

Assessing Financial Returns on Microloans from Economic, Social and Environment Impact: A Case in Kota Kinabalu

Caroline Geetha^{a*}, Anna Savarimuthu^b & Azmi Abdul Majid^c

^{abc}Universiti Malaysia Sabah

Abstract

In Malaysia microfinance programs have been implemented since 1987 as one of the poverty eradication approaches. There are three large microfinance institutions in Malaysia known as Amanah Ikhtiar Malaysia (AIM), Yayasan Usaha Maju (YUM) and The Economic Fund for National Entrepreneurs Group (TEKUN). The main objective of this study being carried out is to determine whether financial and non-financial services influence the impact of microcredit among AIM, TEKUN and YUM recipients by using economic, social and environment as the impact of microcredit. In this study, financial services cover loan services in loan disbursements, loan repayment, loan size, loan usage and loan interest rate. The non-financial services cover training, monitoring, communication and pressure. A total of 350 questionnaires were distributed. However, only 300 questionnaires were returned. Based on 300 respondents, data was analyzed using Statistical Package for Social Science (SPSS) for profile of the respondents and Partial Least Square (SmartPLS) for measurement model and structural model. The result indicates that financial services has an impact on economy and social only, while non-financial services has an impact on economy, social as well as environment. This study also consistent with previous studies regarding financial services and non-financial services and its impact with microcredit. Finally, this study discusses some practical and theoretical implication as well as some suggestion for both borrowers and microfinance institutions to improve and develop economically, socially and environmentally financial instruments.

Keywords: Financial return, microloans, economic, social, environment

1 Introduction

In Malaysia the term microfinance is applied interchangeably with microcredit. Amanah Ikhtihar Malaysia (AIM) is the first institution in Malaysia which offered microloans, developed in 1988. It is aimed to supply loans to the poor people in order to begin microenterprise. This extended with Yayasan Usaha Maju (YUM) and the Economic Fund for National Entrepreneurs Group (TEKUN) which was founded in 1988 and 1998 respectively.

*Corresponding author Tel.: +60168310914
E-mail address: caroline@hotmail.com

Since the formation of these agencies, there was a significant increase of microenterprise from 2006. The Malaysian government wanted to expand them further by encouraging financial institutions to offer microcredit products. Currently in 2014, there are seven commercial banks in Malaysia, Alliance Bank, Am Bank, CIMB Bank, Public Bank, Maybank, United Overseas Bank and Bank Muamalat and development banks such as Agrobank, Bank Rakyat and Bank Simpanan Nasional that provide the service.

The loan amount ranges from RM1,000 to RM50,000. The loan tenure is shorter, the eligibility requires the applicant to poses business license operating full time for the last 6 months to 2 years. Eligible sectors given loans were agriculture services and manufacturing sectors. They need not have any collateral or guarantors. No doubt microcredit provides positive impact in terms of economy, social and environment but it can also create some problems as well.

The disadvantage of these financing is that it has a low loan size, short repayment period, flat interest rate and interest rate which is basically higher than other loan packages (Mensah & Benedict, 2010). Moreover, challenges are faced in term of communication shortages, inadequate awareness, lack of training, lack of donation, funding, insufficient standards for reporting and performance monitoring. The financial institutions also face lack of capital to expand their services to customers. Thus, this study aims to measure the impact of microcredit from the perspective of its contribution in economy, social and environment. According to Hercules (2006) the impact of microcredit can be successful only if it can overcome the problems associated with the microfinance itself. All disadvantages related to the financial services as well as non-financial services should be eliminated. Financial services mentioned in the study includes loan services meanwhile non-financial services cover training, communication, monitoring and pressure.

In Malaysia it is very challenging to the MFI to attract and reach the poor by giving them microcredit loans in order to run a business. According to Rouf (2012), lack of confidence between the poor stops them from borrowing. Besides that, high credit risk excludes them from the programs. Basically, the question arises, do the poor have the ability to run a business while at the same time stressed with the problems to survive. Poor people lack necessities in their daily living like shelter, clothing, food and training. Without fundamental training and business experiences, these people undoubtedly do not have the knowledge and skills required to run a business. MFI should provide the poor with basic necessities like outstanding financial and non-financial services before allowing the poor with microcredit loan. Therefore, financial and non-financial services need to be more attractive and beneficial for the poor at the same time give positive impact to economy, social and environment.

2 Literature Review

The foremost objective of the Grameen Bank project was to eradicate exploitation of the poor that happened during informal savings systems, spreading banking institutions to the poor, encourage jobs for unemployed, stimulate women for more important job and leadership roles and most significantly converse the cycle of “low income, low savings, low capital investments” to injection of credit, investment, more income, more savings. Grameen would become the indication “of a new generation of microlending.” Yunus (2007a) trusted on a phenomenon well-known as “social collateral”, an extension of loans to groups of individuals, predicting that the fear of public shame and a sense of collective responsibility would disappoint loan defaults. Yunus (2007a) also detected that women were more consistent as borrowers because they arranged investment in their families, businesses, education and paying off debts earlier. The outcomes of the Grameen experiment were largely encouraging, as Yunus (2007a) saw that the money borrowed was beneficially consumed in small household businesses. The loan recovery rate was an astounding 98 percent as of 1994 while an average of 5 percent of Grameen Bank borrowers had move out of poverty each year.

Social collateral, also called as social capital usually refers to trust, anxiety for one’s associates, enthusiasm to live the norms of one’s community and to penalize those who not. The theory of a “social-collateral” is a tool within microfinance, provided to communities and not to particular individuals (Yunus, 2007a). By doing so it makes borrowers to select themselves into groups of same risk level and hold each other accountable. Group-lending encouraged for borrowers to pay back the loan on time and to avoid a default. Members within the community now have more reason to monitor neighbour’s and ignore risky-borrowers who might put them into risky situations. Even though group microlending may seem as a successful anti-poverty policy, researchers from the Green Bank of Caraga did tests to evaluate the effectiveness of such tool compared to the individual lending of microfinance loans (Yunus, 2007a). The result showed no amendment in the repayment of loans.

Besides that, Pangea Onlus is a nonprofit organization introduced since 2002 to encourage the social and economic development of women and their families over education, education to human rights, healthy and reproductive education, specialized training, the creation of activities which create income and microfinance (Yunus, 2007a). Pangea Onlus lets women to build Self Help Groups (SHG), formed by a minimum of 5 up to 20 women that eventually gather their savings as groups to make a social capital. Based from social capital, each woman would built part of the SHG obtain a loan, and the interests are paid by all members of the group. Members of SHGs can invest money received from the loan to generate small-scale businesses, to pay their children’s school fees or to pay medical and health insurance bills. Such tool within the

concept of microfinance evades individuals from not paying back the loan, and eventually being excluded from further loans.

The relationship between Financial Services and Impact of Microcredit

Financial services have an impact on economy. According to Mokhtar (2011) the results showed that microcredit loans have significantly increased the borrower's microenterprise's revenue, the household's income and provided social (more involvement in business and family decisions and increased self-esteem) and economic security (increased personal savings, more optimistic in facing the future and increased effectiveness in coping with negative shocks). 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 also investigates if there are any significant changes in the borrower's business, household and individual development after receiving a microcredit loan.

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). Slowly, Project Usaha Maju was successful in lifting its members out of poverty and boost the economy. By providing access to financial services, microfinance plays an important role in the fight against poverty and to boost economy. Thus, Mokhtar (2011) proved that microcredit can also interpret as a tool of economic development because it encourages creating jobs, start-up new business and reducing poverty. Thus the hypothesis derived was as follows:-

H1_a: Financial services can positively influence the economic impact of microcredit.

Financial services have an impact on social. 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. The measurement of the welfare impact of microfinance on the borrowers is essential in determining the success of microfinance programs.

Many researchers measuring the performance of microfinance concentrated solely on the welfare impact of the borrowers (business, household and individual). Park and Ren (2001) measured the performance of microfinance institutions on the outreach, financial performance and the welfare impact of microcredit on the poor. Therefore the hypothesis derived was as follows:-

H1_b: Financial services can positively influence the social impact of microcredit.

Financial services have an impact on environment. According to Rouf (2012), microcredit alleviates poverty by engaging communities in microloans and micro-businesses so that they may earn income. The purpose of the research was to examine the possibility of introducing market-based green business development in Canada. This new microeconomic determination program was expanding all over the world to develop economic growth in people's lives. However, if MFIs were not controlled and they were provided to people who practice unsafe and non-eco-friendly businesses, the effect could be a minimalist microcredit approach that was unable to promote sustainable business development.

Green microcredit programs target micro-business owners in order to assist them in becoming economically self-sufficient through self-employment. Green businesses were not harmful to the environment, rather they accelerate green social development that is people-centered, fosters human health, promotes social justice, generates income, addresses the issue of poverty and reduces waste in the environment. Besides that, it not only seeks profit, but it also looks at ecological balance within businesses, resources, the environment and society.

Additionally, green microbusiness can increase marginalized people's income in order to survive, improve their quality of life as well preserve the environment. Small and medium enterprises (SME) can play an important role in closed-loop ecological economics that can not only strengthen local living economics (LLE), but also protect the environment. Integrated pest management (IPM) in agricultural systems reduces pesticide used by giving preference to non-chemical pest management strategies. Green MFIs can support farmers to initiate IPM services in the agricultural sector.

Moreover, green social microcredit can play a vital role in attaining the United Nations Millennium Development Goals (MDG's) to eradicate poverty and promote environmental development. Role in closed-loop ecological economics can not only strengthen LLE, but also protect the environment. The research methodology employed in this study is primarily qualitative and quantitative research method, literature reviews, seminars and field visit experience, interviews and case studies. This paper envisions a comparison and contrasting of Grameen Bank and Grameen Shakti credit systems (Bangladesh) with Alterna Savings credit programs (Canada) and its impact on Toronto's local living economics and environmental development. The findings are positive to

environmental sustainable development. Thus the hypothesis derived was as follows:-

H1_c: Financial services can positively influence the environment impact of microcredit.

The relationship between Non-Financial Services and Impact of Microcredit

Non-financial services have an impact on economy and social. The financial services that provided by MFIs are important sources for job creation, new businesses formation, and livelihoods improvement (Al-Shami *et al.*, 2014). However, financial services alone are not enough to continuously improving the livelihood of the clients and enhancing the sustainability of their micro and small businesses. Thus, the necessity of integrated nonfinancial services and microcredit has been recommended by many studies and researchers. Ledgerwood (1999) declares that microfinance is not a simple bank, it is a development tool of human skills to effectively use financial sources. Morduch (2000) point out that the entrepreneurial skills and ability are essential to drive a successful microenterprise and not all microfinance institutions' clients are evenly able to take on credit. Therefore the hypothesis derived was as follows:-

H2_a: The non-financial services can positively influence the economic impact of microcredit.

Recently, a few studies in the field of microfinance have approved the importance of nonfinancial services on the clients' households and their micro and small enterprises' performance. Karlan and Valdivia (2006) assured to the importance of entrepreneurial training provided by Peruvian village banking program on the clients' savings, loan repayment and retentions rates and businesses' knowledge. Hamdan, Othman, and Hussin (2012) recommended that the clients of the Malaysian microfinance institutions should be engaged in entrepreneurial and business skills trainings before start operationalizing their microenterprises.

Mensah and Benedict (2010) argue that the entrepreneurship training has potential to enhance the capacity of micro and small enterprises for jobs creation and growth in the South of Africa. They also assert that the entrepreneurial trainings will be more effective when combined with microcredit service. Parvin, Rahman, and Jia (2012) postulate that easily access to credit, skill training availability, accesses to information membership with development organizations are important to successfully driving women to micro entrepreneurship in Bangladesh.

Micro and small business is an important source for developing Malaysian economy; it accounts 78.7 percent of business establishment and 80 percent of small and medium enterprises (SMEs) (Statistics, 2005). Nonetheless, there are several constraints to MEs development, such as lack of relevant laws and administrative

procedures; a lack of or limited access to institutional credit; imperfect market information and lack of opportunities for skill development (Nawai & Shariff, 2011). Entrepreneurship training has recognized to inspire entrepreneurs and advance their micro and small enterprises. The integration between financial and nonfinancial services has been recommended as a proxy to boost micro and small enterprises and advance the clients livelihoods. But, this integration might be costly compared to the promised benefits. Therefore, non-government and government subsidies are needed to cover the cost of nonfinancial services that provided by microfinance institutions to poor. Thus the hypothesis derived was as follows:-

H2_b: The non-financial services can positively influence the social impact of microcredit.

Non-financial services have an impact on environment. There is literature that recognizes mentions the lack of public policy as it relates to develop and support of a microfinance industry that would sustain and expand the green action micro lending program for low-income people in Canada (Self-Employment Development Initiative, 2007). However, the public has limited knowledge on the negative effects of chemicals on nature and human health, and corporations completely ignore the negative effects of chemicals on the human body and the environment. Therefore, environmental education on toxic chemicals, petroleum products and waste recycling management to the public through mass media, printed media, and school curricula are of a pressing matter in Canada. In Canada, MFI's can support green micro businesses by providing business capital for green businesses, business training, mentoring services, marketing supports, and networking. They can finance environmentally-friendly businesses that produce solar panels, energy saving bulbs, solar water pumps and repair, recycle and reuse waste materials. Although microfinance models exist in some regions, they are neither national in scope nor available to all entrepreneurs in Canada. This researcher explores how both green social and economic components might be linked up within the context of sustainable development. It is expected that this process will contribute to the current knowledge base by identifying and seeking to fill the current gap in the literature. Thus the hypothesis derived was as follows:-

H2_c: The non-financial services can positively influence the environment impact of microcredit.

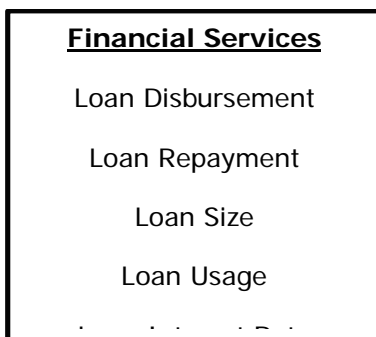
3 Methodology

Research Design

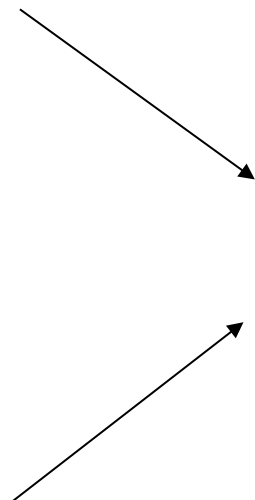
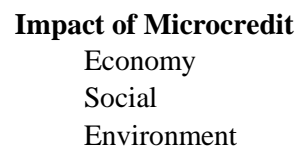
The purpose of this study was to determine whether financial and non-financial services can influence the impact of microcredit recipients from AIM, TEKUN and YUM. Thus, the research used a cross-sectional survey design targeting to examine the relationship

between financial (loan disbursement, loan repayment, loan size, loan usage and loan interest rate) and non-financial (training, monitoring, communication and pressure) services as well as impact of microcredit (economy, social and environment). This research framework was developed according to the study performed by Al-Shami *et al.*, (2014) who measured microfinance with financial and non-financial elements. Besides, Yunus (2007a) believed that microfinance that was financial and non-financial services can help to eradicate exploitation of the poor, encourage jobs for unemployment and building leadership roles among the poor. Microfinance can also most significantly converse the cycle of “low income, low saving, low capital investment” to injection of credit, investment, more income, more savings among entrepreneurs (Yunus, 2007a). A quantitative method was applied in collecting data since it was useful in descriptive.

INDEPENDENT VARIABLES



DEPENDANT VARIABLES



A statistical power analysis was conducted for sample size estimation. According to Mendenhall, Reinmuth and Bearer (1993), in calculating the satisfactory sample response, this study required 367 borrowers from AIM, YUM and TEKUN. The effect size (ES) in this study was 0.15, considered medium using Cohen's (1988) criteria. With an alpha = 0.05 and power = 0.80, the projected sample size needed with this effect size (GPower 3.1 or other software) is approximately N = 98 for this simplest group comparison. Thus, our proposed sample size of 100 was more than adequate for the main objective of this study. This was due to the fact that larger sample size can generate more accurate data (Malhotra et al., 2006).

The questionnaire was used as the instrument of the study. Section A covered the demographic characteristics of respondents. Gender was distinguished as male and female meanwhile age was in 5 categories, less than 20 years old, 20 to 30 years old, 31 to 40 years old, 41 to 50 years old and more than 50 years old. Race was divided into 5 categories which were Malay, Chinese, Indian, *Bumiputra* and others. Item 4 enquires about the marital status (not married, married, divorced, widow or separated). The last educational state provided was primary, secondary, STPM/Matriculation/Polytechnic/Diploma, Degree and Masters. Item 6 measured the number of people generating income in the household. Item 7 enquires the time when the first loan was taken meanwhile item 8 enquires why it was taken, whether expanding an ongoing business, financial needs, starting new business, repaying debt or others. Item 9 enquires the term on the loan meanwhile item 10 enquires where the recipient obtain the information about the institution distributed the loan.

Section B deals with the independent variables, 5 questions enquired on the financial services provided by the institutions. It covers loan disbursement, period of repayment, size of the loan, usage and interest rate. Similarly, 5 questions were also asked in non-financial services that cover training, monitoring, communication and pressure. Section C measures the impact of the microcredit. It has three dimension economy, social and environment. Economy has six questions while social has five questions and environment has six questions.

Data Analysis Methods

In this study the data were analyzed using Partial Least Squares (SmartPLS) while it was used to evaluate measurement model (convergent validity, discriminant validity, cross loading) and structural model. Meanwhile, for descriptive statistical analysis, SPSS was used to determine frequency and percentage.

4 Data Analysis and Findings

Profile of Respondents

A total of 300 respondents were involved in the final sample. The analysis of the

respondents' information showed that male was the highest number of respondents in the age range of 31 to 40 years and *bumiputra* respondents who were married. The highest level of education attained was STPM or Matriculation or *Polytechnic/* or Diploma with 2 people earning income from the household. Majority took the first loan in 1 year for the purpose of financial needs to cover variable cost. The duration taken was 1 year based on the information given by friends.

Construct Validity

Construct validity testifies to how well the results obtained from the use of the measure fit the theories around which the test is design (Sekaran and Bougie, 2011). The first process of construct validity is to look the respective loadings and cross loadings from Table 1 to assess if there are problems with any particular items. The authors used a cut-off value for loadings at 0.5 as significant (Hair, Black, Babin and Anderson, 2010). If any items which has a loading of higher than 0.5 on two or more factors then it is considered as significant cross loadings. In this study, it is observed that all the items measuring the particular construct loaded highly on the construct and loaded lower on the other constructs thus conforming construct validity, except symbolic brand perception which was deleted from the analysis due to its low factor loadings.

Convergent Validity

Loading items greater than 0.50 and Cronbach's alpha value which exceed 0.70 was to be considered that the items load heavily to its respective factor and reliable for subsequent level of analysis. Nevertheless, based on Bagozzi and Yi (1988), the Cronbach's alpha value in exploratory research 0.60 is considered acceptable. Whereas, the CR value for each factor must exceed 0.70 and AVE must surpass 0.50 to have acceptable results (Hair *et al.*, 2014). In this study, the convergent validity is function to examining the AVE value. Refer to (Table 1).

Table 1 shows the result of the measurement model

Construct	Item	Loading	CR	AVE
Financial Services	FS1	0.806	0.763	0.520
	FS2	0.732		
	FS3	0.612		
Non-Financial Services	NFS1	0.936	0.777	0.643
	NFS2	0.640		
Economy	Econ1	0.811	0.792	0.563
	Econ2	0.807		
	Econ3	0.616		
Social	Soc3	0.612	0.770	0.531
	Soc4	0.824		
	Soc5	0.734		
Environment	Environ1	0.938	0.771	0.637
	Environ2	0.628		

^a Composite Reliability (CR) = (square of the summation of the factor loadings) / {(square of the summation of the factor loadings) + (square of the summation of the error variances)}

^b Average Variance Extracted (AVE) = (summation of the square of the factor loadings) / {(summation of the square of the factor loadings) + (summation of the error variances)}

Table 1 illustrated the results of the measurement model. The measurement model for each of the study constructed were examined based on results of the reliability, convergent validity and discriminant validity, prior to the testing of the hypothesized model of the current study. The composite reliability (CR) estimates the extent to which a set of latent construct indicators share in their measurement of a construct, whilst the average variance extracted (AVE) is the amount of common variance among latent construct indicators (Hair, Anderson, Tatham & Black, 1998). The composite reliability test assesses the

internal consistency of the measurement model (Karjaluoto, Standing, Becker, & Leppaniemi, 2008). As shown in Table 1, all loadings were higher than 0.5 as suggested by Hair, Black, Babin and Anderson (2010), the AVE of all studied constructed exceed 0.5 (Bagozzi *et al.*, 1981) and the composite reliability (CR) were all higher than 0.7 (Hair *et al.*, 2010).

Table 1 also indicated that the loadings for all the measurement item of the constructs were ranged between 0.612 and 0.938, which exceeded the cut off value of 0.50. Additionally, the average variance extracted (AVE) for each of the construct were in the ranged of 0.520 and 0.643, which exceed the recommended value of 0.50 (Hair *et al.*, 2014; Fornell & Lacker, 1981). The composite reliability for all the items were ranged between 0.763 and 0.792, which exceeded the recommended value of 0.70 (Hair *et al.*, 2014). In evaluating the discriminant validity of the model, tests were performed as to whether the square root of AVE for each construct is greater than the correlation with each other construct (Fornell & Larcker, 1981).

Table 1 also represented the square root of average variance extracted and the correlation between the constructs. As can be seen, the square root of AVE is greater than the correlation with any other constructs. With regards to cross loadings it should be higher than the cross loading by at least 0.1 to show that adequate discriminant validity. As shown in Table 4.4 the loadings of all construct fulfill this criterion. Overall, the measurement model in this study has showed satisfactory with the evidence of adequate reliability, convergent validity and discriminant validity.

Discriminant Validity

Discriminant validity is the extent to which a construct is truly distinct from other construct by empirical standards (Hair *et al.*, 2013). For cross loading, Hair *et al.*, (2013) also suggested the loadings must be higher than the cross loadings by at least 0.1 to get the sufficient validity. Refer to (Table 2).

Table 2 Discriminant Validity

Construct	1	2	3	4	5
Economy	0.750				
Environment	0.156	0.798			
Financial Services	0.263	0.076	0.721		
Non-Financial Services	0.303	0.138	0.164	0.802	
Social	0.230	0.261	0.187	0.157	0.728

Cross Loading

The assessment is handy for discriminant validity that measures the indicators loading with all the constructed correlation. Smart PLS algorithm function was utilized to examine the result of loading that obtained over cross loading (cross loading: an indicator an indicators correlation with other construct sin the model) as in Table 3

Table 3 Cross Loading

Items			Financial	Non-Financial	
	Economy	Environment	Services	Services	Social
Econ1	0.811	0.165	0.22	0.239	0.167
Econ2	0.807	0.08	0.178	0.225	0.146
Econ3	0.616	0.098	0.19	0.214	0.204
Environ1	0.137	0.938	0.085	0.137	0.23
Environ2	0.118	0.628	0.016	0.07	0.197
FS1	0.249	0.095	0.806	0.162	0.121
FS2	0.133	0.024	0.732	0.073	0.08
FS3	0.156	0.026	0.612	0.097	0.189
NFS1	0.311	0.146	0.129	0.936	0.149
NFS2	0.134	0.052	0.16	0.64	0.096
Soc3	0.139	0.125	0.087	0.124	0.612
Soc4	0.227	0.169	0.153	0.119	0.824
Soc5	0.132	0.266	0.16	0.105	0.734

Note: Horizontal check discriminant validity – vertical check convergent validity (it must not higher than the loading of the variable in bold items)

Measurement Structure

Table 4 enumerates the structured question of each measurement studied in this study.

Table 4 Measurement Structure Questionnaire

Construct	Item	Questionnaire
Financial Services	FS1	Microfinance institutions should have flexibility of loan disbursement such as facility of easy access to services.
	FS2	Microfinance institutions should have flexibility in loan repayment like loan grace period.
	FS3	Microfinance institutions should increase the size of loan for microcredit.
Non-Financial Services	NFS1	Microfinance institutions should increase training.
	NFS2	Microfinance institutions should do peer monitoring from time to time.
Economy	Econ1	The loan helps my business to make profit.
	Econ2	The loan helps business to buy new equipment or materials.
	Econ3	My business creates job opportunities.
Social	Soc3	The loan assists in increases the quality of life.
	Soc4	The loan helps to solve debt issue.
	Soc5	The loan helps to increase household welfare.
Environment	Environ1	I use the loan to purchase inventories or goods for sale.
	Environ2	I use the loan to purchase agriculture inputs (seeds, fertilizers, pesticides, animal feed and others).

Structural Model

Structural model is known as inner model in PLS-SEM. In this part, 500 resample bootstrapping was conducted to examine the t-value. Specifically, it can be seen that the latent variables has relation to each other and shows the construct and path between them.

Coefficient of Determination (R²)

Generally, coefficient of determination (R²) was to determine of the proportion of an endogenous constructs variance that was clarified by its predictor constructs (Hair *et al.*, 2013). R² value attain from PLS was the value that showed the amount of variance in dependable variable and it was also explained by the independent variables. Additional, by using the Smart PLS algorithm, the R² value can be attained for the t-statistic value from the 5000 resample of bootstrapping. The R² for this research was 0.139, 0.022 and 0.052. Falk and Miller (1992) suggested that R² value should be equal to or greater than 0.10 in order for the variance explained of a particular endogenous construct to be deemed adequate. However, based on Cohen (1988), R² values for endogenous latent variable are assessed as follows: 0.026 substantial, 0.13 moderate and 0.02 is weak. Since, the R² for this study was environment is weak, economy and social is substantial. Thus, it indicated that the variable were fit to be a structural modal. Refer to (Table 5).

Table 5 Result of (R²)

Endogenous Constructs	R Square (R²)
Economy	0.139
Environment	0.022
Social	0.052

Path Coefficient

Path coefficient was used to estimate the path relationships for the structural model which were between the latent variables in the model, then corresponded to standardized betas in a regression analysis (Hair *et al.*, 2013). By using the output of Smart PLS algorithm, the relationship of the independent and dependent variable can be observed which the data for t-statistic can only be attained after the bootstrapping was conducted. The results also indicate the acceptance or the rejection of the proposed hypothesis.

Hypothesis Testing

Basically, hypothesis testing was performed to validate the proposed hypothesis and to see either the relationship was supported or not supported. The level of acceptance according to the path coefficient must be 0.1 to impact the model (Welzels, Brockmann, Delhey, & Yuan, 2009). Hence, to make sure the supporting analysis was accepted for the significant hypothesis, it must be 0.05 levels at least which expected to have a positive and consistent path coefficient value. Table 6 specifies the hypothesis suggested in the conceptual framework.

To be exact, financial services has an impact on economy ($\beta = 0.220$, t-value = 4.102, $p < 0.01$) at 1 percent significance level, financial services has an impact on social ($\beta = 0.166$, t-value = 2.358, $p < 0.01$) at 1 percent significance level, Non-Financial Services has an impact on economy ($\beta = 0.267$, t-value = 5.089, $p < 0.01$) at 1 percent significance level, Non-Financial Services has an impact on environment ($\beta = 0.129$, t-value = 2.054, $p < 0.05$) at 5 percent significance level and Non-Financial Services has an impact on social ($\beta = 0.130$, t-value = 2.227, $p < 0.05$) at 5 percent significance level. Based on Cohen (1988), R^2 values for endogenous latent variable were assessed and found that environment was weak, economy and social was substantial. Based on Hair *et al.*, (2014) and Cohen (1988) f^2 assessed as 0.02 small effect size, 0.15 medium effect size and 0.35 large effect size.

5 Conclusion

Recapitulation of the Study Findings

Financial services indicated a positive influence on the impact of microcredit. This was consistent with Mokhtar (2011) findings that microcredit loans have significantly rise the borrower's microenterprise's revenue, the household's income and offered social (more participation in business and family decisions together with improved self-esteem) and economic security (widen personal savings, more confident in facing the future and enhanced effectiveness in coping with negative shocks) according to Mokhtar (2011).

Financial services positively influenced economy. Ashta and Fall (2012) emphasized that there was a correlation between economic performance and the development of microfinance institutions. The aim of this study was to determine the success of microfinance which linked to economic performance and the level of poverty. In this study microfinance is generally recognized as offering "poor people access to basic financial services such as loans, savings, money transfer services and micro insurance" (Consultative Group to Assist the Poor, 2009). Ashta and Fall (2012) underlined that the rapid growth of recipients and cooperatives were to cover the way for the development of the microfinance movement, which was also encouraged by the success of the Grameen Bank in Bangladesh. Finally, this study highlighted that there was a high correlation between the economic performance of countries in terms of growth as well as per capita income and good governance to the development of microfinance.

Besides that, Mokhtar (2011) proved that microcredit can also interpret as a tool of economic development because it encourages creating jobs, start-up new business and reducing poverty. According to Al-Mamun, Malarvizhi, Hossain, and Tan (2012) highlighted that microcredit on businesses' improvement and job creation in the Malaysian microfinance's clients.

Financial services positively influenced social. Based on Garikipati (2008) highlighted that microcredit lets poor to develop the quality of their life through empowering poor to generate income and obtain assets in India. Nader (2008) approved that microcredit played an important role in the families' welfare in Cairo. It aids them to expand assets and create income, develop children's education, improve their health condition and harmony. Mokhtar (2011) underlined to the substantial role of microcredit in improving clients' income, assets and the quality of life in Malaysia. Additionally, Ahmad (2012); Burjorjee and Jennings (2008) demonstrated that microcredit have a positive impact on the entrepreneurs in Yemen through stimulating new businesses formation and reducing poverty.

Further, Mokhtar (2011) highlighted that the impact of microcredit loans on borrowers' empowerment showed that microcredit loans had promoted recipients in various ways, like 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. Studies like by Nader (2008), Goetz and Gupta (1996) and Hashemi, Schuler, and Riley (1996) showed that microcredit loans provided financial and social security to the borrowers.

Financial services negatively influenced environment. However, Mokhtar (2011) stated that in the YUM model, borrowers involved in agricultural business activities had an impact on environment. 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.

Based on the analysis, the non-financial services positively influenced the impact of microcredit. In the previous chapter, three dimensions of impact of microcredit like economy, social and environment have positively influence with non-financial services. Non-financial services positively influence on economy. According to Lock and Smith (2016) used a primary research through face-to-face interviews with entrepreneur in Kenya in a wide range sector who had their own microenterprise. The purpose of this study is to provide better understanding of the obstacles and limitations that faced by entrepreneurs in beginning and running a business in Kenya. Based on the results there are number of barriers to growth within the micro-enterprise sector. On the basis of these, this study discusses that, in order for entrepreneurship to have a greater impact on economic growth within Kenya, the country needs to introduce more effective policies, regulation of the informal sector and further support to entrepreneurs, example through business training, mentoring, monitoring and financial support.

Non-financial services positively influence on social. Based on Atmadja, Je-Su and Sharma (2016) also created a similar study in Indonesia. Microcredit was able to contribute human capital, financial capital as well as social capital for the microenterprises owners. The study was conducted to investigate the impact of microcredit with the demands factor of microcredit in Indonesia. In this study, human capital, discovers that only training level matters for business performance. This finding is consistent with previous findings that firms run by the highly training individuals through are more likely to perform better than those run by the less training individuals (Kangasharju & Pekkala, 2002; Pena, 2002).

Non-financial services positively influenced environment. Rouf (2012) claimed that the relationship between microcredit and the environmental impact used a mix method approach which was both quantitative and qualitative. A regression analysis justified a positive relationship between microcredit and the environment. This was because the loan obtain from microcredit was used to reduced and recycle waste to generate local energy. The companies had a stronger financial position to work with large institution in protecting the environment (Rouf, 2012). The microcredit also helped them to increase their economic status which improved the solar home system and other facilities at home. Thus, this study discussed that green microenterprise and green microfinance development were interconnected to each another. Grameen Shakti Renewable Energy (RE) Program had advanced an integrated model which assists socio-economic and environmental benefits in society and improves a financial self-sufficiency model for its RE Program, as an alternative of subsidies (Shakti, 2008). In Bangladesh, the relationship between the RE soft financing model and biodiversity conservation aids fill the energy crisis gap.

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