UNIVERSITI PUTRA MALAYSIA

IMPACT OF FIRM CHARACTERISTICS, MACROECONOMIC CONDITIONS, BANK REGULATION AND SUPERVISION ON SOCIAL AND FINANCIAL EFFICIENCY OF MICROFINANCE INSTITUTIONS

NURAZILAH BINTI ZAINAL

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By

NURAZILAH BINTI ZAINAL

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Doctor of Philosophy

April 2019

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DEDICATION

TO MY DEDICATED PARENTS

Zainal Hassan

Azizah Hussain

TO MY BELOVED HUSBAND AND DAUGHTER

Muhammad Muzhaffar

Luna Naira

TO MY TREASURED FRIENDS

Aida

Ariff

Najib

Mior

…Thank you for unconditional loves and supports…

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By

NURAZILAH BINTI ZAINAL

April 2019

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Faculty : Economics and Management

Commercial banks have witnessed the failure of poverty reduction due to high risk to serve for poor people. Microfinance institutions (MFIs) were established to fill the gap created by the commercial banks by providing a financial service mainly for low income people. In the drive to supply continuous financial services for the poor, performance of the MFIs has been one of the crucial aspects needs to consider. The MFIs begins the operation with its social goal aims for poverty reduction. However, the commercialization of Microfinance in the 1990s has resulted them to become a financial independent, since they are fully funded by a government in previous. Thus, to count solely on the social goal to measure the performance of the MFIs is no longer consistent. They need to be in parallel with the financial goal to ensure the stability of the MFIs in providing financial products in the long run. The commercialization also has upgraded the legal status of the MFIs to be regulated and govern by bank regulation and supervision. Is it acceptable for the MFIs with dual needs of social and financial sustainability being govern under the same roof with the commercial banks? To date, the question is remained debatable. This study proposes to determine the performance of the MFIs from two different aspects of social and financial efficiency in the first objective. In the second objective is to examine the impact of firm characteristics and macroeconomic conditions on the level of social and financial efficiency of the MFIs. The third objective of the study is to investigate the effect of bank regulation and supervision on social and financial efficiency of the MFIs.

The data consists of 168 MFIs from five countries in Southeast Asia region (ASEAN-5) from 2011 until 2017. First stage of analysis is to identify the level of social and financial efficiency of the MFIs by using Data Envelopment Analysis (DEA) method. The data are further tested by parametric (t-test) and non-parametric Mann-Whitney (Wilcoxon) and Kruskal-Wallis tests. Second stage of analysis is to

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evaluate the determinants and the impact of bank regulation and supervision on the social and financial efficiency by applying the Multivariate Panel Regression Analysis (MPRA) and Generalized Method of Moments (GMM) as an estimation method.

The findings in the first stage analysis show the score of financial efficiency is higher than social efficiency. Although the MFIs is financially efficient to sustain the operation in the long run, the result also discovers the MFIs in ASEAN 5 countries are inconsistent to balance between the social and financial performance as they tend to focus more in achieving financial sustainability thus leave the social effort for poverty eradication. In the second stage of analysis, main result from the GMM estimations indicates the firm characteristics and macroeconomic conditions give a significant influence on the social and financial efficiency of the MFIs. Furthermore, the results also present the significant impact of bank regulation and supervision to the social and financial efficiency of MFIs. However, bank regulation and supervision are found to give more positive impacts to the financial efficiency while negatively effect to the social efficiency of the MFIs. This indicates the bank regulation and supervision are not appropriate with operations of the MFIs since they are not equally fulfill between the social and financial needs of the MFIs.

Overall, the study provides a new insight to the MFIs industry especially for the bank regulators and policy makers to develop a uniform set of regulation and supervision that more appropriate with the nature of the MFIs operations. This is to ensure the MFIs able to achieve financial goal for sustainability in the long run while in the same time accomplish the social goal for poverty reduction.

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Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KESAN KARAKTER SYARIKAT, KONDISI MAKROEKONOMI, PERUNDANGAN DAN PENYELIAAN BANK TERHADAP KADAR EFISIEN SOSIAL DAN KEWANGAN BAGI SYARIKAT MIKRO KEWANGAN

Oleh

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Bank komersial telah menyaksikan kegagalan dalam mengurangkan kemiskinan kerana berisiko tinggi untuk menawarkan perkhidmatan terhadap orang miskin. Institusi kewangan mikro (MFIs) telah ditubuhkan untuk mengisi jurang yang dicipta oleh bank komersial yang tidak menyediakan perkhidmatan kewangan terutamanya untuk golongan yang berpendapatan rendah. Di dalam memacu untuk membekalkan perkhidmatan kewangan yang berterusan untuk golongan miskin, prestasi MFIs telah menjadi salah satu aspek penting yang perlu diperpertimbangkan. MFIs mula beroperasi dengan menjadikan matlamat sosial sebagai matlamat utama bagi mengurangkan kemiskinan. Walau bagaimanapun, pengkomersialan kewangan mikro pada 1990-an telah menyebabkan mereka menjana kewangan sendiri kerana sebelum ini mereka dibiayai sepenuhnya oleh kerajaan. Oleh itu, untuk menjadikan matlamat sosial untuk mengukur prestasi MFIs adalah tidak lagi konsisten. Mereka perlu selari dengan matlamat kewangan untuk memastikan kestabilan MFIs menyediakan produk kewangan dalam jangka panjang. Pengkomersialan juga telah menaiktaraf status berlesen bagi MFIs yang dikawal selia dan ditadbir oleh undang-undang bank. Adakah ia adil bagi MFIs dengan dua keperluan sosial dan kewangan dikawal selia dan ditadbir di bawah undang-undang yang sama dengan bank komersial? Sehingga kini, persoalan ini masih menjadi tanda tanya. Kajian ini mencadangkan untuk mengukur prestasi MFIs dari dua aspek berbeza iaitu kecekapan sosial dan kewangan dalam objektif pertama. Objektif kedua adalah untuk mengkaji impak karakter syarikat dan kondisi makroekonomi terhadap kecekapan sosial dan kewangan. Objektif ketiga kajian adalah untuk mengkaji kesan perundangan dan penyeliaan bank terhadap kecekapan sosial dan kewangan.

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Data yang terdiri daripada 168 MFIs dari lima negara di rantau Asia Tenggara (ASEAN-5) bermula dari tahun 2011 himgga 2017. Tahap pertama analisis adalah untuk mendapatkan skor kecekapan sosial dan kewangan daripada MFIs dengan menggunakan kaedah *Data Envelopment Analysis* (DEA). Data ini seterusnya diuji oleh berparameter (*t-test*) dan tidak berparameter *Mann-Whitney (Wilcoxon)* dan *Kruskal-Wallis*. Peringkat kedua analisis adalah untuk mengenalpasti faktor dan kesan perundangan dan penyeliaan bank keatas kecekapan sosial dan kewangan dengan menggunakan *Multivariate Panel Regression Analysis* (MPRA) dan *Generalized Method of Moments* (GMM) sebagai kaedah metodologi.

Dapatan analisis peringkat pertama menunjukkan skor kecekapan kewangan adalah lebih tinggi daripada kecekapan sosial. Walaupun MFIs didapati efisen dari segi kewangan untuk menampung operasi dalam jangka panjang, hasilnya juga mendapati MFIs dalam negara-negara ASEAN 5 adalah tidak konsisten untuk mengimbangkan antara prestasi kewangan dan sosial kerana mereka cenderung untuk fokus lebih dalam bagi mencapai kemampanan kewangan sekali gus tidak menitikberatkan usaha sosial bagi membasmi kemiskinan. Dalam peringkat kedua analisis, dapatan kajian dari analisis GMM menunjukkan karakter syarikat dan kondisi makroekonomi memberi pengaruh yang signifikan ke atas kecekapan sosial dan kewangan dalam MFIs. Selain itu, dapatan kajian juga mendapati kesan yang ketara dari perundangan dan penyeliaan bank kepada kecekapan sosial dan kewangan bagi MFIs. Walau bagaimanapun, perundangan dan penyeliaan bank didapati memberi kesan yang lebih positif kepada kecekapan kewangan manakala kesan negatif kepada kecekapan sosial untuk MFIs. Ini menunjukkan perundangan dan penyeliaan bank tidak seimbang dalam melengkapi antara keperluan sosial dan kewangan MFIs.

Secara keseluruhannya, kajian ini memberikan satu wawasan baru bagi industri mikro kewangan terutamanya bagi pihak yang merencanakan polisi untuk menubuhkan satu set perundangan dan penyeliaan yang lebih sesuai dengan operasi MFIs. Ini adalah untuk memastikan MFIs berjaya mencapai matlamat kewangan bagi mengekalkan operasi dalam jangka masa panjang dan dalam masa yang sama dapat memenuhi matlamat sosial iaitu membasmi kemiskinan.

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This thesis was submitted to the Senate of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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LIST OF ABBREVIATIONS

API	Indonesian Banking Architecture
ASEAN	Association of South East Asian Nations
BCC	Banker, Charnes and Cooper
BI	Bank Indonesia
BNM	Bank Negara Malaysia
BOT	Bank of Thailand
BP	Breusch Pagan
BRI	Bank Rakyat Indonesia
BSP	Bangko Sentral Philippines
CCR	Charnes, Cooper and Rhodes
CPI	Consumer Price Index
CRS	Constant Returns to Scale
DEA	Data Envelopment Analysis
DER	Debt to Equity Ratio
DFA	Distribution Free Approach
DMU	Decision Making Unit
DRS	Decreasing Return to Scale
FDH	Free Disposal Hull
FDI	Foreign Direct Investment
FEM	Fixed Effect Model
FSS	Financial Self Sustainability
GBL	General Banking Law
GDP	Gross Domestic Product
GLS	Generalized Least Square
GMM	Generalized Method of Moments
IRS	Increasing Return to Scale
LM	Lagrangian Multiplier
MEF	Ministry of Economy and Finance
MFIs	Microfinance Institutions
MIX	Microfinance Information Exchange

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MPRA	Multivariate Panel Regression Approach
NBC	National Bank of Cambodia
NBFI	Non-Bank Financial Institution
NGO	Non-Government Organization
NIRS	Non-increasing Return to Scale
OJK	Financial Services Authority
OLS	Ordinary Least Square
OSS	Operational Self Sustainability
OTE	Overall Technical Efficiency
PAR30	Portfolio at Risk More Than 30 Days
PAR90	Portfolio at Risk More Than 90 Days
PDIC	Philippine Deposit Insurance Corporation
PMR	Profit Margin Ratio
PTE	Pure Technical Efficiency
PTIE	Pure Technical Inefficiency
REM	Random Effect Model
ROA	Return to Asset
ROE	Return on Equity
SC	Securities Commission
SE	Scale Efficiency
SECC	Securities and Exchange Commission of Cambodia
SFA	Stochastic Frontier Analysis
SIE	Scale Inefficiency
TE	Technical Efficiency
TFA	Thick Frontier Approach
TFP	Total Factor Productivity
UNICEF	United Nations International Children's Emergency Fund
USD	United States Dollar
VIF	Variance Inflation Factor
VRS	Variable Returns to Scale
WDI	World Development Indicators
WOR	Written-off Ratio

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CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter provides the background of the study, problem statement, research questions, research objectives and significance of this study. It provides a general description on the establishment of microfinance institutions (MFIs), characteristics and the growths that bring about a massive successful achievement in efforts to eradicate poverty. This chapter also discusses on the issue of regulation and supervision on performance of microfinance institutions. These will then lead to the problem statement, research questions, research objectives and significance of the study.

1.2 Background of the Study

Lack of basic needs with daily income below the minimum level implies the characteristics of poor people. They also provide no collateral that is usually acquired by traditional banks to access the financial services. This situation has prevented the poor from participating in economic activities since they are excluded from the formal financial system (Abdelkader, Jemaa and Mekki, 2012). In order to improve income among the poor, they need access to basic banking services such as savings, insurance, credit, and money transfers to support their lives and to fulfill basic social needs such as children education, health care, water and sanitation. With no access to financial services, this group of poor people find difficulties to setting up a new business of income generating activities and having no ability to build assets, therefore binds them into poverty spiral which can be inherited by future generations.

Study from Chowdury and Mukhadapaya (2012), poverty is defined as the incapability to take place in society; socially, economically, politically and culturally. Poverty can also be described as scarcity in well-being which can be measured by household income, nutrition, health, assets, education, housing, and rights of freedom of speech in a society. The main reason that contributes to poverty is due to traditional banks are found difficult to serve financial services to the poor (Dokulilova, Janda and Zetek, 2009). This is mainly due to the poor clients are risky, since they have no credit record, low income and provide no collateral to guarantee for loan application. Other than that, to deliver credit to poor people involves a high

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transaction cost[1] since they are located in rural area which is difficult for the banks to reach them for behaviour observation and verification.

Based on the study from Simanowitz (2002), due to high risk to serve for the poor, this situation has excluded them to be apart from the circle of banking sector. In addition to this, Chowdhury and Mukhopadhaya (2012) mentioned the formal banking institutions fail to eradicate poverty due to the inconsistency to deliver the financing to the poor. As a result, the poor people depend on informal financial alternatives to obtain credit such as money lenders, family loans, traders and shopkeepers.

According to United Nations Development (2015), almost half of the world's population earn less than USD2.50[2] daily and that indicates poverty. Moreover, the statistics from United Nations International Children's Emergency Fund (UNICEF) (2015) reported over 22,000 children die each day due to poverty. Moreover, lack of basic needs among the poor often brings to social problems such as domestic violence and crime (Sinha, Lipton, Church, Leavy, Litchfield, Ronch and Yacub, 2001).

Therefore in 1976, one of Bangladesh economic professors, Muhammed Yunus has introduced microfinance institutions (MFIs) as a provision of financial services mainly to poor households. Initially, the MFIs were defined as microcredit that generally offer credit delivery system to poor people. Later, it was expanded to more comprehensive banking product which comprises money transfer, insurance and saving. Grameen Bank was the first MFIs established by Professor Muhammed Yunus in Bangladesh. Started its operation from 1976 onwards, the Grameen Bank nowadays has seen as one of the most successful MFIs among the world. Historically, the first loan made by the Grameen Bank was lending USD 28 to villagers near to Chittagong University. This tiny loan is used as a working capital to a group of crafts people and petty traders and majority of them are women. Since then, the MFIs have shown a progressive growth and seem to be a major tool for poverty elimination.

Over the past twenty years, the MFIs have rapidly evolved and expanded from the relatively narrow field credit delivery system to the massive challenge of building wide-range financial services. Wagner and Winkler (2013) mention that microfinance starts its operation as a subsidy dependent industry which fund generates from donors and governments. However, since 1990s microfinance has been commercialized from the subsidy regime to full-fledge banking products.

[1] The transaction cost is high due to small amount of loans and difficulties of bank officer for information searching, enforcement and monitoring the poor that usually located in rural area (Widiarto and Emrouznejad, 2015).
[2] Additionally, more than 1.3 billion live in extreme poverty when they only manage to earn USD1.25 a day (UNICEF, 2015).

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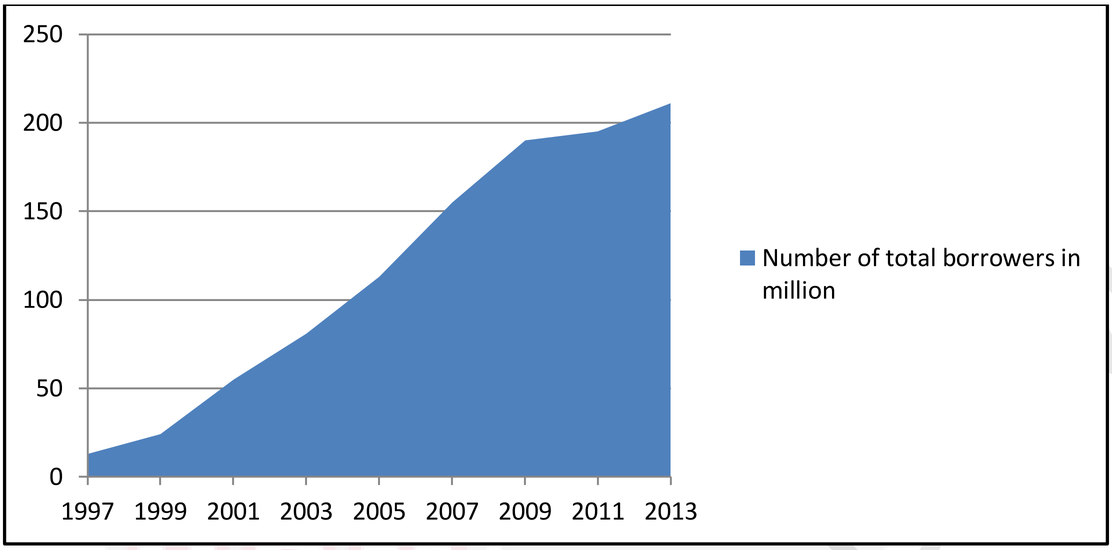

Figure 1.1 : Growth of Poor Borrower in Microfinance Institutions
(Source: Microcredit Summit Campaign Report 2015)

As shown in Figure 1.1, according to Microcredit Summit Campaign Report 2015, a growth of number of poor borrowers in the world has increased by 1,462% from year 1997 until 2013. The total number of borrowers recorded in 1997 was 13.5 million and this amount rose tremendously to 211 million at the end of 2013. The study from Assefa, Hermes, and Meesters (2013) indicate the MFIs have been rising at a significant rate and the number of MFIs provider has also grown intensely.

1.2.1 Characteristics of the Microfinance Institutions

The main feature of the MFIs, as suggested by its pioneer Professor Muhammed Yunus, is to provide social oriented business from the lowest level of society (Dokulilova *et al.*, 2009). He also looked into MFIs as a viable solution to world poverty. The MFIs generally provide banking services to that segment of the population which is not tapped by the traditional banks, for not having collateral. The MFIs have also assisted the poor by allocating other basic services which are basically not permissible to them due to their poverty, locational difficulty and illiteracy.

The first characteristic is the banking operation of the MFIs which mainly focuses on the poor and low-income people. The MFIs initially started the operation with credit delivery system to unsalaried borrowers. After being commercialized in 1990s, the MFIs started to offer a wide range of banking products to the poor. This includes savings, loans, money transfers, deposits, insurances and pension funds. Besides that, the loans usually do not require collateral and they focused on the rural area. The MFIs operated a banking system based on creativity, accountability, participation and mutual trust. A study from Dusuki (2008) states that the clients of the MFIs are excluded from being evaluated on creditworthiness. This flexibility denotes one of the social orientated features in microfinance.

Second, it is saving mobilization among the poor clients of the MFIs. The saving services are well designed providing advantages to the borrowers in terms of liquidity and safety. It also serves the poor with a reliable and secure place to save money in lesser figures and to borrow when they need it. It is compulsory for the borrowers to save a portion of the amount they borrow in saving account. The amount of savings is determined based on the percentage of the loan amount. The money from saving account cannot be withdrawn by the borrower if they still have outstanding loan. In this way, savings play a role as a collateral and serve as an additional guarantee to ensure repayment of loans.

Third, the MFIs implement a group lending approach for loan grant to poor borrowers. The group lending approach normally involves the creation of groups of poor borrowers who have a common interest to access financial services. Among the main features of group lending approach is the capability to decrease the high transaction costs in credit delivery and disbursements due to the effort of information searching, enforcement and monitoring. This can be done by the MFIs by shifting those costs onto the groups. The MFIs indirectly transfer the cost that will be shared equally among the borrowers in the lending group.

Finally, the MFIs also equip their banking services with non-financial services such as business training, agricultural education, technical training and education in health care with the objective to improve the well-being of their clients (Abdelkader *et al.*, 2012). Generally, investments can gain more profit when people have privilege to training, which can enhance their skills. The training must concentrate not only on technical and business skills, but also to improve knowledge of proper nourishment especially on the children, such as the nutrition information to feed the children.

1.2.2 Impact of the Microfinance Institutions on Poverty Eradication

Roy and Goswami (2013) indicate a number of previous studies that have proven to give a progressive impact on the lives of poor people benefiting from financial services of microfinance. This is widely across the range of social indicators and economic, comprising greater empowerment of women, well access to education for children and enlarged involvement of women in political and social activities (Yunus, 2006).

As one of the successful MFIs in the world, the Grameen Bank with the help of microcredit has accomplished to eliminate critical poverty for more than half of borrowers in Bangladesh which are close to 50 million borrowers (Sarkar, 2008). This is based on the measures such as people eating three times a day, all children going to school, drinking a clean water, house with rainproof and toilet equipped

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with sanitary (Khandelwal, 2007). The study conducted by Yunus (2006) has shown starting its operation from 1976 onwards, the Grameen Bank has been capable to lend microcredit loans to 86% of villages in Bangladesh that is worth Taka 290.03 billion. A current World Bank study indicates that income levels have improved among the villagers served by Grameen Bank and this has resulted in education, self-esteem and health of its clients and their families being significantly developed (Vukson, 2003).

In addition to this, in 2006 Professor Muhummed Yunus and its Grameen Bank have been awarded Nobel Peace Prize from United Nations Year of Microcredit year 2005 for his remarkable contribution so as to create economic and social development from below. Viewing at this high potential of the microfinance sector, year 2006 has been declared as the International Year of Microcredit by United Nations General Assembly to appreciate the involvement and significance of microfinance in poverty alleviation.

Considering the successful stories of microfinance in poverty alleviation, United Nation has confirmed to include it in the group of potential contributions to attain the Millenium Development Goals set for 2015 to remove half from the number of people living in poverty. The vast growth within this period encouraged the acceptance of the MFIs as a poverty elimination tool and it began to get greater attention particularly for practitioner and academicians on the performance of the MFIs.

The MFIs are not only being “banking for the poor,” but also now viewed by many as an instrument that will aid society development (Roy and Goswami, 2013). Microfinance has thus emerged as a new approach to fight poverty. Many researchers prove that microfinance has caught the attention of some private investors and more funds are being pushed into this sector (Patten, Rosengard and Johnston, 2001). The outreach of poorest clients through microfinance institution is significant with its social objective that is to increase income and bring people out of poverty.

1.3 Efficiency in Microfinance Industry

The performance of the MFIs has been a long debate among previous researcher. This is important as the MFIs nowadays seem significant to eradicate poverty by extending the financial services to the poor. The MFIs posed a dual characteristic as they initially developed with its social mission. Nowadays the demand is to be financially stable as well in order to provide a continuous financial service for poor people in the long run. Nanayakkara (2012) explains on the term financially stable is not necessarily to focus on profitability, but rather to provide the services in the long period. Other than this, Wijesiri, Yaron and Meoli (2015) suggest the term financially stable in the MFIs is different from other types of financial institutions since it indicates the capability of the MFIs to release from a subsidized dependable

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and extend outreach by providing financial services to a large number of poor people.

This study proposes that social and financial efficiency should be applied equally as a performance indicator of the MFIs. Following the study from Vanroose and D'Espallier (2013), they reveal that it becomes a standard to measure the performance of the MFIs from a dimension of social and financial efficiency. It retains the social role of the MFIs that is to eradicate poverty whilst at the same time they must strive to sustain the operation for long term period. Thus, as proven by many of the previous studies, both efficiency that measures for outreach and financial efficiency for sustainability can be claimed as the best practice that fits with the nature of MFIs (Haq, Skully and Pathan, 2010) .

Social efficiency is defined as the outreach to the poor clients. Outreach can be ascertained as a social value of output produced by the MFIs. It comprises six aspects; depth, breadth, length, scope, worth of users, and cost to users (Schreiner, Churchill, Meyer, Morduch, and Navajas, 2002). Among them, this study undertakes to pay attention on the aspects of breadth and depth of the outreach as suggested by many previous researchers (Quayes, 2012). Widiarto and Emrouznejad (2015) reported, the breadth of outreach is measured by a number of poor people that has been served while the depth of outreach is refered to the extent to which MFIs reaches out to poor borrower.

There is growing number of literatures that has discussed the aspects of financial efficiency recently. Its emphasis is on the need for the MFIs to be financially stable in order to provide a continuous financial service to poor people, thus able to reduce poverty since that is the key role of the MFIs. Unlike any other banking institutions, the term financial sustainability denotes the ability of the MFIs to generate their own income and no longer depend on subsidies to operate the business. Following up, Assefa *et al.*, (2013) argued that the subsidies from the government were not able to ensure the financial sustainability of MFIs since the fund could be reduced or taken out following to the country economic condition. Generally, financial efficiency in the MFIs is not restricted to the profitability but rather focused on the MFIs ability to operate in long term without having risk of bankruptcy (Nanayakkara, 2012).

1.4 Overview of Bank Regulation and Supervision in ASEAN 5 Countries

1.4.1 Regulation of Microfinance Industry

One of the mechanisms to ensure the efficiency of the banking sector is at optimum level is through an effective regulatory framework. In microfinance industry, most of the MFIs have upgraded their legal status to become a regulated microfinance after being commercialized in 1990. Following Wagner and Winkler (2013), the commercialization of the MFIs has released them from a subsidy dependent industry where they started to generate their own income by offering many banking products.

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The commercialization of the MFIs not only to widen the range of products, but also to improve business transparency, efficiency and management information systems (Ledgerwood and White, 2006). As the operation of the MFIs involves collecting money from the public, it is compulsory for the organisation to be regulated by associated regulatory framework. According to the Microfinance Industry Report 2010, more than 50% of MFIs has upgraded to regulated microfinances and they are governed by a central bank of their respective country.

Central bank is an authorised party who is responsible in setting a regulatory framework for banking system. Since commercial banks own the majority in the circle of financial institutions, most of the central banks tend to develop regulatory framework that is more appropriate with the commercial bank's activities. This is to protect depositors as well as to promote a sound financial system to ensure good practices in all banking transaction. Eventhough the MFIs bring large differences with the commercial banks, practically they are governed under the same regulatory framework.

There are several numbers of studies undertaken to examine the impact of bank regulation and supervision regulatory on the performance of the MFIs (Basharat, Arshad and Khan, 2014; Servin, Leinsink and Van, 2012). The study from Basharat *et al.,* (2014) found the performance of the MFIs was influenced by the regulatory framework they have to follow. In the same vein, Servin *et al.,* (2012) proved the weights of social and financial efficiencies of the MFIs vary according to the type of ownership they hold.

Besides that, Hartarska and Nadolnyak (2007) compared the performance of regulated and non-regulated MFIs. By using survey of bank regulatory index from Barth, Caprio and Levine (2004), they find non-regulated microfinance performs better than regulated microfinance. This is due to regulated MFIs that have restricted certain activities to poor people. This may limit the operation of the MFIs, thus provide a poor performance of the MFIs.

This issue has brought the interest of the study to investigate the impact of bank regulatory framework to the performance of the MFIs from the perspective of social and financial efficiency. The study specifically explored the impact bank regulatory framework in terms of bank regulation and supervision to the social and financial effieicny of the MFIs in ASEAN 5 Countries.

1.4.2 Bank Regulation and Supervision in ASEAN 5 Countries

A global leader that focuses to strengthen the practices of worldwide banks, regulation and supervision with purpose to promote financial stability is known as Basel Committee. The Basel Committee implements a standard and recommends situation of best practice on relevant issues of banking regulation and supervision

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including 1) banks' foreign branches, 2) core principles for banking supervision, 3) effective deposit insurance, 4) internal controls and 4) supervision of cross-border electronic banking and 6) risk management guidelines for derivatives. However, the Basel Committee recently has switched attention to liquidity risk, regulatory capital, cross-border banking supervision and establish frameworks for the recovery banks that get into financial difficulties. The banking sector is not obligated to enforce under Basel Committee since it appears more as a guidance for a commercial bank to operate the best practice and the sources of recovery whenever the banks face any shortfalls.

In general, bank regulation is defined as a set of enforceable rules that control the creation, operation and liquidation of banks in an economy (Alam, 2013). While Barth *et al*., (2004) indicate bank supervision is a supervisory authority that exerted these bank regulations through close monitoring with the banking operations. Below is the overview of the bank regulation and supervision in ASEAN 5 Countries:

a) Philippines

Bangko Sentral Philippines (BSP) is the central bank of Philippines. It was established on 3rd July 1993 and governed under New Central Bank Act of 1993. In Philippines, an effective prudential regulator and supervisor is fulfilled entirely by the BSP to promote safe and sound banking system. Governed under the New Central Bank Act 1993, the role of the BSP that acts as the central monetary authority consists of 1) liquidity management, 2) currency issue, 3) lender of last resort, 4) financial supervision, 5) management of foreign currency reserves and 6) determination of exchange rate policy. The main division of the BSP that exercise bank regulation and supervision consist of Monetary Board and Supervision and Examination Sector. The responsibility of Monetary Board is to exercises the powers and functions of the BSP, such as supervise the financial system and conduct of monetary policy. Meanwhile, Supervision and Examination Sector focus on monitoring financial institutions to comply with banking laws to promote a stable and strong banking system.

The legislation that matters on the issue related to banking system in Philippines are administered by General Banking Law 2000 (GBL). The GBL is applicable for the banking activities held by commercial banks. In addition, Philippine Cooperative Code of 2008 also recognises the significance of the GBL in regulating of the commercial banks. The rules to implement the various banking laws have been included in the Manual of Regulations for Banks issued by the BSP. To meet with the current issues, additional circulars are adjusted by the BSP to regulate new matters otherwise to repeal, amend or modify existing rules.

However, there is a special law or charter that is designed to regulate the operations of the other banks, yet the GBL maintains as the main regulator for the whole financial institutions in Philippines. Meanwhile, the New Central Bank Act covers

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provisions on banking regulation in line with the BSP as the primary advisor of banks in the Philippines. In addition, the authority that acts as insurer with the purpose to protect bank deposit is known as Philippine Deposit Insurance Corporation (PDIC).

The banking supervision falls under Section 4 of the GBL that describes activities and operations of the banks shall be subject to supervision of the BSP. Section 4 indicates duty of the BSP to supervise commercial banks through the powers in investigating and examining the activities of banks and determining their compliance with standards and rules, and takes prompt corrective action when needed. Finally, the aim of bank supervision is to encourage bank’s solvency and maintain a liquidity of the banks.

b) Thailand

Bank of Thailand (BOT) is the central bank of Thailand. The BOT was first set up on 28 April 1942 with mission to provide a stable financial environment for sustainable economic growth in order to achieve continuous improvement in the standard of living of the people in Thailand. An efficient bank regulation and supervision is owned wholly by the BOT with subdivision Financial Institutions Policy Group and Supervision Group are responsible for supervising Financial Institution. According to Bank of Thailand Act B.E.2551, roles and responsibility of the BOT are 1) print and issue banknotes, 2) promote monetary stability, 3) manage the BOT's assets, 4) provide banking facilities to the government and act as the registrar for the government bonds, 5) provide banking facilities for the financial institutions, 6) Support the establishment of payment system, 7) Supervise and examine the financial institutions and 8) Manage the country's foreign exchange rate according to the Currency Act. Table 1.1 depicts the list of acts that has been implemented in Thailand banking system.

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Table 1.1 : Banking Acts in Thailand

Acts	Details
Bank of Thailand Act	Sets out the objectives, scope of working and organisation structure of the BOT in accordance with the international central banking standard
Financial Institution Business Act	Enhance the risk management measures of the financial institutions
Exchange Control Act	Controlling, restricting, or prohibiting the execution of all exchange or other operations in which foreign currency is concerned
Royal Decree Regulating on Electronic Payment Services	To oversee the operation of both and Financial institutions and Non-Financial Institutions carrying on the electronic payment service business
Emergency Decree on Asset Management Company	To provide registration mechanism of the asset management company, which will receive benefits of fee and tax exemption on purchasing of non-performing assets
Payment System Act	To supervise the operation of payment systems and services to ensure stability, security and efficiency of the overall payment systems
Currency Act	To ensure the BOT manage international reserves to ensure the stability and confidence in the currency

While the supervision by the BOT has established in accordance with 1) Financial Institutions Businesses Act B.E. 2551, to supervise commercial banks, Finance companies and Credit Foncier business and 2) Declaration of the Revolutionary Council No. 58, to supervise financial businesses that have broad impact on the public.

c) Indonesia

Given the authority by Law No. 23/1999, Bank Indonesia (BI) was declared as independent central bank for Indonesia. This law delivers position and status as an independent state institution in implementing its authorities and duties, free from government interference, except for matters regulated in the law. The primary function of the BI is to mobilise and channel funds from the public to enhance national development in order to improve equitable distribution, economic and dynamic sustainable growth and sustainable national stability, with all aimed at improving the income of the Indonesian people.

Previously, the BI as the Indonesian central bank plays the role of regulator and supervisor in the banking system in Indonesia. However, in late 2013 the power of bank supervisor and functions were handed to Financial Services Authority (OJK) an Indonesian government agency pursuant to Law No. 21 2011. The OJK is an independent agency designed to be free from any intervention, to deliver functions, duties, and powers to regulate, supervise, inspect, and investigate. The OJK also holds the supervision and regulatory functions of the Financial Institutions and Capital Market. Thus, in general, the OJK regulates and supervises banking and financing activities including activities in financial markets, pension funds and insurances. Functions of the OJK are 1) to operate fair, transparent, and accountable

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manners, 2) to provide stable financial system and 3) to protect the interests of consumers and the society.

The regulation regime for banking system in Indonesia was mainly based under the Banking Law. The Banking Law entails any parties aim to collect funds from the public in the form of deposits to first acquire an operating licence as a commercial bank or a rural bank from the OJK. In the previous years, Bank Indonesia in the effort for better future in Indonesian banking industry has implement the programmes under the Indonesian Banking Architecture (API). The API was developed for the strengthening the fundamentals of the banking industry. The program is comprehensive, sets a basic framework for the Indonesian banking system, and sets forth the direction, working structures and outlines for the banking industry over the next five to ten years. With API, the policy direction for the future growth in the banking sector is based on a vision of building a strong, sound and efficient banking system to create stable financial system for the encouragement of national economic growth.

While the bank supervision is in Indonesian banking system, the OJK has given the authority to carry out bank supervision by taking both repressive and preventive measures. To ensure that the prudential principle is consistently complied, the commercial banks must provide all information and explanation on their business activities that include profit and loss and balance sheets statements, periodical reports that follow the procedure stipulated by the prevailing banking law and regulations to the OJK. Besides that, the OJK at any time deemed necessary, has the right to audit the commercial banks. Thus, at the request of the OJK, the commercial banks shall be ready at all times for examination of their documents as well as filing and preparing an assistance for the purpose to reveal all information and explanation reported by the banks concerned.

d) Malaysia

Bank Negara Malaysia (BNM) is the central bank for Malaysia. Established on 26th January 1959, the main role of the BNM is to promote monetary and financial stability. This is aimed at providing a great environment for the sustainable growth of the Malaysian economy. The BNM is empowered through enactment of legislation by the Parliament of Malaysia and is governed by the Central Bank of Malaysia Act 2009. The BNM's monetary policy stance is to control price stability while remaining supportive of growth. Besides that, the BNM is also responsible for the stability of financial system. This can be accomplished by developing a resilient, progressive, sound and diversification of financial sector that contributes to the growth of real economy. It also brings a significant function in implementing initiatives to strengthen the financial market as well as foreign exchange market.

In Malaysia, there are several acts aimed to provide a regulatory framework for both the conventional financial and shariah-compliant sectors. The acts also grant the

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BNM with adequate powers to minimize future risks for stability in the financial sector, wide consumer protection and encourage competition in the financial services sector. The acts also contain provisions that preserve every guideline, circular, direction or notice previously issued under any repealed legislation in relation to any provision of the acts prior to their coming into force. Table 1.2 presents the list of acts that have been operated in Malaysia banking system.

Table 1.2 : Banking Acts in Malaysia

Acts	Details
Central Bank of Malaysia Act 2009	Provides the administration, establishment and powers of the bank
Financial Services Act 2013	Regulatory and supervisory framework for Malaysia's banking industry, insurance industry and payment systems that replace Banking and Finance Act (BAFIA).
Islamic Financial Services Act 2013	Regulatory framework for Islamic financial sector with purpose of promoting financial stability and compliance with Shariah
Money Services Business Act 2011	Regulation of money services business industry which consists of wholesale currency, remittance and currency exchange businesses.
Anti-Money Laundering and Anti-Terrorism Financing Act 2001	Provides powers to the bank to prevent money laundering and terrorism financing
Development Financial Institutions Act 2002	Promotes the growth and efficient development financial institutions.
Labuan Financial Services and Securities Act 2010	To promote Labuan International Business and Financial Centre as the premier mid-shore international business and financial center in the Asia

Meanwhile, Securities Commission Malaysia (SC) is a statutory body entrusted with the responsibility of regulating and systematically developing the capital markets in Malaysia. The SC established on 1st March 1993 under the Securities Commission Act 1993. The SC is a self-funding statutory body with investigative and enforcement powers that report to the Minister of Finance and presentable in Parliament annually. Among the roles of the SC are 1) Supervising exchanges, clearing houses and central depository, 2) Regulating all matters relating to securities, unit trust schemes and take-over and mergers of companies, 3) Approving authority for corporate bond issues and 4) Ensuring proper conduct of market institutions and licensed people. Apart from the function of regulatory authority, the SC is also compulsory by statute to encourage and promote the development of the future and securities markets in Malaysia.

The supervision functions of the banking system in Malaysia was authorised by the BNM that is responsible to ensure safety, soundness and robustness of the financial institutions. To achieve a higher level of efficiency in performing the supervision role, the BNM had established a few departments to smoothen the supervisory approach with the ability to recognize any vulnerabilities. The supervisory departments include 1) Financial Conglomerates Supervision to Supervise of domestic financial conglomerates, 2) Banking Supervision with purpose to supervise foreign, Islamic and stand-alone investment banks, and 3) Insurance and Takaful Supervision to supervise insurance and takaful companies.

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e) Cambodia

National Bank of Cambodia (NBC) established in 1954 is the central bank of Cambodia. The NBC duties include issuer of the national currency, conduct monetary policy and act as a supervisor of the banking and financial system, including the authority to grant operating licenses to financial institutions and commercial banks, as well as to manage the payments system. The NBC also supervises the banking system and principal banker for the government of Cambodia. The NBC has recently upgraded the structure of the supervision and promoted good progress in accomplishing full compliance with the 25 Basel Core Principles.

The banking activities in Cambodia are mainly governed by few Laws as listed below:

i. Organisation and Functioning of the National Bank of Cambodia 2006 (NBC Law)
ii. Law on Banking and Financial Institutions 1999
iii. Law on Foreign Exchange 1997
iv. Law on Anti-Money Laundering and Combating the Financing of Terrorism 2013

In addition, there are a few numbers of implementing sub-decrees, regulations and circulars issued by the NBC. The legal framework governing the banking sector provides a comprehensive set of regulation with the regular updates of existing laws and introduction of new regulations from the NBC. The NBC implements the main role of a central bank and all banking activities are under its own jurisdiction.

Furthermore, Securities and Exchange Commission of Cambodia (SECC) oversees the securities market while Ministry of Economy and Finance (MEF) manages the insurance sector under the jurisdiction of the Financial Industry Department. The NBC, MEF and SECC are working together on a framework with the aim of moving towards a joint supervision, commencing with information sharing. Each banking institution will be incorporated as a public limited company and fulfill with minimum capital requirements. The NBC has recently raised the amount minimum capital of commercial banks. This includes microfinance deposit-taking institutions that are subject to the new minimum capital requirement.

The NBC acts both as the regulatory and supervisory authority of the banking and financial sector in Cambodia. The NBC has switch its supervisory approach by shifting from compliance-based supervision to risk-based and forward-looking supervision with purpose to concentrate on the high-risk areas such as liquidity risk, operational risk, market risk and credit risk. The NBC also deliver the prudential regulations to strengthen policy compliance, good governance, customer protection and transparency as well as the improvement of financial education among relevant

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parties. Thus, its supervisory work is agreed through both on-site visits and off-site examinations. Banking institutions are compulsory to fulfill the disclosure requirement such as internal control reports and periodical reports, audited annual financial reports and reserve requirement reports. The level of transparency in banking and financial institutions is basically much more important compared with companies operating in other financial sectors in Cambodia. Each bank is required to publish its annual audited financial report and all such reports are made available to public.

1.5 Problem Statement

To evaluate performance of the MFIs is very crucial in order to provide continuous services to the poor. The MFIs begin the operation with its social goal to provide a tiny loan for poor people who are financially excluded from traditional banking system. After several years, microfinance industry shows a massive growth with a large increase in total number of poor borrower and the number of MFIs. The MFIs that are initially funded by a subsidy from a government, however in late 1990's there has been a paradigm shift from subsidy regime to commercialization of microfinance. Statistics from Asian Development Bank (2004) revealed, more than 90% number of MFIs in Southeast Asia countries has been commercialized in order to increase outreach to the poor[3]. The study from Roy and Goswami (2013) indicates at this point of time that the MFIs are no longer donors and subsidized dependable and they start to generate their own funds by offering various banking products.

Since then, the MFIs nowadays present a unique characteristic as they bring dual objectives of social and financial goals. Both aspects are equally important since the MFIs need to have a strong financial condition to sustain the operation in the long run at the same time able to serve optimal number of poor borrowers for poverty eradication. The **first issue** in this study arises when there are no longer relevant to count solely on social goal to evaluate the performance of the MFIs. They need to be parallel with the financial goal to promote the stability of the MFIs in providing financial products in the long run. Hence, the study proposes to measure social and financial goals in terms of social and financial efficiency of the MFIs.

Incorporating with the level of social and financial efficiency, the **second issue** in the study emphasises on the factors to influence from both aspects of the performance in the MFIs. The issue has been a long-standing concern among researchers and practitioners. Two categories have been found in previous literature to explain the factors that affect the performance of the MFIs, particularly in firm characteristics and macroeconomic conditions that internally and externally influence the performance of the MFIs. Among them, Assefa *et al.*, (2013) as well as Ahlin, Lin, and Maio (2011) include size, age, financial leverage and profitability as

[3] Initially the MFIs only offer microcredit to poor people. The commercialization able to increase outreach by expanded the range of financial services offer to the poor clients e.g. savings, money transfer, insurance, deposit and pension and fund (Kipesha, 2012).

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a proxy for firm characteristics variables, while Gross Domestic Product (GDP), interest rate and inflation are to represent macroeconomics variables.

However, the findings are mixed and many arguments arise from the researcher to determine on the actual factor to influence performance of the MFIs. At this moment, there is no final evidence to prove valid factors to influence the performance of the MFIs and the result is yet still inconclusive. Additionally, the study from Quayes (2015) mentions the empirical literature has focused more on the factors to effect only the social performance of the MFIs, there are very limited study to provide the evidence on the different factors to influence social and financial aspects of the MFIs. For this distinction, the findings from this study may provide supportive proof to find the factors that affect social and financial performance in the MFIs.

In addition, the MFIs that initially designed as a social oriented organization to help poor people is completely different from profit oriented commercial banks. However, after being commercialized, most of the MFIs are administered by central bank where all the operations are governed under bank regulation and supervision (Microfinance Industry Report, 2010). The study from Wijesiri *et al.,* (2015) notices the reason behind this is, at that particular time most of the MFIs has upgraded their legal status to become regulated MFIs. This is to allow them to offer many banking products as they need to strive their own income since they are no longer in subsidized industry. When they start to offer the banking products, it is compulsory to be governed and supervised by a central bank.

After being regulated, the MFIs continue to preserve the original social mission of poverty eradication. The **third issue** in the study highlights on the possibility of bias impact especially for the MFIs with the dual needs of social and financial stability, to be governed under similar set of regulation and supervision with commercial banks. The study from Schmidt (2000) argue the regulation on microfinance has to meet similar minimum capital requirements that are applicable to commercial banks. His disagreement on “one size fits all” approach explains that it will have adverse consequences to the outreach and sustainability of the MFIs. He suggests the MFIs need to own regulatory instruments that are appropriate to its nature and to be supervised in a meaningful way.

Other than this, Ahmad (2011) discovered a major factor that contributes to the inefficiency of the MFIs in Pakistan due to the regulation on prohibition from pledging security and sourcing foreign currency loans. This kind of restriction on the MFIs activities may affect the performance of microfinance in providing the financial services for poor people and it presents a poor reputation of the institution, especially for potential investor who intentionally proposes to invest in microfinance. In addition, Cull, Dermiguc and Morduch (2009) prove the performance of microfinance can also be affected by the regulatory framework it has to follow.

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Generally, banking regulation is more consistent with the bank operations and such situation potentially give a biased impact on the performance of the MFIs. Although the MFIs nowadays tend to offer many banking products, but they have to retain the social mission of poverty eradication. Certain regulatory requirement may limit the social objectives held by Microfinance and this indirectly may provide a poor performance in continuing to serve for poor people (Basharat *et al.*, 2014).

1.6 Objectives of the Study

There are three main objectives of this study namely:

i. To determine the levels of social and financial efficiency in the Microfinance Institutions among ASEAN 5 Countries
ii. To examine the impact of firm characteristics and macroeconomics conditions on social and financial efficiency of the Microfinance Institutions in ASEAN 5 Countries
iii. To investigate the effect of bank regulation and supervision on the social and financial efficiency of the Microfinance Institutions in ASEAN 5 Countries

1.7 Research Questions

i. Are the efficiency levels (social and financial) significantly different among Microfinance Institutions in ASEAN 5 countries?
ii. What are the potential firm characteristics and macroeconomic factors that influence the efficiency level (social and financial) of the Microfinance Institutions in ASEAN 5 countries?
iii. Does the effect of bank regulations and supervisions have a significant influence on the level of social and financial efficiency in Microfinance Institutions in ASEAN 5 countries?

1.8 Significance of the Study

This study extends the finance literature by making several important contributions. Bangladesh has been viewed as the most successful microfinance among the world and most of previous researchers have investigated the issues such as efficiency, sustainability, profitability, outreach and social goals in this country. Although there are many efficiency studies on the MFIs especially in the Southasia region, none of them are found in the ASEAN 5 countries.

Firstly, the study would contribute to the body of knowledge in microfinance field by addressing some gaps in recent literature in particular, the lack of extensive research in ASEAN 5 countries, especially when the number of microfinance provider is rising over a time. This condition may lead to escalate competition among microfinances and the result from the analysis provide additional knowledge

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and valuable information on efficiency, sustainability and profitability of MFIs in ASEAN 5 countries.

Secondly, with rapid development in microfinance it is very important to assess the performance of microfinances especially in the aspects of social and financial sustainability. Microfinance is expected to provide a continuous operation to achieve its social outreach. This is important when in the recent time, many private investors realize the massive growth of microfinance and look at this situation as a bright investment opportunity. Other than this, it may help investor to evaluate and select the most potential microfinance that provides a good return and stable in the long term period.

Thirdly, this study would lead to some lessons especially for the policy makers and bank regulators as a direction to implement rules and regulations on microfinance operation. As they are the authorised body to construct the regulation and supervision in banking institutions, the findings from the study is expected to help them to realize on the regulatory imposed by them earlier could give impact to performance of microfinance institution. This is due to the certain aspect in the regulatory framework that may not be appropriate with the nature of microfinance. In the case of unfavourable result (regulated MFIs effect to poor performance), the government may revise their existing regulations to the most appropriate set of new regulations in order to improve the performance in microfinance.

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1.9 Chapter Summary

Figure 1.2 depicts the connection between problem statements with objectives of the study respectively;

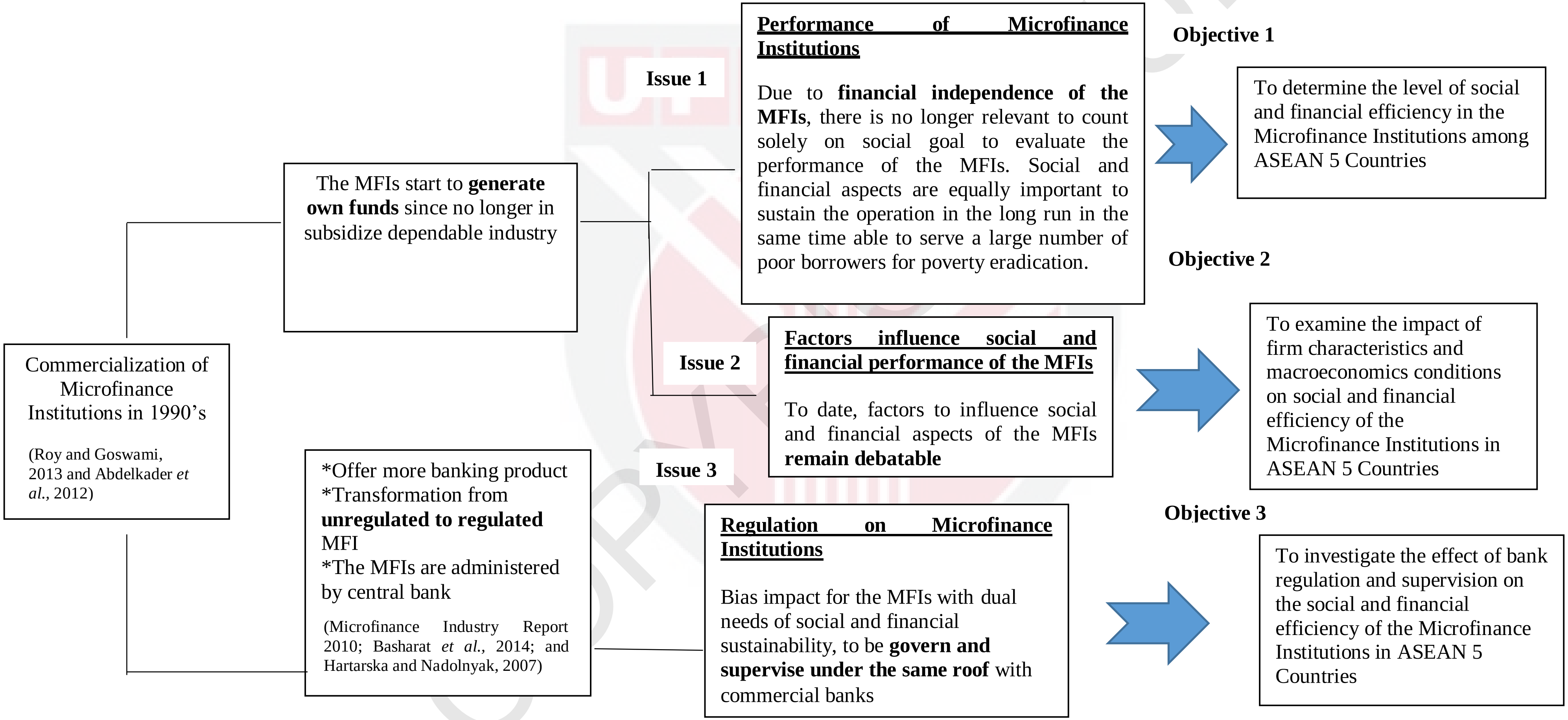

Figure 1.2 : Nnection between Problem Statements and Research Objectives

The main highlights of Chapter One is summarize in Table 1.3

Table 1.3 : Summary of Chapter One

Objectives of the study		Contribution of this study
i.	To determine the levels of social and financial efficiency in the Microfinance Institutions among ASEAN 5 Countries	The output from this study may contribute to the body of knowledge especially in the Microfinance industry by providing additional information to measure the performance of the Microfinance Institutions by looking at dual aspects of social and financial sustainability. To evaluate the performance of the MFIs is very crucial nowadays since they bring both objectives simultaneously (social and financial).
ii.	To examine the impact of firm characteristics and macroeconomics conditions to social and financial efficiency of the Microfinance Institutions in ASEAN 5 Countries	This study will contribute new outcomes to the different factors that influence the level of social and financial performance of the MFIs. Since previous literature are found to focus on social efficiency, the factors effecting both social and financial efficiency are still debatable. The findings from the study is very useful especially for the organisation of the MFIs, practitioner, academicians and potential investor.
iii.	To investigate the effect of bank regulation and supervision on the social and financial efficiency of the Microfinance Institutions in ASEAN 5 Countries	The findings from this study may notify the policy maker and the regulator particularly on the impact on the performance of the MFIs to be govern and supervise by a general banking regulatory framework. The finding may provide an evidence of bias impact to the MFIs since the formulation of banking regulation are not appropriate with the nature of the MFIs activities. This condition may suggest to the policy authorities to develop a uniform set of regulation and supervision particularly that focus on the MFIs's operations.

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