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IMPACT OF MICROFINANCE INSTITUTIONS ON ECONOMIC GROWTH OF NEPAL

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ABSTRACT

This study examines the impact of microfinance institutions on economic growth of Nepal. Gross domestic product and per capita income are the dependent variables. The independent variables are total number of staffs, total number of members, microenterprises credit, total assets, total loan, total deposit, inflation and broad money supply. The study is based on secondary sources of data. The data have been collected for the period of 2012/13 to 2016/17 from 24 microfinance institutions leading to a total of 120 observations. The data are collected from Bank Supervision Report, Quarterly Economic Bulletin published by Nepal Rastra Bank and Economic Survey 2016/17 published by Ministry of Finance. The multiple regression models are estimated to test the significance and impact of microfinance institutions on economic growth of Nepal. The study shows that the total number of staffs, total number of members, ratio of microenterprises loan, total assets, total loan, total deposit and broad money supply growth are positively related to economic growth. It indicates that larger the number of staffs and members of micro-finance institutions, higher would be the economic growth. The results also show that increase in total assets and total loan leads to increase in economic growth. Likewise, the study reveals that higher the amount of total deposits, higher would be the economic growth. Similarly, the study shows that higher the money supply, higher would be the economic growth. However, result shows that there is a negative relationship between inflation and economic growth in Nepal. This indicates that higher the inflation, lower would be the economic growth.

Contribution/ Originality: This study contributes in the existing literature in the context of developing countries. This study uses simple multiple regression model to analyze the impact of microfinance institution's contribution to the national economy. In the context of Nepal, this is the first study which investigates the relationship between microfinance institutions and macroeconomic variable.

1. INTRODUCTION

Microfinance is the system that supplies loans, savings and other basic financial services to the deprived sector. The owners of micro and small enterprises require a diverse range of financial instruments to meet working capital requirements, build assets, stabilize consumption, and shield themselves against risks (Ehigiamusoe, 2005). Financial services include working capital loans, consumer credit, savings, pensions, insurance, and money transfer services. In practice, microfinance is much more than disbursement, management and collection of small amount of

loans. According to Kimotha (2005) microfinance is simply the provision of very small loans to the poor, to help them engage in new productive business activities and to expand existing ones. However, microfinance has come to include a broader range of services overtime. These include mainly credit, savings opportunities, insurance and money transfer as practitioners came to realize that the poor, who lacked access to traditional formal financial institution needed and required a variety of financial products to achieve meaningful improvement in their business activities.

Economic growth is the increase in goods and services produced by an economy over a period of time. It is an ability of an economy to increase its productive capacity by producing additional units of goods and services (Chugtai *et al*., 2015). Economic growth is generally measured in terms of the increase (or growth) in real national income, gross domestic product, or per capita income. National income or product is commonly expressed in terms of the aggregate value-added output of the domestic economy called gross domestic product and when it rises, economists refer to it as economic growth. According to Dandana and Nwele (2011) microfinance banking service play important role in modern society, as it provides micro credit loans to small and medium scale farmers and enterprises. Over the years, microfinance has emerged as an effective strategy for enhancing economic growth across developing countries.

Micro, small and medium enterprises are turning to microfinance institutions (MFIs) for an array of financial services. Access to financial services enable poor households to move from every day-for-survival to planning for the future, investing in better nutrition, their children's education and health and empowering women socially (Ehigiamusoe, 2005). Simojoki (2003) showed the inter-relationship among social and economic empowerment. The poverty alleviation approach followed in Pakistan consists of sustaining a moderate rate of economic growth with an emphasis on equity in distribution and human resource development.

Park and Changqing (2001) found that the non-governmental and governmental microfinance programs from cultural perspective find that nongovernmental programs perform well in aspects of reaching the poor (targeting), guiding financial and operational performance (sustainability), and establishing program benefits (impact). Beck *et al*. (2002) concluded that relation between financial institutions developments and real per capita GDP growth and total factor productivity growth are economically large and statistically significant. Levine (2004) showed that the financial sector development can affect economic growth through two channels, namely capital accumulation and technological innovation.

According to Oyinpreye (2016) well-coordinated activities of microfinance institutions have the capacity to influence the entire economy. Chirwa (1997) concluded that the impact of microcredit has significant influence on small and microenterprises. The micro credit is helpful in engaging people in self-employment project that enables them to generate an income. The study found that microfinance institutions seem to perform better in terms of profitability. Due to the trend of commercialization of the sector, financial sustainability of microfinance institutions is becoming more and more important at the expense of using credit to help overcome poverty. Li (2006) concluded that microfinance has offered an effective financing method for the construction of new socialist rural regions and has won the support of agriculture and farmers which support to national economic growth as well. Dyar (2006) examined the impact of microfinance on gender inequality in China and found that there are many benefits of providing microfinance to women, despite lack of conclusive evidence on significantly reducing gender inequality.

Qin and Ndiege (2013) found a strong positive association between the financial services and the economic growth. The study also observed two-ways Granger causality between financial services and the economic growth. Kareem (2015) observed that employment level and interest rate are the major factors that contributed to gross domestic product (GDP) in Nigeria. Obasi *et al*. (2014) stated that the microfinance banks and banking is used as a substitute to other similar programs created in the past by different governments for the same purpose - reaching out to the poor. Credit allocation is a powerful instrument to fight poverty, increase productivity, output and enhance economic growth (Ehigiamusoe, 2005). Ayodele (2014) revealed that asset base and deposit liability has an

insignificant impact on economic growth while loan and advances to the public has a significant impact on economic growth in Nigeria.

In the context of Nepal, government of Nepal attempts to promote microfinance services which date back to 1975. It was recognized as an official poverty alleviation tool only in the country's Sixth Plan (1980/81-1984/85). The sector has, however, gained momentum after the restoration of democracy in 1991. Microfinance is often seen as an effective strategy for extending financial services to the poor and disadvantaged groups not reached by the formal financial sector (Dhakal, 2007).

According to Dhakal (2007) Nepal has developed considerable history in providing microfinance services which is evidenced by emergence and growth of a large number of microfinance institutions (MFIs) and microfinance programs over time. Formal microfinance in Nepal emerged in 1956 with the emergence of cooperatives that started providing savings and microcredit services to their shareholders. Likewise, access to financial services underpins the ability of the poor to achieve the MDGs on their own terms in a sustainable way. Evidence shows that poor people choose to invest in a wide range of assets, better nutrition, improved health, access to schooling, a better roof on their homes, and expansion of their small businesses (Sharma, 2004). The MFIs and the wholesale lending institutions together have raised the level of awareness and the required skills of deprived sector to successfully carry out locally feasible income generating activities (Shrestha, 2009).

The above discussion reveals that there is no consistency in the findings of various studies concerning the impact and influence of microfinance on economic growth. Therefore, this study has been conducted to analyze the impact of microfinance institutions on economic growth in Nepal. Specifically, it examines the impact of total number of staffs, total number of members, microenterprises loan, total assets, total loan, and total deposit of Nepalese microfinance institutions on economic growth of Nepal.

The remainder of this study is organized as follows: Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws conclusions and discusses the implications of the study findings.

Table-1. Number of the microfinance institutions selected for the study along with the study period and number of observations

S.N	Name of microfinance companies	Study period	Observation
1	NirdhanUtthan Bank Ltd.	2012/13-2016/17	5
2	Deprosc Microfinance Development Bank Ltd	2012/13-2016/19	5
3	Chhimek Microfinance Development Bank Ltd	2012/13-2016/20	5
4	ShawalambanLaghuBittaBikas Banks Ltd	2012/13-2016/21	5
5	NerudeLaghuBittaBikas Bank Ltd.	2012/13-2016/22	5
6	MithilaLaghuBittaBikas Bank Ltd.	2012/13-2016/23	5
7	Summit Microfinance Development Bank Ltd	2012/13-2016/25	5
8	SworojagarLaghuBittaBikas Bank Ltd	2012/13-2016/26	5
9	Nagbeli Microfinance Development Bank Ltd	2012/13-2016/27	5
10	Kalika Microcredit Development Bank Ltd	2012/13-2016/28	5
11	Mirmire Microfinance Development Bank Ltd	2012/13-2016/29	5
12	JanautthanSamudayik Microfinance Dev.Bank Ltd.	2012/13-2016/30	5
13	Laxmi Microfinance BittiyaSanstha Ltd.	2012/13-2016/31	5
14	ILFCO Microfinance BittiyaSanstha Ltd.	2012/13-2016/32	5
15	MahilaSahayatra Microfinance Bittiyasastha Ltd	2012/13-2016/33	5
16	Kisan Microfinance Bittiya Sanstha Ltd.	2012/13-2016/34	5
17	VijayaLaghubittaBittiyaSanstha Ltd.	2012/13-2016/35	5
18	FORWARD Community Microfinance BittiyaSanstha Ltd.	2012/13-2016/36	5
19	Reliable Microfinance BittiyaSanstha Ltd.	2012/13-2016/37	5
20	Mero Microfinance BittiyaSanatha Ltd.	2012/13-2016/38	5
21	Womi Microfinance BittiyaSanstha Ltd.	2012/13-2016/40	5
22	Naya Nepal LaghuBittaBikas Bank Ltd.	2012/13-2016/41	5
23	Nepal GrameenBikas Bank Ltd.	2012/13-2016/44	5
24	National Microfinance BittiyaSanstha Ltd.	2012/13-2016/46	5
Total number of observations			**120**

Source: Bank and financial institution supervision reports.
Thus, the study is based on 120 observations.

2. METHODOLOGICAL ASPECTS

This study is based on secondary sources of data, which were gathered for 24 microfinance institutions in Nepal for the period of 2012/13 to 2016/17, leading to a total of 120 observations. The main sources of data are Bank and Financial Statistics, Bank Supervision Report and Quarterly Economic Bulletin of Nepal Rastra Bank, World Development Indicators of World Bank and Economic Survey 2016/17 of Government of Nepal, Ministry of Finance.

Table 1 shows the number of microfinance institutions selected for the study along with period and number of observations.

2.1. The Model

The study assumes that the economic growth depends on selected micro-finance related variables like, total number of staffs, total number of members, ratio of microenterprises credit, total assets, total loan, total deposit, inflation and broad money supply (M2). Therefore, the models take the following form:

Economic growth = f (total number of staffs, total number of members, ratio of microenterprises credit, total assets, total loan, total deposit, inflation and broad money supply).

More specifically,

$$GDP= \beta_0+\beta_1(TS)+\beta_2(TM)+\beta_3(MEL)+ \beta_4(TA)+\beta_5(TL)+\beta_6(TD)+\beta_7(INF)+\beta_8(M2) +\varepsilon$$

$$PCI= \beta_0+\beta_1(TS)+\beta_2(TM) +\beta_3(MEL)+ \beta_4(TA)+\beta_5(TL)+\beta_6(TD)+\beta_7(INF)+\beta_8(M2)+\varepsilon$$

Where

GDP	=	Gross domestic product
PCI	=	Per capita income
TS	=	Total number of staff working in microfinance institutions.
TM	=	Total number of members defined as the total number of people having account with the respective microfinance institutions
MEL	=	Ratio of loan to microenterprises percentage
TA	=	Total assets, Rupees in million.
TL	=	Total loan, Rupees in million.
TD	=	Total deposit, Rupees in million.
INF	=	Inflation defined as percentage change in consumer price index, in percentage.
M2	=	Broad money supply defined as change in growth of broad money supply, in percentage.

2.2. Gross Domestic Product (GDP)

GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and depletion of natural resources. Real GDP has also been used as the indicator of economic growth by several studies like, Levine (2002); Levine (1997) and Phumiwasana (2003).

2.3. Per Capita Income (PCI)

Per capita income is often used to measure the country's average income. This is used to compare the wealth of one population with those of others. Per capita income is often used to measure a country's standard of living. PCI is used by various studies as the proxy of economic growth (Tang, 2005; Allden, 2009). It represents the economic standard of the society. PCI is therefore, used in this study to focus more on microfinance institutions contributions for economic growth of the nation.

2.4. Total Number of Staffs (TS)

The goal of achieving full employment among other macroeconomic goals is one of the important goals in many developing nations where unemployment and underemployment have been a major cause and consequence of widespread poverty. According to Oloni (2013) national economic growth depends on the level of employment opportunities. Many studies on Nigeria's employment situation have been devoted the unemployment rate as one of the major determinants of economic growth. Kapos (2005) showed that there is a positive relationship between economic growth and employment rate. Based on it, this study develops the following hypothesis.

H1: There is positive relationship between total number of staff and economic growth.

2.5. Total Number of Members (TM)

Total number of members is defined as the total number of people having account with the respective microfinance institutions in different forms such as depositors, borrower, investors etc. Total number of members reflects the level of financial awareness and financial services excess to the people. According to Satta (1999) the financial access and participation has the positive impact on economic growth. Temu and Ishengoma (2010) revealed that in the microfinance industry in Tanzania, saving and credits co-operative societies have gained popularity as the most useful financial tools to majority of the poor people which has been supporting them to increase the productivity. Based on it, this study develops the following hypothesis.

H2: There is positive relationship between total number of members and economic growth.

2.6. Microenterprises Loan (MEL)

Microenterprises loan is defined as the ratio of credit allocated or lending to microenterprise or small firm those are operating in small scale based on local skills, resources and protect the traditional family business. According to Adhikari and Shrestha (2013) microfinance increases household income, which leads to food security, the building of assets, and an increased likelihood of educating children. When large organization operates across the nation, high economic stability would promote (David, 1987). The extent to which small enterprises could access fund is the extents to which small firms can save and accumulate their own capital for further investment which helps to grow and expand its business. Based on it, this study develops the following hypothesis.

H3: There is positive relationship between the microenterprises loan and economic growth.

2.7. Total Assets (TA)

Economic growth may influence the rate of independent entrepreneurship and the (inversely) related concept of average firm size through intermediate mechanisms such as sector structure, occupational choice, and technology. Empirically, there is large stock of knowledge on the relationship between economic development and the size of independent entrepreneurship. Samolyk (1994) explained that the larger industry and individual firms within an industry help to generate high employment opportunities and economies of scale in operation. According Ahmed and Ansari (1998) there is a positive and strong relationship between firms' size and economic growth. When large organization operates across the nation, high economic stability would promote (David, 1987). Based on it, this study develops the following hypothesis.

H4: There is a positive relationship between the total assets of microfinance institutions and economic growth.

2.8. Total Loan (TL)

Total loan is the amount issues as a credit by microfinance in their accounting period to its members. It is an asset of microfinance institutions through which liquidity of microfinance is judged and gives the overview of microfinance institutions performance. Khemraj and Pasha (2009) identified gross domestic product growth is negatively related to quality of loan which is suggested that the improvement in loan quality leads to increase in

real economic growth. Cappiello *et al.* (2010) stated a change in loan growth has an effect on GDP. Based on it, this study develops the following hypothesis.

H5: There is positive relationship between the microfinance institutions' total loan and economic growth.

2.9. Total Deposit (TD)

Total deposit is the amount of total saving in microfinance institutions by its members in their accounting period. Saving is the one of the most important way of capital formations, high economic growth and stability (Najarzadeh, 2014). Hemmi *et al.* (2007) concluded that increased savings can have a favorable impact on sustainable growth. According to Tinaromm (2005) the private saving has a direct and indirect impact on economic growth. Based on it, this study develops the following hypothesis.

H6: There is a positive relationship between the microfinance institutions' total deposit and economic growth.

2.10. Inflation Rate (INF)

The inflation rate has been measured by change in the consumer price index (CPI). A study of Claessens and Perotti (2007) stated that inflation negatively affects the growth. According to Hasanov (2011) zero inflation level may affect the economic growth negatively and reduces the motivation of producers. Based on it, this study develops the following hypothesis.

H7: There is a negative relationship between inflation rate and economic growth.

2.11. Broad Money Supply (M2)

Money supply is the total value of monetary assets available in an economy at a specific time period. M2 is measure of money supply that includes cash and checking deposit (M1) as well as near money. Near money in M2 includes saving deposits, money market mutual funds and other time deposits, which are less liquid and not as suitable as exchange mediums but can quickly converted into cash and checking deposit. Oloni (2013) shows that a positive relationship between broad money supply (M2) and economic growth. Based on it, this study develops the following hypothesis.

H8: There is positive relationship between the broad money supply (M2) and economic growth.

3. RESULTS AND DISCUSSION

3.1. Descriptive Statistics

Table 2presents the descriptive statistics of the selected dependent and independent variables during the period 2012/13 to 2016/17.

Table-2. Descriptive statistics

This table presents the descriptive statistics for the microfinance institution related variables, macroeconomic variables and selected economic growth variables. Gross domestic product (GDP, Rupees in billion) and per capita income (PCI, in Rupees) are the dependent variables. Total number of staffs (TS), total number of members (TM), ratio of microenterprises loan (MEL, in percentage), total assets (TA, Rupees in million), total loan (TA, Rupees in million), total deposit (TD, Rupees in million), inflation (INF, in percentage), and broad money supply defined as percentage change in broad money supply (M2, in percentage) are the independent variables.

Variables	Minimum	Mean	Maximum	Std. Deviation
GDP	1,695.00	2,127.20	2,599.00	301.28
PCI	62,832.00	76,207.19	89,010.12	9,314.27
TS	3.00	192.62	991.00	233.26
TM	506.00	55,792.39	311,909.00	78,489.78
MEL	0	10.27	30.49	8.68
TA	24.03	1,870.12	15,823.40	2,853.55
TL	9.60	9,566.03	65,914.74	16,690.84
TD	0.54	656.14	8,143.60	1,279.13
INF	5.10	7.97	9.45	1.54
M2	16.00	18.18	19.90	1.65

Source: Output of SPSS by using microfinance institutions data obtained from sampling methods

Table 2 shows that the gross domestic product ranges from minimum of Rs. 1,695 billion to maximum of Rs. 2,599 billion with an average of Rs. 2,127.20 billion. Per capita income ranges from minimum of Rs. 62,832 to maximum of Rs. 89,010.12 with an average per capita income is of Rs. 76,207.19. Similarly, total number of staffs ranges from minimum of 3 persons to maximum of 991 persons. The total number of member ranges from minimum of 506 members to maximum of 311909 members. Likewise, ratio of microenterprises loan ranges from minimum of zero to maximum of 30.49 percentages. Total asset ranges from minimum of Rs. 24.03 million to maximum of Rs. 15,823.40million. Total loan ranges from minimum of Rs. 9.60 million to maximum of Rs. 65,914.74 and total deposit ranges from minimum of Rs.0.54 million to maximum of Rs. 8,143.60 million.

3.2. Correlation Analysis

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and the results are presented in Table 3. More specifically, it shows the correlation coefficients between dependent and independent variables.

Table-3. Pearson's correlation matrix

This table presents the descriptive statistics for the microfinance institution related variables, macroeconomic variables and selected economic growth variables. Gross domestic product (GDP, Rupees in billion) and per capita income (PCI, in Rupees) are the dependent variables. Total number of staffs (TS), total number of members (TM), ratio of microenterprises loan (MEL, in percentage), total assets (TA, Rupees in million), total loan (TA, Rupees in million), total deposit (TD, Rupees in million), inflation (INF, in percentage), and broad money supply defined as percentage change in broad money supply (M2, in percentage) are the independent variables.

	RGDP	PCI	TS	TM	MEL	TA	TL	TD	INF
RGDP	1								
PCI	.980**	1							
TS	.241**	.247**	1						
TM	.213*	.215*	.911**	1					
MEL	.198*	.199*	0.173	.216*	1				
TA	.364**	.373**	.813**	.821**	.197*	1			
TL	.400**	.402**	.797**	.787**	.286**	.948**	1		
TD	.352**	.360**	.768**	.774**	.316**	.931**	.955**	1	
INF	-.780**	-.877**	-.222*	-.194*	-0.169	-.340**	-.351**	-.336**	1
M2	.207*	0.058	-0.007	-0.006	0.014	-0.011	0.022	-0.034	.409**

Note: The asterisk signs (**) and (*) indicate that the results are significant at 1 percent and 5 percent levels respectively.

The result shows that total number of staffs is positively related to the GDP and PCI. It indicates that increase in the total number of staffs leads to increase in GDP and PCI. The results also show that total member has positive relationship with GDP and PCI. It indicates that greater the members of microfinance institutions, higher would be the GDP and PCI. Likewise, the results reveal that microenterprises loan and total assets have positive relationship with GDP and PCI. It indicates that increase in microenterprises loan and total assets leads to increase in GDP and PCI. Moreover, the results show that total loan and total deposit are positively related to the GDP and PCI. This indicates that increase in total loan and total deposit leads to increase in GDP and PCI. Similarly, correlation analysis reveals that there is a positive relationship of money supply with economic growth in Nepal. This indicates that higher the money supply, higher would be the economic growth. However, result shows that inflation has negative relationship with economic growth. This indicates that higher the level of inflation, lower would be the economic growth.

3.3. Regression Analysis

Having indicated the Pearson correlation coefficients, regression analysis has been computed and the results are presented in Table 4. It shows the regression results of total number of staff, total number of members, ratio of microenterprises credit, total assets, total loan, total deposit, inflation and broad money supply on gross domestic product.

The results show beta coefficient for total number of staffs is positive. It indicates that larger the number of staffs in microfinance institutions, higher would be the gross domestic product. This finding is consistent with the findings of Kareem (2015). The table shows that beta coefficients are sometimes positive and sometimes negative for total number of members and total assets. It indicates that total number of members and total assets of microfinance institutions do not clearly explain the gross domestic product in the context of Nepal. This finding is consistent with the findings of Ayodele (2014).

Table-4. Regression results of TS, TM, MEL, TA, TL, TD, INF and M2 on gross domestic product

The results are based on pooled cross-sectional data of 24 microfinance institutions with 120 observations for the period of 2012-2016 by using linear regression model. The model is, GDP = β_0 + β_1(TS)+ β_2(TM)+ β_3(MEL)+ β_4(TA)+ β_5(TL)+ β_6(TD)+ β_7(INF)+ β_8(M2)+ ε. Gross domestic product (GDP, Rupees in billion) is the dependent variable. Total number of staffs (TS), total number of members (TM), ratio of microenterprises loan (MEL), total assets (TA, rupees in million), total loan (TA, rupees in million), total deposit (TD, rupees in million), inflation (INF, in percent), and broad money supply (M2, in percent) are the independent variables.

Model	Intercept	Regression coefficients of								Adj. R-bar square[2]	SEE	F
		TS	TM	MEL	TA	TL	TD	INF	M2			
1	23.645 (4013.5)**	5.29 (2.71)**								.058	0.0498	7.28
2	23.648 (4189.06)**		1.391 (2.37)**							.037	0.0502	5.6
3	23.644 (3378.73)**			.001 (2.19)*						.045	.0203	4.81
4	23.416 (413.15)**				.012 (4.24)**					.132	.0478	18.00
5	23.454 (547.85)**					0.01 (4.74)**				.160	.0471	22.41
6	23.499 (607.76)**						.008 (4.09)**			.124	.0481	16.68
7	23.862 (1537.5)**							-.026 (-13.6)**		.609	.0321	183.86
8	23.538 (461.06)**								.006 (2.30)*	.043	.0502	5.30
9	23.298 (233.33)**		1.901 (1.98)*	.001 (1.39)	.009 (.858)	.017 (2.15)*)	-.010 (-1.34)			.208	.0465	5.98
10	23.38 (348.78)**	-4.172 (-1.36)		.001 (1.10)		.021 (2.93)**	-.009 (1.29)			.165	.0467	6.89
11	23.569 (1038.0)**			1.540 (.106)	-.001 (-.53)			-.034 (-38.92)**	.020 (25.42)**	.971	.0124	380.73
12	23.569 (1049.65)**				-.001 (-.59)		.001 (.997)	-.034 (-39.43)**	.020 (25.80*)	.943	.0123	480.04
13	23.567 (735.74)**	2.947 (.02)	-2.77 (-.07)	1.806 (.12)	-0.01 (-.34)	.000 (.076)	.001 (.744)	-.034 (-37.16)**	.020 (24.30)**	.944	.0126	231.72

Note: The asterisk signs (*) and (**) indicate that the results are significant at 1 percent and 5 percent levels respectively.

Moreover, the beta coefficient for ratio of microenterprises loan is positive. It indicates that higher the ratio of microenterprises loan, higher would be the GDP. This finding is consistent with the findings of Ehigiamusoe (2005). However, the beta coefficients are not significant at 5 percent level. The beta coefficient for total loan is positive and significant at 5 percent level of significance. It implies that larger the volume of microfinance institutions' loan, higher would be GDP. Similarly, the beta coefficient for total deposits is positive. It implies that larger the volume of microfinance institutions deposit from its members, higher would be the GDP. This finding is also consistent with the findings of Ayodele (2014).

Likewise, beta coefficient for inflation rate is negative and significant at 5 percent level. It implies that higher the inflation, lower would be the growth in GDP. This finding is consistent with the findings of Fisher (1993). Similarly, beta coefficient for broad money supply is positive and significant at 5 percent level of significance. It implies that higher the broad money supply, higher would be the GDP. This finding is consistent with the findings of Sharma (2004).

Table 5 shows the regression results of total number of staff, total number of members, ratio of microenterprises credit, total assets, total loan, total deposit, inflation and broad money supply on per capita income.

Table-5. Regression results of TS, TM, MEL, TA, TL, TD, INF and M2 on per capita income

The results are based on pooled cross-sectional data of 24 microfinance institutions with 120 observations for the period of 2012-2016 by using linear regression model. The model is, PCI = β_0+ β_1(TS)+ β_2(TM)+ β_3(MEL)+ β_4(TA)+ β_5(TL)+ β_6(TD)+ β_7(INF)+ β_8(M2) +ε. Per capita income (PCI in rupees) is the dependent variables. Total number of staffs (TS), total number of members (TM), ratio of microenterprises loan (MEL, in percentage), total assets (TA, Rupees in million), total loan (TA, Rupees in million), total deposit (TD, Rupees in million), inflation (INF, in percentage), and broad money supply defined as percentage change in broad money supply (M2, in percentage) are the independent variables.

Model	Intercept	Regression coefficients of								Adj. R-bar square	SEE	F
		TS	TM	MEL	TA	TL	TD	INF	M2			
1	11.209 (783.84)**	0.00 (2.77)**								.061	.1210	7.662
2	11.215 (817.61)**		3.413 (2.39)*							.046	.1220	5.708
3	11.205 (658.90)**			0.003 (2.21)*						.040	.1224	4.873
4	10.636 (77.50)**				0.030 (4.37)**					.139	.1159	19.056
5	10.740 (103.33)**					0.023 (4.77)**				.162	.1144	22.752
6	10.843 (115.76)**						0.021 (4.19)**			.130	.1165	17.585
7	11.798 (406.47)**							-0.071 (-19.79)**)		.769	.0601	391.97
8	11.154 (88.074)**								0.007 (0.63)	.003	.1247	.402
9	10.454 (47.056)**	-9.149 (-1.18)		0.002 (1.537)	0.038 (3.318)**					.165	.1151	7.663
10	10.289 (45.80)**		-4.834 (-1.06)	.002 (1.723)						.164	.1137	8.799
11	10.734 (99.608)**			0.002 (1.21)		0.039 (2.40)*	-0.019 (-1.13)			.157	.1142	8.398
12	11.225 (231.76)**	9.411 (0.49)	-3.041 (-0.52)	8.346 (0.368)	0.00 (0.063)	-0.002 (-0.45)	0.002 (0.72)	-0.087 (-62.41)**	0.038 (31.)**	.977	.0190	620.83
13	11.224 (438.81)**						0.001 (1.06)	-0.087 (-66.71)**	0.038 (32.85)**	.977	.0186	1720.11

Note: The asterisk signs (*) and (**) indicate that the results are significant at 1 percent and 5 percent levels respectively.

Table 5 reveals that the beta coefficient for total number of staff is positive. It indicates that larger the number of staff in microfinance institutions, higher would be the per capita income. This finding is consistent with the findings of Sharma and Puri (2013). The table shows that beta coefficients are sometimes positive and sometimes negative for total number of members. It indicates that total number of members of micro-finance institutions does not explain the variation in per capita income in the context of Nepal.

Moreover, the beta coefficient for ratio of microenterprises loan is positive. It indicates that higher the ratio of microenterprises loan, higher would be the PCI. This finding is consistent with findings of Ehigiamusoe (2005). The beta coefficient for total assets is positive which implies that larger the size of microfinance institutions, higher would be PCI. This finding is consistent with the findings of Ayodele (2014). The beta coefficient for total loan is positive. It implies that larger the volume of microfinance institutions loan, higher would be PCI. This finding is consistent with the findings of Ayodele (2014). Similarly, the beta coefficient for total deposits is positive. It implies that larger the volume of deposits of microfinance institutions from its members, higher would be PCI. This finding is also consistent with the findings of Awojobi and Bein (2011).

Likewise, beta coefficient for annual inflation rate is negative and significant at 5 percent level of significance. It implies that higher the rate of inflation, lower would be the growth in PCI. This finding is consistent with the findings of Fisher (1993). Similarly, the beta coefficient for broad money supply is positive. It implies that higher the growth rate in a broad money supply, higher would be the PCI. However, the coefficients are not significant at 5 percent level of significance.

4. SUMMARY AND CONCLUSION

The study attempts to examine the impact of microfinance institution on economic growth in Nepal. The study is based on secondary sources of data from24 microfinance institutions with 120 observations for the period of 2012/13 to 2016/17.

The study reveals that there is a positive relationship of total number of staffs with GDP and PCI. This indicates that higher the total number of staffs, higher would be the GDP and PCI. The study also shows that total

number of member is positively related to GDP and PCI. It indicates that more the members of microfinance institutions, higher would be the GDP and PCI. Likewise, the study reveals that microenterprise loans and total assets are positively related to the GDP and PCI. It indicates that increase in microenterprises loan and total assets leads to increase in GDP and PCI. It is also observed that there is a positive relationship of total loan and total deposit with GDP and PCI. This indicates that increase in total loan and total deposit leads to increase in GDP and PCI. Similarly, the study reveals that there is a positive relationship of money supply with economic growth in Nepal. This indicates that higher the money supply, higher would be the economic growth. The regression results also show that total number of staff, total number of members, ratio of microenterprises credit, total assets, total loan, total deposit and broad money supply have positive impact on economic growth whereas inflation has negative impact on growth in Nepal. However, the coefficients are significant only for inflation and money supply at 5 percent level.

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