



## Political Economy of the NGO Namely 'Bangladesh Extension Education Services' Through Channeling Micro Savings Into Micro Investment to Create Entrepreneur

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### Abstract

NGOs have played a key role in poverty reduction, creating entrepreneurs, and economic growth in Bangladesh through microfinance. Besides microfinance, NGOs like Bangladesh Extension Education Services (BEES) now offer micro-savings schemes and micro-investment opportunities to create entrepreneurs. But a significant obstacle to channeling micro-savings into micro-investment is loan outstanding. The study used secondary data collected from BEES for quantitative analysis. The study period is between February 2021 to May 2021 for analyzing data from 2009-10 to 2019-20. Three different types of statistical analysis were undertaken: Correlation Analysis, Graphical Analysis, and Ordinary Least Square Regression Analysis. The study used three hypotheses to test the relationship between micro savings-loan outstanding, micro investment-loan outstanding, and micro savings-loan outstanding. The study found success in BEES' programs of using micro-savings to stimulate micro-investment and build entrepreneurship. Overall, the study found BEES to be very successful in channeling micro-savings into micro-investment and recommend other NGOs to follow BEES' success and engage in the micro-savings to micro-investment conversion program to build entrepreneurship. In addition, the study has recommended strong political-economic practices such as semiannual auditing by the Microcredit Regulatory Authority (MRA) to prevent such unethical practices.

**Key Words:** Micro Savings, Micro Investment, Loan Outstanding, Entrepreneurship, Political Economy and Development, Regulations.

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## **1. Introduction**

Microfinance has been instrumental in poverty reduction and empowerment of the poor, people, particularly the poor women, and micro-entrepreneurs in Bangladesh. While the most prominent microfinance category that has helped achieve this goal has been microcredit. Two other types of microfinance are slowly becoming popular: micro-savings and micro-investment. The actual macroeconomic condition savings = investment must be satisfied to achieve social, political, and economic stability in Bangladesh and achieve economic development. Friend & Kravis(1957) argued that the strategic role of saving and investing in the dynamic and economic growth is essential for systematic manner for entrepreneurial activities.

As the intends to research a particular NGO, that is also the micro savings= micro-investment model. Whereas microcredit NGO beneficiaries take a small number of loans to start their income-generating activities, micro-savings allow saving a small amount of money from achieving financial security and earning interest. NGOs offer various micro-savings schemes that can be used as a micro-investment to engage in successful entrepreneurial activities after maturity. NGOs also use micro-savings to lend money to further borrowers and invest in various development projects/programs, including creating entrepreneurs. However, loan outstanding remains a big problem.

Robinson (2001) noted that World Bank first provided micro-savings in the 1980s by World Bank. According to his findings, micro-savings are a more crucial microfinance component necessary for economic development than microcredit. Yet, micro-savings have been neglected by most microfinance institutes operating in Asia, Africa, and Latin America. As a result, the overall contribution of microfinance institutes both in rural and urban areas was not up to the mark until recent years due to the inability to implement and promote micro-savings.

The rise in the trend of micro-savings is very recent, but it is already significantly contributing to reducing poverty. Unlike microcredit, a minimal number of NGOs in Bangladesh have implemented micro-savings schemes. But those who did have achieved notable success. The study focuses on the case of Bangladesh Extension Education Services (BEES), an NGO outstanding for its efficient and effective micro-savings services. While most of the beneficiaries of BEES are women, BEES also provides its microfinance services to men. For over 40 years, BEES has been working to reduce poverty and bring about economic development in Bangladesh. BEES offers a holistic microfinance approach that helps income generation, development of entrepreneurial skills, and self-employment and uplifts its beneficiaries from poverty. The microfinance program of BEES has the following objectives: Creation of self and wage-based employment; Contribution towards establishing social equity and fundamental human rights; Improvement of life skills and unbundling livelihood opportunities for the underprivileged people; Reduction of poverty through building resilience; Ultimately, supplement sustainable development as a whole.

The microfinance program of BEES is divided into four components: Savings components, Credit components, Insurance components, and Social services components. This study's primary focus is on the savings component of BEES. Two obligatory savings accounts must be maintained by all beneficiaries of BEES: General Savings and Emergency Savings. An optional savings scheme is the Enterprise Development Savings Program (EDSP). Under general savings, members must hold an account and make a weekly deposit in the range of BDT 30 to BDT 300. 50% of the yearly deposit

can be withdrawn every two years. BEES provides 6% interest per annum. If a member chose to leave BEES, he/she could start the total amount. Under emergency savings, members must make a weekly deposit of BDT 10. The interest rate is also 6% per annum, and the money can be withdrawn at any time during emergencies. EDSP is for members willing to become entrepreneurs. Members can deposit any amount every month and withdraw the funds for micro-investment in entrepreneurial activities. The interest rate is also 6% per annum, but an additional grant of 2% is offered after every two years.

Under these micro-savings schemes, as of 2021, beneficiaries have made a combined deposit of BDT 143,00,55,459 which is 28% of their received loan.

In the 21<sup>st</sup> Century, Bangladesh faces a challenge of overpopulation, with 170 million people living in the boundaries of small land. It is not possible for all people, particularly the poor and underprivileged, to secure jobs. The government alone cannot be held accountable for all the challenges that the people face. Thus various NGOs have emerged to help Bangladesh tackle the challenges of poverty and unemployment. BEES has taken initiatives to not only help its beneficiaries with microcredit facilities but provide micro-savings programs, and the beneficiaries are trained to utilize their micro-savings to incur micro-investment and, in the process, become self-reliant micro-entrepreneurs who can provide their own basic needs and support their family in the process. In the long run, this will empower the poor in uplifting their status as Bangladesh graduates from a Low-Income Country to an Upper Middle-Income Country by 2026 in a bottom-up approach and bring social, political, and economic development to the country. Despite significant success stories, Loan Outstanding among borrowers remains a crucial problem; the study will try to show if proper channeling of micro-investment and micro-savings can help overcome the problem of loan outstanding. Ultimately, the study investigates how successful BEES has created entrepreneurs, particularly among poor women with family, through channeling micro-savings with micro-investment. Financial literacy is an essential factor claimed by BEES that they are doing for their beneficiaries so that they are interested in micro-savings and micro-investment.

The study's research question is: "Weather BEES' micro-savings component is improving the financial status of the beneficiaries through channeling between micro-savings and micro-investment for entrepreneurship development?"

The paper is structured in the following sections: Introduction; Literature Review; Objectives of the study; Methodology; Estimated results and analysis; Conclusion and Recommendations.

## **2. Literature Review**

Gentry & Hubbard (2004) recommended that expensive outward financing for entrepreneurial investments and possibly high returns on those investments have significant consequences for the saving performance for well-off families. The Department of Trade and Industry, Republic of South Africa (2005) found that escalating unemployment crisis is a massive challenge for the government of South Africa, which alone can't tackle the issue. Thus, small, medium, and micro-enterprises (SMMEs) have taken job creation, economic growth, and equity in the country by investing in entrepreneurship generation. They have taken the steps necessary to start a small business and small enterprises for the precious unemployed people to use their products to contribute to the country's economy. Under various entrepreneurship programs by the SMMEs,

one of the most iconic is the Youth enterprise development, which offers training and business support to young aspiring entrepreneurs and introduces entrepreneurship within the educational curriculum. Bangladesh can take an example from South Africa's scenario for encouraging more youth entrepreneurs within the country.

According to Ostrom (2005), both the public and private sectors must build entrepreneurship. Skilled human power needs to be developed to unleash their full potential and become innovative in building entrepreneurship. Both the public sector and the private sector must work together to achieve this. Keep a competitive market gives a broader scope of innovation, investment, and increased consumers through lower prices. The environment for healthy completion must be established. Alam & Ullah (2006,p.67) described that "there is a critical need for putting in place a credit delivery system that evaluates the creditworthiness of borrowers, on a basis other than fixed asset ownership."

Coulter (2009) described that deprived persons are entirely seen in the government's rhetoric solitary, in frequently composed with persons with incapacities as a group named "the vulnerable." And an implication that these topics are in hazard from approximately forthcoming, indefinable immoral objects. MIDAS (2009) noted that "The women entrepreneurs responded that their savings were mostly used for business development 70.1%. The next use was for family requirements mentioned by 64.8%. 24% kept their money in the banks, while 1.7% bought land or assets, and 1.5% invested their savings in other activities. Only 0.4% of the women have used their savings for other purposes according to their needs". International Finance Corporation (2010) stated that SME banking differs from commercial banking as the primary purpose of retail banking is to "lend." In contrast, the primary purpose of SME banking is to "invest." It is essential for SME banking to link savings and investment. It is vital for SME banking to connect savings and investment. Deposits and savings are crucial financial management tools, while various assets aid in creating business opportunities and allowing for earnings for excess capital. (7-16). Stewart, Rooyen, Chereni, & Silva (2012) discovered that combining micro-credit and micro-savings programs has mixed effects. They positively generate income in some places, creating more business opportunities for aspiring poor female entrepreneurs in India. They are not as effective in other countries as in Indonesia. Micro-savings are not as significant in increasing the economic opportunities of poor people as micro-credit is. Micro-credit positively impacts a client's income, while micro-savings positively impact a client's savings. They both have mixed impacts on the accumulation of non-financial assets and expenditure. The overall effect of micro-savings is yet to be seen in Bangladesh, where micro-credit has been the central focus for many years. The concept of micro-savings appears to be promising and can be extended among the poorest of the poor. This leads to an increase in non-financial assets and gives the poor, particularly poor women, scope to improve their status.

Mui (2013) remarked that entrepreneurship initiatives usually start as small innovative thoughts. With their creative ideas' entrepreneurs become the change-makers in the world. They help implement the necessary knowledge, technologies, and solutions required to solve the world's problems and build a prosperous world. Entrepreneurs should use their differences to show animosity, develop innovative ideas, and work together to achieve their goals. United Nations ESCAP (2014) described that assumed the status of the SME in the economic sector and

employment creation; it is imperative to generate a supportive environment for SMEs to prosper and for banks to provide to the credit requirements of SMEs.

Ahammed & Seddiq, (2015) depicted that poor people in Bangladesh are underprivileged totally from NGO's expansion programs and convert deprived to inferior. Gautam & Faruqee (2016) implied that credit constraint is a significant issue for rural non-farm enterprises (RNFE). Those with a lack of excess credit are more likely to rely on their resources as internal savings and investment processes are time-consuming. There is a dilemma whether to use one's savings for expenses or for investment. Participants of MFIs who are less dependent on own resources show more involvement in RNFE activities and are more likely to use their savings for investment purpose. Lack of education, wealth, access to electricity, transportation, etc., results in credit constraint and hampers the savings-investment mechanisms within RNFEs. (134-135) Ali (2017) argued that micro-savings should fall under the working purview of the micro-investment for which social networking and community banking are needed.

Sahoo & Yadav (2017) commented that entrepreneurs and practitioners would make better and more effective decisions about implementing total quality management practices.

Sen (2018) argued the importance of power and politics in understanding institutional change and persistence. They play a central role in maintaining the savings-investment balance and stimulating economic growth. Ali (2020, 25 January) opined that there is no extra alternative to sustainable development goals but original alternative banking schemes in the rural parts. Poor people are fortified to save and invest locally. Ali (2020) described that the political economy in Bangladesh needs to lead to economic progress due to income-generating programs in the country's rural areas through innovation and creativity and entrepreneurship with stimulating economic growth. Omede, Ibekwe, & Nte (2020) opined that active and well-organized placement of their funds allows enterprises to repeatedly expand a modest advantage completed by their contestants to safeguard existence and growth.

Omomowo (2020) clarified that a political evaluation of socio-economic consequences of the provision and consumption of micro-credit has pros and cons. Neo-liberal market logic can understand the demand and supply of micro-credit from a political-economic perspective.

Ngo & Chi (2020) discovered that the accessibility of proper credits is minimal for small firms. In most cases, small firms invest in their business through their savings, retained earnings, or borrowing from friends and family. Comparatively, medium firms have better access to credit than small firms which rely on these alternatives.

Shkodra, Ymeri, & Ibishi (2021) found that savings are crucial for women's entrepreneurship. Successful women entrepreneurs mostly manage and finance their businesses through their savings. Those who use borrowed money or family budget or their inherited capital for investment purposes are less successful than those who invest from their savings.

According to Reddy (2021), small savings have paved the way for self-reliance in a command economy. India used small savings to finance its crisis rather than depend on foreign aid. But neo-liberal economists are discouraging small savings, advocating for a more extensive reach of globalization which hampers India's reputation as a self-reliant economy. The interest rate is being reduced, and monetary policy is adjusted to stimulate people to make more investments rather than hoarding their savings.



Bindabel & Salim (2021) hold that "a few studies have been done in the fields of savings and investment include taxation, micro-financing, gambling or the stock market, financing, etc. with economic and financial behavior."

Rajab & Mexhuani (2021,p.12) argued that "an increase in the accumulation of savings from commercial banks in Kosovo has a positive effect on Kosovo's economic growth, as well as that remittances and loans, are also, an important enabling factor in driving the economy of Kosovo through a direct impact on investment."

The literature review mentioned earlier that the study found very scanty research on how political economy helps achieve channeling savings and investment to build entrepreneurship. As such, the study has been undertaken.

### **3. Objectives of the Study**

The study has been undertaken following objectives:

- i) To assess what are the impacts of political economy on micro saving and micro-investment;
- ii) To examine how micro-savings and micro-investments helps to build entrepreneurs of an NGO;
- iii) To depict whether loan outstanding and total number of borrowers and members of the NGO has any impact on micro saving and micro-investment;

### **4. Methodology**

Based on the literature review and objectives of the study, the research has been undertaken. The study used secondary sources, which were collected from the BEES for quantitative analysis. Information has been collected from Bangladesh Extension Education Services (BEES), -a national Micro-Finance Institute. The bivariate Correlation matrix was used to identify the relationship between each variable. Seven Clustered column charts have been built along with trend lines to show the annual increase/decrease of all the variables. One Scatter diagram was designed to depict the trend relationship between Micro Savings and Micro Investment. Ordinary least square (OLS) regression analysis has been done. Three equations have been derived using OLS regression analysis; in the first equation, micro-investment is the dependent variable. Total members T.M., micro-savings, and Interest rate on Savings are the independent variables. While the chief target is to see the relationship of micro-savings and micro-investment, it is necessary to verify to what extent other factors influence micro-investment and know the strength of the MS-MI relation compared to the other variables. Loan outstanding is a big problem within BEES; it is necessary to see the extent to which loan outstanding affects the overall performance of BEES. In the second equation, Micro Investment is the dependent variable, whereas total borrowers among members, loan unpaid, and Interest Rate on Loan are the independent variables. In the third equation, the study takes micro-savings as the independent variable. It analyzes how Micro Savings is influenced by other variables: Total Members, Loan Outstanding, and Interest rate on Savings. Loan Outstanding is used to represent the annual microcredit taken before it was repaid. As such, the three multiple linear regressions equations are:

$$MI = \beta_0 + \beta_1SIR+ \beta_2MS+\beta_3TM+\mu \dots\dots\dots(1)$$

$$MI = \beta_0 + \beta_1LO+ \beta_2TB+ \beta_3LIR+\mu\dots\dots\dots(2)$$

$$MS = \beta_0+ \beta_1LO+ \beta_2SIR+ \beta_3TM+\mu\dots\dots\dots(3)$$



Where,

MI = Micro Investment

MS = Micro Savings

LO = Loan Outstanding

TM = Total Members

TB = Total Borrowers among Members

SIR = Interest rate on Savings

LIR = Interest Rate on Loan

$\mu$  = Error Term

The research work was done from February 2021 to May 2021 for considering the period of the data from 2009-10 to 2019-20. M.S. Excel and SPSS software were used for quantitative data analysis. Priori model assumes that micro-savings by the beneficiaries of BEES stimulate micro-investment of beneficiaries of BEES in entrepreneurship activities. For testing auto-correlation, the study will do the Durbin-Watson test.

**Limitations of the Study:** Time Constraint; Financial Constraint to do the research study in a more in-depth manner; Difficulty in gaining confidential information of BEES; Travel constraint due to the Covid-19 Pandemic situation.

**Hypothesis Testing:**

Alternative three hypotheses are given below, which were formed for testing multiple regression equation:

Ha1: Increase in Micro Savings stimulates an increase in Micro Investment.

Ha2: Increase in Loan Outstanding stimulates an increase in Micro Investment.

Ha3: Increase in Loan Outstanding stimulates an increase in Micro Savings.

**5. Estimated Results and Analysis**

This section is divided into three parts: Correlation Analysis; Graphical Analysis; Regression Analysis

**Correlation Analysis**

**Table 1: Correlation Matrix**

		Total Members	Total Borrowers Among Members	Micro Investment	Loan Outstanding	Micro Savings	Interest Rate On Loan	Interest Rate on Savings
Total Members	Pearson Correlation	1	.998**	.919**	.915**	.843**	-.556	.852**
	Sig. (2-tailed)		.000	.000	.000	.001	.076	.001
	N	11	11	11	11	11	11	11

<b>Total Borrowers Among Members</b>	<b>Pearson Correlation</b>	.998**	1	.926**	.922**	.854**	-.553	.865**
	<b>Sig. (2-tailed)</b>	.000		.000	.000	.001	.077	.001
	<b>N</b>	11	11	11	11	11	11	11
<b>Micro Investment</b>	<b>Pearson Correlation</b>	.919**	.926**	1	.995**	.982**	-.771**	.976**
	<b>Sig. (2-tailed)</b>	.000	.000		.000	.000	.005	.000
	<b>N</b>	11	11	11	11	11	11	11
<b>Loan Outstanding</b>	<b>Pearson Correlation</b>	.915**	.922**	.995**	1	.987**	-.761**	.966**
	<b>Sig. (2-tailed)</b>	.000	.000	.000		.000	.007	.000
	<b>N</b>	11	11	11	11	11	11	11
<b>Micro Savings</b>	<b>Pearson Correlation</b>	.843**	.854**	.982**	.987**	1	-.813**	.973**
	<b>Sig. (2-tailed)</b>	.001	.001	.000	.000		.002	.000
	<b>N</b>	11	11	11	11	11	11	11
<b>Interest Rate Loan</b>	<b>Pearson Correlation</b>	-.556	-.553	-.771**	-.761**	-.813**	1	-.838**
	<b>Sig. (2-tailed)</b>	.076	.077	.005	.007	.002		.001
	<b>N</b>	11	11	11	11	11	11	11
<b>Interest Rate On Savings</b>	<b>Pearson Correlation</b>	.852**	.865**	.976**	.966**	.973**	-.838**	1
	<b>Sig. (2-tailed)</b>	.001	.001	.000	.000	.000	.001	
	<b>N</b>	11	11	11	11	11	11	11

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

(Constructed by Authors using SPSS)

All tests appear significant under two-tailed tests, and the following observations were made: Total members are strongly correlated with total borrowers among members, with a correlation coefficient of 0.998. If total members increase, total borrowers among members increase. Total members are strongly positively correlated with Micro Investment, with a correlation coefficient of 0.919. If total members increase, Micro Investment increases. Total members are strongly positively correlated with loan outstanding, with a correlation coefficient of 0.915. If total members increase, outstanding loans increase. Total members are strongly positively correlated

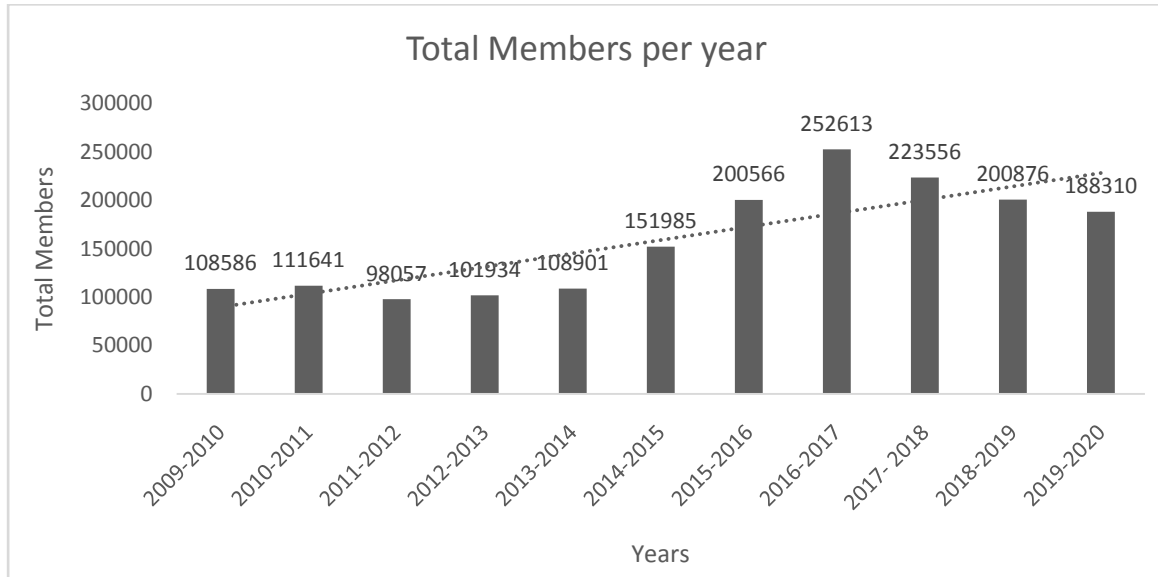


with Micro savings, with a correlation coefficient of 0.843. If total members increase, Micro savings increase. Total members are weakly negatively correlated with the Interest rate on loan, with a correlation coefficient of -0.556. If total members increase, the interest rate on loans decreases. Total members are strongly correlated with the Interest rate on savings, with a correlation coefficient of 0.852. If total members increase, the interest rate on savings increases. Total borrowers among members are strongly positively correlated with total members, with a correlation coefficient of 0.998. If total borrowers among members increase, total members, increase. Total borrowers among members are strongly positively correlated with Micro Investment, with a correlation coefficient of 0.926. If total borrowers among members increase, Micro Investment increases. Total borrowers among members are strongly positively correlated with Loan Outstanding, with a correlation coefficient of 0.922. If total borrowers among members increase, Loan due increase. Total borrowers among members are strongly positively correlated with Micro Savings, with a correlation coefficient of 0.854. If total borrowers among members increase, Micro Savings increase. Total borrowers among members are weakly negatively correlated with Interest Rate on loan, with a correlation coefficient of -0.553. If total borrowers among members increase, the interest rate on loans decreases. Total borrowers among members are strongly correlated with Interest Rate on Savings, with a correlation coefficient of 0.865. If total borrowers among members increase, the interest rate on Savings increases. Micro Investment is strongly positively correlated with total members, with a correlation coefficient of 0.919. If Micro Investment increases, total members, increase. Micro Investment is strongly positively correlated with total borrowers among members, with a correlation coefficient of 0.926. If Micro Investment increases, total borrowers among members increase. Micro Investment is strongly positively correlated with loan outstanding, with a correlation coefficient of 0.995. If Micro Investment increases, due Loan increase. Micro Investment is strongly positively correlated with Micro Savings, with a correlation coefficient of 0.982. If Micro Investment increases, Micro Savings increase. Micro Investment is moderately negatively correlated with Interest Rate on loan, with a correlation coefficient of -0.771. If Micro Investment increases, Interest Rate on loan decrease. Micro Investment is strongly correlated with the interest rate on savings, with a correlation coefficient of 0.976. If Micro Investment increases, the interest rate on savings increases. Loan Outstanding is strongly positively correlated with Total members, with a correlation coefficient of 0.915. If outstanding loans increase, total members, increase. Loan Outstanding is strongly correlated with If total borrowers among members, with a correlation coefficient of 0.922. If outstanding loans increase, then total borrowers among members increase. Loan Outstanding is strongly positively correlated with Micro Investment, with a correlation coefficient of 0.995. If outstanding loan increase, Micro Investment increase. Loan Outstanding is strongly positively correlated with Micro Savings, with a correlation coefficient of 0.987. If outstanding loans increase, Micro Savings increase. Loan Outstanding is moderately negatively correlated with the interest rate on loan, with a correlation coefficient of -0.761. If outstanding loans increase, the interest rate on loan increase. Loan Outstanding is strongly correlated with the interest rate on savings, with a correlation coefficient of 0.996. If outstanding loans increase, the interest rate on savings increases. Micro Savings is strongly positively correlated with total members, with a correlation coefficient of 0.843. If Micro Savings increase, total members increase. Micro Savings is strongly positively correlated with total borrowers among members, with a correlation coefficient

of 0.854. If Micro Savings increase, total borrowers among members increase. Micro Savings is strongly positively correlated with Micro Investment, with a correlation coefficient of 0.982. If Micro Savings increase, micro-investment increase. Micro Savings is strongly positively correlated with loan outstanding, with a correlation coefficient of 0.987. If Micro Savings increase, due loan increase. Micro Savings is strongly negatively correlated with the interest rate on loan, with a correlation coefficient of -0.813. If Micro Savings increase, the interest rate on loan decrease. Micro Savings is strongly correlated with the interest rate on savings, with a correlation coefficient of -0.973. If Micro Savings increase, the interest rate on savings increases. The interest rate on loans is weakly negatively correlated with Total members, with a correlation coefficient of -0.556. If the interest rate on loan increase, total members decrease. The interest rate on loans is weakly negatively correlated with total borrowers, with a correlation coefficient of -0.553. If interest rate On loan increase, total borrowers decrease. The interest rate on loans is moderately negatively correlated with Micro Investment, with a correlation coefficient of -0.771. If the interest rate on loan increase, micro-investment decrease. The interest rate on loans is moderately negatively correlated with Loan Outstanding, with a correlation coefficient of -0.761. If the interest rate on the loan increase, loan outstanding decreases. The interest rate on loans is strongly negatively correlated with Micro Savings, with a correlation coefficient of -0.813. If the interest rate on loan increase, Micro Savings decreases. The interest rate on loan is strongly negatively correlated with the Interest rate on savings, with a correlation coefficient of -0.838. If the interest rate on loan increase, the interest rate on savings decrease. The interest rate on savings is strongly correlated with Total members, with a correlation coefficient of 0.852. If the interest rate on savings increase, total members increase. The interest rate on savings is strongly correlated with Total borrowers among members, with a correlation coefficient of 0.865. If the interest rate on savings grows, total borrowers among members increase. The interest rate on savings is strongly correlated with Micro Investment, with a correlation coefficient of 0.976. If the interest rate on savings grows, micro-investment increases. The interest rate on savings is strongly correlated with Loan Outstanding, with a correlation coefficient of 0.966. If the interest rate on savings increase, loan due increase. The interest rate on savings is strongly correlated with Micro Savings, with a correlation coefficient of 0.973. If the interest rate on savings increase, micro-savings increase. The interest rate on savings is strongly negatively correlated with the Interest rate on savings, with a correlation coefficient of -0.838. If the interest rate on savings increase, the interest rate on loan decrease.

### Graphical Analysis

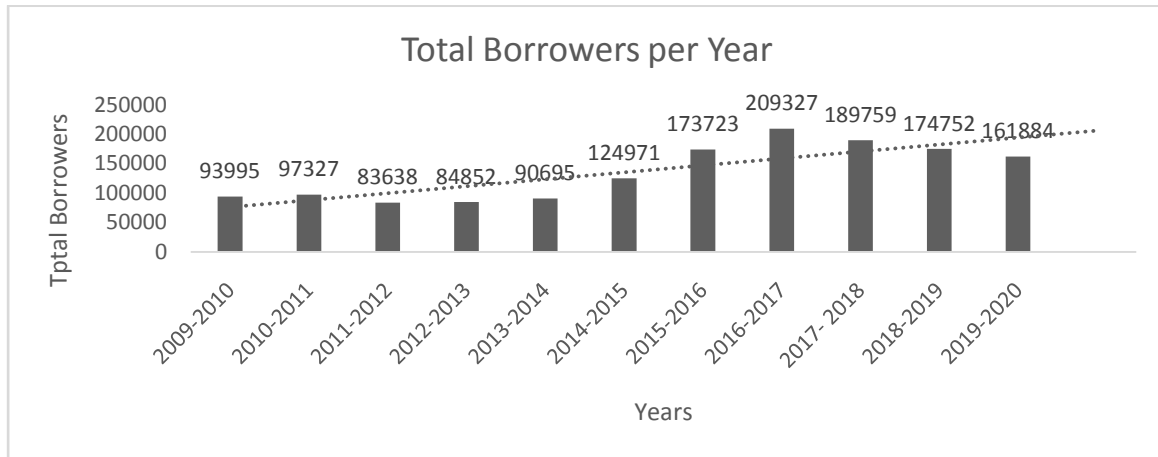
Figure 1: Annual trend of Total Members:



(Source: Constructed by the Authors using MS Excel)

Chart type: Clustered Column Chart

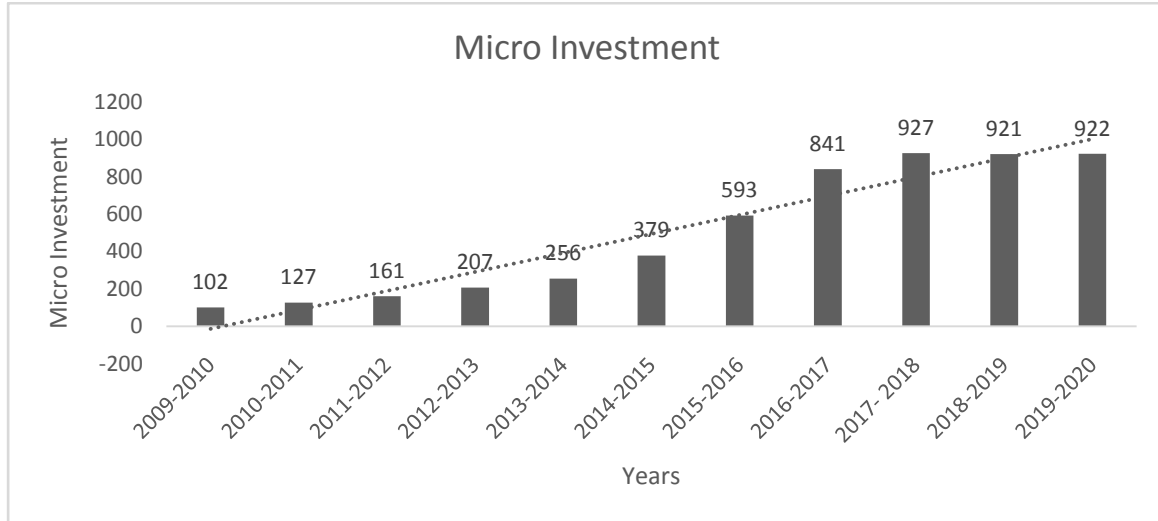
Figure 2: Annual trend of Total Borrowers:



(Source: Constructed by the Authors using MS Excel)

Chart type: Clustered Column Chart

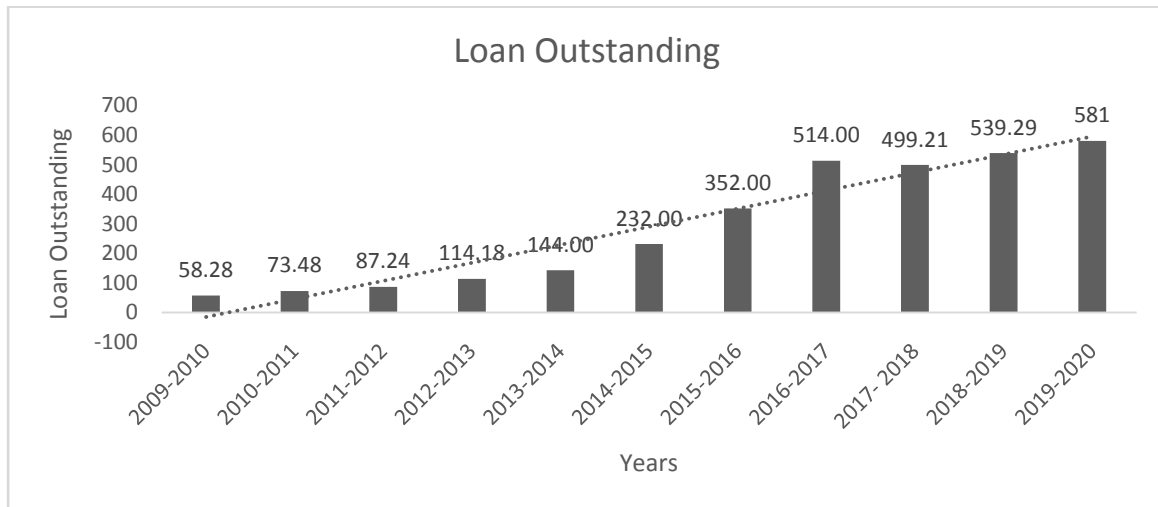
**Figure 3: Annual trend of Micro Investment**



(Source: Constructed by the Authors using MS Excel)

Chart type: Clustered Column Chart

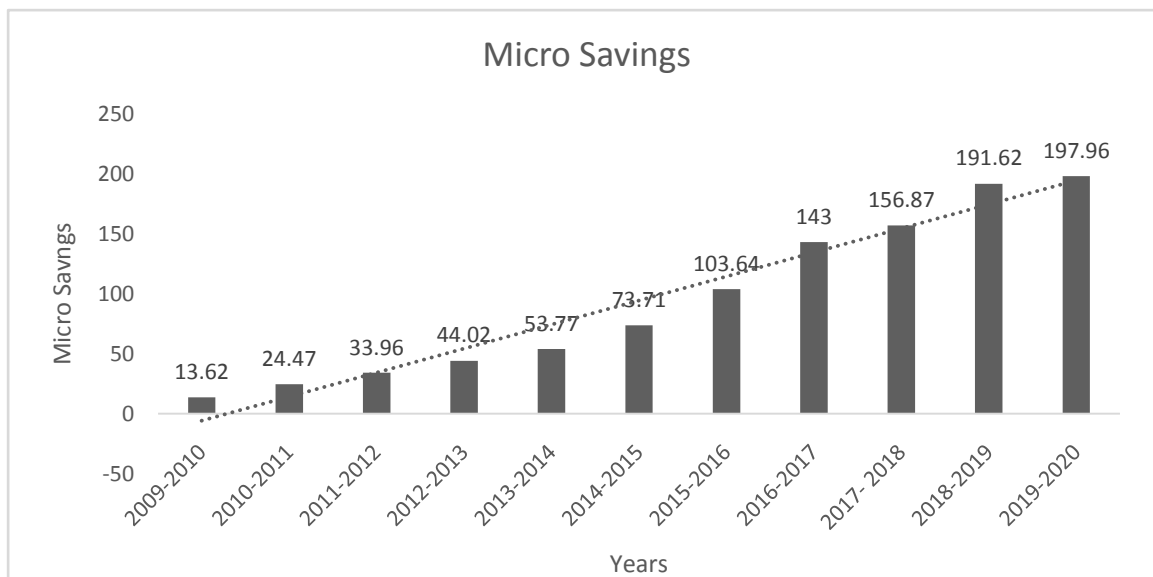
**Figure 4: Annual trend line of loan outstanding**



(Source: Constructed by the Authors using MS Excel)

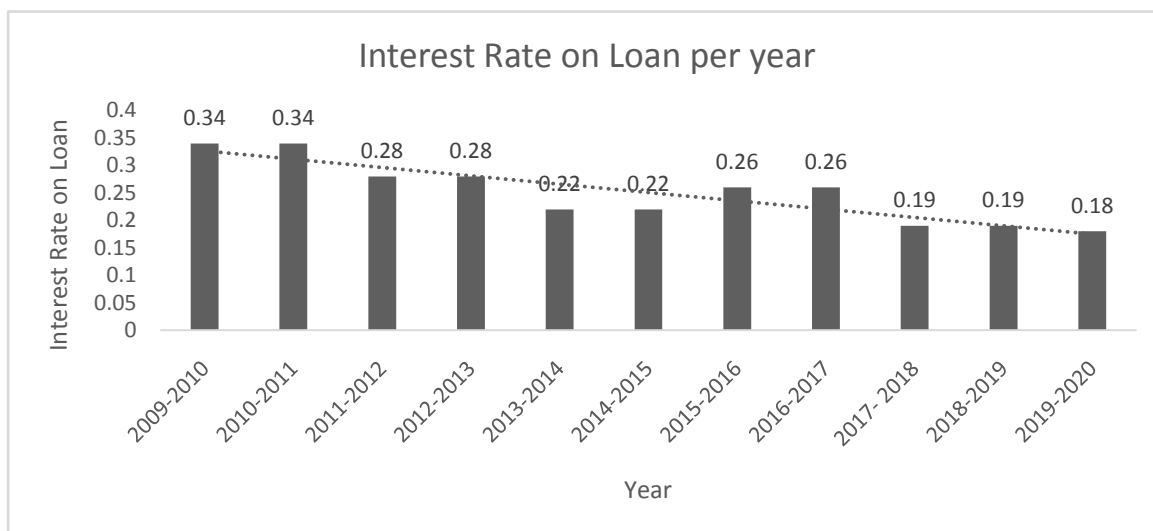
Chart type: Clustered Column Chart

**Figure 5: Annual trend line of Micro Savings**



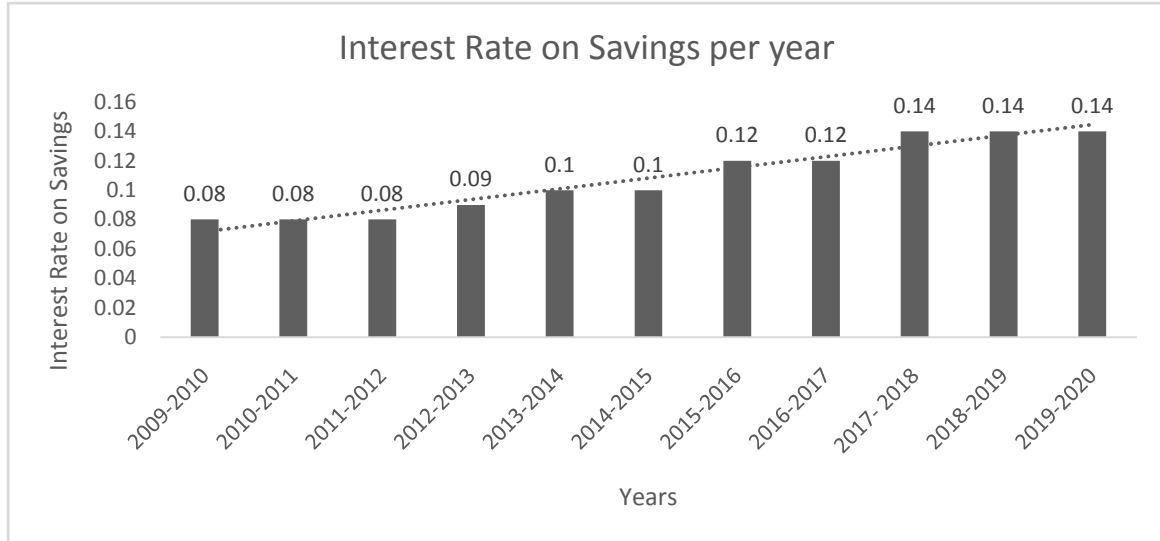
(Source: Constructed by the Authors using MS Excel)  
Chart type: Clustered Column Chart

**Figure 6: Annual trend line of Interest rate on loan**



(Source: Constructed by the Authors using MS Excel)  
Chart type: Clustered Column Chart

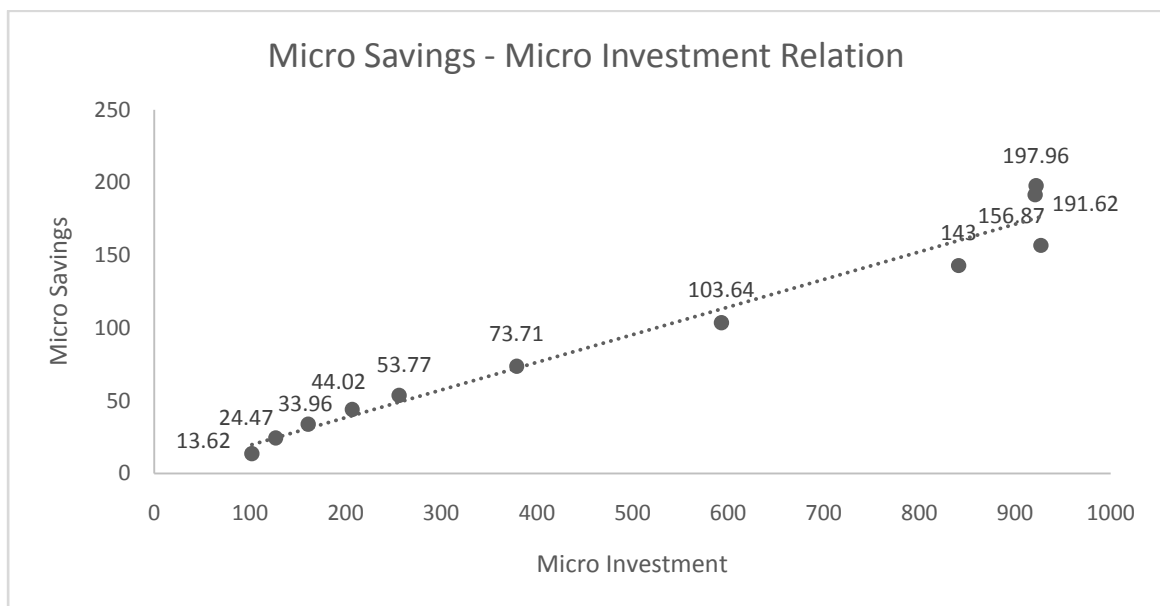
**Figure 7: Annual trend line of Interest rate on savings**



(Source: Constructed by the Authors using MS Excel)

Chart type: Clustered Column Chart

**Figure 8: Trend of Micro Savings and Micro Investment**



(Source: Constructed by the Authors using MS Excel)

Chart type: Scatter Diagram



**Observations:** Figure 1: The number of total members increased from 2009-2010 to 2019-2020. Figure 2: The number of unqualified borrowers among members has increased from 2009-2010 to 2019-2020. Figure 3: The amount of Micro investment has a growing trend from 2009-2010 to 2019-2020. Figure 4: The amount of Loan Outstanding has increased from 2009-2010 to 2019-2020. Figure 5: The amount of Micro Savings has a growing trend from 2009-2010 to 2019-2020. Figure 6: The Interest Rate on loans has decreased from 2009-2010 to 2019-2020. Figure 7: The Interest Rate on Savings has increased from 2009-2010 to 2019-2020. Figure 8: There is a positive trend relationship between Micro Savings and Micro Investment. When micro-savings increase, micro-investment also increases and vice versa.

**Multiple linear Regression Analysis**

**First Equation:**

**Table 2: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.998 <sup>a</sup>	.996	.994	27.93693	.996	524.994	3	7	.000	1.799

a. Predictors: (Constant), Total\_Members, Micro\_Savings, Interest\_Rate\_on\_Savings

b. Dependent Variable: Micro\_Investment

(Source: Constructed by Authors using SPSS)

**Table: 3 ANOVA<sup>b</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1229228.332	3	409742.777	524.994	.000 <sup>a</sup>
	Residual	5463.304	7	780.72		
	Total	1234691.636	10			

a. Predictors: (Constant), Total\_Members, Micro\_Savings, Interest\_Rate\_on\_Savings

b. Dependent Variable: Micro\_Investment

(Source: Constructed by Authors using SPSS)

**Table: 4 Results of the Variables**

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	Std. Error			Lower Bound	Upper Bound
1 (Constant)	-362.965	116.977	-3.103	.017	-639.572	-86.358
Interest_Rate_on_Savings	2780.121	1608.793	1.728	.128	-1024.070	6584.313
Micro_Savings	2.810	.571	4.925	.002	1.461	4.159
Total_Members	.002	.000	6.070	.001	.001	.003

a. Dependent Variable: Micro\_Investment  
 (Source: Constructed by Authors using SPSS)

**Estimated Equation 1**

**MI = -362.965+2780.121SIR+2.810MS+0.002TM**  
 (derived by the authors)

For the table:2 to the table:4, the study described below: The F test is significant at 95% Confidence Interval, R square of 0.996 indicates the model fits exceptionally well with the data. Durbin-Watson statistics is 1.799, which suggests no autocorrelation prevails at a 5% level of significance. Interest Rate on Savings is insignificant at 95% Confidence Interval, as p-value > α, which is 0.128 > 0.05. We infer that increasing interest rates on savings does not stimulate an increase in micro-investment. Micro Savings is significant at 95% Confidence Interval, as p-value < α, that is 0.02<0.05, we infer that increasing Micro Savings stimulates an increase in micro-investment. Total member is significant at 95% Confidence Interval, as p-value < α, that is 0.01<0.05, thus we infer that increase in the number of Total Members stimulates an increase in micro-investment. As 2/3 of the independent variables appear significant, we accept the alternative hypothesis Ha1 that an increase in micro-savings stimulates micro-investment.

**Second Equation:**

**Table 5: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	d f 1	d f 2	Sig. F Change	
1	.996 <sup>a</sup>	.993	.990	35.22956	.993	329.273	3	7	.000	1.689

a. Predictors: (Constant), Interest\_Rate\_on\_Loan, Total\_Borrowers\_Among\_Members, Loan\_Outstanding

b. Dependent Variable: Micro\_Investment  
 (Source: Constructed by Authors using SPSS)

**Table: 6 ANOVA<sup>b</sup>**

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1226003.781	3	408667.927	329.273	.000 <sup>a</sup>
	Residual	8687.856	7	1241.122		
	Total	1234691.636	10			

a. Predicators: (Constant), Interest\_Rate\_on\_Loan, Total\_Borrowers\_Among\_Members, Loan\_Outstanding

b. Dependent Variable: Micro\_Investment  
 (Source: Constructed by Authors using SPSS)

**Table: 7 Results of the Variables**

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	Std. Error			Lower Bound	Upper Bound
1 (Constant)	90.777	96.761	.938	.379	-138.026	319.580
Loan_Outstanding	1.340	.216	6.199	.000	.829	1.852
Total_Borrowers_Among_Members	.001	.001	1.410	.201	.000	.003
Interest_Rate_on_Loan	-508.451	374.060	-1.359	.216	-1392.961	376.060

a. Dependent Variable: Micro\_Investment

**Estimated Equation 2**

$$MI = 90.777 + 1.349LO + 0.001TB + 508.451LIR$$

(derived by the authors)

For the table: 5 to the table: 7, the study described below: The F test is significant at 95% Confidence Interval, R square of 0.993 indicates the model fits exceptionally well with the data. Durbin-Watson statistics is 1.689, which suggests no autocorrelation prevails at a 5% level of significance. Loan Outstanding is significant at 95% Confidence Interval, as p-value <  $\alpha$ , that is  $0.00 < 0.05$ . Thus we infer that increasing loan outstanding (a portion of microloan unpaid) stimulates an increase in micro-investment. Total Borrowers among Members is insignificant at 95% Confidence Interval, as p-value >  $\alpha$ ,  $0.201 > 0.05$ . We infer that increase in the number of total borrowers among members does not stimulate an increase in Micro Investment. Finally, the interest rate on loan is significant at 95% Confidence Interval, as p-value >  $\alpha$ , that is,  $0.216 > 0.05$ , we infer that the interest rate on loan does not affect Micro investment.

As 2/3 of the independent variables appear insignificant, we fail to accept the alternative hypothesis Ha2 that an increase in loan outstanding stimulates micro-investment. For Micro Investment to effectively increase, loans must be repaid.

**Third Equation:**

**Table 8: Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	d f 1	d f 2	Sig. F Change	
1	.998 <sup>a</sup>	.997	.995	4.64284	.997	712.266	3	7	.000	2.644

a. Predictors: (Constant), Total\_Members, Interest\_Rate\_on\_Savings, Loan\_Outstanding

b. Dependent Variable: Micro\_Savings

(Source: Constructed by Authors using SPSS)



**Table: 9 ANOVA<sup>b</sup>**

Model		Sum of Squares	F	Sig.
1	Regression	46060.692	712.266	.000 <sup>a</sup>
	Residual	150.892		
	Total	46211.583		

a. Predicators: (Constant), Total\_Members, Interest\_Rate\_on\_Savings, Loan\_Outstanding

b. Dependent Variable: Micro\_Savings

(Source: Constructed by Authors using SPSS)

**Table: 7 Results of the Variables**

Model	Unstandardized Coefficients		t	Sig.	95% Confidence Interval for B	
	B	Std. Error			Lower Bound	Upper Bound
1 (Constant)	9.814	20.903	.469	.653	-39.615	59.242
Loan_Outstanding	3.77	.037	10.209	.000	.290	.465
Interest_Rate_on_Savings	372.148	241.888	1.539	.168	-199.826	944.121
Total_Members	.000	.000	-6.068	.001	.000	.000

a. Dependent Variable: Micro\_Savings

(Source: Constructed by Authors using SPSS)

From table: 8 to the table: 10, the F test is significant at a 95% Confidence Interval. The R square of 0.997 indicates the model fits exceptionally well with the data and the Durbin-Watson statistics is 2.644, which means possible auto correlation at a 5% level of significance. Loan Outstanding is significant at 95% Confidence Interval, as  $p\text{-value} < \alpha$ , that is  $0.00 < 0.05$ , we infer that increasing loan outstanding (a portion of micro-loan unpaid) stimulates an increase in micro-savings. Interest Rate on Savings is insignificant at 95% Confidence Interval, as  $p\text{-value} > \alpha$ , that is  $0.168 > 0.05$ . Thus we infer that increasing interest rate on savings does not stimulate an increase in micro-savings. Total members are significant at 95% Confidence Interval, as  $p\text{-value} < \alpha$ , that is  $0.01 < 0.05$ . Thus we infer that an increase in the number of Total Members stimulates an increase in micro-savings. As 2/3 of the independent variables appear significant, we accept the alternative hypothesis  $H_{a3}$  that increase loan outstanding stimulates an increase in micro-savings.

### Estimated Equation 3

$$MS = 9.814 + 0.377LO + 372.148SIR + 0.000TM$$

(derived by the Authors)

## 6. Conclusion and Recommendations

The study found that micro-savings are ideally responsible for stimulating micro-investment in entrepreneurial activities among the beneficiaries of BEES. For implementing successful micro-savings and micro-investment frameworks, a dedicated regulatory body is needed. The correlation matrix in Table 1 shows that the strong positive relationship between micro-savings and micro-investment is evident; if micro-savings increase, micro-investment increases. It is

further justified in figure 8 the scatter diagram between micro-savings and micro-investment, which shows a positive trend. The clustered column charts from Figures 1-7 show positive trends in the increase of Micro Investment, Micro Savings, Loan Outstanding, Total Members, Total Borrowers among Members, the Interest rate on Savings, and Interest Rate on Loan. The high trend of Loan Outstanding remained a dilemma and a barrier of progress for channeling micro-savings and micro-investment to achieve entrepreneurship. Thus, three separate OLS analyses were done. From the first equation:  $MI = 90.777 + 1.349LO + 0.001TB + 508.451LIR$ , the alternate hypothesis was accepted, and it was determined that an increase in micro-savings stimulates growth in micro-investment.

From the second equation:  $MI = 90.777 + 1.349LO + 0.001TB + 508.451LIR$ , we failed to accept the alternate hypothesis. Thus, micro-investment is unaffected by loan outstanding and infer that repaying the loan is ideal for incurring higher investment. However, from the third equation:  $MI = 90.777 + 1.349LO + 0.001TB + 508.451LIR$ , we accepted the alternate hypothesis that an increase in loan outstanding causes higher micro-savings. It leads to a possibility of unethical practice among the beneficiaries who are deliberately withholding their loan due and are using this withheld cash for their micro-savings. As loan outstanding does not impact micro-investment, we conclude that this unethical withheld money isn't being used for entrepreneurship purposes, rather for other undisclosed gains. Political Economic analysis of the situation is thus crucial. A strong regulatory body needs to be established so that loan outstanding can be reduced, due loans paid, and the unpaid loan is not sued for incurring micro-savings. Ethical practices among the beneficiaries need to be encouraged. The Microcredit Regulatory Authority (MRA) should send the audit team to monitor loan cases in NGOs as a whole. Semiannual auditing practices are recommended. However, from equation-1, it is evident even without the impact of loan outstanding, proper channeling of micro-savings and micro-investment is taking place among beneficiaries of BEES. Thus BEES is successfully creating entrepreneurs who can now have higher income and uplift themselves from poverty. It would be beneficial to implement mandatory micro-savings schemes within all NGOs in the nation. NGOs are recommended to try to replicate the success of BEES and establish proper channeling between micro-savings and micro-investment. Thus, they will successfully create high-income entrepreneurs, the combined effect of which will have a bottom-up effect as it will lead to higher per capita income of Bangladesh and bring the nation closer to its goal of becoming an LDC graduate country by 2026.

In the future, the study will emphasize further how entrepreneurship helps to uplift the poor from the state of poverty and how the bottom-up approach contributes to the nation's political economy and will help Bangladesh achieve the status of an upper-middle-income country by 2026. Also, the study has found some unethical practices such as money through loan outstanding being used to finance micro savings schemes. A stronger regulation such as semiannual government auditing may help discourage such practice. As the number of beneficiaries is increasing, manual regulatory control may not be feasible. Thus this incorporates the need for a digitalized procedure. In the era of the fourth industrial revolution, digitalization is playing a pivotal role in advancing economics. In the future, the study hopes to show the link between entrepreneurship and digitalization.

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