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MICRO ENTERPRISE LENDING PROGRAM AND ITS CONTRIBUTION TO INCOME IN URBAN ETHIOPIA: THE CASE OF DEBRE BIRHAN AND ASSELA BRANCHES OF THE DEVELOPMENT BANK OF ETHIOPIA

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Micro Finance and Its Contribution to Enterprise Income in Urban Ethiopia: The Case of Debre Birhan and Asela Towns

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DEDICATION

To my late father Ato Temesgen Eshetu who died while I was in grade 7. He was able to inculcate the benefits and appreciation of education in our family and in turn to me.

Abstract

The study was conducted in two market towns, namely, Debre Birhan and Assela with the aim of identifying the impact of microcredit on micro enterprise income.

According to the findings of the study, borrowers in Debre Birhan were able to increase monthly enterprise income from 181.14 Birr per month before the loan to 252.77 Birr per month after the loan. Non- borrowers reported current monthly enterprise income of Birr 154.77. Borrowers in Assela indicated an increase in enterprise income from Birr 139.32 per month before the loan to Birr230 per month after the loan. The current enterprise income of the non- borrowers was Birr 282.94 per month.

The regression result showed that income is affected by several factors. Among the many factors, credit was significantly correlated to average microenterprise income in Debre Birhan. Credit was not significantly correlated with income in the case of Assela. Enterprise income was also affected by start-up capital, non-paid family workers, paid employees and productive assets in Debre Birhan. The other variable which correlated to income was the type of economic activity. Those who were engaged in service enterprises earned more income than manufacturing in both towns.

As indicated credit was not significantly correlated with income in the case of Assela. The possible reasons for this result were: - a) Improper selection of borrowers; b) Misleading information during the initiation of the project; c) Low business activity as compared to Debre Birhan and d) Low level of credit provided to operators in Assela.

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1. INTRODUCTION

1.1. Background

The population of Ethiopia is estimated to be 58.6 million in 1998. The average annual percentage growth of total population is more than 3 percent. The Gross National Product (GNP) per capita in 1996 was US $ 110(World Bank, 1997, p.35). This is very small even when compared to low income countries which had GNP per capita of US $380 in 1993(World Bank, 1995, p.111).

Agriculture is the mainstay of the Ethiopian economy. It is the major source of employment, revenue and export earnings. In 1990, it was estimated that 86 percent of the labor force was engaged in agriculture (World Bank, 1997, p.290). On the other hand, the industrial and service sector accounted for 2 and 12 percent of the labor force in 1990, respectively (World Bank, 1997, p.290).

It is estimated that in Ethiopia 64 percent of the population is living in absolute poverty (see Hadgu Bariagaber, 1995, p. 219). This means that the large majority of the population is living in poverty. The life expectancy at birth for the country was 49 years in 1995 (World Bank, 1997, p.334).

Alcock (1993) noted that "poverty is not just a state of affairs, it is unacceptable state of affairs- it implicitly contains the question, what are we going to do about it?" So, poverty is not only a descriptive but also a prescriptive concept. Most of the time, the way we understand poverty determines the policy interventions.

Most of the poor people lack the financial capability to meet the minimum standard of living and suffer from different kinds of deprivation such as social inferiority,

powerlessness and isolation. They are also vulnerable to all kinds of economic shocks including hunger and illness. Most of the poor people are women, children, elders, disabled, small scale farmers, unskilled workers, etc. These people are engaged in distinct sources of livelihood. In most cases, they work as cultivators, hunters and gatherers, small artisans, petty traders and wage laborers at various times of the year (World Development Report, 1990, P.33).

As regards the local livelihood strategies of poor people, Chambers noted that:

> Contrary to normal professional prejudice, the livelihoods of most poor people are diverse and often complex. ... They have not one source of support but several. They maintain a portfolio of activities. Different members of the family seek and find different sources of food, fuel, animal fodder, cash and support in different places at different times of the year. Their living is improvised and sustained through their livelihood capabilities, through tangible assets in the form of stores and resources, and through intangible assets in the form of claims and access (Chambers, 1997, p.163).

In accordance with the idea of Chambers, poor people have diverse livelihood strategies. These strategies vary from place to place. It seems that those who are interested to design anti-poverty strategies should take into account the realities surrounding the poor and the strategies adopted by these poor people.

The informal sector is said to be one of the largest employers in both urban and rural areas of developing countries. The definition of the informal sector varies from place to place and from country to country. It is noted that in terms of employment, the informal sector consists of the following: -i) survivalists (very poor people who work part-time in various non-farm, income generating activities); ii) self-employed people who produce goods for sale, purchase goods for resale, or offer services; and iii) very small businesses (micro enterprises) that usually operate from a fixed

location with more or less regular hours and participants include very poor and marginal people (Fidler and Webster, 1996, p.6).

Thus, the informal sector is heterogeneous and diverse. Llosa (1995), on the other hand, defined the informal sector/economy as "the people's spontaneous and creative response to the state's incapacity to satisfy the basic needs of the impoverished masses" (p.289). This definition implies that the informal sector is the outcome of people's innovation to combat poverty. In other words, it is established to sustain life.

The International Labor office (ILO) Report on Kenya (1972) defined the informal sector as areas of economic activity characterized by ease of entry, unregulated and competitive markets, reliance on indigenous resources, family ownership of enterprises, small scale operation, labor intensive and adapted technology, skills acquired outside the formal school system' (see Charmes, 1990, p.13). This definition is very comprehensive and broad. It implies that small operators are present everywhere and rely on indigenous technology and innovation. On the other hand, Marxists perceived the informal sector as a product of the unequal development of capitalism in non-industrialized urban areas (See Abrar Suleiman, 1994,p.272). In other words, the uneven development of capitalism has created the informal sector in urban centers of developing countries.

For the purpose of this paper, microenterprises can be defined as "those business activities which are i) independently owned and operated, ii) have a small share of the market, iii) are managed by the owner and, 4) employing five or less employees"(Andualem Tegegne, 1996, p.5).

According to the Informal Sector Sample Survey conducted by Central Statistical Authority of Ethiopia (1997) in the urban centers of the nation, there were 730,969 people engaged in this sector of which 584,911 (80.02%) were informal sector operators and 146,058 (19.98%) were those persons who are employed in the sector

during the survey (Central Statistical Authority, 1997, p.22). This study has also indicated that of the total work force, 474,570(64.92%) were females while 256,399 (35.08%) were males (p.23). Hence, females mainly dominate the sector.

Regarding the composition of informal sector operators, 47.24 percent were in manufacturing, 41.86 percent were in trade, hotels and restaurants and 10.90 percent were distributed among other activities (CSA, 1997, p.24).

Operators of the informal sector activities do face various problems in Ethiopia. The above mentioned survey undertaken by CSA (1997) has also identified the major problems encountered by the informal sector operators. The major problems included shortage/lack of capital, lack of premises, limited market, family responsibility, high price of raw materials, inadequate access to raw materials, obstacles from government regulations and so on. Due to these and other factors, most of the owners of the informal sector activities seem to remain in subsistence.

The macro-economic policies developed by the market led strategy do not necessarily promote small-scale entrepreneurial activities (Olowu, 1995,P.114). In other words, this strategy does not give special emphasis to the mass of small-scale producers that require critical resources from the state.

Regarding the low performance of the informal sector, Olowu noted that "the reason the informal sector (either in the agricultural or non-agricultural sector) has a low productivity is that it has to operate in spite of, rather than with the support of the state" (1995, p.124).

Olowu concluded that appropriate micro-economic policies and institutions should be designed to bring small-operators into the economic development process. The policies include appropriate legislation (which allow small operators to secure property rights, to make contracts, to use legal process, to broader and improve their scale and quality of commercial operations); improved access to capital, credit,

educational and training facilities; and better access to municipal services like roads, water, electricity, schools, health clinics, etc. Moreover, all these actions require energetic action at the local level (Olowu, 1995, p.114). So, it seems that an integrated approach is needed to address the whole issues raised above than the minimalist credit model that focuses on credit provision only.

1.2. Micro Financing In Ethiopia

In Ethiopia, provision of credit to micro enterprises or income generating activities started in the late 1980s by Non-Governmental Organizations (NGOs)(see ActionAid Ethiopia, 1996, P.6). These organizations provide credit to promote income-generating activities of poor households.

The government started micro enterprise lending program after signing a Development Credit Agreement (i.e. Market Towns Development Project) with International Development Association (IDA) on March 30, 1990. According to the agreement, the major objectives of the microenterprise-lending program are: -

a) to finance very small, and household income generating activities and
b) to provide at least 50 percent of the loans to women entrepreneur.

The Development Bank of Ethiopia has been given the responsibility to provide credit to micro-scale enterprises in phase one and phase two towns. Phase one towns included Assela, Shashemene, Ziway, Goba-Robe, Arsi Neglle, Ambo, Mizan Teferi and Wolliso. And phase two towns included Bahir Dar, Debre Birhan, Woldia, Asebe Teferi, Debre Tabor, Arba Minch, Bedele and Awassa. Previously, Handicrafts and Small Scale Industries Development Agency (HASIDA) was given the responsibility to screen and assist the microenterprenuer who seek loan facilities from the Development Bank. But later, this responsibility has shifted to zonal trade and industry departments of the regional states.

The micro enterprise-lending program provides loan for income generating activities. It is hoped that providing access to formal credit sources to micro entrepreneurs would enable them to benefit in terms of employment, output and income.

The actual implementation of an urban micro enterprise financing started in 1994. However, the date of implementation of micro enterprise lending program varies from branch to branch of the DBE. Such kind of program was unique to the bank. This is because of the fact that the bank has never been involved in the provision of micro credit. At present, the number of market towns under the micro enterprise-lending program is 49 (DBE, 1997, P. 2).

The maximum amount of money that each member of the co-operative can borrow is 5000.00 Birr. There is a 10 percent compulsory saving to be deducted when the entrepreneur takes the credit. This saving serves as an insurance deposit for the bank if the borrowers fail to repay their debt. Those who complete their loans will withdraw it at the end of the installment period. Otherwise, if someone did not repay the whole amount, it will be diverted for the repayment of this debt. Loans are repaid on 15 days basis. The bank charges an interest rate that is fixed by the National Bank of Ethiopia. The current interest rate is 10.5 percent.

The zonal trade and industry departments are responsible to organize beneficiaries into co-operatives consisting of 25-30 members. The co-operatives are formed on voluntary basis and each member is required to pay a registration fee of 5 Birr. The regional trade and industry bureau issues a certificate that facilitates Bank loan. The co-operatives submit their business plans prepared for them by the promoters in order to get the credit. However, the Bank may accept or reject the proposal of the Bureau. If it accepts, a loan contract will be signed between the Bank and co-operatives executive committees. Disbursement of loans is made in the name of the co-operative. The executive committee in turn distributes the share of each member upon signing a sub-agreement with the co-operative. The program from its inception in1994 to June 30, 1996 disbursed Birr 24 million to 21,712 beneficiaries of which

14819 (68.25%) were females and 6893 (31.75%) were males, in 49 market towns (DBE, 1997, p.11b) (See Table1).

The number of market towns that provided credit to micro enterprise operators in Bahir Dar branch of the DBE was eight and the number of beneficiaries were 6501(29.94 percent) in 1996. The number of beneficiaries was the highest in Bahir Dar. Dessie and Debre Birhan branch of the DBE had three market towns each. The number of beneficiaries in Dessie and Debre Birhan were 1979(9.11percent) and 2422(11.16 percent), respectively. These branches stood second and third in terms of the number of beneficiaries. The least number of beneficiaries were registered in Asebe Teferi (i.e., 160 beneficiaries)(see Table1). It is said that the overall loan repayment rate is 85 percent (DBE, 1997, p. 3).

Recently, the government issued a proclamation for licensing and supervision of micro financing institutions (i.e. Proclamation No.40/1996). This proclamation was issued to provide legal regime to micro finance institutions to provide credit for peasant farmers and others engaged in small-scale production and service activities. This means that the main purpose of micro financing institutions is to provide credit in cash or in kind and to accept savings both in rural and urban areas focusing on small farm or non farm activities. As a result, some micro finance institutions have been emerging with the aim of serving poor people who are engaged in one way or another in income generating activities.

Table 1

DEVELOPMENT BANK OF ETHIOPIA
MICRO ENTERPRISE LENDING PROGRAM ACTIVITY
FROM DATE OF COMMENCEMENT TO JUNE 30, 1996

Branch/ Sub-Branch	Name of Market Towns	No. of Beneficiaries				Total loan Disbursed ('000 Birr)	Collection ('000 Birr)	Total outstanding	Arrears
		No of Cooperatives	Male	Female	Total				
Ambo	Ambo	38	153	325	478	1561.00	676.83	344,690	121.
Assela	Assela	21	120	342	462	365.20	205.17	128,493	71.8
Awassa	Awassa, Dilla, Welayta Sodo, Arbaminch	66	290	1259	1549	1891.91	1140.60	808,014	142.
Bahir Dar	Fenote Selam, Debre Tabor, Gondar, Dabat, Debark, Addis Zemen, Nefas Mawecha, Bahir Dar	238	2024	4477	6501	5967.69	3708.37	3,999,512	453.
Debre Berhan	Debre Brehan, Mehal Meda, Shoa Robit	91	476	1946	2422	2461.55	1545.00	903,300	35.0
Debre Markos	Debre Markos, Dejen, Bichena	46	626	674	1300	1310.98	545.59	840,996	77.2
Dessie	Dessie, Woldia, Kombolcha	119	935	1044	1979	2868.50	1725.33	1,436,139	302.3
Dire Dawa	Asebe Teferi	6	69	91	160	144.00	112.00	75,000	75.0
Fiche	Alem Ketema, Fiche	20	72	393	465	465.35	169.68	326,549	11.2
Goba	Goba, Sinana	44	366	682	1048	497.00	256.57	285,453	285.4
Hossana	Hossaena, Durame	12	104	251	355	436.80	224.93	239,213	40.9
Jimma	Mizan Teferi, Bonga	27	234	405	639	689.05	571.00	213,435	30.0
Mekele	Mekele, Endaselase, Axum, Adigrat, Maychew, Wukro, Adwa	35	343	502	845	1275.53	432.45	937,087	2.3
Metu	Bedele, Metu	45	385	795	1180	1356.70	753.13	721,565	101.7
Nekemte	Nekemete, Gimbi	23	138	517	655	926.00	425.40	480,900	256.4
Wolliso	Wolliso, Welkite	33	346	339	685	641.60	514.58	234,550	69.7
Zeway	Shashemene, Arsi-negele, Zway, Butajira	43	212	777	989	1115.65	702.78	544,823	12.7
Total	(49 market towns)	907	6893	14819	21712	23974.51	13709.46	12,524,719	2089.1

Source: DBE, Performance Report on Micro Enterprise Lending Programme, For the period covering July 1, 1995 - June 30, 1996,Report No.

1.3. Research Problem

In the 1980s many African countries started to adopt the structural adjustment program (SAP) which is said to affect the poor more than any other group. According to the World Bank Report 1990, many of the poor are at risk in the short run due to the implementation of SAP.

Consequently, the World Bank proposed safety net programs to reduce the effects of SAP on the poor. These programs include national insurance scheme, social or public assistance in kind or in cash, targeted programs like school feeding programs, social funds, public works programs, training programs and promotion of micro enterprise development (Baker, 1997, p.xvi).

Micro enterprise development can be considered as one of the social safety net programs. This program encourages the development of small businesses. It enables micro entrepreneurs to have access to credit and savings that could raise and stabilize their incomes.

Moreover, the World Bank and other donor institutions (1990s) have established the Consultative Group to Assist the poorest (CGAP) so as to support large scale development of credit and saving programs for the very poor (MKNelly, 1996, p.22).

Nowadays micro enterprise development is considered as one of the major tool to reduce poverty (Fidler and Webster, 1996, P. 8). However, it is noted that there are two counter arguments around the importance of the informal sector (Fidler and Webster, 1996, P.8). The first argument asserted that the informal sectors could create a large number of jobs. But the wage earned by informal operators is less than the wages earned by medium and large-scale workers. In other words, workers in medium and large scale firms are better than those engaged in the informal sector in terms of wages.

The second argument says that although micro enterprise support programs do raise the income of the poor, it does not benefit the poorest of the poor. According to one study made on six micro finance institutions, it is observed:

> ...Micro enterprise promotion programs are unlikely to benefit the very poor and that the poorest of the poor might actually be ill-served by credit programs that create debt among persons who can least afford it.... Services that aim to protect rather than to promote income are better suited for the poorest. Such services would avoid enterprise- related loans and include savings services and consumption and emergency loans (see Fidler and Webster, 1996, P. 8).

Hence, micro finance institutions do not serve the poorest of the poor. But it serves the middle and upper poor.

Moreover, commentators on self-employment program in USA emphasized:

> Small business development remains largely a high-risk, labor-intensive activity that often, at least initially, must be combined with a low- wage job in order for a family to make ends meet; it should therefore be viewed as an option suitable for some people, but not as a substitute for the development of wage employment for the majority of low-income people (See Bengtsson, 1997, p.1).

It seems that one should be careful in designing and implementing a self-employment program by taking into account the surrounding environment and the capability of the entrepreneur.

The micro enterprise lending program of the DBE has never been evaluated in terms of the economic impact by taking borrower and non-borrower groups. This research will throw some light on the contribution of this program to micro enterprise income.

In other words, attempt was made to compare the income of borrowers with non-borrowers.

1.4. Objectives and Significance of the Study

The objectives of the study are to assess the economic impact of micro enterprise lending program of the DBE on borrowers. The specific objectives of the study are: -

a) to observe micro enterprise income of borrowers before and after the loan,
b) to compare the income of the borrowers versus the non borrowers, and
c) to identify the contribution of credit to micro enterprise income.

The findings of the study are important for the following organizations and concerned bodies: -

1) The Government or policy makers can use the results in designing a more effective financial policy for the informal sector.

2) Information that is provided by assessing the economic impact of micro enterprise lending program is important for those organizations which are interested to provide micro credit.

3) Researchers and micro enterprise financiers can learn through this study whether micro enterprise lending program contributed to micro enterprise income.

1.5 Hypothesis

Micro finance institutions are institutions that provide small credits to poor households or micro enterprise operators. It is noted that concrete evidence of economic impact of micro finance institutions on borrowers is rare (MkNelly, 1996, P.22)

However, in accordance with one study made on borrowers and non borrowers interms of net business income and employment, both groups have showed an increment in business income (Berger, 1995, P. 212). Moreover, concerning business performance no significant change has been observed in both groups.

It is obvious that credit has a potential to increase productive assets, income and facilitates employment. In this research, it is hypothesized that micro enterprise lending would increase the micro enterprise income of the borrower as compared to the non-borrower group.

1.6. Scope and Limitation of the Study

This research has been done by selecting two market towns as a case study. These two towns were selected from among the 49 market towns where the micro enterprise-lending program of the DBE was implemented. The market towns under the study are Debre Birhan and Assela. It mainly focused on the program of the DBE. It does not include the micro credit program of the NGOs and other micro finance institutions established in the regional states of the nation.

The paper is divided into five Chapters. Chapter one deals with the introduction where the research problem, objective, significance, scope and limitation of the study are discussed. Some issues concerning micro financing in Ethiopia are also touched upon. A review of the related literature is presented in chapter two of the paper. Chapter three focuses on the methodology of the research. It tries to show the

reasons for the selection of the study area, the methods of data collection and analysis. The empirical findings of the study are presented in chapter four of the paper. In this part, attempt is made to describe the results of the study. Conclusion and policy implications are presented in the last chapter of the paper.

Some of the major limitations of the study were: -

1) Respondents tend to overestimate their expenses and underestimate their incomes.

2) The time allotted to undertake the research was short.

3) The financial constraints and the problems associated with the external environment forced the researcher to limit the sample size and the scope of the paper.

2. LITERATURE REVIEW

Capital investment is a key factor in determining economic growth. However, the capital markets in developing countries do not work well (Hulme et. al, 1996, p.1). It is observed that a gap exists in the availability of capital for small business development, long term debt for small and moderately sized businesses and equity financing (Parzen et. al, 1992, P.38). Moreover, the capital market does not serve the low income households (Hulme et. al, 1996. P.1). So, moneylenders started to provide small loans in the absence of formal financial institutions. The interest rate charged by these money lenders is high and may exceed 75 percent per year and sometimes credit may not be available at any interest rate (Hoff and Stiglitz, 1990, P.235).

Governments have intervened in the financial markets through the creation of Development Finance Institutions (DFIs) since the 1930s (Hulme, 1996, P.2). In other words, government started to provide less expensive credit as an alternative to the moneylenders. These institutions were diverse in their orientation. Some of them operated on a sectoral basis, others aimed at specific regions and others concentrated on the rural poor. They do not have saving facilities for their borrowers (Hulme, 1996, P.8).

Starting from the mid-1970s, the subsidized credit market of the government was subjected to steady criticism. Mckinnon (1973) questioned the policies that promote low interest rate on the fact that low interest rates would reduce savings and hence investment (Sarris, 1996, P.14). He favored liberalization of interest rates on loans.

Another group of economists based at Ohio State University (USA), notably Dale Adams and J.D.Von Pischke also criticized state intervention in credit markets and argued that the provision of credit should be left to the private sector (Hulme et. al, 1996, PP 2-3; Johnson and Rogaly, 1997, p.6; Besley, 1994, P.28). Their main ideas

include: - i) debt is not an effective tool for helping most poor people; ii) informal financial institutions are efficient, iii) saving mobilization is important for Development Finance Institutions; iv) opposition to the idea of "targeting" loans on specific sectors, types of economic activity or socio-economic groups, v) scepticism about political influence to direct cheap credit to particular clients and to protect defaulters; and vi) hostility to the idea of subsidy (Hulme et. al, 1996, P.3). However, as regards to the informal financial institutions, these economists ignored the social ties, power relations, coercion, and interlocked contracts associated with the activities of moneylenders (Johnson and Rogaly, 1997, P.6).

It is noted that interventions in rural credit markets should focus on those cases where market failure has been identified (Besley, 1994, P.27). According to Besely (1994), some of the problems which led to market failures in developing countries are enforcement difficulties, imperfect information, especially screening and incentive problems; the risk of bank runs and the need for safeguards against the monopoly power of some lenders. State intervention is favored to adjust these market failures.

Organizations that seek to provide financial services to significant numbers of poor people need to overcome three particular problems (Hulme et. al, 1996, p.8). These are: - i) how to ensure that large number of poor borrowers can access loans; ii) how to provide a mechanism for screening out bad borrowers in the absence of written records and business plans; iii) how to give borrowers who can not offer collateral an incentive to repay or, failing this, compel them to repay on time. It is noted that it is possible to tackle these problems by using different mechanisms (Hulme et. al, 1996, P.8). And the mechanisms, which should be adopted by the financial institutions, may vary from one country to another.

2.1 Financial Institutions

The first innovative financial institution that tackled the above three problems is the Grameen Bank of Bangladesh. It was established in 1976 as a small action-research project by Muhammad Yunus, a professor of Economics, who believed that the poor could be reliable borrowers and could make wise investment choices (Hulme, 1991, P.249). The Grameen Bank provides credit to poor households (i.e. landless and assetless) on the basis of peer group monitoring so as to reduce lending risks (Johnson and Rogaly, 1997, P.7). In other words, the loans are provided on group collateral basis. If someone defaults from the group, the group will repay the loan.

The action research program became an independent bank (i.e. Grameen Bank) in 1983 (Yaron, 1994, P.49). It is said that members own 75 percent of the issued shares and the rest is owned by the Government of Bangladesh (Hulme, 1991, P.249).

The credit delivery model of the Grameen Bank that focuses on group liability can be described as follows:

> ...A borrower is asked to form a group of five people who would like to borrow from the bank. Then loans are made to the two neediest and the bank directs the other group members to keep watch. If the first two fail to start repaying their loans, the bank will do no more business with any member of the group. If after six weeks all repayments are in order, two more of the group of five may borrow. Finally, if all is in order, in six more weeks the leader of the group may borrow. All five must keep up their repayments if they are to continue taking advantage of the credit scheme...(Ribe et.al, 1990, p.27).

It seems that the credit delivery system has built-in mechanism to screen borrowers. But this system serves only those borrowers who take credit in-group. It does not allow borrowers to take credit individually. Besides, those who took the credit at the end would have a loan whose real value was less than the loan that was taken earlier. This is because of the fact that today's money is better than tomorrow's money.

In 1994, the Grameen Bank covered 35,000 villages (half of all villages in Bangladesh) and had more than 2 million members of which women constitute 94 percent (Khandker et. al, 1995, P.81). The cumulative repayment rate of the bank has been more than 95 percent (Gibbons, 1992, P.11). In addition to the small loans provided to poor households, the bank provides housing loans to its members (Gibbons, 1992, P.20).

After the success story of the Grameen Bank of Bangladesh, a number of microfinance institutions have been established with the aim of providing microcredit to poor households for income-generating activities in almost all parts of the world.

The other financial institution/scheme that should be mentioned here is the Malawi Mudzi Fund (MMF). The MMF (experimental in nature) was established in 1989 with the fund from the International Fund for Agricultural Development (IFAD). It was the result of an attempt to transfer experience of Grameen Bank of Bangladesh to another country (Hulme, 1991, P. 260; Buckley, 1996, P.372). In other words, the donors of the scheme were very much interested to transfer the Grameen Bank model to Malawi.

In particular the scheme/project was created to provide micro credit to the poorest and most vulnerable groups of the society for off-farm income-generating activities (Buckley, 1996, P.371). Consequently, membership was limited to those with less than 1 hectare of land or equivalent asset.

The MMF started its operation in April 1990. The interest rate charged by the project was 18.5 percent in 1992. There was compulsory 5 percent deposit deducted from disbursed funds. Besides, there is a compulsory saving of certain amount money per week. Loans are repaid on weekly basis at group meeting over one year.

According to Buckley's study (1996), the operational performance of the MMF has not been impressive. After three years of full operation, the active members of the project reached 337 of which 206 (61.13%) members repaid the loans fully. And the cumulative repayment rate was only 64 percent.

Buckley (1996) argues that the record of the project become unattractive mainly because of the misguided attempt to copy rigidly the Grameen Bank of Bangladesh without creating a capacity for adaptation to local conditions. However, the project is undertaking a learning experience and doing its best to adapt its operation to the particular circumstances it operate. Although the project is trying to improve its operation, Buckley noted that the financial sustainability of the project would not be attained even in the medium term. As a result, the project will be highly dependent on donors. This implies that any attempt to replicate the experience of the Grameen Bank requires to understand the local condition and the needs and interest of those poor people who are engaged in income generating activities.

2.2 The Performance of the Credit Schemes

Before any attempt is made to evaluate the performance of the financial scheme, it would be logical to observe the goals of the financial scheme (Berger, 1995, p. 191). If the program has a goal to provide access to financial services, the evaluation should focus on financial sustainability. On the other hand, if the goal is to promote employment opportunities and incomes, evaluation should be made to distinguish the impact of the program both on the beneficiary and its business. The issues that could be raised in this connection include the extent to which borrowers have been able to

expand their operations, hire more labor, improve productivity, and increase their profitability and their own incomes(Berger, 1995, P.191).

Yaron (1994) used financial self-sustainability and outreach as indicators to assess the performance of four rural financial institutions in Asia. He devised a Subsidy Dependence Index (SDI) which measures the percentage increase in the average on-lending interest rate required to compensate for eliminating subsidies (P.57) to know the extent of dependency on subsidies. Besides, he assessed lending interest rate, rates of loan collection, deposit interest rates and the extent of administrative costs to observe the financial self-sustainability of the institutions.

As regards to measures of outreach, Yaron used the type of clientele served and the variety of financial services offered. This includes the value and number of loans extended; the value and the number of savings accounts; the type of financial services offered; the number of branches and village sub-branches; the percentage of the total rural population served; the real annual growth of the rural financial institution's assets over recent years; and the participation of women as clients.

It is emphasized that it is difficult to assess the impact of savings and credit programs but possible to assess their financial performance (Havers, 1996, p.144). Havers indicated that a credit program is financially sustainable if it covers its cost of funds, operating costs, loan write-offs and inflation. Consequently, he came up with the Sustainability Index that is the percentage of total costs covered by income, i.e.

$$\text{Sustainability Index} = \frac{\text{Total Income earned from Credit program during the period}}{\text{Total Credit Program costs During the period}} \times 100$$

Some people argued that in addition to financial sustainability, aspects of management and organizational structure (i.e. organizational sustainability) should

be given weight to ensure that schemes are able to provide services in the long-term (Johnson and Rogaly, 1997, P.2).

Other scholars argued that performance evaluation of Development Finance Institutions (DFIs) should address issues such as appropriateness of goals, effectiveness in attaining them (outputs and impacts) and efficiency in using resources (Parzen et. al, 1992, P.73). According to Parzan et. al, output is the quantity of services provided and the measures of output include dollars loaned, number of loans, number and dollar amount of loans leveraged from other sources, number of business assisted in other ways and types of assistance. In order to answer whether the outputs are produced efficiently or not, attempt should be made to measure it in terms of cost per loan, loans as a share of assets, loan turnover, rate of loan repayment, income from loans as a share of total costs and profitability.

Furthermore, Parzen and Kieschnick noted that when Development Banks have a goal of job creation, it is possible to evaluate such goals in terms of the number of businesses started or expanded, number of jobs created, viability of the businesses, type and quality of jobs, race, gender and income level of employees, job training offered, multiplier effects (i.e. jobs indirectly created at other businesses) and the wage level of jobs created. Besides, to measure the efficiency of producing these impacts, we need to assess the total cost per job created (including all transaction costs, loan losses, and interest subsidies) and the jobs created per loan. Those financial institutions with qualified employees and sufficient resources could evaluate their progress on the basis of the above information provided that their objectives are in line with the above points.

When it came to the actual evaluation of the credit scheme, Yaron (1994) concluded that the following four rural financial institutions were successful on the basis of measures of financial self-sustainability and measures of outreach. These were the Bank for Agriculture and Agricultural cooperatives (BAAC) in Thailand, the Badan Kredit Kecamatan (BKK) and the Bank Rakyat Indonesia Unit Desa (BUD) in

Indonesia and the Grameen Bank (GB) in Bangladesh. He observed that a success that is exhibited in one socio-economic condition might not work in another socio-economic condition. According to him, one key to such success was the introduction of social mechanism (i.e. peer group pressure) that minimized transaction costs. However, one study (1996) asserted that no one administrative model dominated the other and both success and failure was observed in "solidarity group", "cooperative group" and individual lending models (Hulme et. al, 1996, P.200). Hence, it seems that the basic reason for success might not be the mechanism of group liability (i.e., peer pressure). Yaron emphasized that state or donor support that focused on institution building is critical for success (Yaron, 1994, P.69).

Rural financial institutions in Brazil, Mexico and India have failed because of their inability to reach the appropriate target population, poor loan collection, negative lending interest rates, inadequate planning and inefficient operation, and inadequate credit evaluation, management, and monitoring (Yaron, 1994, PP 51-52). It seems that there are both successful and unsuccessful rural financial institutions spread all over the world.

Although financial self-sustainability and outreach are important indicators of performance, Yaron's assessment of performance did not show the impact of credit in varying the income of the operators. In other words, it did not show whether the income of the borrowers increased as compared to the non-borrowers group or pre loan situation. Moreover, high loan repayment does not necessarily mean that the borrower benefits from the credit. This is because of the fact that due to peer group pressure and the like the poor may repay the loan by taking another loan from friends or relatives or by selling the available household assets.

A performance study of the Grameen Bank by Hossain (1988) asserted that the incomes of a sample of Grameen Bank members were 43 percent higher than that of comparable groups in non- Grameen Bank villages and 28 percent higher than non-Grameen Bank members in the same village (see Hulme, 1991, P.250). It was noted

that this happened because of the accumulation of capital and additional employment in productive work financed by the Bank (MKNelly et. al, 1996, P.23). In addition to the positive impact of credit on the income of the borrowers, the bank has started to make profit since 1984 (see Hulme, 1991, P.250).

Another study conducted in Bangladesh on household and intrahousehold impacts of the Grameen Bank and similar credit programs in the country asserted that micro credit has a positive impact on the well being of the poor households (see MKNelly et. al, 1996, P.23). This study was conducted by taking target and non-target households (i.e. a quasi-experimental survey). The findings implied that program participation had a positive impact on household expenditures, asset accumulation, self-employment, children's schooling, food consumption and contraceptive use (see MKNelly et. al, 1996, P. 24).

Although the Grameen Bank has played its role in reducing poverty, a senior accountant (1990) from the Sri Lanka government asserted that the Bank was fortunate to attract foreign funds at negligible costs. Besides, his critical review of the financial structure of the bank had made him to observe the following: "...About 30 percent of Grameen Bank's funds have gone to capitalists and entrepreneur classes through the commercial banks. These are funds that could and should have been utilized for the socio-political and economic upliftment of its target group" (see Albee, 1996, P.51).

An assessment of credit scheme in Peru revealed that incomes of the male were found to increase much more than the incomes of the females (See MkNelly et. al, 1996, P.24). This happened because of two possible factors: - 1) Women do give less importance to income generating activities with low returns and 2) Women's do have dual roles (i.e. economic provider and caretaker) which undermine their activity.

By undertaking an impact study on two lending programs in Kenya on the basis of borrowers and non-borrowers group, Buckley (1996) noted that both programs have

had a positive impact on the business to which they lend. But the degree of impact varies and depends probably more on the abilities, aptitudes and attitudes of individual borrowers than on any particular feature of the respective lending program. In addition to this, he observed that almost half of the Juhudi households had more than one income source. And this makes it extremely difficult to trace the impact of the loans to a specific enterprise. In other words, in a situation where there is more than one enterprise, the loan taken for one enterprise may be utilized among the enterprises. This makes it difficult to single out the contribution of credit to micro enterprise income promotion.

Moreover, assessing the impact of financial service schemes on the basis of income promotion has a number of methodological problems. These problems include: - i) respondents may give false information if the loans are utilized for other purposes (i.e. fungibility); ii) establishing a causal relationship to actual loan in question involves knowledge of all the beneficiaries' sources and use of funds and iii) it is difficult to know what would have happened if the loan had not been made (Johanson and Rogaly, 1997, P.73). Due to these and other factors, Johanson and Rogaly do not support assessment of impact on the basis of income promotion.

Consequently, they proposed an approach to assess the impact of financial service schemes on the basis of the usefulness and relevance of their services. The questions that could be raised in this connection include: -i) how users see them in the context of other locally available services; ii) how the amounts, timing of loans and ease of withdrawals from savings relate to their priorities; iii) how repayment schedules and any compulsory saving deposits relate to flows of income available to individuals and the household as a whole. However, this approach does not show whether those who are assisted improved their lives or not. It is more of evaluating managerial and service delivery aspects of the program.

Similarly, it is said that since the quantitative approach of evaluating impact has some methodological problems, those who are engaged in the evaluation of impact

should give the necessary attention to the qualitative approach (Copestake, 1995,P.430). This means that evaluation of financial service programs should strike a right balance between quantitative and qualitative methods since both of them are complementary. It appears that it would be fair to evaluate the performance of the financial scheme by using qualitative and quantitative methods.

It is observed that well designed financial schemes have reached the upper and middle income poor households and they have been relatively ineffective in reaching the poorest (Hulme et. al, 1966, P.130). The reasons for such results are: - i) The emphasis on credit delivery by many institutions limit the opportunities of poor households for credit financed self employment and involvement in such activities is considered as a risky activity. ii) In-group formation, the poor differentiate amongst themselves. Exclusion is exercised based on the intensity of poverty. In other words, nobody dares to select those who are very poor. iii) It is observed that when credit programs are expanded and management is professionalized, the incentive structure of the staff favors a concentration on groups other than the poorest (Hulme et.al. 1996, P.130).

It seems that problems in credit programs are the direct result of the design and/or management of the program itself (Havers, 1996, p.147). Accordingly, any micro credit scheme should give attention to savings, gender, appropriateness of the loan size, realistic interest rates, payment periods and installment, security and collateral, measurement of the program, incentives, scale and related issues.

It is often stated that success at the financial level of the scheme is positively associated with market-determined interest rates, the availability of savings and insurance facilities, intensive loan collection and incentives for borrowers and agency staff (Hulme et. al, 1996, P.200). It is also argued that the type of credit mechanisms is one of the determining factors in attaining the required level of borrower participation or involvement and sustainability (Albee, 1996, P.52). Albee advised that before selecting a particular type of credit mechanisms, development

practitioners should clarify the level of commitment to empower borrowers. They should first decide whether to have "credit for the poor" where loans are delivered and the financial management is out of the borrowers or to have "credit by the poor" in which women have the decision making power over the mechanism itself. She further noted that since provision of credit has a potential to increase poor people's debts those people who design credit mechanisms should not adopt long repayment interval. It appears that attention should be given to the design features of the financial scheme and the purpose and goal behind the scheme.

Rogaly (1996) reacted to the hope of the Micro credit summit to reach 100 million of the world's poorest families by 2005 on the basis of three facts. These are: - i) the promotion of microenterprise credit may lead to a single-track allocation of resources at the cost of other potential interventions, in for example, health and education, ii) it overemphasizes the extent to which very poor people benefit from microenterprise credit. In practice, various findings asserted that the impact of microenterprise credit is not necessarily beneficial to very poor people. iii) the scale increases the risk of the re-emergence of a "blue-print" approach to anti-poverty action and diminishes the chances of introducing flexible financial services. Finally he recommended that if we advocate expanded uses of financial services as a strategy for poverty reduction, the specific needs of different groups of poor people, the structures of existing financial intermediation and the ways in which these needs and structures are changing should be taken into account.

2.3. Studies on Ethiopia

The available literature on micro financing in Ethiopia is limited. However, some experts have contributed their share in certain specific areas of the subject. Since the focus of attention is on the lending program of the Development Bank of Ethiopia, we shall focus on papers written on this area. This doesn't mean that there are no written materials concerning microcredit provided by the Non Governmental Organizations (NGOs).

Bekele Tilahun (1996) wrote about micro enterprise lending program of DBE. The study showed the amount of money disbursed to microenterprenuers, the repayment rate and saving activities. Besides, the design features, the strength and weakness of the programs were discussed. But the author did not assess the impact of the program on borrowers.

Solomon Damte (1996) has also studied about the microenterprise-lending program of the DBE. He randomly selected 65 borrowers and tried to show the responses of these people to the terms and conditions of the loan (i.e. the amount of loan, repayment schedule and interest rate). In addition to this, he showed the impact of the programs on the income of the beneficiaries. The findings of the survey revealed that during the 12 months' of operation, 49 percent of the sample households experienced an increase in income levels due to the loan. About 32 percent of the sample cases did not show any change in income levels. And 19 percent experienced a decline in income mainly due to a rise in the cost of production. However, he did not use non-borrower group which represent those people who did not take credit from the program to show the difference between the income of those who took credit and those who did not. Besides, he did not show whether the variation in income was due to credit or other related factors.

Mengistu Bediye (1997) wrote on micro enterprise lending program of DBE with the aim of identifying the determinants of microenterprise loan repayment and the efficiency of screening mechanisms in two market towns (i.e., Bahir Dar and Awassa) in Ethiopia. According to the findings, the number of workers in the credit-assisted enterprise (including borrower, family members and hired labor) employed, age and weekly repayment period were positively related to repaying loan in Awassa. On the other hand, loan diversion was negatively correlated to loan repayment.

In the case of Bahir Dar, the determinants of loan repayment were expectation of getting another loan and the number of workers employed. Loan repayment was negatively related to loan diversion and availability of other sources of credit. With regard to efficiency of screening mechanisms, there is the problem of separating creditworthy borrowers from non-credit worthy borrowers in both towns. It seems that in this study micro enterprise income was not considered as a factor that could affect loan repayment. The result would have been the reverse if it was included in the model.

According to ActionAid-Ethiopia (1996), the Rural Credit Society of Tigray was established in 1994.* It provides credit for both men and women but with especial emphasis to women. The value of loan ranged from Birr 50 to Birr 2500. In order to borrow, every beneficiary has to save for 3 to 4 months consecutively. The enforcement mechanism was peer pressure. Since the beneficiaries took the loan in-group, the group members influenced each other to repay the loan.

Propride, another NGO in Ethiopia, started the provision of micro credit to resourceless, able, female-headed households in May 1995. The amount of loan ranged from Birr 110 to Birr 1750. The repayment rate was 97 percent. The enforcement mechanism was peer pressure. At the end of September 1996, the number of beneficiaries was 1197. Besides credit, it provided services like HIV/AIDS and STD (Sexually Transmitted Diseases) control program and non-formal education to these beneficiaries.

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* The following discussion is mainly based on Workshop Report that was organized by ActionAid-Ethiopia (i.e., Workshop Report on Financing the Poor: Experience of NGOs in Ethiopia (1996)). The NGOs stated in this report are partners to ActionAid-Ethiopia. The activities of some of the NGOs working on saving and credit programs are raised. However, the discussion is not a full description of NGOs working in saving and credit programs. It only tries to highlight some of the main activities of few NGOs (i.e., REST, Propride, Goodshepred and Ethiopian Aid).

Goodshephered was one of the NGOs that had a saving and credit program. The credit and saving program was started in September 1995 in woreda 13 (i.e., in selected 4 kebeles) in Addis Ababa. Credit was provided to "gulete" petty traders, "injera" and bread baking. It is stated that at the time of the Workshop, the number of beneficiaries was 1410 women. Loan was repaid on a weekly basis and provided on group basis. The program had a saving component and group members were obliged to save starting from 0.25 cents to one Birr.

Ethiopian Aid is also one of the indigenous NGOs working in the country. It works in woreda13 (i.e., in selected 6 kebeles) in Addis Ababa. Previously, they focused on childcare. But later on they started to help the families of these children by providing credit. The saving and credit program started in July 1991. The amount of loan ranged from Birr 150 to Birr1000. The loan was provided on group basis. Each member in the group serves as a guarantor for the other.

Although the above description does not fully cover the activities of NGOs in saving and credit program, it is possible to say that most NGOs operating in the country has some sort of saving and credit program. Hence, there is a need to assess the impact of these programs in terms of the assisted business activity and the household condition of the beneficiaries.

3. METHODOLOGY

3.1 Study Area

The main goal of this research is to investigate the economic impact of microenterprise lending program of the DBE. To do such kind of research, one will obviously need to collect primary data from each and every microenterprises. However, due to lack of financial resources and time constraints, the research focused on two selected market towns as a case study. As a result, a representative sample was taken from these two market towns to observe the contribution of micro credit to income.

The market towns that were under this case study were Debre Birhan and Assela. Debre Birhan is found in North Shoa zone of the Amhara regional state. It is situated on the main road from Addis Ababa to Dessie, 130 km north of Addis Ababa. It has 9 kebeles. According to the 1994 population and housing census, the town had 38,717 people of which 20,799 (53.72%) were females and 17,918 (46.28%) were males.

Under the Debre Birhan Branch of DBE, the number of cooperatives organized till June 30, 1996 was 91. The total beneficiaries were 2422 of which 476 (19.65%) were males and 1946 (80.35%) were females. This figure included beneficiaries present in Mehal Meda and Shoa Robit towns (See Table1). But the research was conducted on members living in Debre Birhan town only.

The second market town was Assela. It is found in Tiyo Woreda (or the city of the Arsi Zone) of the Oromia regional state. It is situated on the main road from Addis Ababa to Bale, located 175 Km south of Addis Ababa. It has 14 Kebeles and has a

population of 47391out of which female and male constituted 25398(53.59 percent) and 21993(46.41 percent) respectively (CSA, 1995, P.29).

Up to June 30,1996, the number of cooperatives which were organized in Assela by the regional trade, industry and tourism department was 21. The total number of beneficiaries was 462 of which 120 (25.97%) were males and 342 (74.03%) were females (See Table1).

The basic reasons to select these two market towns are the following: -

1) Both towns were towns that started provision of microcredit in March 1994. They were among the earlier towns that started the program. Since the program has been in operation for more than three years in these towns, it would not be too early to assess the economic impact of the program on borrowers.

2. Both towns are located in two different socio-economic settings. Assela is found in the Arsi Zone of the Oromia regional state. Debre Birhan is located in North Shoa Zone of the Amhara regional state. So, both towns are somewhat different in ethnic composition and cultural settings. This would enable to observe the impact of microcredit on income under these two different socioeconomic conditions.

3. Both towns are easily accessible from Addis Ababa. Due to time shortage, the study has to focus on areas that were not far from Addis Ababa.

4. Both towns are found under the same agro-climatic condition. The types of economic activities undertaken in the towns are more or less similar. But the socio-cultural situations are not similar. This enables

the research to observe whether the impact of micro credit on enterprise income in one site could be repeated on similar agro-climatic conditions but different economic and cultural settings.

3.2 Methodology of Data Collection

The research has been done by taking two groups of microenterprenuers, i.e. those microenterprenuer who took credit on the one hand, and those micro entrepreneurs who did not but registered to take credit or those who showed their interest to take the credit through informal discussion on the other hand. In other words, the survey covered people who took credit as borrower group and those who did not take the credit as non-borrower group. Those people who were registered or indicated their interest to take the micro credit was considered as a non-borrower group. This methodology would help to compare the results of the two groups so as to throw some light on the impact of microcredit in promoting micro enterprise income.

To assess the contribution of microcredit to income promotion, the research has utilized both primary and secondary sources of data.

3.2.1 Primary sources of Data

The data has been gathered using structured questionnaire and general observation. Attempt has been made to observe issues pertaining to micro enterprise lending. Interviews have been undertaken with members of the cooperative and the employees of the Bank and the trade and industry departments.

A structured questionnaire was prepared to be filled by borrowers and non-borrowers. This questionnaire is attached at the end of the paper. Before this questionnaire was finalized, it was pre-tested on 8 selected borrowers in Debre Birhan.

The structured questionnaire consisted of issues concerning the entrepreneur, the enterprise, saving and credit conditions, micro enterprise cooperatives and the impact of the credit on the business activity and enterprise income. The questionnaire required borrowers to answer questions pertaining to the present condition and the situation before they took the loan. It is based mainly on recall method.

Enumerators were trained to collect relevant data from each household. The data collection was undertaken within two months (i.e. March and April 1998).

The total sample size of microenterprises in both towns was 231. In Debre Birhan, the total number of respondents were 160 (i.e. the borrower and non-borrowers groups had 130 and 30 respondents respectively). On the other hand, in Assela, the total number of respondents was 71 (i.e. 37 and 34 borrower and non-borrowers respectively). The sampling technique utilized in this research was stratified sampling method. In this case, all borrowers were stratified according to the frequency of the loan. Hence, each member in the group has equal chance of being selected in the sample.

All the list of the borrowers was collected from the trade and industry department of the respective zones. Since the research focused on economic impact assessment, those who took credit for the first time were excluded from the sample. The sample included in this research was those active members of the cooperative who were servicing their 2nd, 3rd or 4th loan at the time of the survey.

In Debre Birhan, there were borrowers who took credit for the fourth time. In each group, an attempt has been made not to have a sample size of less than 30. In the case of the fourth time borrowers, 30 respondents were randomly selected from the available 43 borrowers. As can be observed from Table2, 37 respondents were randomly selected from the total 86 third time borrowers. Finally, from the total 293-second time borrowers, the study has selected randomly 63 respondents. The size of the respondents selected from each stratum was determined on the basis of

convenience. Hence, in this town it was possible to select randomly 63, 37 and 30 respondents from 2nd, 3rd, and 4th time borrowers, respectively (see Table 2). The borrower group, therefore, has 130 respondents of which females were 97 (74.62 %) and males were 33 (25.38 %).

Once the borrower group has been chosen, the next task was the selection of the non-borrower group. In Debre Birhan, it was possible to get 10 respondents who were registered to take loan and did not take any credit during the time of the survey. The other 20 respondents were randomly selected from informal sector operators. These operators were primarily asked whether they have the interest to take microcredit or not. Those who were willing to take the credit at one point in time in the future were selected randomly and considered as a non-borrower group. The total number of the respondents in the non-borrower group were 30 of which 11(36.67%) were male and 19(63.33%) were females.

In Assela, the number of borrowers who took credit more than once was not that much high. As a result, attempt was made to use the available borrowers. Since the 3rd time borrowers were less than 30, no sample was taken from this group. Out of the borrowers who were servicing their second loan at the time of the survey, the research selected randomly 37 respondents of which 10 (27percent) were males and 27(73percent) were females.

The non-borrower group in Assela was obtained from the waiting list of prospective borrowers. This list was obtained because of the registration of all microenterprise operators that were willing to take the credit. Accordingly, those who fulfilled the department's criteria were allowed to take the credit. But those who fulfilled the criteria but not accepted by the department due to the capacity problem of the office appeared in the waiting list. This people who fulfilled the criteria but did not take the credit were considered in this research as a non-borrower group (see Table 2). The non-borrower group has 34 respondents out of which males were 9 (26.47%) and females were 25(73.53%).

Table 2 - Sample size in Debre Birhan and Assela Towns

Type of Respondents	Debre Birhan			Assela		
	Total Population	Sample size	Percentage of the sample taken	Total Population	Sample Size	Percentage of the sample taken
Fourth time borrowers	43	30	69.77	-	-	-
Third time borrowers	86	37	43.02	26	-	-
Second time borrowers	293	63	21.50	65	37	56.92
Non-borrower group	-	30	-	-	34	-
Total	-	160	-	-	71	-

Source: - Survey Data

Moreover, unstructured interviews, group discussion and personal observations were also included as part of the primary data collection.

3.2.2 Secondary sources of Data

Secondary sources of data were also relevant to the research. This included project document, annual reports, documents related to the program, various books, journals and periodicals. The secondary sources of data enabled to understand the design features of microfinance and the involvement of women in the program.

3.3 Methods of Analysis

Relevant statistical methods of analysis have been utilized in order to determine the contribution of the microfinancing program to micro enterprise income. Specifically the statistical methods utilized were percentage, ratios and average. These methods enabled to compare the results obtained in the borrower and non-borrower groups. Apart from the statistical methods, qualitative analysis has been employed in the impact analysis of the scheme.

Regression analysis and statistical tests such as T-test, and F-test were applied to determine significance levels

It is noted that 'the principal aim in regression analysis is to explain changes or variation in the sample values of the dependent variable Y in terms of changes or variation in the sample values of the explanatory variable X (and by implication to explain variation in the population values of Y)'(Bowers, 1991,p.207).

Regression model has been constructed/developed so as to identify the contribution or relationship of credit to micro enterprise income. The model is developed in such a manner that all the contributing factors have been included in the analysis. The inclusion of the major contributing factors in the analysis would enable the research to identify the impact of individual variables on micro enterprise income.

To determine the impact of credit on micro enterprise income, the research has used the following regression model.

The model that was used in the case of Debre Birhan and Assela to observe the impact of credit on micro enterprise income has the following functional form: -

$$\text{Nowenter} = \mathbf{B}_1 + \mathbf{B}_2\,\text{Startup} + \mathbf{B}_3\text{Years} + \mathbf{B}_4\,\text{Nonpaid1} + \mathbf{B}_5\,\text{Educa} + \mathbf{B}_6\,\text{Econcate} + \mathbf{B}_7\,\text{Dummycre} + \mathbf{B}_8\,\text{paid1} + \mathbf{B}_9\,\text{prodass1} + \mathbf{B}_{10}\text{Dummyequ} + \mathbf{B}_{11}\text{Dumkebele} + \mathbf{B}_{12}\,\text{Dummysex} + \mathbf{B}_{13}\,\text{Dumown} + \text{Ui}$$

Where,

Nowenter – The average monthly income of the microenterpirse at present

Startup =The amount of start-up capital. It has been categorized into 6 variable codes: 1)< Birr 250, 2) 251-750 Birr, 3) 751-1000 Birr, 4) 1001-2000 Birr, 5) 2001-5000 Birr, 6) More than 5000 Birr.

Nonpaid1– Number of non-paid family employees working in the enterprise

Paid1- Number of paid employees working in the enterprise

Educa- Level of education. The Education level has been grouped in 6 Variable codes 1)-Illiterate, 2)- Literate (read and write) 3)- Grade 1-6, 4)- Grade 7-8, 5) Grade 9-12, 6)- above grade 12

Econcate – Economic activity classification. A dummy variable where 0 is service, 1 otherwise

Years – Number of years the business has been operating

Prodassl – Productive assets of the firm, both fixed and current in Birr

Dummycre – A dummy variable for credit, where borrowers = 1 and non-borrowers = 0

Dummyequ – A dummy variable for 'equb', where 1 is member, 0 otherwise,

Dumkebele- A dummy variable for kebele house, 1 for kebele house and 0 otherwise

Dumown – A dummy variable, own house,1 and 0 otherwise. The reference for Dumkebele and Dumown is house rented from private owners.

Dummysex – A dummy variable for sex where 0 female and 1=male

B1 – a constant

B2 – B13 - regression coefficients

Ui – error term

4. EMPIRICAL RESULTS

4.1. Descriptive Statistics

4.1.1 Some General Characteristics- Comparing Borrowers And Non-Borrowers

The borrowers in Debre Birhan consisted of 25.38 and 74.62 percent of male and female respondents respectively while the non-borrowers comprised 11 males' (36.67 percent) and 19 females (63.33 percent). In the case of Assela, the percentage of male and females in the borrower group was 27.03 and 72.97 percent respectively while the non-borrower group consisted of 9 males (i.e. 26.47 percent) and 25 females (i.e.73.53 percent). In both towns, more than 60 percent of the respondents were females (see Table 3).

Table 3 - Respondents by Sex

Sex	Debre Birhan		Assela	
	Borrowers	Non-borrowers	Borrowers	Non-borrowers
Male	33 (25.38)	11 (36.67)	10(27.03)	9(26.47)
Female	97 (74 .62)	19 (63.33)	27(72.97)	25(73.53)
TOTAL	130 (100)	30 (100)	37(100)	34(100)

Source: Survey Data

- Figures in parenthesis show percentages

Concerning the relationship of the respondents to the head of the household, in Debre Birhan 61.54 and 60.0 percent of the respondents in the borrower and non-borrower group was head of the household respectively. In the case of Assela, about 62 and 65percent of the borrower and the non-borrower respondents were heads of

the household respectively. Thus, the majority of the respondents (i.e., more than 60 percent) were head of the household in both towns (see Table 4).

Table 4- Relationship of the Respondents to the head of the household

Type of relationship	Debre Birhan		Assela	
	Borrowers	non-borrowers	Borrowers	Non-borrowers
Head of the household	80 (61.54)	18(60.0)	23(62.16)	22(64.71)
Spouse	44 (33.85)	7 (23.33)	10(27.03)	10(29.41)
Son/ Daughter	5 (3.85)	3 (10.0)	2(5.41)	1(2.94)
Mother/Father	1(0.77)	-	-	-
Brother/sister	-	1 (3.33)	1(2.70)	-
Other relative	-	1 (3.33)	1(2.70)	1(2.94)
Total	130 (100)	30 (100)	37(100)	34(100)

Source: Survey Data

It has been observed that in Debre Birhan about 59 and 43 percent of the borrower and non-borrower respondents were married respectively. The percentage of married respondents in the borrower and non-borrower group in Assela was about 60 and 62 percent, respectively. The number of married respondents in Assela was higher than in Debre Birhan(See Annex 1).

It seems that the level of education in the micro enterprise sector is low. As it is shown in Table 5, in Debre Birhan, the percentage of respondents both in the borrower and non-borrower group who were illiterate was 20 and 10 percent respectively. Similarly in Assela, the percentage of illiterate respondents in both the borrower and non-borrower group was 16.22 and 14.71 percent, respectively. In any case, the percentage of illiterate borrowers was higher in Debre Birhan than Assela. But the percentage of illiterate non-borrowers was higher in Assela than in Debre Birhan. In both towns, more than 50 percent of the respondents had less than grade 8 level of schooling (see Table 5).

In Debre Birhan, the respondents who were categorized in a group with grade 9 to 12 level of education were 10 percent in the borrower group and 33.33 percent in the non-borrower group. It seems that those who where in the non-borrower groups are better educated than the borrower group. In Assela, on the other hand, about 27 and 24 percent of the respondents in the borrower and non-borrower groups were found in the group whose level of education was from grade 9 to 12 respectively. In general, non- borrowers in Debre Birhan were found in higher grades (i.e. grade 9 to 12). On the other hand, by comparing the level of education attained from grade 9 to 12, borrowers in Assela were better educated than in Debre Birhan.

Table 5-Level of Education

Level of education	Debre Birhan		Assela	
	Borrowers	Non-borrowers	Borrowers	Non-borrowers
Illiterate	26 (20.0)	3 (10.0)	6(16.22)	5(14.71)
Literate (read and write)	23 (17.69)	3 (10.0)	7(18.92)	5(14.71)
Grade 1-6	51 (39.23)	9 (30.0)	13(35.14)	11(32.35)
Grade 7-8	16 (12.31)	5 (16.67)	1(2.7)	5(14.71)
Grade 9-12	13 (10.0)	10 (33.33)	10(27.03)	8(23.53)
Above grade 12	1 (0.77)	-	-	-
Total	130 (100)	30 (100)	37(100)	34(100)

Source: Survey Data

The type of micro enterprises owned by the respondents varies from household to household. In Debre Birhan, the major microenterprises owned and operated by borrowers were 'areke' making (43.08percent), dairy/fattening (12.31percent), sells of non-processed food items (8.46 percent) and food processing (8.46 percent). In the case of non-borrower group in Debre Birhan, the three major types of microenterprises were 'areke' making (23.33 percent), dairy/fattening (20.0percent) and cereals and pulses trading (13.33 percent). It can be said that most of the respondents in the town were engaged in 'areke' making (see Table 6).

In Assela, the percentage of micro enterprises assisted by loan was the highest in the case of "areke' making (i.e. 29.73 percent). The next higher percentage was exhibited in food processing activities (i.e. 27.03 percent). Tailoring (16.22 percent) was the third higher percentage of micro enterprises owned by borrowers (See Table 6). Although the percentage of respondents may vary as compared to the borrower group, the non-borrower group were involved in 'areke' making (41.18percent), food processing (26.47 percent) and tailoring (14.71percent) according to order of importance.

The percentage of respondents who were involved in 'areke' making was the highest in both towns. It is observed that 'areke' produced in Debre Birhan is exported to the surrounding towns including to Addis Ababa. Although many respondents were involved in 'areke' making in Assela, it is not as popular as that of Debre Birhan and it is locally consumed.

It is interesting to observe the fact that there are no respondents who are involved in dairy/fattening in the case of Assela. Moreover, there are no respondents who are involved in pottery in Debre Birhan and only one respondent in Assela.

Table 7 showed the number of years the micro enterprises have been operating. The age of the enterprise ranged from 1 upto 53 in Debre Birhan. The average age of the micro enterprise for the borrowers in this town was 11.75 years. About 62 percent of the micro enterprises (i.e., from the borrower group) have been in existence from 1 to 10 years. This shows that most of the enterprises are new. This is also common among the non-borrowers where 83 percent of the enterprises was only 1 to 10 years old. The average age of the enterprise in the case of the non-borrower was 5.53 in Debre Birhan.

In the case of Assela, the average age of microenterprises in the borrower group was 9.59 years. The maximum age was 25 years and the minimum age was two years. The average age of the microenterprises in the non-borrower group was 13.21 years.

The maximum and minimum age of microenterprises in the non-borrower group was 1 and 36 respectively. In general it can be said that most of the microenterprises in both towns were categorized from 1 to 10 years old.

Table 6 Type of Micro enterprises

	Debre Birhan		Assela	
Type of Enterprise	Borrowers	Non-borrowers	Borrowers	Non-borrowers
'Areke' Making	56(43.08)	7(23.33)	11(29.73)	14(41.18)
Selling of non-processed food items	11(8.46)	2(6.67)	2(5.41)	-
Dairy/fattening	16(12.31)	6(20.0)	-	-
Food Processing	11(8.46)	3(10.0)	10(27.03)	9(26.47)
Pottery	-	-	1(2.70)	-
Tailoring	7(5.38)	2(6.67)	6(16.22)	5(14.71)
Cereals and Pulses Trading	7(5.38)	4(13.33)	1(2.70)	2(5.88)
Selling of Second Hand Clothes	3(2.31)	-	1(2.70)	-
Wood works	2(1.54)	1(3.33)	1(2.70)	1(2.94)
'Gulete'(trading of household goods)	2(1.54)	1(3.33)	-	-
Basket Works	1(0.77)	-	-	-
Carpet Making	1(0.77)	-	-	-
'Tella' Making	2(1.54)	1(3.33)	2(5.41)	1(2.94)
Metal Works	-	-	1(2.70)	-
Weaving	1(0.77)	-	1(2.70)	2(5.88)
Other	10(7.69)	3(10.0)	-	-
TOTAL	130(100)	30(100)	37(100)	34(100)

Source: Survey Data

Table 7 Age of the Micro enterprises

	Debre Birhan		Assela	
Category	Borrowers	Non-borrowers	Borrowers	Non-borrowers
1 - 10	80(61.54)	25(83.33)	23(62.16)	18(52.94)
11 – 20	32(24.62)	3(10.0)	11(29.73)	9(26.47)
21 - 30	15(11.54)	1(3.33)	3(8.11)	5(14.71)
37 - 53	3(2.31)	-	-	1(2.94)
No Response	-	1(3.33)	-	1(2.94)
Total	130(100)	30(100)	37(100)	34(100)
Mean Age	11.75	5.53	9.59	13.21

Source: Survey Data

The start-up capital is one of the important constraints to start business activities. The very nature of the micro enterprises is the fact that they start their business with small capital. The formal sources of capital to start business seems to be absent for small business activities. It would be interesting to observe the sources and the value of start-up capital of both borrowers and non-borrowers in the two sites.

Only about 15 percent of the borrowers reported that they started business by using the money they got from the Development Bank of Ethiopia in Debre Birhan (See Table 8A). This means that the microenterprise-lending program of the Bank resulted in the creation of jobs to 20 respondents provided that they were unemployed. The majority of the borrowers in Debre Birhan (i.e. about 45 percent) started their business using their own saving and the credit from the bank was used to expand their business (see Table 8A).

A significant number of borrowers in Debre Birhan (i.e. about 21 percent) started their business by the credit drawn from cereal traders (next to own saving). In this case, there is no transfer of cash from lender to borrower. Instead, the transfer is in

kind. The lender would sell certain amount of grains to the borrower on credit and charge certain amount of interest. The borrower would utilize the grains mainly for "areke" making. Whenever the borrower sells his/her product, the value of the grain will be repaid in cash together with the interest.

The other source of money to start a business in the case of Debre Birhan (i.e.,borrowers) was the money obtained from the family. As can be observed from Table 8A, about 15 percent of the borrowers stated that they received the money from their family to start business.

The non-borrower group in Debre Birhan started its business using their own saving (i.e. 40 percent)(see Table 9A). Almost quarter of the respondents (i.e.30 percent) started their business using the credit they got from cereal traders. This source of cash was also significant in the case of borrowers (i.e. about 21 percent).

In general, the major sources of money to start-up business in Debre Birhan (for both groups) were own saving, credit from cereal traders, credit from microenterprise lending program of the DBE and money provided by the family.

The micro enterprise lending scheme of the DBE in Assela was one of the source of cash to start a business (i.e. about 38 percent). This means that the scheme was able to create jobs for the above mentioned percentage of people provided that the people were unemployed.

About 87 percent of borrowers started their business by credit that was drawn from moneylenders in Assela.

The third significant source of money for borrowers in the case of Assela was own saving. As can be observed from Table 8B, 27 percent of the borrowers started their business by using their own saving.

In the case of non-borrower group in Assela, the major source of money to start a business was own saving or 'equb' (i.e. about 77 percent) (see Table 9B). This means that about 77 percent of the non-borrowers started their business by their own saving. A significant number of respondents started their business by the money which was provided by the family (i.e. about 27 percent).

In general, in Assela, the major sources of start-up capital for both groups (borrower and non-borrowers) was credit from moneylenders, own saving, credit from microenterprise lending program of the DBE, credit from relatives and money provided by family. In both cases, except credit from DBE, all are from informal sources.

As can be observed from Table 8Aand 8B, the micro enterprise lending program of the DBE was able to create jobs for 15 percent and 38 percent of the borrowers in Debre Birhan and Assela, respectively. About 87 percent of the borrowers in Assela started their business by using a credit drawn from moneylenders while it was about 2 percent in the case of Debre Birhan. About 45 and 27 percent of the borrowers in Debre Birhan and Assela started their business by their own saving respectively.

Table 8A -Source of Capital in Debre Birhan (Borrowers)

(Multiple Responses)

Response	Own Saving or 'equb'	Credit from Relatives	Money Lenders	Credit from Cereal Traders	DBE	Inheritance	Given By the Family	Other
Yes	59(45.38)	6 (4.62)	3 (2.31)	27 (20.77)	20(15.38)	4 (3.08)	19(14.62)	10(7.69)
No	69 (53.08)	122 (93.85)	125(96.15)	101 (77.69)	108(83.08)	124(95.38)	108(83.08)	1 (0.77)
No response	2 (1.54)	2 (1.54)	2 (1.54)	2 (1.54)	2 (1.54)	2 (1.54)	3(2.31)	119(91.54)
Total	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)

Source: Survey Data

Table 8B -Source of Capital in Assela (Borrowers)

(Multiple Responses)

Response	Own Saving or 'equb'	Credit from Relatives	Money Lenders	Credit from Cereal Traders	DBE	Inheritance	Given by the Family	Other
Yes	10(27.03)	3(8.11)	32(86.49)	-	14(37.84)	1(2.70)	3(8.11)	4(10.81)
No	22(59.46)	29(78.38)	-	32(86.49)	18(48.65)	31(83.78)	29(78.38)	33(89.19)
No response	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	-
TOTAL	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)

Source: Survey Data

Table 9A -Source of Capital in Debre Birhan (Non-borrowers)

(Multiple Responses)

Response	Own Saving or 'equb'	Credit from Relatives	Credit form Money Lenders	Credit from Cereal Traders	Inheritance	Given by the family	Others
Yes	12(40.0)	5(16.67)	1(3.33)	9(30.0)	-	7(23.33)	6(20.0)
No	18(60.0)	25(83.33)	29(96.67)	21(70.0)	30(100)	23(76.67)	-
No response	-	-	-	-	-	-	24(80.0)
TOTAL	30(100)	30(100)	30(100)	30(100)	30(100)	30(100)	30(100)

Source: Survey Data

Table 9B -Source of Capital in Assela (Non-borrowers)

(Multiple Responses)

Response	Own Saving or 'equb'	Credit from Relatives	Money Lenders	Credit from Cereal Traders	Inheritance	Given by the Family	Other
Yes	26(76.47)	6(17.65)	1(2.94)	2(5.88)	4(11.76)	9(26.47)	1(2.94)
No	8(23.53)	28(82.35)	33(97.06)	32(94.12)	30(88.24)	25(73.53)	33(97.06)
No response	-	-	-	-	-	-	-
TOTAL	34(100)	34(100)	34(100)	34(100)	34(100)	34(100)	34(100)

Source: Survey Data

With regard to the amount of start-up capital, in Debre Birhan, about 62 and 63 percent of the borrower and non-borrower group started their business with less than 250 Birr respectively. But in the case of Assela, the percentage of borrower and non-borrowers that started business with less than 250 Birr was about 46 and 56 percent respectively. In general, more than 90 percent of the respondents in both towns started their business with a capital less than 2000Birr (see Table 10).

Table 10- Amount of Start-up Capital of Micro Enterprises

Amount	Debre Birhan		Assela	
	Borrower	Non-borrower	Borrowers	Non-borrowers
Less than 250 Birr	81(62.31)	19 (63.33)	17(45.95)	19(55.88)
251-750 Birr	22 (16.92)	3 (10.0)	5(13.51)	8(23.53)
751-1000 Birr	9 (6.92)	4 (13.33)	8(21.62)	3(8.82)
1001-2000 Birr	12(9.23)	4 (13.33)	6(16.22)	2(5.88)
2001-5000 Birr	3 (2.31)	-	-	2(5.88)
> 5000 Birr	3 (2.31)	-	1(2.70)	-
TOTAL	130 (100)	30 (100)	37(100)	34(100)

Source: Survey Data

Having less amount of start-up capital has an impact on business activities: - the less the amount of capital, the less investment made on productive assets. The vicious cycle take the following form:- Less investment means less production → Less production means less income→ Less income means less saving→ Less saving means less investment. Hence, micro enterprise operators are in a vicious circle where very few can break it without support. The external source that can break this circle is mainly credit. So, credit is a critical resource that should be used to promote the development of small businesses.

Many Ethiopians belong to the traditional saving and credit groups. One of the oldest and most widely known informal financial institutions is the"equb". It is common both in urban and rural centers. Accordingly, in Debre Birhan, about 50 and 53 percent of the borrower and non-borrower group was members of 'equb',

respectively. In the case of Assela, the percentage of borrower and the non-borrower group was 51.4 and 76.5 percent, respectively. The majority of the respondents in the non-borrower group belong to informal financial institution in Assela (See Table 11).

Table 11 Response to Experience of "Equb"

Response	Debre Birhan		Assela	
	Borrower	Non-borrowers	Borrowers	Non-borrowers
Yes	65 (50.0)	16 (53.33)	19(51.35)	26(76.47)
No	58 (44.62)	13 (43.33)	13(35.14)	8(23.53)
No response	7 (5.38)	1 (3.33)	5(13.51)	-
TOTAL	130 (100)	30 (100)	37(100)	34(100)

Source: Survey Data

The respondents were asked whether the bank has refused their loan application prior to the loan provided through the micro enterprise-lending program of the DBE. About 92 percent of the borrower in Debre Birhan reported that they did not apply for bank loan prior to the present loan of the DBE. The corresponding figure was 87 percent in the case of Assela. As can be observed from Table12, the percentage of non-borrowers who did not apply for bank loan in the case of Debre Birhan and Assela was 100 and 88 percent, respectively. This indicated that more than 80 percent of the respondents in both towns did not apply for bank loan. This shows that the bank is inaccessible to micro enterprise operators.

Table 12 Responses to the experience of Bank Loan

Response	Debre Birhan		Assela	
	Borrowers	Non-borrowers	Borrowers	Non-borrowers
Yes(the bank refused the loan application)	2(1.54)	-	-	1(2.94)
No(the bank has never refused the loan application)	8(6.15)	-	-	-
Never applied	119(91.54)	30(100)	32(86.49)	30(88.24)
No response	1(0.77)	-	5(13.51)	3(8.82)
Total	130(100)	30(100)	37(100)	34(100)

Source: Survey Data

Similarly, the respondents were asked whether they have savings in a bank or other institution. The borrowers in Debre Birhan responded that 93.08 percent of them do not have savings in any bank. About 97 percent of the non-borrowers indicated that they do not have any saving in a bank or other institution (see Annex 2). About 76 and 94 percent of the borrower and the non-borrower group in Assela did not have any saving in the bank, respectively. About 11 percent of the borrowers and about 3 percent of the non-borrowers have a saving account in Assela bank (see Annex 2).

In addition, about 22 and 27 percent of the borrowers and non-borrowers in Debre Birhan had saving in their home, respectively. In the case of Assela, the percentage of borrowers and non-borrowers who saved in their homes were about 14 and 38 percent respectively. In both towns more than 27 percent of the non- borrowers saved in their homes (see Annex 3).

One of the major characteristics of microenterprises is that they are located within the home of the operators. In this case study, it is asserted that about 81 percent of the borrowers in Debre Birhan reported that the enterprise and their residence were in one compound. About 15 percent of the borrowers responded that the enterprise and their residence were located in different places. The different places could be market areas, rented shops etc. Concerning the non-borrower group, about 67 percent

of the microenterprise were located within one compound (including their home) while about 33 percent were located outside the compound of the operator (see Annex 4).

In the case of Assela, the percentage of micro enterprises (i.e., borrowers) that were located within one compound including the house of the entrepreneur was 59.5 percent. But in the case of the non-borrowers, 73.5 percent of the enterprises were located within one compound. The percentage of enterprises that were located in different places from the home of the entrepreneur both in the borrower and non-borrower group was 24.3% and 26.5%, respectively (see Annex 4). In general, more than 50 percent of the respondents (both borrowers and non-borrowers) had an enterprise located within their residence.

It seems that microenterprise operators lack the necessary infrastructures (i.e., electricity, water and telephone). These infrastructures are critical for the performance of the enterprise and the health of the respondents (for instance, water). According to this study, about 90 percent of the borrowers in Debre Birhan have access to electricity. Telephone services are available to 13.1 percent of the borrowers. And in the case of water supply about 77 percent of the borrowers have access to water facility. In the case of the borrowers in Assela, 27 percent of the micro enterprises do have water facilities. Concerning telephone and electricity services, about 78 and 5 percent of the respondents have access to electricity and telephone facilities respectively (see Table13A).

Table 13A Infrastructure Services (Borrowers)

	Debre Birhan			Assela		
Response	Electricity	Telephone	Water	Electricity	Telephone	Water
Yes	117(90.0)	17(13.08)	100(76.92)	29(78.38)	2(5.41)	10(27.03)
No	7(5.38)	98(75.38)	23(17.69)	2(5.41)	30(81.08)	22(59.46)
No Response	6(4.62)	15(11.54)	7(5.38)	6(16.22)	5(13.51)	5(13.51)
TOTAL	130(100)	130(100)	130(100)	37(100)	37(100)	37(100)

Source: Survey Data

Table 13B Infrastructure Services (Non-Borrowers)

Response	Debre Birhan			Assela		
	Electricity	Telephone	Water	Electricity	Telephone	Water
Yes	25(83.33)	10(33.33)	24(80.00)	11(32.35)	-	4 (11.76)
No	5(16.67)	20(66.67)	6(20.0)	21(61.76)	33(97.06)	29(85.29)
No Response	-	-	-	2(5.88)	1(2.94)	1(2.94)
Total	30(100)	30(100)	30(100)	34(100)	34(100)	34(100)

Source: Survey Data

In the case of the non-borrower group in Debre Birhan, 80, 33, and 83 percent of the respondents have access to water, telephone and electricity facilities, respectively. But in Assela, about 32 percent of the respondents have access to electricity. Besides, about 12 percent of the respondents have access to water services. Unfortunately, the non-borrower group in Assela did not have telephone lines (see Table 13B).

As can be observed from Table 13A and 13B, in both towns, more than 75 percent of the respondents (i.e., borrowers) had access to electricity. In the case of water, more than 70 percent of the respondents in Debre Birhan had access to water services while less than 30 percent of the respondents had access to water services in Assela.

In Debre Birhan, about 84 percent of the respondents in the borrower group did not have work license while 13.1 percent of the respondents did. Most of the licensed enterprises are shops and retail traders located in rented houses in the market area. In the case of the non-borrowers, about 10 percent of the respondents had a work license (see Annex 5).

In the case of Assela, 85.3 percent of the non-borrowers did not have any license. Similarly the percentage of the borrowers that did not have any license was 81.1 percent. Those who have license are engaged in activities like shops (retail) and other trading activities located in rented house/place in the market area (see Annex 5).

4.1.2. The Credit Scheme and Its Impact

The micro credit program of the DBE is provided to micro entrepreneurs on the basis of cooperatives. The executive committee (i.e. chairman, vice chairman and secretary) of the cooperatives signs an agreement with the Bank to take the loan. The cooperatives in turn sign an agreement with individual members so as to provide the credit.

The interaction and relationship among members of the cooperative is important to exert peer pressure. If individual members know each other, the problem of default is likely to be less. Peer pressure is one of the mechanisms that were used in the case of the Grameen Bank and other microfinance institutions to influence members to repay their debt. In Debre Birhan, about 59 percent of the respondents know members of the cooperative very well before they join the cooperative, while about 16 percent of the respondents know members only partly. Similarly, in the case of Assela, about 57 percent of the borrowers know members of the cooperative while 5 percent know members only partly (see Table 14).

Table 14- Familiarity with Members of Cooperatives

Extent of Familiarity	Debre Birhan	Assela
Yes (Full)	76 (58.46)	21(56.76)
No	31(23.85)	9(24.32)
Partly	21(16.15)	2(5.41)
No response	2(1.54)	5(13.51)
TOTAL	130(100)	37(100)

Source: Survey Data

In both towns, more than 50 percent of the borrowers responded that they knew members before they joined the cooperative. The percentage of respondents who did not know members of the cooperative before they joined the cooperative was about 24 percent in both towns. This means that a quarter of the members did not know each other. This has an impact on repayment. If members do not know each other,

the mechanism to enforce repayment on the basis of peer pressure would be jeopardized.

With regard to the amount of credit provided to the microenterprise operators, 27 percent of the respondents in Assela noted that the amount provided to the business was sufficient, while more than 59 percent of the sample group reacted that the amount was not sufficient to run the business activity. But the response in the case of Debre Birhan was more favorable. About 56 percent of the respondents said that the amount taken was sufficient, while about 43 percent reacted that the amount of loan was not sufficient to run the business activity (See Annex 6).

The amount of loan has an impact on both the business activity and repayment situation. Those operators who took a sufficient amount of credit would utilize it for productive activities and increase income. At the same time, those who do not know how to run the business might use the credit for other purpose (i.e., purchase of consumer items). Under this situation, the borrowers would be in trouble to repay the loan. Hence, the mere demand for additional credit (i.e., increasing the size of the loan) has to be treated with care.

The response of the sample interviewees concerning the duration and frequency of repayment is presented in Table 15. The majority of the respondents (i.e., 71.54percent) in Debre Birhan responded that the duration was acceptable. In the case of Assela, only about 38 percent of the respondents noted that the duration was sufficient. On the other hand, half of the respondents in Debre Birhan did not support the 15 days repayment period. About 30 percent of the respondents in Assela reacted that the frequency of repayment was not suitable to them (see Table 15).

Table 15 Opinion to Repayment Period and Frequency of repayment

Response	Debre Birhan		Assela	
	Duration of loan	Frequency of Repayment	Duration of loan	Frequency of Repayment
Yes	93 (71.54)	63 (48.46)	14(37.84)	21(56.76)
No	31 (23.85)	65 (50.0)	18(48.65)	11(29.73)
No response	6 (4.62)	2 (1.54)	5(13.51)	5(13.51)
Total	130(100)	130(100)	37(100)	37(100)

Source: Survey Data

In Debre Birhan, about 40 percent of the borrowers have other enterprises besides the enterprise that they took credit for. But about 77 percent of them considered the loan-assisted enterprise as the main sources of income. On the other hand, in the case of Assela, the percentage of operators who considered the enterprise as the main source of income was about 65 percent. About 24percent of the respondents in Assela have additional enterprises besides the loan assisted one (see Annex 7and 8).

As it is observed, most of the time the microenterprise operators have more than one enterprise. And these activities complement each other. It might be logical to think that the credit taken for one enterprise may be utilized for another enterprise. In the case of Assela, about 11 percent of the respondents reported that they shared the credit among the enterprises under their control. But, in Debre Birhan, about 32 percent of the respondents shared the credit with other enterprises owned by them. But about 64 percent of the respondents utilized the credit for the stated business activity only. Similarly, in Assela, about 70 percent utilized the credit for the stated activity only (see Annex 9).

The micro enterprise-lending program of the DBE entails that 10 percent of the loan is deposited with the bank as an insurance protection. If a member of the group fails to repay, the deposit will be utilized to settle the debt. If such saving does not cover the whole amount of the debt, individual members will share the burden. This study has asked the sample respondents to comment on such arrangement. About 59

percent responded they were unhappy while about 27 percent regarded it as agreeable in Debre Birhan. Similarly, in the case of Assela, about 60 percent of the respondents were not happy while about 16 percent considered it as workable (See Table 16). In general, it can be said that more than 50 percent of the borrowers in both towns were not happy to such arrangement.

Table16- Reaction of the Respondents to Group Liability

Reaction	Number of Respondents	
	Debre Birhan	Assela
Unhappy	76 (58.46)	22(59.46)
It is as per the agreement	35 (26.92)	6(16.22)
To get another loan	-	1(2.70)
Other	1 (0.77)	1(2.70)
No response	18 (13.85)	7(18.92)
TOTAL	130 (100)	37(100)

Source: Survey Data

Regarding the source of income for repayment, about 90 percent of microenterprise operators in Debre Birhan reported that the loan was repaid from incomes generated by the assisted enterprise while about 23 percent of the respondents repaid from other enterprises. This showed how other enterprises that run under their control contribute to repay the loan. Having more than one enterprise would enable to hold risks (See Table 17A).

It is interesting to note that, about 16 percent of the borrowers repay their debt from the bank loan. This means that they are not using the bank loan properly. The percentage of respondents who repay the loan from the wage employment was about 14 percent (see Table17A).

Table 17A- Source of Income to Repay the Loan (Multiple Responses)

(Debre Birhan)

Response	Assisted Enterprise	Wage Employment or Retirement	Agriculture	Dairy/ fattening	Other enterprises	Borrowed money from non bank	Gift	Property sales	Bank Loan	others
Yes	117(90.0)	18(13.85)	1(0.77)	12(9.23)	30(23.08)	3 (2.31)	3(2.31)	4(3.08)	21(16.15)	4(3.08)
No	10(7.69)	109(83.85)	126(96.92)	115(88.46)	96(73.85)	124(95.38)	123(94.62)	122(93.85)	104(80.0)	126(96.92)
No- response	3 (2.31)	3(2.31)	3(2.31)	3 (2.31)	4(3.08)	3 (2.31)	4(3.08)	4(3.08)	5(3.85)	-
TOTAL	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)	130(100)

Source: Survey Data

Table 17B Source of Income to Repay the Loan (Multiple Response)

(Assela)

Response	Assisted Enterprise	Wage Employment / Retirement	Agriculture	Dairy/ Fattening	Other Enterprises	Borrowed money from non-Bank	Gifts	Property Sales	Bank Loan	Others
Yes	30(81.08)	5(13.51)	-	2(5.41)	1(2.70)	-	-	2(5.41)	2(5.41)	-
No	2(5.41)	27(72.97)	32(86.49)	30(81.08)	31(83.78)	32(86.49)	32(86.49)	30(81.08)	30(81.08)	2(5.41)
No response	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	5(13.51)	35(94.59)
TOTAL	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)	37(100)

Source: Survey Data

In the case of Assela, about 81 percent of the respondents asserted that they would repay the loan from the activities of the assisted enterprise. As can be seen from Table 17B, about 13 percent of the respondents repay from wage employment or retirement.

The research has also tried to identify the impact of the credit on technology, competition, time devotion, diversification of products and customers and work premises. Table 18 showed the percentage of technological changes observed in both towns. In Debre Birhan about 9 percent of the borrowers indicated that the credit has brought up technological change in their enterprise. Most of these technological changes have been observed in tailoring and dairy/fattening activities. Those who are engaged in tailoring activity have bought a machine that works with electric power and has a speed that is much faster than the non electric one. Moreover those who are engaged in dairy/fattening activity have utilized hybrid cattle so as to increase productivity. Besides, 11.5 percent of the respondents replied the credit has brought a partial technological change in their enterprise (see Table 18).

In the case of Assela, 5.4 percent of the respondents reported that the loan has brought up technological change in their enterprise. About 14 percent of the respondents observed partial technological change. In general, one can say that the contribution of the microcredit to technological change seems insignificant.

Table 18 Technological change observed in the enterprise After Borrowing

Response	Debre Birhan	Assela
Yes	11(8.5)	2(5.4)
Partly	15(11.5)	5(13.5)
No Change	74(56.9)	25(67.6)
No Response	30(23.1)	5(13.5)
TOTAL	130(100)	37(100)

Source: Survey Data

The impact of the credit on the number of customers, improvement of work premises and diversification of products has been presented on Table 19. As can be observed from Table 19, about 77 percent of the borrowers in Debre Birhan had observed an increase in the number of customers after the credit. In the case of Assela, only 54 percent of the microenterprise operators have observed an increase in the number of customers since they took the loan. The percentages of respondents that have improved the work premises were 21.6 percent in Assela, while it was about 34 percent in Debre Birhan. An insignificant number of respondents (i.e. 5.4 percent) have diversified their products after taking the loan in Assela, compared to 29 percent in Debre Birhan. Hence, borrowers in Debre Birhan were able to diversify their products/services after the loan.

Table 19 Change Observed in Customers, work Premises and Diversification of products After Borrowing

Response	Debre Birhan			Assela		
	Increment in the Number of customers	Improvement of Work Premises	Diversification of Products	Increment in the Number of customers	Improvement of Work Premises	Diversification of products
Yes	100(76.92)	44(33.85)	37(28.46)	20(54.05)	8(21.62)	2(5.41)
No	23(17.69)	78(60.0)	87(66.92)	11(29.73)	23(62.16)	25(67.57)
No Response	7(5.38)	8(6.15)	6(4.62)	6(16.22)	6(16.22)	10(27.03)
TOTAL	130(100)	130(100)	130(100)	37(100)	37(100)	37(100)

Source: Survey Data

The State of competition before and after the loan has been presented in Table 20. About 55 percent of the borrowers in Debre Birhan indicated that the competition among business activities started to increase especially after the loan. It seems that this has happened due to the emergence of many similar business activities. But in the case of Assela, about 38 percent of the respondents said that the competition is increasing from time to time. Provision of credit might raise the probability of competition provided that all or majority of the borrowers engages in similar activities. In order to avoid matters that arise due to such issue, the concerned body

seems to formulate a mechanism to provide advise to these operators on the selection of enterprises.

Table 20 State of Competition Compared to Pre loan Situation

Response	Debre Birhan	Assela
Similar	36(27.69)	7(18.92)
Increased	72(55.38)	14 (37.84)
Decreased	2(1.54)	-
Varies	12(9.23)	7(18.92)
No Response	8(6.15)	9(24.32)
TOTAL	130(100)	37(100)

It seems that the time devoted to work has an impact on the volume and quality of products. If someone spends much more time strictly for work, it is expected that he will produce goods and services in large volumes. Those family members who do have sons and daughters can utilize them as family laborers. On the other hand, those microenterprise operators who don't have sons/daughter have to work hard so as to earn a living.

The head of the enterprise has been asked whether he/she spends much more time on the enterprise after the loan. About 72 percent of the borrowers in Debre Birhan asserted that the entrepreneur spent much more time in the business after the loan. But in the case of the borrowers in Assela, it was about 60 percent of the respondents who spent much more time for the business as compared to the pre loan situation (see Annex 10).

As can be seen from Table 21, in Debre Birhan, the average monthly enterprise income of the borrowers was (i.e., after borrowing) Birr 252.77 while the non-borrowers had an income of Birr 154.17. Enterprise income increased by 39.54 percent for borrowers after the loan and by 117.47 percent for non- borrowers after the scheme was initiated in the town. The income of the borrowers ranged from 0 to 600 Birr. But in the case of non-borrowers, it ranged from 30 to 380 Birr.

Table 21- Average Monthly Income of the Micro enterprises (Nominal)

	Debre Birhan		Assela	
	Before the loan*	After the loan(current)	Before the loan*	After the loan (current)
Borrowers	181.14	252.77	139.32	230.00
Non – Borrowers	71.17	154.77	256.18	282.94

Source: Survey Data

* For non borrowers the classification before and after the loan refers to the period ,i.e., the period before the scheme was initiated and the current period respectively.

Micro enterprise operators in Assela earned Birr 230.00 after the loan while non-borrowers generated Birr 282.94. This means that borrowers earn less micro enterprise income than non-borrowers (i.e. nominally). The percentage change in income before and after the loan for both borrowers and non-borrowers was 65.09 and 10.45 percent respectively. For the borrowers, average monthly income generated from the enterprise ranged from 30-450 Birr. While for non-borrowers, it ranged from 40 to 700 Birr.

The total households income (including the microenterpise income) of the micro enterprise operators are presented in Table 22. Borrowers and non-borrowers were able to increase the total income of the household.

Table22 Average Household Income of the Microenterprise Operators (Nominal)

	Debre Birhan		Assela	
	Before the loan*	After the loan(current)	Before the loan*	After the loan(current)
Borrowers	352.55	445.76	394.15	475.49
Non-Borrowers	327.27	398.63	452.41	469.09

Source: Survey Data

*For the non-borrowers, the classification before and after the loan refers to the period , i.e., the period before the scheme was initiated and the current period respectively.

As can be observed from table 22, in both towns, borrowers and non-borrowers were able to increase their household income. But the percentage change varies between the two towns. In the case of Debre Birhan, borrowers and non-borrowers were able to increase their total income by 26.44 and 21.80 percent. The percentage increase was 20.64 and 3.69 percent in the case of borrowers and non-borrowers respectively in Assela. Although the enterprise income of borrowers was less than the non-borrowers (nominally), the total household income of the borrowers was a little bit greater than the non-borrowers in Assela.

The average household assets of the borrowers and non-borrowers for the towns are presented in Table 23. In both towns, microenterprise operators were able to increase household assets. As depicted in Table 23, borrowers in Debre Birhan and Assela towns were able to increase their household assets by 29.14 and 23.38 percent respectively. Non-borrowers in Debre Birhan and Assela were able to increase their household assets by 29.23 and 19.63 percent respectively.

Table23 Value of Household Assets

(Nominal)

	Debre Birhan		Assela	
	Before the loan*	After the loan(current)	Before the loan*	After the loan(current)
Borrowers	12,136.17	15,672.19	13,355.80	16,478.91
Non-borrowers	12,476.67	16,123.42	3464.97	4144.82

Source: Survey Data

*For the non-borrowers, the classification before and after the loan refers to the period , i.e., the period before the scheme was initiated and the current period respectively.

Productive assets include fixed and current assets. Fixed assets include machineries, tools, work premises, etc. Current assets include raw materials, work in process, finished goods, petty cash, credit sales, etc. Table 24 showed the value of productive assets before and after the loan. The percentage change in productive asset was the highest in both towns. It was more than 90 percent. In the case of Debre Birhan,

borrowers and non-borrowers were able to increase the productive assets of the enterprise by 91.52 and 140.41 percent respectively. Surprisingly, productive assets of the borrowers and non-borrowers in Assela increased by 686.05 and 95.24 percent respectively. In the case of borrowers in Assela, it seems that most of the credit has been utilized for the purchase of productive assets.

Table 24 Productive Assets of Micro enterprises

	Debre Birhan		Assela	
	Before the loan*	After the loan(current)	Before the loan*	After the loan(current)
Borrowers	888.40	1701.49	399.95	3143.82
Non-borrowers	833.97	2004.93	784.32	1531.27

Source: Survey Data

*For the non-borrowers, the classification before and after the loan refers to the period , i.e., the period before the scheme was initiated and the current period respectively.

4.2. Regression Analysis

4.2.1. The Model and the Hypothesis

It is known that the income of a micro enterprise is affected by a number of factors. It is hypothesized that credit is one of the major factors affecting income. To single out the significant variable, some sort of a regression analysis is needed. Regression analysis enables to examine the nature of a relationship between or among variables.

This study has used a linear regression model to identify the impact of microcredit on micro enterprise income. For the purpose of this analysis, the regression is done by combining borrowers with non-borrowers. A separate regression model is constructed for each of the two towns. One dependent variable (i.e. micro enterprise

income) is used in each case. In identifying the contributing factors, attempt has been made not to select two or more variables that are correlated with one another.

The model that was used in the case of Debre Birhan and Assela has the following functional form: -

$$\text{Nowenter} = B1 + B2\ \text{Startup} + B3\text{Years} + B4\ \text{Nonpaid1} + B5\text{Educa} + B6\text{Econcate} + B7\text{Dummycre} + B8\text{paid1} + B9\text{prodass1} + B10\text{Dummyequ} + B11\ \text{Dumkebele} + B12\ \text{Dummysex} + B13\text{Dumown} + Ui$$

Where,

Nowenter – The average monthly income of the microenterpirse at present

Start-up – The amount of start-up capital. It has been categorized into 6 variable codes: 1)< Birr 250, 2) 251-750 Birr, 3) 751-1000 Birr, 4) 1001-2000 Birr, 5) 2001-5000 Birr, 6) more than 5000 Birr.

Nonpaid 1 – Number of Non paid family employees working in the enterpirse

Paid 1- Number of paid employees working in the enterprise

Educa- Level of education. The Education level has been grouped into 6 Variable codes: - 1)-Illiterate 2)- Literate (read and write) 3)- Grade 1-6 4)- Grade 7-8 5)- Grade 9-12 6)- Above grade 12

Econcate– Economic activity classification. A dummy variable, where 0 is service, 1 otherwise

Years – Number of years the business has been operating

Prodassl – Productive assets of the firm, both fixed and current in Birr

Dummycre – A Dummy variable for credit where borrowers = 1 and non-borrowers = 0

Dumkebele- A dummy variable for keble house, 1for Kebele house and 0 otherwise.

Dumown – A dummy variable for own house, 1 is own house (private) and 0, otherwise. The reference for Dumkebele and Dumown is house rented from private owners.

Dummysex – A dummy variable for sex, where 0= female and 1=male

Dummyequ – A dummy variable for 'equb,' where 1 is member, 0 otherwise

B1 – a constant

B2 – B13 - regression coefficients

Ui – error term

It is hypothesized that enterprise income is a function of credit, the amount of start-up capital, the number of non paid family employees, level of education, number of years in the business, productive assets, the number of paid employees and the type of enterprise. Moreover, other contributing factor such as ownership of own private house or kebele house, membership of equb and gender were considered in the analysis. The basic assumptions or expected results of the model are presented as follows:-

a) It is expected that those microentrepreners who started their business with greater amount of money would generate higher income than those who started with less amount. As a result, start-up capital is expected to be positively correlated with enterprise income.

b) It is assumed that the relationship between the number of non-paid family employees and enterprise income would be positive. As the number of non-paid family employees' increases, the enterprise income would increase.

c) It is expected that those who are engaged in service enterprises would earn more income than manufacturing enterprises. In the case of service giving enterprises, the operators are always ready to sell their services on demand. There is no material wastage as such. But in the case of production enterprises, material and labor wastage is common problem as the product could not be sold. Thus service enterprises have better chance of earning higher income than production enterprises. Besides this, the number of respondents engaged in manufacturing is higher than services. As a result, the competition is higher for the manufacturing than the service enterprises. Moreover, services tend to have higher income elasticities than most manufactured goods.

d) It is expected that the relationship between the number of years the business has been operating and income would be positive. In other words, as the number of years in the business increases, the income of the enterprise would increase.

e) The value of productive assets is expected to have an impact on income. Those enterprises with more productive assets would generate more income. Consequently, productive assets are positively correlated with income.

f) As it can be observed from the physical movement, credit is a transfer of money from someone to somebody. This money would increase the amount of cash

available for the purchase of fixed and current assets. As a result, credit is expected to be positively correlated with enterprise income.

g) The number of paid employees working in the enterprise has an impact on income. Those enterprises that employ many workers would earn more income. Consequently, the number of workers is positively correlated with income.

h) It is expected that the level of education is positively correlated with income. Those operators who are relatively educated would earn more income than those who are not.

i) Membership of 'equb' is expected to be positively correlated with income. Those who are members of 'equb' would be forced to earn more income than others.

j) It is expected that sex have an impact on income. Females would earn more income than males because most of the important microenterprise activities like 'areke' making are tasks exclusively handled by women.

k) It is assumed that those who have their own house would earn more income than others. They have more freedom (than houses rented from the private sector) in how to using their houses for business. Consequently, operators with private house would earn more income than others.

l) It is expected that operators who live in kebele house would earn more income (than those who rented from the private sector). In other words, living in kebele house is positively correlated with income.

Table25- Summary Statistics of the Variables in the Model

Variable	Debre Birhan			Assela		
	Mean	Range	Standard Deviation	Mean	Range	Standard Deviation
Startup	1.78	1-6	1.23	2.01	1-6	1.27
Dummysex	.28	0-1	.45	.27	0.1	.45
Nonpaid1	0.89	0-6	1.34	0.93	0-7	1.39
Paid1	0.44	0-5	0.99	0.24	0-4	0.66
Educa	2.91	1-6	1.28	3.11	1-5	1.38
Econcate	0.77	0-1	0.42	0.79	0-1	0.41
Years	10.59	1-53	8.36	11.32	1-36	8.24
Prodass1	1758.38	0-17690	2838.62	2371.61	0-70092	8397.16
Currloan	1653.44	0-5000	1630.69	704.65	0-2000	753.63
Nowenter	234.83	0-600	156.29	255.35	30-700	125.84
Dumkeb	.38	0-1	.49	.59	0-1	.50
Dumown	.54	0-1	.50	.38	0-1	.49
Dummyequ	.54	0-1	.52	.63	0-1	..49
Dummycred	.81	0-1	.39	.52	0-1	.50

Source: Survey Data

4.2.2. Determinants of Income

Table 25 showed the summary of the statistical figures of the two towns by taking into account borrowers and non-borrowers as one group. As can be observed from this table, the number of non-paid family employees ranged from 0 to 6 in the case o Debre Birhan while it ranged from 0 to 7 in Assela. The number of paid employee working in the micro enterprises ranged from 0 to 5 in Debre Birhan while it range from 0 to 4 in Assela. The number of years the business enterprise has bee operating ranged from 1 to 53 in Debre Birhan while it ranged from 1to 36 yea only in Assela. The average size of loan was Birr1653 for Debre Birhan while it w Birr 704.65 in Assela.

The result of the regression analysis for income is presented in Table26. In the case of Debre Birhan, the adjusted R square (i.e. 0.39) indicates that about 39 percent of the variations in income are explained by the hypothesized variables. The F-value of the equation is significant at less than five percent. But in the case of Asela, the F-statistics were not significant when all the twelve independent variables were included. However, when some of the variables were dropped, the F value became significant at less than 5 percent. But the adjusted R square was only about 10 percent. The five contributing factors (i.e. Start-up, prodassl, Dumcred, Years and Econcate) explained only 10 percent of the variation in income.

In Debre Birhan, credit is significantly correlated with income. It is significant at less than five percent. The empirical result supports the hypothesis which states that credit scheme have increased enterprise income. But, credit is negatively and significantly correlated with income in Assela. Some of the possible reasons why credit correlate with income negatively is presented at the end of this section.

The second variable that is significant is the start-up capital. Start-up capital is significant at less than five percent. The more start-up capital a business enterprise has, the more income it generates. This is confirmed in one of the study sites i.e., Debre Birhan. In the case of Assela, the results in Table26 showed that there is no relation between income and start-up capital.

Table26: Results of Regression Analysis for Income

(Figures in parenthesis show T-statistics)

Variables	Debre Birhan			Assela		
	Equation1	Equation 2	Equation3	Equation1	Equation2	Equation3
Constant	17.873 (.317)	44.230 (1.021)	85.458 (2.573)	333.143 (2.727)	397.672 (7.071)	313.333 (9.863)
Dummycre	92.524 (3.258)	92.546 (3.514)	104.641 (4.172)	-47.296 (-1.115)	-57.681 (-1.966)	
Startup	25.055 (2.788)	26.256 (3.128)	26.167 (3.170)	-5.015 (-.373)	-4.742 (-.381)	
Nonpaid1	27.358 (3.598)	28.733 (3.952)	29.501 (4.061)	-3.860 (-.325)		
Paid 1	22.334 (2.005)	22.296 (2.030)	24.292 (2.252)	3.543 (.137)		
Prodass 1	.0159 (3.846)	.0161 (4.081)	.0157 (3.969)	-.003 (-1.689)	-.003 (-1.561)	
Econcate	-58.588 (-2.100)	-61.942 (-2.514)	-61.102 (-2.477)	-58.544 (-1.189)	-82.488 (-2.217)	-73.512 (-2.055)
Dumkeble	55.068 (1.375)	52.812 (1.346)		11.343 (.118)		
Dummyequ	11.512 (.584)	-		27.449 (.751)		
Dummysex	5.995 (.214)	-		29.072 (.640)		
Dumown	61.744 (1.585)	59.832 (1.566)		7.940 (.077)		
Years	.747 (.568)	-		-2.472 (-1.118)	-2.760 (-1.519)	
Educa	3.419 (.403)	-		2.264 (.180)		
Adjusted R Square	.393	.406	.404	.010	.098	.044
F-statistics	9.583	14.577	18.971	1.060	2.525	4.223

Source: Survey Data

The other variable that correlates with income in the case of Debre Birhan is non-paid family employees. The number of non-paid family workers is positively and significantly related with income. Non-paid family labor is not significantly correlated with income in the case of Assela.

The fourth significant explanatory variable is the number paid employees. In Debre Birhan, the number of paid employees is significant at 5 percent. In other words, the income of the enterprise would increase as the number of paid employees increase. Such relation is not observed in the case of Assela, i.e., the number of paid employees is not correlated with income.

The amount of productive assets is positively correlated with income in Debre Birhan. It is significant at less than 5 percent. As the value of productive assets increases, the income of the enterprise increases. But, the variable is not significant in the case of Assela.

It is interesting to observe the fact that in both towns, the type of economic activity correlates with income. Those who are engaged in service giving enterprises earn more income than those in the manufacturing activities. This variable is significant at less than 5 percent in both towns. The possible reason for the correlation of service activities to income could be explained by the fact that the study sites are urban centers that mainly provide services. Farmers who are located in the surrounding areas often sell their products in the urban centers and purchase services. As a result, those who are engaged in service activities tend to earn more income than manufacturing activities. Besides the number of respondents who were engaged in manufacturing activities were high as compared to service giving enterprises. As a result the manufacturing activities face higher competition than the service giving enterprises.

The other variables (i.e. Dumkeble, Dummyequb, Dummysex, Dumown, years and educa) are not positively correlated with income. The impact of these variables on income is insignificant in both towns. Compared to house rented from private owners, living in a kebele house, for instance, has no influence on income. Similarly, having private home is not correlated with income. Besides, membership of equb does not imply more income. In other words, membership of equb does not increase income.

Dummysex is not correlated with income. Enterprise income is not affected by whether the operator is male or female.

The number of years the business has been operating is not significantly related to the income of the enterprise. Income is not influenced by whether the operator is literate or not.

To summarize, variation in income arises as a result of credit availability, start-up capital, non-paid family workers, paid employees, productive assets and economic activity in Debre Birhan. In Assela, the two explanatory variables for income change are type of economic activity and credit which both are negatively correlated with income.

The results with regard to credit are unexpected in the case of Assela. This may be due to the following factors.

First, the selection of members (borrowers) in Assela is highly personalized. According to the respondents (especially non-borrowers and some borrowers) those who have relatives and the like were able to get the credit. Those who were capable of using the credit effectively were not included.

Second, the amount of credit provided was small when compared to Debre Birhan. In Debre Birhan, the maximum amount of money provided to the microenterprise

operators was 5000 Birr. But in the case of Assela, the maximum amount of credit provided was only 2000 Birr.

The third possible reason is the low business activities in Assela. The products produced by the operators in Debre Birhan are sold in the local market rarely exported to other areas.* That the business climate in Debre Birhan is more favorable can also be inferred from the practice of 'buying cooperatives.' If one cooperative has a certain amount debt and the debt cannot be repaid within the time specified, promoters (Department of trade and industry)of the cooperative will declare that the cooperative is up for sale. Those who are interested in buying it can settle the debts and obtain new credit from the bank. The promoters usually initiate a legal process against the defaulting members to enforce repayment. This shows the scarcity of financial resources in Debre Birhan. Since new cooperatives can not be formed, the existing ones earn rent income as a result of the high demand for credit.

The fourth possible reason is the misunderstanding about the objective of the scheme in Assela. Most of them considered the credit as the government money that would not be repaid. As a result, the borrowers may have failed to use the money for business activities. Although the program was initiated at the same time as the Debre Birhan program, no borrower has proceeded to the fourth phase. By contrast, there are presently 26 active members who are servicing their third loan and 65 borrowers servicing their second loan (See Table 2).

* The Debre Birhan, "Areke" is exported to other urban centers in the country.

5. CONCLUSION AND POLICY IMPLICATIONS

5.1 Conclusion

Capital is a critical resource for economic development. It is not possible to think of development without finance. It does not mean that there are no other critical resources for economic development. The other resources include human capital, natural resources, management and the like.

The capital market does not satisfy the financial needs of small-scale operators. Due to this and other related factors, in the 1930s some governments started to provide credit for small operators by establishing Development Finance Institutions (DFIs). Unfortunately, the attempt of these institutions was not always successful.

In 1976, Professor Mohammed Yunas established a small action research project with the aim of providing credit to poor households. The mechanism adopted by the professor was group based lending. The small action research project became an independent Bank, known as the Grameen Bank, in 1983. This bank has opened the door for the establishment of other similar kinds of banks around the world.

Using the experience of the Grameen Bank, microfinance institutions started to flourish around the world. They provide small amount of credit to poor households or microenterprise operators. Their performance in terms of repayment rate varies from country to country and from one place to another within the same country. Beneficiaries are also said to improve their income, productive assets and the like, but the impact is not the same throughout.

In Ethiopia, provision of micro credit for income generating activities started in 1980s by NGOs. In other words, NGOs were the first to start micro finance in urban and rural areas of the country.

The DBE started microenterprise-lending program in 1994 in 16 selected market towns. This was possible due to the agreement signed between the Government of Ethiopia and the International Development Association (IDA) of the World Bank. At present, the number of market towns which the bank provides microcredit are forty-nine.

This paper is a case study of two market towns, i.e. Debre Birhan and Assela. It has tried to assess the impact of the program in terms of micro enterprise income. The study hypothesized that microenterprise lending would increase the micro enterprise income of the borrowers. In order to test this hypothesis, the research used a methodology, which allow comparing borrowers with non-borrowers. In addition, a comparison of the situation before and after the credit was made.

The research utilized descriptive statistics so as to highlight the major characteristics of the respondents. Descriptive statistic is also important to comprehend the general conditions behind the program.

This research has also tried to single out the contributing factors which in one way or another brought variation in income. To do this, it has used a regression analysis. By taking into account all possible explantory variables, the method has identified the relative impact of each variable on income.

The sample size of the study was 231 respondents. Out of this, borrower and non-borrowers consisted of 167 and 64 respondents respectively. More than 50 percent of the respondents were head of the household.

In Debre Birhan, the total number of respondents who took credit was 160 of which fourth time borrowers were 30, third time borrowers were 37 and second time borrowers were 63. Here, the non-borrowers were 30. And in the case of Assela, the second time borrowers were 37 and the non-borrowers were 34.

With regard to educational level, in both towns, more than 50 percent of the respondents were less than grade 8 level of schooling. The majority of the non-borrowers in Debre Birhan were (i.e. about 33 percent) found to have grade 9 to 12 level of schooling.

The type of microenterprises operated by the respondents varies from site to site. In Debre Birhan, the major activities for the borrower group were 'areke' making (43.1 percent), dairy/fattening (12.3 percent), sells of non-processed food items (8.5 percent) and food processing (8.5 percent). In the case of non-borrowers, the activities are similar except the significance of cereal and pulses trading in the group(i.e. about 13.3 percent). On the other hand, in Assela, the major enterprises according to order of importance were 'areke' making (29.7%), food processing (27.0%) and tailoring (16.2%). The situation is similar in the case of the non-borrower group.

The major sources of cash to start up business in both towns were credit from moneylenders, own saving, credit from micro enterprise lending program of the DBE, credit from relatives, money provided by the family and credit from cereal traders.

With regard to the volume of start-up capital, in Debre Birhan, the percentage of borrower and non-borrower operators who started the business with less than Birr 250 was 62 and 63 percent respectively. In Assela, about 46 and 56 percent of the borrowers and non-borrowers started their business with less than 250 Birr.

The study has shown that more than 50 percent of the respondents in borrower and non-borrower group were members of 'equb' (i.e. a traditional financial institution). But, the number of respondents who deposited money in the bank was insignificant in both sites.

More than 50 percent of the microenterprises in the study sites are located within one compound including the home of the operator. The majority of the respondents (more than 75 percent) have access to electricity in both towns except the non-borrowers in Assela. Similarly more than 75 percent of the respondents (borrowers and non-borrowers) have access to water in Debre Birhan, compared to less than 30 percent in Assela. Most of the respondents in both sites don't have work license (i.e. about 80 percent).

The maximum amount of credit provided to micro-enterprise operators was Birr 5000 in Debre Birhan and Birr 2000 in Assela. About 59 percent of the respondents in Assela reacted that the amount was not sufficient. In Debre Birhan, only 43 percent of the respondents reported that the amount was not sufficient.

The program has an impact on income and productive assets. Borrowers in Debre Birhan were able to increase their enterprise income from Birr 181.14 per month before the loan to Birr 252.77 Birr per month after the loan. Non-borrowers were reported an average monthly income of Birr 154.77. The average monthly income of the borrowers was higher than the non-borrowers. In the case of Assela, borrowers were able to increase income from Birr 139.32(before the loan) per month to Birr 230 (after the loan)per month. The monthly income of the non-borrowers was Birr 282.94.(i.e., current enterprise income) Here, the enterprise income of the borrowers was less than the non-borrowers.

The results of the regression analysis imply that credit is significantly and positively correlated with income in Debre Birhan. Moreover, the other variables that were significant and positive were start-up capital, non-paid family workers, paid

employees and productive assets. Those who were engaged in service activities also earned more income than manufacturing (negative coefficient for the dummy variable representing economic activity).

In the case of Assela, there were two variables that explained variation in micro enterprise income. These were economic activity and credit and both were negatively correlated with income. The result with regard to credit was unexpected in the case of Assela. The possible reasons are:-

1) Improper selection of borrowers:- Most of the borrowers were selected on the basis of friendship, instead of competence. It appears operators who could benefit much more from the credit were not included.
2) Misleading information during the initiation of the project. Most people in Assela considered it as an aid package and thus, the borrowers may have failed to efficiently utilize the credit.
3) Low business activity as compared to Debre Birhan town.
4) Low level of credit provided to operators in Assela

5.2 Policy Implications

Credit is not an end by itself. It is a means to achieve something. If a person who took credit did not run his/her business well, the end objective would not be achieved. In other words, operators who utilized the credit for non-productive assets would be unable to repay the loan.

Based on the findings of the study, the following implications can be drawn.

1) Appropriate package of support should be prepared to promote micoenterprise operators (i.e. including suitable working area, marketing outlets, provision of basic infrastructures and other related facilities).

2) In the provision of microcredit, emphasis should be given to the selection of micro enterprise operators. Proper screening has to be made to sort out those who are good borrowers and bad borrowers before they took the credit.

3) The volume of credit provided must be sufficient to meet the working capital requirement of the activity.

4) The duration of the loan repayment period needs to be flexible by taking into account the nature of the business.

5) The program that is being undertaken by the Development Bank of Ethiopia is an additional task to the Bank. The Bank mainly provides credit to medium and large- scale industrial and agricultural activities. The provision of micro credit is generally viewed as an additional burden with no incentive by the workers. There is a need to develop a micro finance institution which mainly focus on saving and credit activities.

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NON-BORROWER QUESTIONNAIRE

PART ONE: - MICROENTREPRENEUR AND THE ENTERPRISE

1.1. Name of the microentrepreneur_____

1.2. Address: woreda_____ kebele_____

1.3. The relationship of the microentrepreneur to the head of the household _____

Head of the household ----1
Spouse---------- - -2
Son/Daughter----------3
Mother/Father----------4
Brother /Sister----------5
Other relative----------6
Non-relative----------7

1.4. Sex_____

Male ----1
Female---2

1.5. Age_____

1.6. Religion_____

Orthodox-------1
Protestant-----2
Catholic-------3
Muslim---------4
Other/specify--5 ___

1.7. Ethnicity_____

Amhara---------1
Guragie---------2
Tigray----------3
Oromo----------4
Other/specify---5

1.8. Marital status_____

Married----1
Single------2
Divorced---3
Widowed----4

1.9. Level of Education

Illiterate---------- 1
Literate (read and write)----2
Grade 1-6----------3
Grade 7-8----------4
Grade 9-12----------5
Above grade 12----------6

1.10. Could you tell us the number of people who live in your household? What about before 1993/94? (i.e., the period before the start of micro credit program in the town)

Now----------
Before 1993/94----------

1.11. Details of the household

Code A- Educational level

Illiterate----------1
Literate (read and write)-----2
Grade 1-6----------3
Grade 7-8----------4
Grade 9-12----------5
Above Grade 12----------6
Kindergarten----------7

Code B - Economic Activity

Metal works -1
Wood works -2
Basket works -3
Tannery -4
Shoe repairing -5
Tailoring -6
Pottery -7
Bee hiving-8
Cereals and
Pulses trading -9
'Areke' making-10
'Tella' making-11
Food processing-12
Dairy/fattening-13
Home Gardening -14
Agriculture -15
Poultry -16
Cotton rolling -17
Weaving-18
Embroidery -19
'Sifet' -20
Kiniting -21
Selling of second
Hand clothes -22
Making of fire bricks -23
Selling of firewood -24
Selling of charcoal - 25
'Gulete' - 26
Carpet making -27
Government employee/retired - 28
Housewife -29
Student -30
Not employed
(Seeking employment)-31
Selling of non-
processed food
items -32
Non-paid servant -33
Other/Specify -34

Name (use No)	Sex	Age	Level of Education	Occupation

1.12. Is there any other person/persons in your household who do have independent sources of income? ___

Yes- 1
No -2

1.13. If 'Yes' to Q.1.12, could you tell us their number?

Now------
Before 1993/94-----

1.14. How many members of your family depend on your income (including children)?

Now-------
Before 1993/94-------

1.15. How long have you been living in this town? _____Years.

1.16. How do you acquire the present skill?

Self-taught - 1
Family tradition -2
Apprenticeship - 3
Formal training -4
Other/Specify/ - 5

1.17. Could you tell us the main type of enterprise you are engaged in at present?_____

1.18. How old is your present enterprise?___Years

1.19. Do you keep financial records of your enterprise?

	Yes = 1 No = 2
Now	
Before 1993/94	

1.20. If the enterprise maintains financial records, could you tell us the extent of maintaining the records?

	Full -1 Partly -2 Average -3
Now	
Before 1993/94	

1.21. What about the location of your enterprise and home? _____

Within one compound -1
In different places -2

1.22. Do you have the following services around your work area?

	Yes -1 No -2	Private -1 Others' family -3 Communal -2 Government -4
Electricity		
Water		
Telephone		

1.23. Could you tell us the average weekly working hours of the enterprise?_____Hours.

1.24. Is the enterprise seasonal?_____

Yes -1
No -2

1.25. If 'Yes' to Q.1.24, could you tell us when the activity becomes high, average and low?

High -1			Average -2			Low -3					
S	O	N	D	J	F	M	A	M	J	J	A

1.26. What are the three main problems you encounter in the day to day activities of your enterprise?

1___ 2___ 3
Shortage of capital -1
Family problem -2
Lack of market -3
Inadequate work premises -4
Lack of raw materials -5
Inadequate skill -6
Red tape to get license -7
Other/specify/ -8

_____
I don't have any problem -9

PART TWO: - CREDIT AND SAVING

2.1. What was your source of money to start the enterprise?

Yes -1 No. -2						
Saving or 'equb'	Credit from friends/relatives	Credit from money Lenders	Credit from cereal traders	Inheritance	Given by the Family	other/specify/

2.2. If 'Saving or 'equb' to Q.2.1, what was the source of the money?

Yes -1 No -2				
Agricultural income	Property Sales	Other businesses Income	Apprenticeship payment	Other/specify/

2.3. With how much money did you start your enterprise?_____

Less than 250 Birr - 1
251 - 750 " -2
751 - 1000 " -3
1001 - 2000 " -4
2001 - 5000 " -5
More than 5000 Birr/Specify/ -6

2.4. Have you taken any credit?_____

Yes -1
No -2

2.5. Has any bank ever refused your loan application?_____

Yes -1
No -2

2.6. Do you have any outstanding debt?_____

Yes -1
No -2

2.7. If 'Yes' to Q.2.6, how much is the outstanding amount?--- Birr

2.8. If 'Yes' to Q. 2.6, could you tell us some of the reasons behind the outstanding debt?

Yes= 1 No = 2			
Low Demand of products	Family illness	Natural disaster	Other/Specify/

2.9. Do you have any saving in the bank or another institution?_____

Yes -1
No -2

2.10. If 'Yes' to Q. 2.9, could you tell us details of the saving?

Name of the organization	Amount of saving	Starting time
Bank		
Credit and saving Association		
Other/Specify		

2.11. Do you have savings in your home/excluding the working capital/? ---

Yes -1
No -2

2.12. If 'Yes' to Q.2.11, could you tell us how much money do you have in your home now?___Birr

2.13. Are you a member of 'equb'? _____

Yes -1
No -2

2.14. If "Yes' to Q.2.13, could you tell us the monthly payment? (All 'Equbs' should be added) ___Birr.

2.15. How much money do you get when you finish the equb?___Birr

2.2. If 'Saving or 'equb' to Q.2.1, what was the source of the money?

Yes -1 No -2				
Agricultural income	Property Sales	Other businesses Income	Apprenticeship payment	Other/specify/

2.3. With how much money did you start your enterprise?_____

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No -2

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Yes -1
No -2

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Yes= 1 No = 2			
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