THE DETERMINANTS OF RETURN ON EQUITY: EVIDENCES FROM SRI LANKAN MICROFINANCE INSTITUTIONS

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ABSTRACT

Particularly, this study was carried out to ascertain the significant determinants of Return on Equity in Sri Lankan Microfinance Institutions (hereafter MFIs). Within the period of 2005-2011 the researcher evaluated 11 MFIs exists in Sri Lanka. Under this study, efficiency and productivity are measured by operating expense ratio, personal productivity ratio and cost per borrower ratio. Financing structure is measured by debt/equity ratio. Meanwhile, Profitability is measured by return on equity ratio. The research concluded stating that the Cost per Borrower and Debt/Equity ratios are statistically significant predictor variables in determining return on equity in a MFI. Most notably, the result on relative debt/equity was supported by empirical verifications as well.

Keywords: Return on Equity, Profitability, Microfinance

JEL Classifications: G21

1. INTRODUCTION:

Sri Lanka is well known for its significant improvements in human development indicators. Though it is the fact, Sri Lanka remains a low income country (Kelegama, 2001). The poor entail financial services particularly savings services and credit as much as the rich, or even more so (Alwis, 2008). Though there's a prerequisite of finance for the poor, inability to access formal finance has become a critical concern in this regard (Safiuddin, 2011). Besides, there is a perception that, formal financial institutions often do not meet financial needs of the poor (Alwis, 2008). Under this phenomenon, the poor often tend to resort to alternative savings methodologies such as accumulating excess funds at home and/ or saving in kind (e.g. accumulated gold, livestock and consumer durables) (Alwis, 2008). Obviously, borrowings from the informal sector are comparatively riskier. Though the informal sector gives awful repercussions, still 18.3% of households are borrowing from the informal sector (GTZ ProMis, 2009). Starting with the Grameen Bank founded by professor Mohammd Yunus in the 1970s, microfinance is considered as a viable tool to alleviate poverty while serving to the poorest people on the globe (Ugur, 2006). In Sri Lanka microfinance is fueled by many institutions' interests, such as Regional Development Banks (RDBs) and other Licensed Specialized Banks, Co-operative Rural Banks and other co-operatives, Thrift and Credit Co-operative Societies (TCCSs), Samurdhi Bank Societies (SBSs), NGO (Non Governmental Organizations)-MFIs (Microfinance Institutions), and other financial institutions. (This category includes commercial banks, registered financial companies, etc)[1] Based on the regulatory and accountability phenomenon, the researcher is keen on establishing an intuitive argument, which is, microfinance sector in Sri Lanka will be more productive, if MFIs operate in a lucrative manner by means of alleviating poverty in Sri Lanka. If so, MFIs must be well designed towards profitability and towards accomplishing a moral obligation towards alleviating poverty by means of implementing microfinance programs. Eventually, it can be argued that the win-win scenario will also be attained for both parties (Ugur, 2006), (McDonald, 1997).

2. REVIEW OF LITERATURE:

2.1. Return on Equity:

Cost recovery and the elimination of subsidies would only force MFIs to shed the poorest from their portfolios of borrowers because they are precisely the most difficult and costly to attend, Hulme et al (1996). These findings are circuitously relates with the return on equity as net income is considered in return on equity excluding grants or donations. Whereas, MFIs generate lower return on equity compared to commercial banks in developing countries, a fact which they explain as being ''due to their very low levels of leverage'', Christen and McDonald (1998).

The return on equity is an inevitable measure of profitability, Zeynep Ugur (2006). Finally supporting evidence to Zeynep Ugur (2006) can be found in Befekadu B. Kereta's (2007) studies. Stating, MFIs are operational sustainable measured by return on equity and the industry's profit performance is improving over time. Meanwhile, Michael Tucker and Gerard Miles declared stating, there is a possibility that self sufficient MFIs with positive return on equity may be attaining those results by reducing levels of services to the poorest of the poor, those with the greater needs.

2.2. Operating Expense:

To reduce costs, delegation of costs can be diminished via diversification, Diamond (1984). Moreover, economic incentive schemes to staff productivity are significant to enhance operational efficiency, Laura Elser et al (1999). The underlying theme is that a focus on efficiency will help institutions to reach more clients and attain higher levels of profitability, Monica Brand et al (2001).

Stephanie Charitonenko et al (2002) declared the commercialization of microfinance in Sri Lankan perspective. They affirmed that in addition to bringing institution's commercial and social objectives into balance, MFIs should strive for cost effective operations. The emphasis on cost efficiency is in line with their social objectives, because increase in cost efficiency allows commensurate reduction in the interest rates.

A study on determinants of financial viability, Nimal Sanderatne (2003), defined that the operational efficiency and low administration costs have an important bearing. Besides, a study on financial performances, (Michael Tucker et al), declared that, many MFIs are not considered sustainable. By stating the fact, Michael Tucker et al confirmed that the operational efficiency is inevitable to attract funds.

The relative smaller size and shorter maturity of loans drives transaction costs higher for MFIs, Nicholas P. O'Donohoe, et al (2009). Further they asserted higher costs (especially operating costs) justify higher rates.

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[1] Microfinance industry report, Sri Lanka, 2009, PP 14

Reduction in operating expense ratio is primarily driven by reductions in non-personnel expenses, Devyani Parameshwar, et al (2010).

The operating expense ratio is an indicator of institutional effectiveness, Gray M. Woller et al, Damian et al (2003). Added to this, Gray M. Woller and Mark Schreiner asserted that, an increase in the administrative expense ratio[2] is hypnotized to be associated with a decrease in financial self sufficiency and vice versa.

2.3.   Personal Productivity:

Productivity is the amount of quality services delivered by microfinance staff to their clients and it quantifies the employees' efforts to deliver a MFIs output. By increasing productivity, a MFI can lower per unit costs, improve efficiency, and ultimately enhance self sufficiency, Geetha Nagarajan (2001). In fact, staff productivity is the primary indicator to measure the productivity, Geetha Nagaranjan (2001). A MFI's entire staff is a relevant unit of serve production, so the best measure of productivity collectively accounts for the efforts of front and back offices. Eventually she emphasized that, the staff productivity indicator is therefore more useful when comparing between less similar MFIs.

Incentive based systems are vital to enhance staff productivity, Isabelle Barrès (2001). To enhance efficiency, increasing staff productivity through incentive systems, transportation equipment, and establishing specialized staff positions for routine administrative functions are vital, Monica Brand and Julie Gerschick (2001).

The lack of awareness of best practices in microfinance and the need for staff training were given as the key constraint to commercialization of microfinance, Stephanie Charitonenko et al (2002). One key to achieving profitability is investing more heavily in staff costs, Robert Cull et al (2006). Devyani Parameshwar et al (2010) in MBB states that, greater efficiency also results from improved staff productivity in terms of both volume and value.

Gray M. Woller et al asserted that the staff productivity[3] ratio measures the total number of staff required to produce a given level of output, as measured by borrowers. Eventually, the staff productivity is hypothesized to be positively associated with self sufficiency.

2.4. Cost per Borrower:

D'Espallier, et al (2010) and Hermes, et al (2011) ideas on woman borrowers and the impact it has on the profitability are same. This confirms the negative correlation between two variables.

Gray M. Woller et al identified that the cost per borrower ratio measures the value of total monetary and in kind inputs required to produce a given level of output, as measures by borrowers. He further defined that the cost per borrower is hypothesized to be inversely associated with financial self sufficiency.

2.5.   Write Offs:

Devyani Parameshwar, et al (2010) in MBB states the factors contributing to the increase in loan sizes are: Graduation of clients in mature markets to higher loan sizes, increased focus of MFIs on urban clients with higher credit needs than rural clients, introduction of individual lending and increased ticket size for the first loan to new customers by some MFIs. Here the loan size has taken into consideration as loan size is an inevitable determinant of gross loan portfolio.

2.6.   Debt / Equity (Leverage):

Firms with higher leverage positions tend to have a capital structure that translates into a better performance, Modigliani et al (1958). This states that high leverage and profitability are positively correlated. Nevertheless, Rhyne et al (1992) observed somewhat different approach to Modigliani et al (1958); They stated that institution which have high capital structure with equity, is tend to be more profitable. Jonathan Conning (1999) once more confirms Rhyne and Otero's (1992) study of capital structure.

The financial viability does not mean that a MFI depends on its own funds, Nimal Sanderatne (2003). Abor (2005) postulates that, short term debt ratio is positively correlated with return on equity. In fact Abor (2005) affirmed their findings pertaining to SMEs.

High leverage is related to higher profit efficiency Berger et al (2006), While, Felipe Portocarrero Maisch, et al (2006) identified that, it is important for an MFI to create a capitalization plan before beginning to look for new shareholders. The creation of this capitalization plan is step one in the process of issuing debt or equity.

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[2] Administrative Expense Ratio is more or less synonymous to operating expense ratio
[3] Staff Productivity ratio is synonymous to personal productivity ratio

Zeynep Ugur (2006) portrays this new approach to microfinance by managing debt funds and attracting commercial investors to the microfinance industry. Moreover, Nicholas P. O'Donohoe, et al (2009) studied, the leverage of mature MFIs is only slightly lower than that of traditional banks.

Microfinance institutions that employ higher debt in their capital structure are more profitable, and highly leveraged microfinance institutions are more profitable, Peter Muriu, (2011). Besides, a higher debt ratio can enhance the rate of return on equity capital during good economic times, Peter Muriu, (2011). Moreover, it also appears that NGO type of microfinance institutions rely more on debt financing relative to other type of microfinance institutions, perhaps because many are not regulated to mobilize deposits.

3. METHODS:

3.1. Data and Sample

The criteria for choosing the MFIs were the availability and quality of data for a time period of 6 years (2005-2010). It is an attempt to make the database of Sri Lankan MFIs as complete as possible. Therefore, the sample consists of 66 observations. The data were provided by the "Mix Market" web site which is known as the Microfinance Information Exchange (MIX)[4].

3.2. The Variables:

The study investigates the significant determinants of microfinance profitability in Sri Lankan MFIs. To measure the determinants of microfinance profitability, five measures are used as independent variables which were extracted from Damian von Stauffenberg et al (2003) studies[5]. Namely, Operating Expense Ratio (OER), Personal Productivity Ratio (PPR), Write-off Ratio (WoR), Cost per Borrower Ratio (CpBR), and Debt/Equity Ratio (DER). Moreover, to determine the variable to measure profit generated, one measure is used as dependent variables. Namely, Return on Equity Ratio (RoER), (Damian von Stauffenberg et al, 2003).

3.3. Model of the Study:

$$RoER = \alpha + \beta_1(OER) + \beta_2(PPR) + \beta_3(WoR) + \beta_4(CpBR) + \beta_4(DER) + e$$

Where, α, is constant, β_1, β_2, β_3, β_4, β_5, β_6 and β_7 are coefficients of variables, e, is the residual term.

3.4. Operationalization of Variables:

The following definitions of operational variables are given in the following table.

TABLE 01: OPERATIONALIZATION OF VARIABLES

Concept	Variable	Indicator	Measurement
Return on Equity	Return on Equity Ratio	Ratio	Net income/Average Equity
Determinants of Return on Equity	Operating Expense Ratio	Ratio	Operating expenses/ Average gross portfolio
	Personal Productivity Ratio	Ratio	Number of active borrowers (excluding consumer and pawn loans) / Total staff
	Write-off Ratio	Ratio	Value of loans written-off/ Average gross portfolio
	Cost per Borrower Ratio	Ratio	Operating expenses/ Average number of active borrowers(excluding consumer and pawn loans)
	Debt/Equity Ratio	Ratio	Total liabilities / Total equity

Source: Research data

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[4] Data from the MIX market are reliable and it has been used by many researchers who are interest in the microfinance field. Further, the MIX market review data of MFIs for coherence and consistency, and reclassify according to international financial reporting norms.

[5] Damian, v, S., Tor, J., Naomi, K., María, C, B, B., "Performance indicators for microfinance institutions", Technical guide, 3rd edition, July 2003

4. ANALYSIS AND DISCUSSION OF FINDINGS:

4.1. Empirical Results:

4.1.1. Correlation Matrix of The Sample

TABLE 02: CORRELATION MATRIX OF THE SAMPLE

	RoER	OER	PPR	WoR	CpBR	DER
OER	-.541**	1				
PPR	.364**	-.546**	1			
WoR	.071	.184	-.194	1		
CpBR	-.118	.538**	-.364**	-.158	1	
DER	.075	-.326**	.399**	-.069	-.403**	1

Source: Research data

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Using the Pearson's Product Movement Correlation with two – tailed test of significance, the correlation analysis is carried to investigate the relationship between independent and dependent variables. Results showed that a strong negative correlation between operating expense ratio and the return on equity ratio of the study significantly at 1% level of significance. This suggests that, changes in this predictor variable will negatively contribute towards the return on equity significantly. Moreover, a strong positive correlation can be observed between personnel productivity and the return on equity of the study significantly, suggesting a positive contribution towards the model. Most importantly, write off ratio, Cost per Borrower and Debt/Equity ratios are not statistically significant variables under the analysis of correlation.

4.1.2. Results of Multiple Regression Analysis Over Return on Equity:

TABLE 03: RESULTS OF MULTIPLE REGRESSION ANALYSIS OVER RETURN ON EQUITY

Variables	Return on Equity
Intercept	12.741
Operating expenses	(β -1.821)(t. -5.198) (Sig 0.000)*
Personnel Productivity	(β .018)(t. 1.574) (Sig 0.121)
Write off	(β 3.806)(t. 2.684) (Sig. 0.009)*
Cost per Borrower	(β 0.004)(t. 2.660) (Sig. 0.010)*
Debt/Equity	(β. -0.116)(t. -0.636) (Sig. 0.527)
R^2	0.421
F	8.737
Obs	66

Source: Research data

*. Significant at the 0.05 level (2-tailed)

To assert the determinants of Return on Equity, multiple regression analysis was applied. This section deals with the application of the multiple regression models to five indicators of microfinance profitability determinants (independent variables) against the Return on Equity (dependent variable).

R^2 value of the study implies that 42.1% of fitness can be observed in the sample regression lines for the model. And these percentage of the model measures that 42.1% of the total variation in the Return on Equity is explained by the independent variables (Operating Expense Ratio, Personal Productivity Ratio, Write off Ratio, Cost per Borrower Ratio and Debt/Equity Ratio) jointly.

TABLE 04: EXPECTED AND PREDICTED SIGNS OF THE COEFFICIENTS FOR THE MICROFINANCE INSTITUTIONS

		Operating Expense Ratio		Personal Productivity Ratio	Write-off Ratio	Cost per Borrower Ratio	Debt /Equity Ratio
Return on Equity Ratio	*Predicted*	(-)		(+)	(-)	(-)	(-)
	Observed	(-)**		(+)	(+)**	(+)**	(-)

A positive sign "+" indicates that the researcher suggests a positive relationship between the variables and the determinants of profitability, whereas a negative sign "-"indicates that the researcher suggests a negative relationship between the variables and the determinants of profitability.

OPERATING EXPENSES:

According to the table 04, operating expense was significant at 5% for the return on equity. In this empirical research it can be stated that 1% increase of operating expense will leads to a decrease in return on equity significantly. Adding to that, coefficient of the operating expense is in the expected direction of the researcher for the model significantly. Annotations of the operating expense ratio imply that the variable is a determinant of return on equity.

PERSONNEL PRODUCTIVITY:

Once more the table 04 affirmed that, the study implies the personnel productivity is not a statistically significant predictor variable. Besides, the coefficient value of the personnel productivity is in the expected direction of the researcher for the model. Most notably, these directions are not statistically significant. Observations of the personnel productivity assert that the variable is not a determinant of the study.

WRITE OFF :

For the model, the Write off ratio proved statistically significant predictor variable at 5% level of significance. Moreover, the write off ratio rejects the predicted direction of the coefficient of the researcher. The direction of the write off with return on equity is statistically significant at 5% level. It can be stated that the write off is a determinant for return on equity.

COST PER BORROWER :

The cost per borrower is a statistically significant predictor variable at 5% level of significance for the model. Notably, the expected direction of the researcher was rejected for the model. Besides, the direction of the coefficient of the return on assets and profit margin was not explicit. Perhaps most notably, the cost per borrower is a determinant for return on equity.

DEBT/EQUITY:

The table 04 suggests that the debt/equity is a statistically insignificant predictor variable for the model at 5% level of significance. Besides the expected direction of the coefficient of the corresponding models are not as per the predicted direction of the researcher. An observation of the debt/equity variable of the study does not imply causality for the model.

COLLINEARITY:

TABLE 05: COLLINEARITY STATISTICS OF THE MODELS

	OER	PPR	WoR	CpBR	DER
Tolerance	.539	.636	.848	.581	.760

Source: Research data

TOLERANCE:

Tolerance means the percentage of variance in a variable not associated with other variables. Tolerance has a range from zero to one. A value of near one indicates independence; if the tolerance value is close to zero, the variables are multicollinear. As a rule of thumb, a tolerance of less than .20 indicates a problem with multicollinearity (Kellogg School of Management 2004). As per the research data of the study one may identify

that, as an average all tolerance values are more than 0.50 (50%). So therefore, one can determine that the models do not corresponds with, no multicollinearity. Or in other words, all variables on the study are act independently.

AUTOCORRELATION (SERIAL CORRELATION):
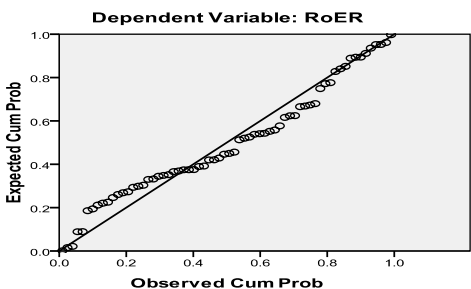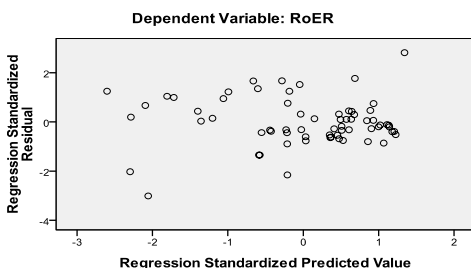
TABLE 06: DURBIN-WATSON TESTS OF THE MODELS

	Model
Durbin-Watson	1.835

Source: Research data

The researcher has taken into consideration, the test of Durbin-Watson, to test the serial correlation of models. The rule of thumb is that a Durbin-Watson close to 2 indicates no serial correlation, a Durbin-Watson greater than 2 indicates negative serial correlation, and a Durbin-Watson below 2 indicates positive serial correlation. Given that one can postulate that the model of the study is not corresponds to problem of autocorrelation.
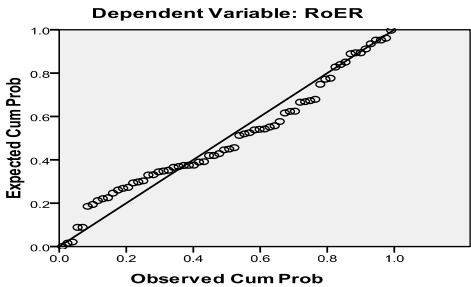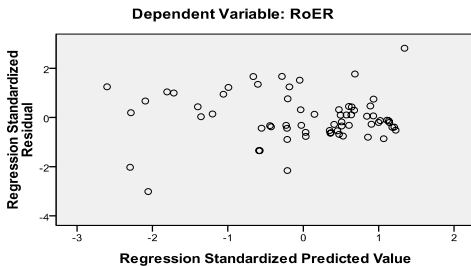
RESIDUAL ANALYSIS:

TABLE 07: NORMALITY AND HETEROSCEDASTICITY ANALYSIS OF MODELS

Normality analysis of models	**Heteroscedasticity analysis of models**
Model I	**Model I**

Normal probability plots of the standardized residuals in the table 07 show that the normal probability plot of the model is not too far from a straight line (although the line is not entirely convincing). It seems that the normality assumption might be satisfied for these data.

HETEROSCEDASTICITY :

TABLE 07: NORMALITY AND HETEROSCEDASTICITY ANALYSIS OF MODELS

Normality analysis of models	**Heteroscedasticity analysis of models**
Model I	**Model I**

According to the table 07, the points in the figures seem to be fluctuating randomly around zero in an un-patterned fashion. Thus, the plot does not suggest violations of the assumptions of zero means and constant variance of the random errors.

5. CONCLUSION OF THE STUDY:

The researcher's intention was to assert the significant determinants of Return on Equity in Sri Lankan MFIs. The criteria used for choosing the institutions were the availability and quality of data for a time period of six years (2005-2010). It is an attempt to make the database of MFIs as complete as possible.

The study's findings lead to the conclusion stating that the operating expense ratio, write off ratio and cost per borrower are the statistically significant predictor variables n determining return on equity in a MFI in Sri Lanka. Adding to that, operating expense ratio and personal productivity ratios are apparent to be significant under correlation analysis.

6. REFERENCES:

[1] **Abor, J.** (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana, The Journal of Risk Finance,

[2] **Alwis, S.,** (2008), 'Survey', Central Bank of Sri Lanka, *News,* July- September 2008, Volume 28, No. 3, ISSN 1391 3689.

[3] **Atapattu, A., (**2009), 'State of Microfinance in Sri Lanka', Institute of Microfinance (InM), *as a part of the project on State of Microfinance in SAARC Countries.*

[4] **Barrès, I.,** (2001), "Bosnian MFIs: Performance, and Productivity", The MicroBanking Bulletin, Focus on Productivity, Issue No 06, April 2001.

[5] **Bell, R.,** (2002), "Can commercial banks do microfinance? Lessons from the CommercialBank of Zimbabwe and the Co-operative Bank of Kenya", Small Enterprise DevelopmentJournal (SED), vol.13 (4), December 2002.

[6] **Berger, A., Bonaccorsi di Patti, E.,** (2006).Capital structure and firm performance: A new approach to testing agency theory and an application to the banking industry, Journal of Banking and Finance.

[7] **Brand, M., Gerschick, J.,** (2000), Maximizing Efficiency: The Path to Enhanced Outreach andSustainability", ACCION Monograph Series No 12, September 2000.

[8] **Brand, M., Gerschick, J.,** (2001), "Maximizing Efficiency: The Path to Enhanced Outreach andSustainability", *ACCION Monograph No. 12,* The MicroBanking Bulletin, Focus on Productivity, Issue No 06, April 2001.

[9] **Charitonenko, S., Silva D.D.,** (2002), "Commercialization of Microfinance: Sri Lanka, Asian Development Bank, Manila, Philippines, ISBN No. 971-561480-9, December 2002.

[10] **Christen, R.P., McDonald, J., (**1997) "The Microbanking Bulletin": Vol. I. The Economics Institute, Boulder.

[11] **Christen, R.P., McDonald, J., (**1998), "The Microbanking Bulletin: Vol. II", The Economics Institute, Boulder.

[12] **Christen., Robert.,** (2000), "Bulletin Highlights", *The Microbanking Bulletin No 04,* February 2000.

[13] **Cull, R., Demirgüç-Kunt, A., Morduch, J.,** (2006), "Financial Performance andOutreach: AGlobal Analysis of Leading Microbanks", *World Bank Policy Research Working Paper 3827,* February 2006.

[14] **D'Espallier, B., Guérin, I., Mersland, R.,** (2010). Gender bias in microfinance, World Development, forthcoming.

[15] **Dacheva, P.,** (2009), "Commercialization in Microfinance – A Study of Profitability, Outreach and Success Factors within the Latin American Context.

[16] **Damian, V.S., Jansson, Tor., Naomi, K., María, C. B. B.,** (2003), "Performance Indicators for Microfinance Institutions", *Technical Guide*, 3rd edition, MicroRate and Inter American Development Bank, Sustainable Development Department, Micro Small and Medium enterprise division, Washington, D.C, July 2003.

[17] **Diamond, D.W.,** (1984),"Financial intermediation and delegated monitoring", Review of Economic Studies.

[18] **Dieckmann, R., (**2007), 'Microfinance: An emerging investment opportunity', *Uniting socialinvestment and financial returns,* Deutsche Bank Research, December 19, 2007, PP 1-2.

[19] **Duflos, E., Ledgerwood, J., Helms, B., Moyart, M.,** (2006), "Country Level Effectiveness and Accountability Review-Sri Lanka", CGAP Aid Effectiveness Initiative, February 2006.

[20] **Gary, M, W., Christopher, D., Warner, W.,** "Where to Microfinance?"

[21] **Gomez, A.,** (2009), 'Sri Lanka Connecting Regional Economies (Usaid/Core), MicrofinanceSector Assessment', June 2009.

[22] **Gujarati D.N.,** (2006), 'Essentials of Econometrics', *International Edition, McGrow Hill,* ISBN 007-124448-4, 2006.

[23] **Gujarati D.N.,** (2008), 'Basic Econometrics', 4th Edition, *McGrow-Hill,* 2008

[24] **Hermes, N., Lensink, R., and Meesters, A.** (2011). Outreach and efficiency of microfinaninstitutions, World Development, 39.

[25] **Hulme, D., Mosley, P.,** (1996), "Finance Against Poverty", Vol. I. Routledge, London.

[26] **Jayawardena, A, S.,** (2003), "Role of Microfinance in Rural development", International Workshop, Issues and Challenges of Microfinance, SEEDS, July 2003, PP 21.

[27] **Kantak, P.,** (2011), "Growth in Commercial Microfinance: 2005-2008", *An Update toCharacteristics of Equity Investments in Microfinance,* Council of Microfinance Equity Funds, 2011.

[28] **Kelegama, S.,** (2001), 'Poverty Situation and Policy in Sri Lanka', *Asian Development Bank discussion paper, Asia and Pacific Forum on poverty: Reforming Policies and Institutions for Poverty Reduction* Manila, 5-9 February 2001.

[29] **Ketera, B. B.,** (2007), "Outreach and Financial Performance Analysis of Microfinance Institutions in Ethiopia", *National Bank of Ethiopia Economic Research and Monetary Policy Directorate,* African Economic Conference United Nations Conference Center (UNCC), Addis Ababa, Ethiopia 1517, November 2007.

[30] **Laura, E., Alfred, H., Sylvia, W.,** (1999), "Comparative Analysis of Savings Mobilization Strategies", *Consultative Group to Assist the Poorest (CGAP), Working Group on Savings Mobilization,* 1999.

[31] **Leonard, J.K.,** (2004), "Business Statistics", Fourth Edition, *Tata McGrow-Hill,* ISBN 0 07058742-6, 2004, PP 287.

[32] **Maisch, F. P., Soria, A. T., Westley, G. D.,** (2006), "How Should Microfinance Institutions Best Fund Themselves?, Inter-American Development Bank, Washington, D.C., *Sustainable Development Department Best Practices Series,* November 2006.

[33] **Meyer, R. L.** (2002), "Track Record of Financial Institutions in Assisting the Poor in Asia"ADB Institute Research Paper, No 49, December 2002.

[34] **Michael, T., Gerard, M.,** "Financial Performances of Microfinance Institutions", *A Comparison to Performance of Regional Commercial Banks by Geographical Regions.*

[35] **Modigliani, F., and Miller, M. H.** (1958). "The cost of capital, corporate finance and the theory of investment." The American Economic Review.

[36] **Modoran, C., Grashof, L.,** (2009), "Microfinance Institutions in Sri Lanka", *Promotion on the Microfinance Sector (PROMIS), Sri Lankan- German Development Cooperation,* 2009.

[37] **Monica, B., Julie, G.,** (2001), "Maximizing Efficiency: The Path to Enhanced Outreach an Sustainability", *ACCION Monograph No. 12,* The MicroBanking Bulletin, Focus on Productivity, Issue No 06, April 2001.

[38] **Monica, B., Julie, G.,** (2001), "Maximizing Efficiency: The Path to Enhanced Outreach and Sustainability", *ACCION Monograph No. 12,* The MicroBanking Bulletin, Focus on Productivity, Issue No 06, April 2001.

[39] **Muriu, P., (2011), "**Microfinance Profitability: Does finance choice matter?", Birmingham Business School, University of Birmingham, May 2011.

[40] **Nagarajan, G.,** (2001), "Productivity Drivers and Trends", The MicroBanking Bulletin, Focus on Productivity, Issue No 06, April 2001.

[41] **Nhu, A, T.,** (2000), "Innovations in Microfinance", Technical Note 02, Development Alternatives, Inc. and Weidemann Associates, Inc., October 2000.

[42] **Nicholas, P, O., Frederic, R, M., Elizabeth, L., Xavier, R., Christoph K.,** (2009), "Shedding Light on Microfinance Equity Valuation: Past and Present", *CGAP, Occasional Paper No14,* February 2009.

[43] **Nimal, S.,** (2003), "Leading Issues in Microfinance", *Annual International Workshop on Challenges of Microfinance,* Hikkaduwa, Sri Lanka, July 2003.

[44] **Otero., Maria.,** (1999), "Bringing Development Bank into Microfinance", Journal of microfinance.

[45] **Pandey, I.M.,** (1999), "Financial Management", Eighth edition, 1999, ISBN 81-2590638 X.PP130-140.

[46] **Parameshwar, D., Aggarwal, N., Zanchi, R., Shankar, S.S.,** (2010), "Indian MFIs: Growth for Old and New Institutions Alike", Feature Articles, MicroBanking Bulletin, Issue 20, September 2010.

[47] **Rhyne, E., Otero, M.,** (1992),"Financial services for microenterprises: principles and   institutions. World Development.

[48] **Rosenberg, R.,** (2001), "Talking About Performance Ratios", *Measuring Client   Retention*,   The MicroBanking Bulletin, Focus on Productivity, Issue No 06, April 2001.

[49] **Rosenberg, R.,** (2010), "Does Microfinance Really Help Poor People?", CGAP   Focus Note   No 59, January 2010.

[50] **Safiuddin, S, K.,** (2011), 'Is Micro Finance a Profit Maximizing Industry or a Social   Business Some evidences from recent literature survey', *Indian journal of   Commerce   and   Management Studies,* Volume II, Issue 2, March 2011, ISSN 22295674.

[51] **Schmidt, R.H., C.-P. Zeitinger.,** (1996) "Prospects, Problems and Potential of Credit   Granting NGOs", in: Journal of International Development 8, 1996.

[52] **Ugur, Z., (**2006), "Commercial Banks and Microfinance", *College UndergraduateResearch   Electronic Journal (CUREJ),* University of Pennsylvania, May 04, 2006.

[53] **Woller, G.M., Schreiner, M.,** "An Empirical Analysis of Microfinance Institutions: Poverty Lending, Financial Self-Sufficiency and the Six Aspects of Outreach".

[54] **Woolcock, M, J, V.,** (1999), "Learning form Failures in Microfinance", *What   unsuccessful   cases tell us how group based programs work,* American Journal   of Economics and   Sociology.

[55] **Young., Robin., John G., John, J., Mary, M., Nancy, N., Tony, S., Lynne, C.,**   (2005), 'Banking the Underserved: New Opportunities for Commercial Banks', *Policy   division working paper, Exploring the business case, Commissioned by Financial   sector team, Policy division, Department for international development, London,* April2005.

[56] ACCION InSight, **(**2003), 'The Service Company Model'*: A New Strategy for   Commercial Banks in Microfinance,* No 06, September 2003.

[57] CBSL (2010), 'Central Bank of Sri Lanka-Annual Report', 2010, *Accounts and   Operations of   the Central Bank of Sri Lanka, Central Bank, Colombo,* Part II, *PP56.*

[58] DCS, (2011), Department of Censes and Statistics- Sri Lanka, May 2011, 'Poverty Indicators', *Household Income and Expenditure Survey-2009/10,* Ministry of Finance and Planning, Volume 01Issue 02, ISSN 1391-4696.

[59] (2010) 'Microfinance Industry Report'**,** Sri Lanka, 2010, *produced by GTZ   ProMiS   in collaboration with The Banking With The Poor Network, Updated edition 2010.*

[60] (2010), Bank of Ceylon (BoC), Annual report, 2010.

[61] (2010), People's Bank (PB), Annual report, 2010.

[62] 'Microfinance Industry Report', Sri Lanka, (2009), *produced by GTZ   ProMiS in collaboration with The Banking With The Poor Network. 2009. PP.20.*

[63] *CBSL* (2009), 'Central Bank of Sri Lanka-Annual Report', 2009, Central   Bank,   Colombo, PP 73-75.

[64] (2000), "Finance for the Poor: Microfinance Development Strategy", *Asian   Development   Bank (ADB),* 2000.

[65] (2009) 'Microfinance Institutions in Sri Lanka', Sri Lanka, 2009, *Sri Lankan   German Development Cooperation, PROMIS-Promotion of   Microfinance   Sector, 2009.*

[66] (2009), "Financial Analysis for Microfinance Institutions", Participant   course materials, Consultative Group to Assist Poor (CGAP), 2009.

[67] (2009), "MIX 2009 Benchmarks", *Microfinance Information   Exchange*,   2009

[68] (2004), "Introduction to SPSS", Kellogg School of Management, *Kellogg Research Computing,* October 11, 2004.

[69] (2009), Sanasa Development Bank (SDB), Annual report, 2009.

[70] (2010), Hatton National Bank (HNB), Annual report, 2010.

[71] (2010), Sampath Bank, Annual report, 2010.