.8%; house: 19.4%;

land: 7.8%; farm land: 19.0% and livestock: 7.1%) (see Table 5.4). This study found that microcredit loans have only a marginally positive impact on the borrowers' household fixed assets.

Regarding borrowers' expenditure on their children's education and family food, only 33.2% of borrowers reported an increase in their children's educational expenditure compared with 60.8% who reported no change after they received the microcredit loans. More than half (64.2%) the borrowers reported spending a similar amount of money on their family's food after they received the microcredit loan compared with 34.0% who reported an increase in their food expenditure. The results also showed that microcredit loans have only a marginally positive impact on YUM borrowers' children's educational expenditure or their family's food spending.

5.3.4   Summary of the microcredit loans impact on the households

The findings of the impact of microcredit loans on the borrowers' households show that microcredit loans did not significantly impact their households. The microcredit loans made a significant positive impact only on the households' monthly income for all kinds of borrowers (AIM, TEKUN and YUM). The microcredit loans also gave only a marginally positive impact on all borrowers' household fixed assets, except for AIM borrowers, who had a significant positive impact on their households' appliances.

As hypothesised, after receiving the microcredit loans there should be changes in the borrowers' life conditions such as improvements in their house and an increase in their household appliances, land, farm or livestock. The life of the borrower was supposed improve after receiving a microcredit loan. However, few changes took place among Malaysian microfinance borrowers' household fixed assets even after receiving a microcredit loan several times.

One possible explanation for this situation was insufficient income received by the borrowers. This situation might apply to YUM borrowers whereby most borrowers still earned less income than AIM and TEKUN borrowers after they received the microcredit loans (see Table 5.2). Another possible explanation is that this study perceived Malaysian microfinance borrowers in Malaysia are among the non-poor. Moreover, Nawai and Bashir (2010) stated that institutions like AIM reached only 4% of the total poor in Malaysia. During the

fieldwork, this study also found that many AIM, TEKUN[16] and YUM borrowers were not really poor and lived in comfortable houses which they already had before they received the microcredit loan.

Furthermore, microfinance institutions' management staff also admitted that it is difficult to offer microcredit loans to the poorest because they are not interested in conducting a business. The poor also do not have the ability, in terms of knowledge and resources, to conduct any businesses, either retail or agricultural. Hence, many microcredit loans reach non-poor borrowers. This could be the reason why there was only a marginal impact on borrowers' households after they received the microcredit loans since they could have owned those assets before they received the loan.

In terms of the microcredit's impact on the borrowers' children's education and family food expenditure, only AIM borrowers showed a significant increase. Both TEKUN and YUM borrowers showed only a marginal increase in their children's education and family food expenditure after they received the loan. Since many borrowers were non-poor, they already had sufficient family food before they received the loan. Based on observations during the fieldwork, this study found that the income from the microcredit loans used to maintain or increase food consumption had changed only marginally.

Some borrowers did not spend much on their children's education because education in Malaysia is subsidised by the government. Borrowers will spend more only if they send their children to extra tuition classes outside school or bought extra books. Since TEKUN and YUM borrowers had only a marginal increase in their children's education, it showed that TEKUN and YUM borrowers did not spent much on their children's education compared with AIM borrowers. However, some borrowers mentioned that they were satisfied with the education their children received from the government school and they did not need extra tuition classes and materials such as reference books.

5.3.5 Impact of microcredit loans on the individual borrowers

This section discusses the impact of microcredit loans on individual borrowers. Five important factors were used to measure the changes microcredit loans had on the individual borrower: (i) the borrower's control over resources and income; (ii) the borrower's self-esteem; (iii) the borrower's personal savings; (iv) the borrower's attitude towards the future;

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[16] TEKUN is supposed to offer microcredit loans to both poor and not-so-poor borrowers, however, according to TEKUN management, most borrowers are not-so-poor and some of them are better off borrowers.

and (v) the borrower's effectiveness in coping with negative shocks. Both the x^2 and binomial statistical tests showed a statistically significantly difference at the 10% level (see Table 5.5).

Two criteria were used to measure the borrower's control over their resources and income. The first was the borrower's control over business decision-making and the second was the borrower's control over family decision-making. Respondents who made decisions in their business were: the borrowers themselves; the borrowers together with their spouse; only the borrowers' spouse; and the borrowers with others, such as a business partner or a family member. Table 5.5 shows that most business decisions were either made by the borrowers themselves (42.5% - AIM; 52.5% - TEKUN[17]; 40.3% - YUM) or together with their spouse (41.6% - AIM; 37.2% - TEKUN; 48.8% - YUM). The results showed that many women borrowers in AIM, TEKUN and YUM were making business decisions on their own or together with their spouse. This meant, AIM, TEKUN and YUM borrowers held either a dominant or sharing decision-making power with their spouse. The results also showed that only a small number of borrowers' spouses had full control over decision making in their businesses (13.0% - AIM; 5.8% - TEKUN; 10.1% - YUM). This trend could be because some women borrowers shared the business with their spouse (see Table 5.2).

A similar pattern was also shown in the control of family decision making where over half of the borrowers from the three microfinance institutions (62.1% - AIM, 55.4% - TEKUN, 68.6% -YUM), held equal decision-making power with their spouse. These findings showed that many borrowers made family decisions based on the collective opinion of the husband and wife. The findings were similar to those by Garikipati (2006), Dunn and Arbuckle (2001) and Husain (1998) who found that microcredit loans provided a greater opportunity for female borrowers to make business and family decisions.

This study also found that 86.2%, 85.8% and 88.1% of AIM, TEKUN and YUM borrowers, respectively, agreed that microcredit loans increased the borrower's self-esteem. The findings were consistent with those of Nader (2008), Afrane (2002), Goetz and Gupta (1996) and Hashemi (1996), who found microcredit loans improved the borrowers' confidence in managing their business and income and increased their involvement in the community. In this study, the borrowers agreed that after they received the microcredit loans they were able to control their own business, increase their income, manage their own money and savings, and participate in social organisations in the community (see Table 5.6). Microcredit loans also increased the borrowers' personal savings. Many (91.8% - AIM, 90.2% - TEKUN,

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[17] It consists of 35.8% male borrowers and 16.7% women borrowers.

77.9% - YUM) reported that their personal savings also increased after they received the microcredit loan.

This study also investigated whether microcredit loans had a buoyant effect on the borrowers' attitude towards the future. A great majority (98.2% – AIM; 90.7% - TEKUN and 85.4% - YUM) agreed that microcredit loans had a buoyant effect in enabling them to face the future. They felt that the microcredit loans had improved their businesses giving them an opportunity to accumulate wealth, increase their financial security and give them more confidence in conducting their business (see Table 5.7).

This study also examined whether microcredit loans had increased the borrowers' effectiveness in coping with negative shocks. Most borrowers (86.2% – AIM; 85.8% - TEKUN and 88.1% - YUM) agreed that by having microcredit loans, their ability to cope with negative shocks had increased. The negative shocks included increases in input goods and fuel prices, increased business competition, having a serious illness or a business reversal (see Table 5.8). Table 5.8 also shows the types of actions taken by the borrowers in response to negative shocks. Among the actions taken were: using savings, liquidating household assets, engaging in other income earning activities, reducing expenditure and pawning business or household items.

According to Dunn and Arbuckle (2001), actions that reduced the level of a household's productive assets, such as liquidation and pawning assets, were classified as harmful strategies. This was because such strategies will cause long-term productivity losses for the household. Table 5.8 shows that for all borrowers (from the three microfinance institutions), asset-reducing strategies (liquidation and pawning assets) were rarely used in response to negative shocks. This study found many borrowers (from the three microfinance institutions) used savings or reduced their expenditure in response to negative events that occurred.

Table 5.5: Microcredit loans impact on the individual AIM, TEKUN and YUM borrowers

	AIM			TEKUN			YUM		
	$N_1=391$			$N_2=204$			$N_3=268$		
	Count	% of	Statistical test	Count	% of	Statistical Test	Count	% of	Statistical test
	(N_1)	N_1		(N_2)	N_2		(N_3)	N_3	
Borrower's control over business decision									
Borrower	166	42.5	$\chi^2=480.35**$	107 73-M 34-W	52.5 35.8 16.7	$\chi^2=304.00**$	108	40.3	$\chi^2=279.46**$
Borrower and spouse	163	41.6		76	37.2		131	48.8	
Spouse	51	13.0		12	5.8		27	10.1	
Others	11	2.8		9	4.4		2	0.7	
Borrower's control over family decision									
Husband	69	17.6	$\chi^2=304.35**$	59	28.9	$\chi^2=126.58**$	36	13.4	$\chi^2=273.88**$
Wife	62	15.9		23	11.3		25	9.3	
Husband and wife	243	62.1		113	55.4		184	68.6	
Own (single)	17	4.3		9	4.4		23	8.6	
Microcredit loans increases a borrower's self-esteem									
Agreed	337	86.2	$P=0.001$	175	85.8	$P=0.001$	236	88.1	$P=0.001$
Disagreed	54	13.8		29	14.2		32	11.9	
Microcredit loans increases a borrower's personal savings									
Agreed	359	91.8	$P=0.001$	184	90.2	$P=0.001$	209	77.9	$P=0.001$
Disagreed	32	8.2		20	9.8		59	22.1	
Microcredit loans has a buoying effect on the borrower's attitude towards future									
Agreed	384	98.2	$P=0.001$	185	90.7	$P=0.001$	229	85.4	$P=0.001$
Disagreed	7	1.8		19	9.3		39	14.6	
Microcredit loans increases the borrower's effectiveness in coping with negative shocks									
Agreed	337	86.2	$P=0.001$	175	85.8	$P=0.001$	236	88.1	$P=0.001$
Disagreed	54	13.8		29	14.2		32	11.9	

Table 5.6: Reasons for increased self-esteem among borrowers of microcredit loans

AGREED	AIM N$_1$=391		TEKUN N$_2$=204		YUM N$_3$=268	
	N	% of N$_1$	N	% of N$_2$	N	% of N$_3$
Able to control own business	198	50.6	69	33.8	84	31.3
Able to increase income	340	87.0	151	74.0	188	70.1
Able to manage own money and savings	240	61.4	85	41.7	102	38.1
Able to participate in social organisation	105	26.9	33	16.2	34	12.7

Table 5.7: Reasons microcredit loans have a buoyant effect on the borrowers

AGREED	AIM N$_1$=391		TEKUN N$_2$=204		YUM N$_3$=268	
	N	% of N$_1$	N	% of N$_2$	N	% of N$_3$
Microcredit loans improved business	294	75.2	143	70.1	149	55.6
Microcredit loans accumulated wealth	166	42.5	59	28.9	35	13.1
Microcredit loans increase financial security	286	73.1	115	56.4	122	45.5
Microcredit loans give more confidence in business	210	53.7	91	44.6	125	46.6

Table 5.8: Negative shock events and actions taken by the borrowers

TYPES OF NEGATIVE EVENT	AIM N$_1$=391		TEKUN N$_2$=204		YUM N$_3$=268	
	N	% of N$_1$	N	% of N$_2$	N	% of N$_3$
Increase in goods and fuel prices	247	63.2	103	50.5	167	62.3
Competitors increase in business	220	56.3	134	65.7	121	45.1
Serious illness	54	13.8	18	8.8	15	5.6
Business reversals	53	13.5	22	10.8	53	19.8
TYPES OF ACTION TAKEN						
Used savings	220	56.3	109	53.4	103	38.4
Liquidated household assets	29	7.4	19	9.3	4	1.5
Engaged in other income earning activities	70	17.9	30	14.7	82	30.6
Reduced expenditure	222	56.8	109	53.4	168	62.7
Pawned item	30	7.7	15	7.4	9	3.4

5.3.6 Summary of the impact of microcredit loans on the individual borrower

This study found that for all three microfianance institutions microcredit loans have a positive impact on the borrower's self-empowerment. For example, female borrowers became more involved in making important business and family decisions after receiving a microcredit loan. Borrowers from the three institutions also agreed that microcredit loans increased their self-esteem and personal savings, increased their optimism in facing the future and increased their ability to cope with negative shocks. The findings also showed that microcredit loans provided financial security to the borrowers.

5.3.7 Summary of the findings of the impact of microcredit loans on borrowers

This study examined the impact of microcredit loans from Malaysian microfinance institutions (AIM, TEKUN and YUM). One similar characteristic among the three microfinance institutions is that they are subsidised by the government. Most microcredit loans impact studies in the literature were conducted on unsubsidised microfinance institutions. The findings showed that microcredit loans positively impacted the borrowers' microenterprises, household and individual empowerment (Copestake et al., 2001; Hossain et al., 1997; Schuler & Riley, 1996). Other studies on unsubsidised microfinance institutions showed microcredit loans reached and benefited the non-poor and better off borrowers rather than the poor (Mosley, 2001; Coleman, 2002).

The results in this study showed that microcredit loans did not have a significant impact on the borrowers' microenterprises and households. Based on observations during the fieldwork and information from the microfinance institution's staff, this study perceived that microcredit loans were mis-used by some borrowers and also reached non-poor borrowers. This study supported the arguments of Robinson (2001), Morduch (2000) and Adam et al. (1984) who argued that subsidised microfinance programmes reached non-poor borrowers and undermined their impact. This situation is also common among Malaysian microfinance borrowers.

There is also a possibility that the Malaysian microfinance borrowers' lack of financial management skills whereby the increases in income did not show up as growth in their microenterprises. However, this study did find that microcredit loans significantly impacted the borrowers' empowerment. The microcredit loans increased the confidence of the borrowers in conducting their business and in facing the future.

Among all the borrowers, AIM borrowers showed a higher positive impact from microcredit loans than TEKUN and YUM borrowers. YUM borrowers showed a less positive impact from microcredit loans than AIM and TEKUN borrowers.

5.4 Empirical Results of the Investigation of the Repayment Problem with Microcredit Loans

Logistic regression was used (Equation 4.2) to investigate the determinants of the microcredit loan repayment problem among TEKUN and YUM borrowers. The maximum likelihood estimation technique was used. Tables 5.9 and 5.10 present the results of the logistic model for TEKUN and YUM, respectively. Table 5.9 shows that four out of 20 predicted influencing factors were statistically significant (Chi-Square = 45.1836, P-Value = 0.001, 20 degrees of freedom). The estimated coefficients were statistically different from zero variously at the 1% and 5% levels of significance. Overall, the logistic model successfully predicted factors contributing to 74.26% of the microcredit loan repayment problem among TEKUN borrowers.

The significant positive sign on the *Gender* variable indicated that the probability of a loan repayment problem was higher for males than for females. As hypothesised, male borrowers were less responsible and disciplined in repaying their microcredit loans than female borrowers. This finding is similar to the results reported by Chaudray and Ishfaq (2003) among rural borrowers in Pakistan and Roslan and Abd Karim (2009) for Malaysia, who also found male borrowers had loan repayment problems and became defaulters. Since TEKUN male borrowers have a higher problem in repaying their loan, TEKUN needs to check the financial commitment of male borrowers in their family as well as the record of any male borrower's financial obligations towards loans in other financial institutions before granting them a new loan. The *Business Type* variable was positive and significant at the 5% level of significance. This implied that borrowers involved in agriculture, such as farming, animal husbandry and fisheries, were more likely to have a problem repaying the microcredit loan than borrowers involved in a small business activity. The finding supports the hypothesis that the lower revenue cycle in agricultural businesses creates repayment problems for borrowers. The result agreed with Chaudray and Ishfaq's (2003) findings that the problem of loan repayments in the agricultural sector was related to the irregularity of income from producing agricultural products. The reliance of agriculture on the weather caused fluctuations in production that were beyond the control of the farmers.

Table 5.9: Logit estimates for the microcredit loan repayment problem for TEKUN
        borrowers

Independent Variables[1]	Estimated Coefficients	Marginal Effect
Gender	1.1087***	0.1823
Marital status	-1.0044	-0.1250
Educational level	-0.3785	-0.0607
Business type	1.5028**	0.3221
Extra income	-0.0843	-0.0136
Repayment period	0.1422	0.0234
Repayment mode	1.2794**	0.2070
Extra loan	0.7865	0.1477
Dummy variables[2]		
(Age)		
$Age_{(2)}$	0.8940	0.1678
$Age_{(3)}$	0.7532	0.1255
$Age_{(4)}$	1.9923**	0.3894
(Dependant)		
$Dependant_{(2)}$	0.1101	0.0182
$Dependant_{(3)}$	0.4164	0.0633
(Business revenue)- in Malaysian Ringgit-RM		
$Business\ revenue_{(2)}$	0.3085	0.0520
$Business\ revenue_{(3)}$	0.0359	0.0058
$Business\ revenue_{(4)}$	-0.1851	-0.0289
$Business\ revenue_{(5)}$	0.3092	0.0531
(Repayment amount)- in Malaysian Ringgit (RM)		
$Repayment\ amount_{(2)}$	-0.9522	-0.1311
$Repayment\ amount_{(3)}$	-0.11194	-0.0177
$Repayment\ amount_{(4)}$	-0.4605	-0.0723
Constant	-3.6924**	

McFadden R-squared	0.1572
Log likelihood	-94.2965
LR statistics	45.1836**
Degree of Freedom	20
Total observation	204
% Correct Prediction	74.26

Note: 1/. Dependent variable=1 if borrower has missed payment more than four times;
          and 0 otherwise

2/. To avoid the dummy trap problem, a dummy variable is dropped in each group.
     The group that has the fewest responses is dropped.
     ,*, represent 5% and 1% significance level, respectively.

Hence, since TEKUN borrowers involved in agricultural activities have a greater problem repaying their loan, TEKUN needs to consider giving flexibility in loan repayments to borrowers who receive income irregularly caused by drought or flood. In addition, TEKUN also needs to consider introducing a microinsurance policy especially weather insurance for borrowers.

A discussion with TEKUN management regarding the reason borrowers involved in agricultural business faced problems in repaying their loans revealed that it was also related to government policy during the fifth Malaysian prime minister, Tun Abdullah Bin Ahmad Badawi (November 2003-2009). The government, in its efforts to reduce the number of unemployed graduates, introduced a special scheme to help new graduates find jobs. One scheme encouraged them to be involved in agriculture. The objective was to encourage young graduates to become agribusiness entrepreneurs in line with the country's mission, which was to promote the country's agricultural industry. This coincided with TEKUN giving microcredit loans to young graduates to be involved in agricultural projects. However, many projects faced problems and some were unsuccessful because the young graduates lacked knowledge and experience in agriculture.

The results also showed that the *Repayment mode* coefficient was positive and significant at the 5% significance level. That result implies that the probability of a loan repayment problem was higher for borrowers who repaid their loans on a weekly basis. As hypothesised, a weekly loan repayment schedule posed problems for borrowers who generated a lower revenue cycle. Therefore, TEKUN should consider lowering the weekly repayment amount and a longer duration of payments in response to borrowers who generate lower revenue having a problem meeting their weekly repayment. The *Age$_{(4)}$* dummy variable was positive and significant at the 5% level. This implies that borrowers in the 46 to 55 age group had a higher probability of having repayment problems. This finding contradicted the hypothesis that older borrowers were more responsible in repaying their loans than younger borrowers. This could be because the TEKUN borrowers in this age group might have higher financial commitments to their family and business expenses. Thus, with higher financial obligations, they could have difficulty in repaying their loans. Hence, it is suggested that TEKUN requests information and analyses the financial commitments and obligations of borrowers in this age group as a condition of giving them the loan. TEKUN should have a certain limit of microcredit loans to the borrowers who have higher financial commitments to family or other financial institutions.

Table 5.9 shows the coefficients for the remaining explanatory variables. *Marital status, Educational level, Extra income, Repayment period, Extra loan, Age$_{(2)}$*-(26-35 years old), *Age$_{(3)}$*-(36-45 years old), *Dependant$_{(2)}$*-(3-4 people), *Dependant$_{(3)}$*-(more than 4), *Revenue$_{(2)}$*-(1,000-2,000), *Revenue$_{(3)}$*-(2,001-3,00), *Revenue$_{(4)}$*-(3,001-4,000), *Revenue$_{(5)}$* -(More 4,000), *Repayment$_{(2)}$*-(101-150), *Repayment$_{(3)}$*-(151-200), *Repayment$_{(4)}$*-(More 201) did not significantly contribute to the repayment problem among TEKUN borrowers.

For example, the borrowers' *Educational level* did not have a significant effect on the probability of a loan repayment problem. This contrasts with Bhatt and Tang's (2002) results in a study of microenterprises in the USA and Chaudray and Ishfaq's (2003) study of rural borrowers in Pakistan that found that a lower educational level of borrowers was associated with higher repayment problems.

The results also showed that *Extra income* and *Repayment Period* were not significant in the loan repayment problem; however, the study by Brehanu and Fufa (2008) found that borrowers who had extra business income had a lower probability of having a loan repayment problem. Our results also found that the repayment period was not significant in the loan repayment problem, which contradicts Roslan and Abd Karim's (2009) results that a longer loan repayment period gave a higher indication of a loan repayment problem.

The results showed *Business revenue* did not have a significant effect on the probability of a loan repayment problem. This contrasted with Okorie's (1986) finding that borrowers receiving a higher business revenue had fewer problems in repaying their loans.

Additional information can be obtained through an analysis of the marginal effects calculated as the partial derivatives of the non-linear probability function, evaluated at each variable's sample mean (Greene, 2003). For example, the results showed that a unit increase in the *Gender* factor results had an 18.23% probability that a male borrower will have a loan repayment problem (see Table 5.9). Similarly, a unit increase in the *Business type* factor resulted in a 32.21% increase in probability that a borrower whose business was in agriculture will have a loan repayment problem.

From the marginal effects values in Table 5.9, it can be concluded that TEKUN should rank borrowers aged between 46 and 55 as the most important factor contributing to a loan repayment problem. Agricultural businesses and weekly repayment instalments were the second and third most important factors affecting the loan repayment problem. Being a male borrower was the fourth most important factor contributing to the loan repayment problem.

The estimated results of the YUM loan repayment problem are presented in Table 5.10. *Gender* and *Repayment mode* variables were excluded from YUM models because YUM offered loans only to women borrowers and imposed weekly loan payments. The results showed four of the 17 predicted influencing factors were statistically significant (Chi-Square=52.9038, P-Value=0.001, 17 degrees of freedom). The coefficients were statistically different from zero variously at the 1%, 5% and 10% levels of significance. Overall, the logistic model successfully predicted the factors that contributed 76.32% to the microcredit loans repayment problem among YUM borrowers.

The results show the *Business type* coefficient was positive and significant at the 1% significance level. This result was similar to TEKUN borrowers and shows that borrowers involved in agricultural business activities such as farming, animal husbandry and fisheries, had a higher probability of encountering repayment problems than borrowers involved in a small business activity. Apart from the income irregularity facing by the borrowers, the results also showed that the YUM standard lending contract for an agricultural business with weekly loan repayments and a two week grace period could have contributed to loan repayment problems. Thus, a revision of the lending contract is necessary by YUM to overcome this problem.

This study found a significant negative effect of *Repayment period* at the 5% significance level. The finding implies that borrowers who had a loan period of over one year had a lower probability of having a loan repayment problem. This contrasted with the results of Roslan and Abd Karim (2009) who showed a long term loan period (more than one year) gave a higher loan repayment problem to the borrowers. This means the longer the duration of loan contracts offered by YUM the less of a problem borrowers have in repaying their loan. This is a sign to YUM that their longer duration of loan contract is not giving a problem to the borrowers in meeting their loan repayments.

The $Age_{(1)}$ dummy variable was positive and significant at the 10% level of significance. This implies that borrowers aged between 18 and 25 years old had a higher probability of having a problem in repaying their loans. The age group 18 to 25 years old is the youngest group among YUM borrowers. These findings support the argument that older borrowers would be more responsible and disciplined in repaying their loans than younger borrowers. The lack of experience in the business involved, which resulted in less income received, might be the reason that the younger group has difficulty in repaying the loan. In addition, younger borrowers are not committed to repaying their loan since they might believe that even if they default; they still can receive microcredit loans from other microfinance institutions because

Table 5.10: Logit estimates for the microcredit loans repayment problem for YUM borrowers

Independent Variables[1]	Estimated Coefficients	Marginal Effect
Marital status	0.5192	0.0896
Educational level	-0.0010	-0.0001
Business type	1.8698***	0.3132
Extra income	0.4283	0.0778
Repayment period	-0.8177**	-0.1561
Extra loan	1.1142	0.1777
Dummy variables[2]		
(Age)		
$Age_{(1)}$	1.2021*	0.2739
$Age_{(2)}$	0.3353	0.0667
$Age_{(3)}$	-0.1231	-0.0233
(Dependant)		
Dependant $_{(2)}$	0.3474	0.0634
$Dependant_{(3)}$	0.3957	0.0736
(Business revenue)- in Malaysian Ringgit-RM		
Business revenue$_{(1)}$	1.4657	0.2599
Business revenue$_{(2)}$	0.8591	0.1765
Business revenue$_{(3)}$	1.0601	0.2379
(Repayment amount)- in Malaysian Ringgit-RM		
Repayment amount$_{(2)}$	-0.3681	-0.0657
Repayment amount$_{(3)}$	-0.6721	-0.1100
Repayment amount$_{(4)}$	0.7553*	0.1599
Constant	-1.0813	

McFadden R-squared	0.1637
Log likelihood	-135.1261
LR statistics	52.9038**
Degree of Freedom	17
Total observation	268
% Correct Prediction	76.32

Note: 1/. Dependent variable=1 if borrower has missed payment more than four times, and 0 otherwise;

2/. To avoid the dummy trap problem, a dummy variable is dropped in each group. The group that has the fewest responses is dropped.

*,**,***, represent e 10%, 5% and 1% significance level, respectively.

they have more opportunities since they are still young. Thus, YUM needs to monitor closely businesses that belong to borrowers in this age group and ensure they make full use of the loan given. The *Repayment amount(4)* coefficient was positive and significant at the 10% level of significance. This result suggests that the probability of having a loan repayment problem was higher for borrowers who repaid more than RM201 per week. The finding supports the hypothesis that higher loan repayments burdened borrowers, especially those who received a lower cycle of cash flow. Since YUM imposed weekly loan repayments on all kinds of borrowers regardless of their business cycle, borrowers in general confront problems in repaying loans with repayments over RM201 per week. Thus, YUM needs to revise its lending system that applies weekly loan repayments on all type of businesses in a way to reduce repayment problems faced by borrowers.

Table 5.10 shows that the coefficients of the remaining explanatory variables: *Marital status*, *Educational level*, *Extra income*, *Extra loan*, *Age(2)*- (26-35 years old), *Age(3)*- (36-45 years old), *Dependant(2)*- (3-4 people), *Dependant(3)*- (more than 4), *Revenue(1)*- (Less than 1,000), *Revenue(2)*-(1,001-2,00), *Revenue(3)*- (2,001-3,000), *Repayment(2)*- (101-150), and *Repayment(3)*- (151-200), did not have any significant effects on the loan repayment problem among YUM borrowers.

Like TEKUN borrowers, the borrowers' *Educational level*, *Extra income* and *Business revenue* did not have any significant effect on the probability of a loan repayment problem, which contradicts what Brehanu and Fufa (2008), Chaudray and Ishfaq (2003), Bhatt and Tang (2002) and Okorie (1986) found.

The marginal effects results in Table 5.10 show that a unit increase in the *Business type* factor resulted in a 31.32% probability that a borrower whose business was in agriculture will have a loan repayment problem. In contrast, borrowers with a *Repayment period* of over one year had a decreased probability of 15.61% of having a loan repayment problem (see Table 5.10).

Based on the marginal effects results, it can be concluded that YUM should rank agricultural types of businesses as being the most important factor contributing to loan repayment problems. Borrowers aged between 18 and 25 years old and with repayments of over RM201 per week are the second and third, respectively, most important factors affecting the loan repayment problem.

Overall, the findings of this study can provide information to both TEKUN and YUM to find ways to overcome the loan repayment problem faced by the borrowers and reduce their number of defaulters.

Chapter 6

Discussion and Conclusions

6.1   Introduction

This chapter discusses the research findings. Section 6.2 presents a summary of the objectives and major findings. The implications of the research findings are discussed in Section 6.3. Section 6.4 discusses the research limitations and Section 6.5 provides recommendations for future research.

6.2   Summary and Major Findings

Microcredit was introduced to Malaysia as a part of poverty eradication programmes in the country. Microfinance institutions have existed in Malaysia for 23 years, with Amanah Ikhtiar Malaysia as the pioneer lender. Yayasan Usaha Maju was the second microfinance institution established and The Economic Fund for National Entrepreneurs Group began 11 years after the establishment of AIM and YUM. AIM and YUM are replicates of the Grameen Bank. However, YUM modified the Grameen Bank lending system a few years after it was established when it changed from group lending to an individual lending approach.

The purpose of this research was to examine the performance of microfinance institutions in Malaysia. One objective was to investigate the impact of microcredit loans on borrowers. The study investigated the impact of microcredit loans on the borrower's microenterprise, household and empowerment. The study also examined the determinants of loan repayment problems among YUM and TEKUN borrowers, since these two institutions recorded lower repayment rates than AIM borrowers. This study also compared Malaysian microfinance institutions' lending systems with the Grameen bank, in Bangladesh, and the People's Bank (*Bank Perkreditan Rakyat*-BPR) in Indonesia.

The three subsidised microfinance institutions in this study received support and subsidies from the government. Both primary and secondary data were used in this research. Primary data were used to assess the impact of microcredit loans on AIM, TEKUN and YUM borrowers and the determinants of loan repayment problems among TEKUN and YUM borrowers. The primary data were collected through survey interviews using a structured

questionnaire. Using a stratified sampling technique, a total of 391 AIM, 204 TEKUN and 268 YUM borrowers (usable sample) from four states (Selangor, Kedah, Kelantan and Sabah) were included in the sample. The survey questionnaire was personally administered to the microfinance borrowers between May and July 2009.

Secondary data were obtained from the Malaysian microfinance institutions and Bank Nagari in Padang, West Sumatra, Indonesia. Secondary data were used to compare the lending systems between the Malaysian microfinance institutions, the Grameen Bank and BPR.

The impact of microcredit loans on the borrower's microenterprise, household and personally was analysed using the χ^2 test. The χ^2 test tests whether there are any significant differences between borrowers who experienced an increase in their microenterprise, household and individually after they received the microcredit loans with those who did not experience any changes. Logistic regression was employed to identify the factors influencing the borrowers' problems in repaying their loans.

Table 6.1 summarises the estimated results of the impact of microcredit loans on the borrower. In summary, the microcredit loans' impact on the borrowers showed:

- At the microenterprise level, microcredit loans significantly increased AIM, TEKUN and YUM microenterprises' monthly business revenue. In terms of asset accumulation, microcredit loans significantly increased only AIM borrowers' microenterprises' tools and equipment and had only a marginal increase in land holdings or business premises. However, for TEKUN and YUM borrowers, microcredit loans significantly increased only the microenterprises' business revenue, but had only a marginal increase on all fixed assets. Microcredit loans also had a marginal positive impact on the microenterprises' employment for all borrowers (AIM, TEKUN and YUM) (see Table 5.3). These results suggested that the increased business revenue did not significantly increase the borrowers' microenterprises' fixed assets or employment level. This study perceived that borrowers mis-used the microcredit loans given to them and that was why there was little change shown after they received the microcredit loans. In addition, this study also revealed the borrowers' lack of financial management skills in managing their income.

- At the household level, microcredit loans showed a significant increase in AIM, TEKUN and YUM borrowers' household income. In terms of households' asset accumulation, microcredit loans significantly increased only AIM borrowers' household appliances and gave a marginal increase in other household assets such as houses, land holdings, farmland or livestock (see Table 5.4). However, for TEKUN and YUM borrowers, microcredit loans showed marginal increases in the households' fixed assets such as houses, household appliances, land holdings, farmland or livestock (see Table 5.4). Since this study perceived that borrowers were non-poor, they might have a comfortable life before they received the microcredit loans. This could be the reason there was not much change in the household's fixed assets after they received the microcredit loans.

  Microcredit loans produced a significant increase in AIM borrowers' expenditure on children's education and food for the family. However, microcredit loans resulted in only a marginal increase in expenditure on TEKUN and YUM children's educational expenditure. They were not spending more on their children's education because they were satisfied with the subsidised school system provided by the government.

  Microcredit loans also did not have a significant impact on TEKUN and YUM family food expenditure. The expenditure on their family food was sufficient before they received the microcredit loans since they were not really poor before they received the microcredit loan.

- At the individual level, microcredit loans had a positive impact on female borrowers' self empowerment in that they were more involved in making family and business decisions (see Table 5.5). All borrowers agreed that microcredit loans had increased their self-esteem and personal savings, increased their optimism in facing the future (see Table 5.5) and also increased their ability to cope with negative shocks (see Table 5.8). The results showed that microcredit promoted gender equality in the country and provided financial security to the borrowers.

Table 6.2 summarises the results from the determinants of the empirical models on the loan repayment problem. Analysis of the determinants of loan repayment problems among TEKUN and YUM borrowers showed that:

- TEKUN male borrowers (*Gender*) had a higher probability of loan repayment problems than female borrowers (see Table 5.9).

- TEKUN borrowers involved in agricultural types of business *(Business type),* such as farming, fishery and animal husbandry, had a higher probability of loan repayment problems (see Table 5.9). The results showed that a lower cycle of revenue inherent in agricultural businesses adversely affected the borrowers' ability to meet their repayment schedules.

- The probability of having a loan repayment problem was also higher for the TEKUN borrowers who repaid their microcredit loans on a weekly basis *(Repayment mode)* (see Table 5.9). This implied that a weekly loan repayment schedule caused problems for borrowers who generated a lower business revenue cycle.

- The loan repayment problem in TEKUN was also significant among the borrowers in the 46 to 55 years age group *(Age$_{(4)}$)* (see Table 5.9).

- In the YUM model, borrowers involved in agricultural business activities *(Business type)* also had a higher probability of loan repayment problems (see Table 5.10). The result implied that, apart from the lower revenue cycles generated by the agricultural business, the weekly loan repayment mode imposed by YUM on agricultural businesses could also have caused problems to borrowers in meeting their repayment schedules.

- YUM borrowers who had over a one-year loan repayment period *(Repayment period)* had lower repayment problems (see Table 5.10). These findings contradicted the hypothesis that stated that a longer repayment period would lead to a loan repayment problem. This meant that YUM's longer loan repayment contracts gives fewer problems in repayment of loans.

- A higher probability of having loan repayment problems occurred among YUM borrowers in the 18 to 25 age group *(Age$_{(1)}$)* (see Table 5.10).

- YUM borrowers who paid over RM201 in weekly payments (*Repayment amount$_{(4)}$*) had a higher probability of having a loan repayment problem (see Table 5.10). Since YUM imposed a weekly loan repayment on all kinds of businesses, the results showed that the borrowers have problems repaying over RM201 per week.

Table 6.1: Microcredit loans' impact hypotheses checklist on the AIM,TEKUN and YUM borrowers.

Hypothesis	AIM	TEKUN	YUM
Impact of microcredit loans on microenterprise			
Microcredit increases a microenterprise's revenue	SI	SI	SI
Microcredit increases a microenterprise's fixed assets:			
-Land	MI	MI	MI
-Premises	MI	MI	MI
-Tools and equipment	SI	MI	MI
Microcredit increases a microenterprise's employment	MI	MI	MI
Impact of microcredit on households			
Microcredit increases a borrower's household income	SI	SI	SI
Microcredit increases a borrower's household assets:			
-House	MI	MI	MI
-Household's appliances	SI	MI	MI
-Household's land	MI	MI	MI
-Household's farm	MI	MI	MI
-Household's livestock	MI	MI	MI
Microcredit increases a borrower's expenditure on children's education	SI	MI	MI
Microcredit increases a borrower's expenditure on food	SI	MI	MI
Impact of microcredit on the individual			
Microcredit increases a borrower's control of business and family			
-Control over business decisions	SI	SI	SI
-Control over family decisions	SI	SI	SI
Microcredit increases a borrower's self-esteem	SI	SI	SI
Microcredit increases a borrower's personal savings	SI	SI	SI
Microcredit has a buoyant effect on the borrower's attitude towards the future	SI	SI	SI
Microcredit increases a borrower's effectiveness in coping with negative shocks	SI	SI	SI

Note: "SI" means significant increase; "MI" means marginal increase.

Table 6.2: Factors affecting loan repayment problems for the TEKUN and YUM
microfinance institutions.

Factors	TEKUN	YUM
Male borrower	(+)	NI
Marital status	(0)	(0)
Educational level	(0)	(0)
Agricultural business	(+)	(+)
Extra income	(0)	(0)
Repayment period	(0)	(-)
Weekly repayment	(+)	NI
Extra loan	(0)	(0)
(Age)		
18-25 years old	NI	(+)
26-35 years old	(0)	(0)
36-45 years old	(0)	(0)
46-55 years old	(+)	NI
(Dependants)		
1-2 people	NI	NI
3-4 people	(0)	(0)
More than 4 people	(0)	(0)
(Business revenue)- in Malaysian Ringgit-RM		
Less than 1,000	NI	(0)
1,001-2,000	(0)	(0)
2,001-3,000	(0)	(0)
3,001-4,000	(0)	NI
(Repayment amount)- in Malaysian Ringgit-RM		
Less 100	NI	NI
101-150	(0)	(0)
151-200	(0)	(0)
Over 201	(0)	(+)

Note: 1. (+), (-), and (0) represent positive, negative, and no significant impact, respectively;
2. "NI" means that the variable is not included in the model.

6.3 Implications of the Research Findings

The findings of this research have several important implications for academics, microfinance institutions and policymakers. *For academics,* the research findings on the impact of microcredit loans show that the subsidised credit system in Malaysian microfinance institutions does not have a significant impact on the borrowers' microenterprise growth and household improvement. Morduch (2006) and Robinson (2001a) argued that subsidised credit undermines the microcredit loans' impact on borrowers. This is because the subsidised credit system of the government is used as a political tool to attract supporters who can be non-poor and poor people. This study perceived a similar situation occurred in Malaysia and there is a possibility that many of the Malaysian microfinance borrowers are non-poor borrowers.

In addition, based on the study findings, observation of the borrowers and information given by the microfinance institutions' staff, this study also perceived that there is mis-use of microcredit loans occurring among the microfinance borrowers. Based on observations of the borrowers' conditions during the fieldwork, this study also believes that the low impact of microcredit loans on the borrowers might be because of the borrowers' lack of financial management skills in their businesses. However, the results from the impact of microcredit loans on borrowers' empowerment showed that microcredit loans had promoted women in various ways, such as having a greater voice in making business and family decisions, having increased self-esteem, increased personal savings and helped them be more optimistic in facing the future. Like studies by Nader (2008), Goetz and Gupta (1996) and Hashemi et al. (1996), this study showed that microcredit loans provided financial and social security to the borrowers.

Morduch (2006) and Robinson (2001a) argued that subsidised microcredit loan programmes led to higher default rates. A study by Park and Ren (2001) found that subsidised microfinance institutions in China recorded lower repayment rates. However, AIM recorded good loan repayment rates (98.98%) (AIM, 2009) and this showed that the repayment rate performance by the subsidised microfinance institution depended on the type of lending design they used. This study found that a subsidised microfinance institution that used a group lending design (AIM) had good loan repayment performance compared with the individual lending designs used by TEKUN and YUM. However, this study found that the higher repayment rate recorded by AIM is contributed to by the group members who forcibly paid the loan repayment because another group member failed to repay the loan. In the group lending mechanism, the members of the group are responsible for repaying the loan of the

other members if she cannot meet the repayment on any particular week. Thus, the higher repayment rates achieved by the AIM are not solely because of all members are committed to repay their weekly loan repayment, but also because of the obligation of the members in the group to repay the loan if other members failed to repay the loan. This study found that it is true that group lending contributes to the higher loan repayment rate of the institution, but it can also be a burden to other members in the group if any of their group members cannot make the payment. Hence, the group lending system gives more benefits to the institution in terms of loan collection rather than to the borrowers.

Cull et al. (2007) and Mersland et al. (2007) stated that microfinance institutional designs (group lending versus individual lending) affect the microfinance institution's performance. This study found that the type of microfinance institution design by the subsidised microfinance institutions played a major role in determining the institutions' performance. In terms of the microcredit loans' impact on the borrowers' microenterprises, households' asset accumulation, school children and family food expenditure, the borrowers in the group lending design (AIM) performed better than those in the individual lending design (TEKUN and YUM). This is probably because the borrowers in the group lending design institution related more closely to one another, not only to ensure that the members are able to meet the loan repayment schedule (Armendariz de Aghion, 1999; Varians, 1990) but they are also motivated by each another to utilize the money borrowed to make their businesses grow.

The results of the determinants of loan repayment problems among the TEKUN and YUM borrowers showed that the borrower's characteristics (age and gender), business characteristics (business type) and loan characteristics (repayment period, repayment mode, and repayment amount) were among the factors that influenced borrowers in repaying their loans. For example, male borrowers in TEKUN had problems in repaying their loan. The finding is similar to those of Chaudhary and Ishfaq (2003) and Roslan and Abd Karim (2009), who found that male borrowers were the largest group of defaulters. Further, for both TEKUN and YUM borrowers involved in agricultural businesses, this fact contributed to loan repayment problems. Chaudhary and Ishfaq (2003) had similar findings and reported that the lower cycle of business revenue generated by agricultural businesses as well as exposure to climatic factors were among the reasons why borrowers faced loan repayment problems.

This study found that the age of the borrower contributed to loan repayment problems. TEKUN and YUM borrowers aged between 46 to 55 years old and 18 to 25 years old, respectively, had loan repayment problems. Higher financial commitments to family could be the reason older borrowers in TEKUN had problems repaying their loan. Meanwhile,

microcredit loans offered by YUM are attracting more young age borrowers than older people. The less income received resulting from a lack of experience in the business involved might be the reason they are having problems repaying their loan. Younger borrowers might also have the perception that they have more opportunities to get microcredit loans even though they already had become a defaulter with one microfinance institution.

Weekly loan repayments caused problems for TEKUN borrowers in repaying their loans, but a loan repayment period of over one year gave fewer problems to YUM borrowers in repaying their loans. YUM borrowers who had to pay over RM201 weekly loan instalment faced problems in repaying their loans. Overall, the findings of this study show that the loan repayment problems facing the TEKUN and YUM borrowers were not only caused by the individual borrower's characteristics and business type but also the lending system (grace periods, mode of repayment, repayment amount) imposed by the microfinance institution. Similar findings were reported by Roslan and Abd. Karim (2009), Derban at al. (2005), Chaudhary and Ishfaq (2003) and Okorie (1986), who documented that the institutional lending system also played a role in determining the loan repayment ability of borrowers.

The study findings have implications *for microfinance institutions*. With regard to YUM borrowers involved in agricultural businesses who were facing problems in repaying their loan, this study found that the lending system, such as weekly loan repayments and the two weeks grace period used by YUM, might have contributed to the problem. Borrowers involved in agricultural businesses used credit both to buy inputs, such as seed, fertilizer and pesticides, and assets, such as farm machinery and livestock. These borrowers have different time frames for their revenue cycle. For example, if the borrower uses credit to buy seed, the borrower needs at least six months to one year to receive the revenue from harvesting the crop.

Therefore, they cannot pay back the loan in two weeks. Thus, YUM management should re-evaluate and recognize these weaknesses in their lending system and modify it in order to reduce the burden on the borrowers in repaying loans. AIM imposes a similar lending system to YUM but AIM applies a group lending approach and generates a higher repayment rate. However, during the fieldwork, a few AIM borrowers complained about the one week grace period imposed by AIM. While waiting for the harvesting period borrowers needed to borrow money from family members to repay the loan. TEKUN, Grameen Bank and BPR practices in determining loan repayments for agricultural businesses according to the harvesting cycle need to be considered by AIM and YUM. Further, the flexibility in the lending contracts of

the Grameen Bank and BPR, which are designed specifically for the borrower's affordability and the type of business, should be considered by AIM, TEKUN and YUM.

With regard to TEKUN offering loans to inexperienced young graduate to conduct agricultural businesses that resulted in many unsuccessful agricultural projects, this study recommends that TEKUN, as well as other microfinance institutions, ensure that borrowers have the experience and related skills in agriculture before granting them loans. A study of Malawi microfinance borrowers also indicated that microcredit loans alone had not contributed to farming efficiency unless the borrowers also had good agricultural skills and technology (Zeller & Meyer, 2002a).

This study also found that TEKUN borrowers who repaid by weekly loan instalments had problems repaying their loans. The repayment schedule, weekly, monthly or seasonally, was determined by the borrowers. Many borrowers involved in small businesses preferred to make loan payments on a weekly basis. However, many of them could not meet their weekly loan repayment schedule. Since TEKUN recorded a high level of non-performing loans worth RM225 million (Berita Harian, 2009), they should guide borrowers to choose the most suitable mode of payment and it must be based on the borrower's revenue cycle. TEKUN also needs to closely monitor the businesses of male borrowers and the borrowers aged between 46 and 55 since these groups contributed significantly to the loan repayment problem. Meanwhile, YUM needs to closely monitor borrowers aged between 18 and 25 because this is an age group that also had loan repayment problems.

Agriculture is exposed to climatic factors beyond the borrowers' control. This study recommends that microfinance institutions offer a microinsurance policy. An insurance plan not only reduces the burden on the borrowers if their agricultural project failed but also reduces the financial burden on the microfinance institution from uncollectible loans (Alip, Navarro, & Catibog, 2009). Among the three microfinance institutions in Malaysia, AIM has introduced the welfare and well-being funds to their members. However, the monetary award under this fund covers only the members, their spouse and children if they are sick or if the disaster happened to their house, for example a fire. No monetary award is given if drought or flood happens to the members' agricultural project under this welfare fund. Thus, there is a need for AIM, as well as TEKUN and YUM, to introduce a microinsurance policy, especially weather insurance, that focuses on giving protection to the borrowers' agricultural projects in the case of drought or flood. A few microfinance institutions in Southeast Asian countries, such as Cambodia, the Philippines and Vietnam, have started introducing microinsurance for borrowers (Alip et al., 2009). These countries received advice and technical help from

RIMANSI. RIMANSI is a regional resource centre based in the Philippines established to help professionally manage mutual benefit organisations and microinsurance programmes of microfinance institutions in Asia (Alip et al., 2009). This is the agency that Malaysian microfinance institutions can collaborate with in introducing a microinsurance policy for borrowers.

This study also perceived that many microfinance borrowers in Malaysia lacked knowledge of business financial management. Hence, this study recommends to microfinance institutions that, apart from microcredit loans, borrowers also need to be given the entrepreneurial skills to manage their income and resources efficiently. This study also perceived that there is a mis-use of microcredit loans among Malaysian microfinance borrowers. Therefore, this study recommends that Malaysia's microfinance institutions place extra conditions on borrowers when they apply in the next microcredit loan cycle. Before a new microcredit loan given to a borrower, the microfinance institution needs to request business records, such as sales performance and the microenterprise's asset status, as the proof that their business had improved from the use of the previous microcredit loan. If they find there was no significant positive achievement, unless for reasonable reasons, they should not be given a new microcredit loan. Moreover, if the mis-use of a microcredit loan is found, the particular borrower needs to be blacklisted from obtaining a microcredit loan from any microfinance institution in the country. This strategy should reduce morally hazardous behaviour among microfinance borrowers and so make full good use of the microcredit loans given.

For policymakers, the issue of Malaysian microfinance institutions achieving financial self-sufficiency may not be appealing since the government is willing to give financial support. The government claimed that the financial support given to microcredit programmes is part of social cost that it needed to bear (Siwar & Abd. Talib, 2001). However, the subsidised microcredit programmes do not reach many of the poor in the country. Hence, a promotion strategy and encouragement must be implemented by microfinance institutions in order to attract more poor to borrow microcredit loans.

The subsided microfinance system has also led to a higher level of non performing loans in YUM and TEKUN. Apart from the weaknesses in the lending systems of the microfinance institutions, the continuous financial assistance from the government could be the reason the microfinance institutions are not concerned about the low repayment rate they receive. Thus, the government needs to revise the subsidy policy in the microfinance sector in Malaysia. There are many steps that the government can take if they are willing to stop or reduce the

subsidy given to the microfinance institutions. One way is by lifting the restrictions on taking deposits, since microfinance institutions in Malaysia are legally forbidden from accepting deposits from borrowers. Malaysia's policymakers should learn from the Grameen Bank and People's Bank (*Bank Perkreditan Rakyat*-BPR) practices in collecting savings from borrowers. The safety of the deposits must always be monitored by the Central Bank. Experience with the Self Help Groups (SHGs), a village banking type of microfinance institution in India, showed that when the members' savings in the institution are more than the credits given, the microfinance institution could be profitable without subsidies and donations (Prahalad, 2005). African microfinance institutions also focus on savings as a source of funds for lending (Lafourcade et al., 2005).

The People's Bank (*Bank Perkreditan Rakyat*-BPR) gives investment opportunities to borrowers that could also be considered by Malaysia's policymakers. This strategy not only reduces the financial burden on the government but also gives the local community a share in the microfinance institution's branch in their district. This practice can also create a feeling in the borrowers of belonging to a particular microfinance institution.

However, this research is quite sceptical that the government is ready to stop subsidising the microfinance institutions and borrowers in the country. The microcredit programme in Malaysia is a favourite project of the government. This programme is always been a government political tool to attract political supporters, especially the poor people. This study would like to suggest an efficient way of subsidising if the government insists on continuing to give a subsidy to the microfinance institutions in the country. This study suggests that Malaysia's policymakers establish a trust fund specifically for the microfinance institutions in the country. This would be similar to the Grameen Trust Fund introduced by the Grameen Bank (Yunus, 2007b). One of the Grameen Trust Fund functions is to offer training and technical assistance to national and international organisations to support Grameen Bank replication initiatives (Yunus, 2007b). The Grameen Trust received funding from international donors such as the World Bank and the United Nations Capital Development Fund (UNCDF) (Yunus, 2007b). In the Malaysian context, the government, as well as the private sector and individual donors, could contribute money to a similar fund. As incentives, the government could also provide tax exemptions to those making contributions. Like the Grameen Trust Fund, this fund could be used to provide funding, management and technical training to the existing microfinance institutions and their new branches. Table 6.3 provides a list of recommendations to policymakers.

Table 6.3: List of recommendations to Malaysian microfinance institutions and policymakers

No:	Recommendations
1	Provide business management training to the borrowers
2	Remove the standardisation of loan contracts
3	Pass a new law so microfinance institutions can take deposits from borrowers
4	Provide an insurance policy for agricultural projects
5	Open investment opportunities to the borrowers
6	Create a Microfinance Fund

6.4 Research Limitations

There are a number of limitations in this research relating to sample selection, data and estimation techniques. These include:

- This study used only the borrower's empowerment variables according to the Household Economic Portfolio Model (HEPM), which are the borrower's control over business and family decisions, personal savings, the buoyant effect of the borrower's attitude towards the future and borrower's effectiveness in coping with negative shocks. Many empowerment variables were not tested in this study, such as women's mobility, political awareness, knowledge regarding family control and the legal system.

- This study did not take monetary data of the value of the borrowers' fixed assets, the borrower's children's education and family food expenditure before and after they received the microcredit loan. This study asked the borrowers if there were any changes; increasing, remaining the same or decreasing after they received the microcredit loans.

- The determinants of the loan repayment problem model used in this study did not take into account the "Training" variable, used by Roslan and Abd Karim (2009) in their study. Their study showed that the borrowers who had training related to the business they are involved in had a good repayment performance compared with borrowers who had no training. This study also did not take into account the moral hazard variable, such as the "unwillingness to repay", in the determinants of the loan repayment problem model. Important information would be provided to the microfinance institutions and policymakers if we know whether the attitude of unwillingness to repay occurred in TEKUN and YUM borrowers.

- In the primary data collection process, some of the data were collected in TEKUN's offices (for Tekun's borrowers) and after the borrowers' weekly meeting (for AIM and YUM borrowers). The information given by the borrowers could be biased or overstated to favour the microfinance institutions' staff and the institution's continuous provision of microcredit services to them.

6.5   Recommendations for Future Research

This study recommends that further research take monetary data about the borrowers' fixed assets, their children's education and family food expenditure before and after receiving the microcredit loans. Microfinance borrowers in Malaysia are less educated, thus, in order to obtain the monetary information, a future study would need to hire more assistant researchers to help the borrowers in understanding the questions and help them value their assets and expenditure.

A future microcredit loan impact study should measure the impact of microcredit loans on non-poor, poor and hard-core poor borrowers, separately. This is because these groups of borrowers have different standards of living and needs. These findings will give more information to microfinance institutions and policymakers for improving strategies to enhance these groups' standards of living. In addition, there are also variables that can be added to the determinants of the loan repayment problem model, such as the "training" and "moral hazard" variables, to enhance the performance of the model.

A longitudinal study is also recommended for future research. The longitudinal study can monitor changes in the borrower's business, household and individual after receiving the microcredit loan. If resources allow, this study suggests that a comparative study between borrowers and non-borrowers be conducted in future research.

Future research also should conduct ethnographic studies to assess the impact of microcredit loans on the borrowers' empowerment. In an ethnographic study, borrowers' empowerment is measured through extensive observation and personal interviews with the borrowers. Thus, the impact of microcredit loans on the borrowers' empowerment will be more comprehensive and will enhance the validity and reliability of the findings.

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Appendix 1: Sample Size Calculation

The sample size is estimated by using the formula given by Mendenhall et al. (1993).

$$n = \frac{NZ^2_{\alpha/2}\, pq}{(N-1)e^2 + Z^2_{\alpha/2}\, pq}$$

Where:

n = the sample size

N = the size of population

$NZ^2_{\alpha/2}$ = the critical value of a two-tailed Z test at $1-\alpha$ confidence level

e = the tolerable error level for estimation (5%)

pq = component of sample proportion variance estimate (maximize 0.5)

This research assigned $p = 0.5$ and $q = 0.5$ to the equation above. Applying the formula above, the calculation of the minimum sample size, as follows:

Sample size for AIM

$$n = \frac{200,000 \times (1.96)^2 \times 0.25}{200,000(0.05)^2 + (1.96)^2(0.25)} = 383$$

Sample size for TEKUN

$$n = \frac{150,000 \times (1.96)^2 \times 0.25}{150,000(0.05)^2 + (1.96)^2(0.25)} = 383$$

Sample size for YUM

$$n = \frac{8,000 \times (1.96)^2 \times 0.25}{8,000(0.05)^2 + (1.96)^2(0.25)} = 367$$

Appendix 2: Survey Questionnaire

IMPACT OF MICROCREDIT ON BORROWERS

The purpose of this survey is to better understand the market in which small entrepreneurs work as well as the impact of microcredit on your business. We assure you that the information you provide us will be completely confidential and will be used exclusively for our research to help better understand the microcredit market. The information you give us will not be associated with your business in any way. The survey asks several questions about your household and your business over the past two years. We are trying to understand the changes that have taken place over the past year. The survey will take about 30 to 40 minutes of your time to complete.

For each question with brackets provided, please tick your answer(s); otherwise, please follow the instructions given to answer the questions.

SECTION 1
Impact of Microcredit on Small Business Enterprise

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1. Which of the following microcredit institution did you borrow from in the last 2 years?
    a. Amanah Ikhtiar Malaysia (AIM)   [   ]
    b. TEKUN   [   ]
    c. Yayasan Usaha Maju (YUM)   [   ]

2. How many times did you borrow money from this institution?
    a. Once   [   ]
    b. Twice   [   ]
    c. 3 times   [   ]
    d. 4 times   [   ]
    e. More than 4 times   [   ]

3. Overall, how much money have you borrowed from this institution?
    a. Less than RM 5,000   [   ]
    b. Between RM 5,001 and RM 10,000   [   ]
    c. Between RM 10,001 and RM 15,000   [   ]
    d. Between RM 15,001 and RM 20,000   [   ]
    e. Between RM 20,001 and RM 25,000   [   ]
    f. More than RM 25,000   [   ]

4. Was the loan amount received adequate?
    a. Yes   [   ]   b.   No   [   ]

5. If inadequate, did you borrow from other credit sources?
    a. Yes   [   ]   b.   No   [   ]

6.   If "Yes" in Q5, where did you source your additional credit?

     a.   Commercial Banks   [   ]
     b.   People's Org/NGOs/Coop   [   ]
     c.   Pawnshops   [   ]
     d.   Traders/Wholesalers or Retailers   [   ]
     e.   Friends/Relatives   [   ]
     f.   Government assistance   [   ]
     g.   Other(s) please specify _____

7.   If "Yes" in Q5, what is the amount you borrowed?

     a.   Less than RM 5,000   [   ]
     b.   Between RM 5,001 and RM 10,000   [   ]
     c.   Between RM 10,001 and RM 15,000 [   ]
     d.   Between RM 15,001and RM 20,000 [   ]
     e.   Between RM 20,001 and RM 25,000 [   ]
     f.   More than RM 25,000   [   ]

8.   How would you describe your business?

     a.   Small business   [   ]
     b.   Services   [   ]
     c.   Agriculture   [   ]
     d.   Animal Husbandry   [   ]
     e.   Fishing   [   ]
     f.   Manufacturing   [   ]

9.   Who owns the business?

     a.   You   [   ]
     b.   Spouse   [   ]
     c.   You + spouse   [   ]
     d.   You + business partner   [   ]
     e.   You + business partner + spouse   [   ]

10.   Who makes the important business decisions?

     a.   You   [   ]
     b.   Business partner   [   ]
     c.   Spouse   [   ]
     d.   You + business partner   [   ]
     e.   You + spouse   [   ]
     f.   You + business partner + spouse   [   ]

11.   What is your monthly business revenue?

     a.   Less than RM1,000   [   ]
     b.   Between RM1,001 and RM2,000   [   ]
     c   Between RM2,001 and RM3,000   [   ]
     d.   Between RM3,001 and RM4,000   [   ]
     e   More than RM4,000   [   ]

12.   Compared with your business revenue without the microcredit loan, has your business
     revenue with microcredit loan in the last 2 years_____

     a.   Increased   [   ]
     b.   Remain the same   [   ]
     c.   Decreased   [   ]

13. Compared with the number of paid employees without the microcredit loan, has the number of paid employees with microcredit loan in the past 2 years_____

Workers	Increased	Decreased	No change
Full-time paid			
Part-time paid			

14. Compared with your fixed assets without the microcredit loan, has your fixed assets with microcredit loan in the past 2 years_____

Fixed Assets	Increased	Decreased	No change
Land			
Premises			
Tools & equipment			

15. What is the mode of loan repayment for your existing loan?
a.   Weekly   [   ]
b.   Monthly   [   ]
c.   Semi-annually   [   ]
d.   Annually   [   ]

16. How long is your loan repayment period?
a.   6 months   [   ]
b.   1 year   [   ]
c.   2 years   [   ]
d.   3 years   [   ]
e.   More than 3 years   [   ]

17. How much is your loan repayment for each week?
a.   RM50-100   [   ]
b.   RM101-150   [   ]
c.   RM151-200   [   ]
d.   More than RM200   [   ]

18. Have you missed your loan repayment more than 4 times in the last 2 years?
a.   Yes   [   ]   b.   No   [   ]
(If no, please go to Section 2)

SECTION 2
Impact of Microcredit on Household

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1.   What is your monthly household income?
a.   Less than RM1,000   [   ]
b.   Between RM1,001 and RM2,000   [   ]
c.   Between RM2,001 and RM3,000   [   ]
d.   Between RM3,001 and RM4,000   [   ]
e.   More than RM4,000   [   ]

2. Compared with your household's income without the microcredit loan, has your household income with microcredit loan in the last 2 years_____
    a. Increased   [   ]
    b. Remain the same   [   ]
    c. Decreased   [   ]

3. Compared with the household's assets without the microcredit loan, has your household's assets with microcredit loan in the past 2 years_____

Household Assets	Increased	Decreased	No change
House			
Household' appliances			
Household's Land			
Household's Farm			
Household's Livestock			

4. Compared with your children's education expenditure without the microcredit loan, has your children's education expenditure with microcredit loan in the last 2 years   _____
    a. Increased   [   ]
    b. Remain the same   [   ]
    c. Decreased   [   ]

5. Compared with your food expenditure without the microcredit loan, has your food expenditure with microcredit loan in the last 2 years   _____
    a. Increased   [   ]
    b. Remain the same   [   ]
    c. Decreased   [   ]

6. Has microcredit loan helped you cope with the unexpected event(s)?
    a. Yes   [   ]   b. No   [   ]

7. If "Yes" in Q6, what was the event? (you may tick more than one)
    a. Increase in goods and fuel prices   [   ]
    b. Competitors increase in business   [   ]
    c. Serious illness   [   ]
    d. Business reversals   [   ]
    e. Other(s) please specify _____

8. How did you respond to the unexpected event? (you may tick more than one)
    a. Used savings   [   ]
    b. Liquidated household assets   [   ]
    c. Engaged in other income earning activities   [   ]
    d. Reduced expenditure   [   ]
    e. Pawned items   [   ]
    f. Other(s) please specify _____

1. Who makes the important family decisions in your household?
    a. Husband   [   ]
    b. Wife   [   ]
    c. Both   [   ]
    d. Individually (single)   [   ]

2. Do you have a plan for saving BEFORE the microcredit loan?
    a.   YES   [   ]
    b.   NO   [   ]

3. Do you have a plan for saving AFTER the microcredit loan?

    a.   YES   [   ]
    b.   NO   [   ]

4. Do you have personal savings independent of your spouse?
    a.   Yes   [   ]   b.   No   [   ]

5. Has microcredit loan helped you to increase your self- esteem?
    a.   Yes   [   ]   b.   No   [   ]

6. If "Yes" in Q5, what are the reasons? (you can tick more than one)
    a.   With microcredit loan, I am in control of my business such as
          signing documents and doing the book keeping for my business [   ]
    b.   With microcredit loan, I am a source of increased household's
          income   [   ]
    c.   With microcredit loan, I am able to manage my own money and
          savings   [   ]
    d.   With microcredit loan, I am able to participate and be a member
          of some social organizations in my village   [   ]
    e.   Others_____

7. With microcredit loan, I am more optimistic about the future?
    a.   Agree   [   ]   b.   Disagree   [   ]

8. If "Agree" in Q7, what are the reasons? (you can tick more than one)
    a.   Microcredit loan improves my business   [   ]
    b.   Microcredit loan helps me accumulate wealth   [   ]
    c.   Microcredit loan increases my financial security   [   ]
    d.   Microcredit loan gives me more confidence in my business   [   ]
          decision making
    e.   Other_____

1.   What is your gender?
        a.   Male   [   ]   b. Female   [   ]

2.   Which age group do you belong to?
        a.   18 – 25 years olds   [   ]
        b.   26 – 35 years olds   [   ]
        c.   36 – 45 years olds   [   ]
        d.   46 – 55 years olds   [   ]
        e.   Over 55 years olds   [   ]

3.   Which ethnic group do you belong to?
        a.   Malay   [   ]
        b.   Chinese   [   ]
        c.   Indian   [   ]
        d.   Kadazan   [   ]
        e.   Other(s) please specify _____

4.   What is your marital status?
        a.   Single/Never Married   [   ]
        b.   Married   [   ]
        d.   Divorced/Separated   [   ]

5.   What is your highest educational or professional qualification?
        a.   No Education   [   ]
        b.   Primary School   [   ]
        c.   Middle School   [   ]
        d.   High school   [   ]
        e.   Vocational   [   ]
        f.   College   [   ]
        g   Postgraduate degree   [   ]

6.   How many children do you have?
        a.   None   [   ]
        b.   1   [   ]
        c.   2   [   ]
        d.   3   [   ]
        e.   4   [   ]
        f.   5
        g.   More than 5   [   ]

7.   How many of your children are in school?
        a.   None   [   ]
        b.   1   [   ]
        c.   2   [   ]
        d.   3   [   ]
        e.   More than 4   [   ]

8. How many of your children are studying in a college/university?
   a. None   [   ]
   b. 1   [   ]
   c. 2   [   ]
   d. 3   [   ]
   e. More than 4   [   ]

9. How many of income earners in your household?
   a. 1   [   ]
   b. 2   [   ]
   c. 3   [   ]
   d. 4   [   ]
   e. More than 4   [   ]

10. How many dependents live in your household?
   a. 1   [   ]
   b. 2   [   ]
   c. 3   [   ]
   d. 4   [   ]
   e. More than 4   [   ]

*Your participation in this survey is greatly appreciated. Thank you for your time and if you have further comments about microcredit loan, please feel free to comment in the space provided below. Once again, we assure you that your identity will remain **STRICTLY CONFIDENTIAL.***

Comments: _____
              _____
              _____