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## Full Length Research Paper

# Does Participation Of Women On Micro And Small Scale Enterprises Address Poverty In Northern Ethiopia? Evidences From Adwa, Aksum And Shire Towns

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As an engine of economic growth and women empowerment, micro and Small Scale Enterprises (MSEs) have taken considerable focus in Ethiopia. To explore the impact of women's participation on MSEs on Poverty; primary data from 300 women MSE operators and non participants from Shire, Aksum and Adwa were collected. FGT, Gini index, logit model and PSM were used to analyze the data. 24.2 percent of the households were living below the poverty line in which 20.1 percent of the MSE participants and 27.2 percent of the MSE non participants are poor. Experiencing cyclical moves in the growth rate of income, the mean monthly income of the participants was 2.165 times higher than that of non participants and Current capital of the participants was 2.05 times higher than the non participants. With inequality level of 0.47, there was high income inequality (0.48) in MSE non participants than their counterparts (0.35). Participation has a positive impact on poverty which significantly affects on the level of consumption, income and capital of the households. Number of male adult household members (-0.67), experience of shocks (1.76), sex of the household head (2.19) and family size (0.38) were the determinants of participation on MSEs, at less than 5 percent level of significance. Financial problem (28.6 %), poor management practices(14.9%), poor saving habit(14.9 %), conflict among members(13.1 %), lack of demand driven training(11.9%), market and promotion problem(9.5 %) and others( administrative) problems( 8.9 %) were the dominant factors for the failure which demands market based short term trainings focusing on saving, conflict resolution and improving access for finance.

**Keywords:** Determinant, Gini index, MSE, Poverty and PSM.

## BACKGROUND AND JUSTIFICATION

Poverty is a multidimensional concept which addresses different issues, defined differently by different scholars,

and mainly rests on the situation of deprivation experienced by human beings. Constance F. *et al.*,

(1995) cited in Araya M. (2010), define poverty as economic deprivation. A way of expressing this concept is that it pertains to people's lack of economic resources (e.g., money or near-money income) for consumption of economic goods and services like food, housing, clothing, education and transportation. The World Bank (2007) defines poverty as "the inability to attain a minimum standard of living." Townsend (1979) cited in Esubalew(2006) defines poverty when individuals, families or groups in a society lack adequate resources to satisfy their wants and needs, or else to participate in the activities and have the living conditions and amenities, which are common to the society. Furthermore, Lipton and Ravallion (1993) defines it as a situation existing when one or more persons fall short of a level of economic welfare believed to comprise a reasonable minimum, either in absolute sense or by the standards of a specific society.

Women are regarded as the world's poor because the majority of the 1.5 billion people living on 1 dollar a day or less are women and earn an average slightly more than 50 percent of what men earn. The core source of the entire gender differential in poverty is that women relative to men are more vulnerable because of the socio-cultural framework of human society, less educated in the population, cultural values, and ethnicity and lack of physical and human capital. The socio-cultural beliefs are the limiting factors, which limits the opportunities and capabilities of women, and make them resource less and powerless individuals (Fitsum T., 2002, Mok T.Y, *et al*, 2007).

The micro and small enterprises contribute to the reduction of poverty and vulnerability of poor through enabling them to break the vicious cycle of poverty and also enabling them to enhance self empowerment, respect and social dignity. It allows poor people to increase their income, accumulate assets, and enter into mainstream society. The benefits of starting micro-enterprises go beyond an individual and a household. Others in the society are also get benefited from the microenterprise development as it fosters social relations or networks, civic engagement, community solidarity, and social capital (Ssewamala et al., 2006).

Micro and small enterprises are also play key roles in a society including contributing to jobs through innovations and creativity as well as aiding human resources development. The immediate and the long run effect is that they affect levels of income and ultimately contributing to poverty alleviation (Daniel A., 2010). Now a days, the role of Micro and Small-scale Enterprises (MSEs) in socio-economic development as a means for generating sustainable employment and income is increasingly recognized. In developing countries, the informal sector is a large source of employment and income, particularly for the urban population. The informal employment, outside of agriculture, is defined as employment that comprises of both self-employment, in

the informal enterprises, and wage employment, in the informal jobs, without secure contracts, worker benefits, or social protection and represents nearly half or more of the total non-agricultural employment in all regions of the developing world. It ranges from 48% in North Africa to 51% in Latin America, 65% in Asia, and 72% in sub-Saharan Africa (ILO, 2002).

Ethiopia, by now, is recognized as one of the least developed countries showing continuous economic growth of double digit for a decade, able to attract foreign direct investment and multinational organization to work with. To achieve this economic growth, the country has practiced different intervention and has developed and implemented different poverty reduction, food security and sustainable development policy and strategies for five years term since 2001 termed as Poverty Reduction and Sustainable Development Program (PRSDP) of the first five year plan(2000/1-2004/5), in the 2nd five years plan(2004/05-2010/11) called Plan for Accelerated and Sustainable Development to End Poverty (PASDEP) and currently in the 3rd five years plan which is called Growth and Transformation Plan (GTP) covering the years from 2010/11 to 2014/15. In all these plans and programs, the role of micro and small enterprises on poverty reduction and women empowerment through diversifying their income alternative schemes was credible understood and took significant policy and government support (MoFED, 2011).

Economic growth brought with its positive trends in reducing poverty, in both urban and rural areas of Ethiopia. While 45.5 percent of the Ethiopian population was living below the poverty line with extreme poverty in 1995/06, it was reduced to 38.7% in 2004-2005; five years later this was 29.6%, which is a decrease of 9.1 percentage points as measured by the national poverty line, of less than \$0.6 per day. Strengthening different poverty reduction efforts and interventions, using the Growth and Transformation Plan (GTP), the target is to reduce this further to 22.2% by 2014-2015. Despite the reduction in the level of poverty, extreme poverty is still a common phenomenon of female headed households than the male counter parts (MoFED, 2012).

Economic growth in the regions of Ethiopia has the same feature as the economic achievement of the nation. It shows continuous increment throughout the decade averaging more than 10 percent. The encouragement of micro and small enterprises are carried out in all regions of Ethiopia. Tigray, the study area, is on the process of change and shows economic growth continuously for more than a decade. In its strategic plan (2002-2004), the region has achieved average growth rate of 10.01 percent. Observing and measuring the current performance, the regional government has increased its efforts for a better accomplishment than the previous plan and achieved 11 percent average growth rate of the economy in its strategic plan of 2005/05-2009/10.

In Ethiopia, about half of the urban workforce is

**Table 1.** Incidence of poverty on the basis of participation

Group	P0	P1	P2	Poverty line
Non-MSE	0.340(0.038) *0.272(0.036)	0.042( 0.007) 0.056 ( 0.009)	0.008 (0.002) 0.021(0.005)	231.6 336
MSE	0.245(0.040) *0.201(0.038)	0.078 ( 0.011) 0.021( 0.005)	0.035(0.009) 0.003( 0.001)	231.6 336
<b>Population</b>	<b>0.299(0.028)</b> <b>*0.242( 0.026)</b>	<b>0.062(0.007)</b> <b>0.041 ( 0.006)</b>	<b>0.023(0.005)</b> <b>0.013( 0.003)</b>	<b>231.6</b> <b>336</b>

Source: Researchers' survey and computation, August 2012

Value in brackets is standard deviations

\*incidence of poverty using total poverty line

**Table 2.** Incidence of poverty at woreda level

Group	P0	P1	P2	Poverty line=336
Shire	0.372(0.072)	0.120(0.034)	0.064(0.021)	
Axum	0.224 (0.055)	0.040 (0.016)	0.015 (0.011)	
Adwa	0.166(0.047)	0.021(0.006)	0.003( 0.001)	
<b>Population</b>	<b>0.242(0.033)</b>	<b>0.041 (0.011)</b>	<b>0.013(0.007)</b>	

Source: Researchers' survey and computation, August 2012

Value in brackets is standard deviations

engaged in the informal sector. Even if the composition of the female informal workforce varies across regions, the majority of economically active women in developing countries makes up a significant share of the micro-enterprise population and is considered critically important for poverty reduction strategies (Gebrehiwot and Wolday, 2005). According to the Ethiopian Central Statistical Authority (2004), almost 50% of all new jobs created in Ethiopia are attributable to small businesses and enterprises, and roughly 49% of new businesses that were operational between 1991 and 2003 were owned by women. Moreover, Ethiopian Economic Association (2004) stated that small businesses and enterprises operated by women entrepreneurs contribute significantly to the national economy in terms of job creation and the alleviation of poverty.

Studies conducted in most developing countries revealed that Micro and Small Enterprises by virtue of their size, location, capital investment and their capacity to generate greater employment have proved their powerful propellant effect for rapid economic growth. The sector is also known as an investment potential in bringing economic transition by effectively using the skill and talent of the people without requiring high level of training, much capital, and sophisticated technology in Ethiopia. Self-employment in small-scale businesses presents a constructive option for income generation. The development of MSEs is becoming a very critical issue for the unemployed people, especially for women. In many developing countries like Ethiopia, a high

percentage of small-scale businesses that cater to local needs are controlled or owned by women (Wolday, 2004).. Studies on this theme mostly focuses on the employment opportunity, income, and poverty and challenges focusing on the big or capital cities of the regions. However, to the best of the researchers' knowledge the real impact of women's participation in MSEs on poverty alleviation in the zonal towns were not studied so far. Therefore, a research into women participation in Micro and small Enterprises and its impact on poverty alleviation could highlight the status of women participation in MSEs and its effect on poverty alleviation and determinants for their participation; and to connect the research works focusing on mega cities with the zonal cities in Ethiopia.

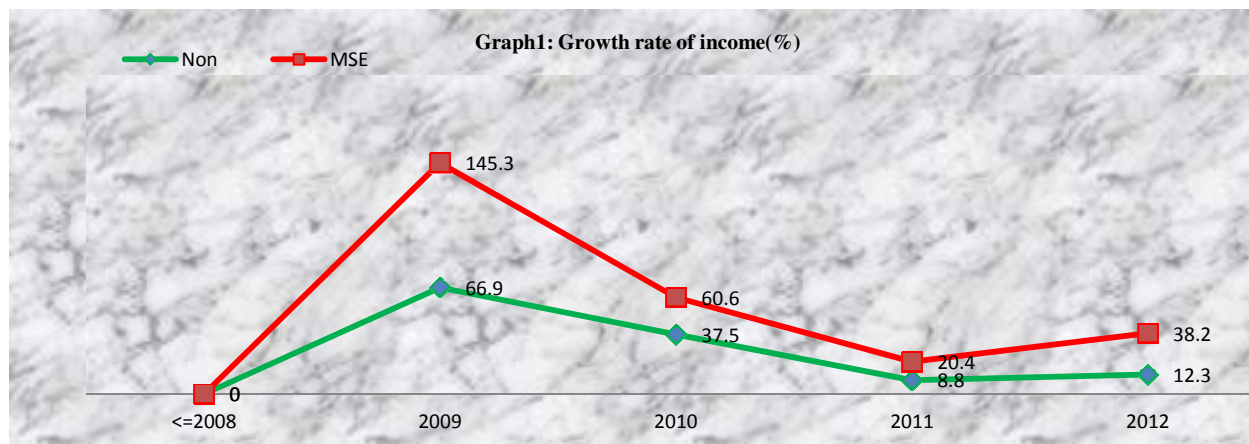
## Objectives Of The Study

### General Objective

The overall objective of the research was to assess the impact of women's participation in urban micro and small enterprises on poverty in Tigray

### Specific Objectives

- To examine the status of poverty on women MSEs participants and non participants
- To examine the impact of women's participation in



Source: Researchers' survey and computation, August 2012

**Table 4.** Income inequality before and after participation

Income Inequality	Type	Estimated	STD	LB	UB
Before	Participants	0.47	0.04	0.43	0.51
	Non participants	0.46	0.03	0.44	0.48
	Total	0.50	0.02	0.47	0.53
After	Participants	0.35	0.03	0.28	0.42
	Non participants	0.48	0.02	0.46	0.49
	Total	0.47	0.02	0.44	0.50

Source: Researchers' survey and computation, August 2012

**Total 5:** Consumption expenditure per adult equivalent after matching

Per adult equivalent	Obs	Mean	Std. Dev	Min	Max
MSE participants	126	421	2.021	256	852
MSE non-participants	87	362	3.265	158	554

Source: Researchers survey and computation, August 2012

**MSEs on consumption and income**

- To analyze the factors influencing participation of women on MSEs
- To identify the challenges facing urban women MSE operators

area (theme) of Aksum University for its immediate support through research and community service outreaches.

**METHODOLOGY OF DATA ANALYSIS**

**Sampling**

**Sampling Frame**

Micro and small Enterprises in urban areas of Central and North Western Zones was purposely selected to be the study area; because the zones are highly populated areas, has un exploited potential that definitely serves as business area for MSEs, particularly MSEs focusing on tourism. Secondly, these zones are the research focus

**Sampling Technique And Sample Size**

Multistage sampling technique was employed for selecting the representative women. The first stage was purposively selection of 3 urban areas from Central and North western zones of Tigray Shire, Aksum and Adwa were selected purposefully as these are the major urban areas in the zones having well functioning MSEs. The second stage was the use of systematic random sampling, from the list obtained from the Trade and Industry Office (MSEs core process), to obtain the required women participants and a total of 168 women MSEs Operators was sampled. In addition, 132 non MSEs participants who are assumed to have similar

**Table 6.** Logit Model Estimates for participation in MSE  
Dependent variable: whether a household participated in MSE or not

Variables	Coefficients	Std. Err	t-values
Sex of the household head	2.1900300	0.6301631	3.48***
Age of the household head	0.0331605	0.0253169	1.31
Land holding (in hectare)	0.4538186	0.2788640	1.63
Family size	0.3808790	0.1806844	2.11**
Access to credit	1.0000400	0.6663582	1.50
Shocks	1.7615820	0.3482018	5.06***
Oxen holding (tlu)	0.1021113	0.4487010	0.23
House ownership	0.0251001	0.0312013	0.12
Livestock owned (tlu)	-0.0380292	0.1495155	-0.25
Educational status	-0.1886385	0.5222046	-0.36
Male adult household members	-0.6735947	0.2383953	-2.83***
Female adult household members	0.4145770	0.2973316	1.39
Intercept	-6.2403350	1.7450510	-3.58***
Number of observations = 168			
Summary statistics			
LR chi2(13)	=	63.89	
Prob > chi2	=	0.0001	
Pseudo R2	=	0.21254	
Log likelihood	=	-99.23156	

Source: Researchers survey and computation, August 2011

\*\*\* Significant at 1 percent level, \*\* Significant at 5 percent level and \* significant at 10 percent significance level

economic status with sampled MSEs participants before their participation was included. Therefore, the total 300 sample was allocated to each urban woreda proportionately on the basis of the available number of MSEs.

## DATA ANALYSIS AND MODEL SPECIFICATION

The study was conducted using both scientific models and descriptive analysis. Simple dispersion and central tendency measures was utilized to describe some points in the study. Different software packages like STATA 10, P-Score, DASP were used for the analysis purpose.

### Poverty Analysis

To analyze the impact of participation on MSEs on poverty, it demands first to analyze the incidence of poverty. it was analyzed using the expenditure approach, commonly known as FGT as it was developed by Foster, Greer, and Thorbecke (1984) and applied in most poverty studies (Fredu, 2008, Araya M, 2010). In measuring the incidence of poverty at household level, three measures are influencing once; the Head Count Index ( $P_0$ ) which depicts number of population who are poor, Poverty Gap Index ( $P_1$ ) which measures the extent to which individuals fall below the poverty line (the poverty gaps) are far away from the poverty line and Poverty Severity Index ( $P_2$ ) that

demonstrates not only the poverty gap but also the inequality among the poor (WBI, 2005).

Given that  $Z$  is the poverty line,  $Y_i$  is the actual Expenditure (adult equivalent) of individuals below the poverty line,  $n$  is number of people,  $q$  is the number of poor people normally those below the poverty threshold,  $\alpha$  is poverty aversion parameter  $\alpha$  is value given by researchers(0, 1, or 2) to determine the degree to which the measure is sensitive to the degree of deprivation for these below the poverty line and higher values of  $\alpha$  shows greater weight is placed on the poorest section of the society. , the formula is given as (Fredu, 2008, Tassew etal, 2008, Tesfaye (2006), WBI, 2005 and Araya M, 2010).

Then, the FGT or  $P_\alpha$  is given by:

$$P_\alpha (Z, Y) = \frac{1}{n} \sum_{i=1}^q \left[ \frac{Z - Y_i}{Z} \right]^\alpha$$

Therefore, if the value of  $\alpha = 0$ , the FGT or the  $P_\alpha$  becomes the Head Count Index ( $P_0$ ) yet when  $\alpha$  has value 1,  $P_\alpha$  is the Poverty Gap Index ( $P_1$ ).

## INCOME INEQUALITY

MSEs are expected to be source of income for the household and enable individuals to escape out of poverty. Thus, studying the impact of these on poverty has to address the issue of income and its distribution. To

**Table 7.** ATT Estimation Results of Impact of MSE on Households' Consumption Expenditure per Adult Equivalent (Poverty)

Outcome variable/ consumption Expenditure	Matching method	No of MSE- Participants	No of MSE non- participants	Average treatment effect on the treated (ATT)	t-values
Total food	Nearest neighbor	101	66	654.421	3.2012***
	Stratification	101	66	774.524	4.2310***
	Kernel	101	66	561.251	3.6245***
	Radius	101	66	780.113	5.2216***
Total Non-food	Nearest neighbor	101	66	28.4598	0.2458
	Stratification	101	66	45.8562	1.2560
	Kernel	101	66	66.4859	0.2356
	Radius	101	66	71.0568	1.0026
Total consumption Expenditure	Nearest neighbor	101	66	250.554	2.6532***
	Stratification	108	82	362.1542	3.2154***
	Kernel	108	82	202.8547	3.0214***
	Radius	108	82	198.6541	3.2540***

Source: Own Computed from Household Survey Data, August 2012

\*\*\* Significant at 1 percent level of Significance; standard errors are bootstrapped.

deal with, income inequality was analyzed using the popular measure of inequality, Gini coefficient (GC).

In most empirical findings focusing on income inequality, gini index is the dominant one and is represented by the following formula in which let assume  $X_i$  be a point on the cumulative percentage of population that lies on the horizontal or (X-axis) and  $Y_i$  is a point of cumulative percentage of expenditure plotted on the vertical or Y-axis, then the Gini coefficient(GC) is given by the formula(WBI(2005), Tesfaye(2006) , Tassew *et al*(2008) and Araya M., 2010).

$$Gini \ (GC) = 1 - \sum_{i=1}^N (X_i - X_{i-1})(Y_i + Y_{i-1})$$

Where  $X_i$  is value on the cumulative percentage of population

$Y_i$  is value of cumulative percentage of expenditure

$N$  is sample size

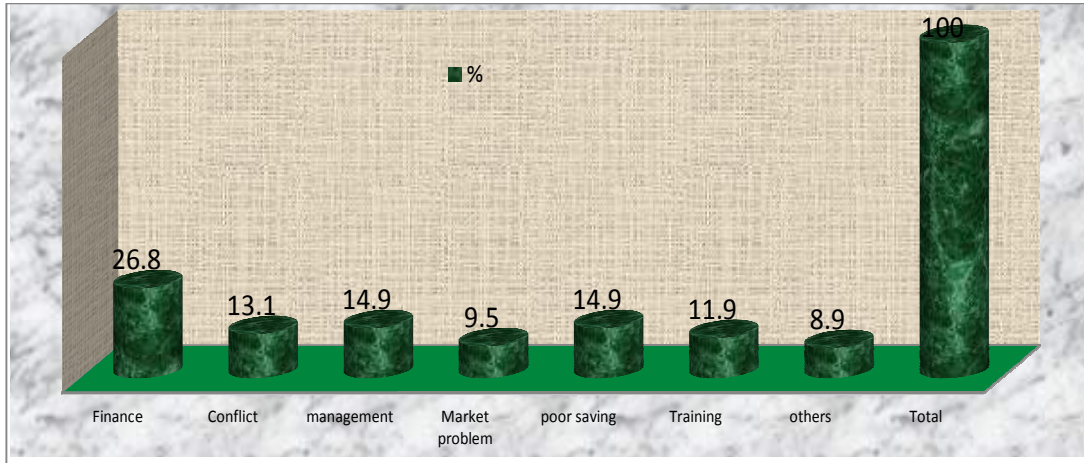
### Impact Analysis

Assessing the impact of any intervention requires making an inference about the outcomes that would have been observed for program participants had they not participated. The appropriate evaluation of the impact of the program requires identifying the average treatment effect on the treated (ATT) defined as the difference in the outcome variables between the treated households

and their counterfactual. Counterfactual refers to what would have happened to the outcome of program participants had they not participated (Rosenbaum and Rubin, 1983; Gilligan *et al.*, 2008 cited in Yibrah H., 2010).

Access to the MSES was not randomized. As a result, the impact of the Micro and Small Scale Enterprises on women households' poverty reduction and income was estimated using propensity score matching as a method of estimating the counterfactual outcome for MSES beneficiary households. Estimating the propensity score and making that the balancing condition satisfied is the first step in propensity score matching (PSM) based on observed household characteristics. The magnitude of a propensity score ranges between 1 and 0; the larger the propensity score, the more likely the household is to participate in the Program (Setboonsarngat *et al.*, 2008). Variables used in propensity score estimation in this study will be age of the household head, sex of the household head, education status of the household head, male adult equivalent, female adult equivalent, pre-program consumption, pre-program income, and family size, access to credit service, access to health service, and access to communication.

According to Rosenbaum and Rubin (1983), let  $Y^{MSE}$  be the outcome of the MSES beneficiary households and  $Y^{non-MSE}$  outcome of the Non-MSES beneficiary households. For each household, only  $Y^{MSE}$  or  $Y^{non-MSE}$  is observed, which leads to a missing data problem. In estimating the propensity score,



Source: Researchers survey and computation, August 2012

the dependent variable used was participation in the MSES and Let  $D_i$  denotes the participation indicator equalling 1 with probability of  $\pi$  if the household is MSES beneficiary households and 0 with probability of  $1-\pi$  otherwise. Let  $X_i$  denotes a vector of observed individual characteristics used as conditioning variables.

The main goal is to identify, the most common evaluation parameter of interest, the average effect of the treatment on the treated (ATT). It is defined as:

$$ATT = E(Y^{MSE} - Y^{non-MSE} | D=1, X) = E(Y^{MSE} | D=1) - E(Y^{non-MSE} | D=1) \dots (1)$$

This parameter estimates the average impact among MSES beneficiary households. The data on MSES beneficiary households identify the mean outcome in the treated state  $E(Y^{MSE} | D_i = 1, X)$ . The mean outcome in the non-MSES  $E(Y^{non-MSE} | D_i = 1, X)$  is not observed.

Let  $P = \Pr(D=1 | X)$  denote the probability of participating in the program (MSEs), i.e., the Propensity Score.

Propensity Score Matching (PSM) constructs a statistical comparison group (Non-MSEs beneficiary households) by matching observations on MSEs beneficiary households to non-MSEs beneficiary households on similar values of propensity score. The effectiveness of PSM estimators as a feasible estimator for impact evaluation depends heavily on the assumptions of Conditional Independence Assumption (CIA) and common support assumption (CSA) (Rosenbaum and Rubin, 1983).

Building on these underlying assumptions, Propensity Score Matching provides a valid method for estimating  $E(Y^{non-MSE} | D_i = 1, X)$  and obtaining unbiased estimates of ATT (Heckman *et al.*, (1997), Smith and Todd (2001), Smith and Todd (2005)).

Following the parameter of interest here is the average treatment effect on the treated (ATT). Therefore, applying the composite assumption, the ATT can be written as follow:

$$ATT_{PSM} = E_{P(X)}(Y^{MSE} - Y^{non-MSE} | D = 1, P(X)) \dots (2)$$

$$ATT_{PSM} = E_{P(X)}\{E(Y^{MSE} | D=1, P(X)) - E(Y^{non-MSE} | D=1, P(X))\} \dots (3)$$

The perception is that two individual households with the same probability of participation will show up in the participants and non-participants samples in equal proportions on the basis of propensity scores.

Where the first term on the right hand side of the above expression (Equation 03) can be estimated from the MSES beneficiary households and the second term from the mean outcomes of the matched (i.e. based on propensity score) non-MSEs beneficiary households.

The probability of participation in the MSES can be derived by binary response models. Following Todd (1995) cited in Liebenehmet *et.al* (2009), who finds that various methods to predict *propensity score produce similar estimates, for computational simplicity in this study logit model was applied*. The propensity score can then be defined as:

$$P(X) = \Pr(D=1 | X) = F(\beta_1 x_1 + \dots + \beta_i x_i) = F(X\beta) = e^{X\beta} \dots (4)$$

Where  $F(X\beta)$  produces response probabilities strictly between zero and one

Once the propensity score is estimated, the data is split into equally spaced intervals of the propensity score. This implies that, within each of these intervals, the mean propensity score of each covariates do not differ between the treated (MSEs beneficiary) and control group (non-MSEs beneficiary) households. This is known as the balancing property.

## FINDINGS AND RESULTS

### Basic Features Of Respondents

300 samples were distributed to three urban areas of the Central and Northwestern zones. From the total sample size, Adwa took 34.69 %, Aksum (39%) and the remaining (26.33%) belongs to shire. From the total sample size, 56 percent of them were MSE operators and the remaining 44 percent were non MSE members.

Marital status profile of the respondents has comprised of all types of status. 44.33 percent of the respondents were married followed by unmarried 42.33 percent; divorced 10 percent and 3.33 percent of them were also widowed. 46.33 percent of the target respondents were high school complete (9-12), diploma and above (22.33%), secondary (7-8) has a share of 15.33 percent followed by illiterate (8.67%) and elementary (7.33%). The mean family size of the respondents was 2.07 with maximum number of household members of five and the minimum was one. Accordingly about 48.67 percent of the respondents were singled member households followed by two members (17.67%), three members (16.67%), four (11.33%) and five (5.67%).

The age category of the target respondents was in the age range of 16-70 years. The mean age of the respondents is 30.84 years with standard deviation of age 9.97 years. Based upon the number of MSEs established in the urban areas of the Central and North western zones of Tigray, the sample size, for both the participants and non participants, was allocated proportionately. From the total sample size (300), 56 percent was the share of the MSE and the remaining 44 percent was covered by the non-MSE participants. Accordingly, 39 percent of the sample was allocated to Axum, followed by Adwa (34.67 %) and Shire (26.33 %).

### Poverty Situation of Respondents

Poverty reduction is still an ultimate objective of the government of Ethiopia which is stated in its Growth and Transformation Plan of the country. In urban areas of the country, poverty reduction efforts are expressed by the activities and focuses given to the establishment of MSEs. It is through this and allied interventions; the urban youth and unemployed people are expected to generate income that enables them to escape from poverty. The poverty situation of the study area was analyzed with the help of FGT method using the poverty line used to study poverty situation in Aksum This poverty line is considered as a proxy measure to study poverty in the neighbor study areas with total poverty line of birr 336 and food poverty line of birr 231.6 developed by Araya M., et al(2010) to study determinants of poverty and income inequality in Aksum town.

The incidence of poverty in the study area as measured

by the Head count index (P0), Poverty gap index (P1) and poverty severity index (P2) is stated below. Using the food poverty line, table 1, the poverty head count index in the non-MSE participants (0.34) was higher than the participants (0.245). However, the poverty gap index in the MSE participants (0.078) was greater than their counterpart living 4.2 percent far away from the poverty line. In addition, the poverty severity index was also higher in MSE participants (0.035) than the non-participants (0.008). This shows that the non-MSE participants were living around the poverty line and with less inequality among these who were living below the poverty line than the participants.

Poverty can also be measured by the total poverty line, i.e, taking into account the food and non food expenditures of the households. In this study, as stated above, the total poverty line is birr 336 in which 31.07 percent (birr 104.4) accounts for non food poverty line. As depicted in table 1, the incidence of poverty among the participants and non MSE participants is different. 24.5 percent of the non-MSE participants were living below the poverty line with income short fall of 0.056 and poverty severity index of 0.021. on the other way round, 20.1 percent of the MSE participants were living below birr 336 and were living 2.1 percent far away from the poverty line and severity index rate of 0.003. Thus, the poverty gap index and poverty severity index of the non-MSE participants were relatively higher than the MSE participants if we able to compare using the total poverty line. Most studies carried out with the relationship between participation in MSEs and poverty revealed that it has the capacity to reduce the extent of poverty. The figures on incidence of poverty between the participants and non participants revealed that the MSE participants have lower level of poverty than the non participants. This is quite in line with most numerical finding carried out in this theme.

The incidence of poverty was different in all the study woredas. Accordingly, table 2, 37.2 percent of the respondents from Shire was living below the poverty line followed by 22.4 percent in Axum and Adwa with head count index of 0.166. The poverty gap index, percentage distance from the poverty line, was also highest in Shire (0.120), followed by Axum (0.040) and Adwa (0.021). Moreover, the poverty severity index was also led by Shire, Axum and Adwa with respective magnitudes of 0.064, 0.015 and 0.003, respectively.

### Arrangement of Micro and Small Scale Enterprises (MSEs)

#### Types of MSEs

Respondents have been involved in different sectors of the economy so as to support and sustain their life through their direct involvement on income generating

schemes. The MSE participants were involved in seventeen different categories of sectors. 15.33 percent of the respondents were involved in the retail shops, beauty salon(10 %), Baltina(sale of food related consumables) accounts 9.33 percent, restaurant(9%), wood and metal works(9%), coffee house(8%) were among the leading sectors.

According to the study made, from the total MSE participants, 11.1 percent of the operators were established before and in 2005, 20.9 percent of them were established in 2008, 30.36 percent were started operation in 2009 and the remaining 36.9 percent were also founded in 2010. The number of MSEs established had increased by average yearly growth rate of 47.4 and in 2008 highest establishment of MSEs (75 %) was recorded.

Having 4.46 mean numbers of members, the maximum and minimum number of members in the MSEs was 25 and 1, respectively. The average age of MSE participants was 30.0 years and the non- MSE participants had mean age of 29.36 years. Moreover, the mean family size of the MSE participants was 2.08 and the non-participants had mean family size of 1.95. Further, there was no such significant difference between the mean hours that MSE participants (12.12) and non-participants (12.137) spent on work per day.

### Capital and Income Structure

Initial investment is a key element in the study of impact of participation on MSEs. Of course, success or failure of businesses might depend on so many factors but having huge startup capital is helpful to have well organized kind of business. To this end, studies shows that initial capital of MSEs can affect their success stories positively.

Capital in our study refers to the money and the current monetary worth of both fixed and variable assets owned by the respondents. Based on this, the mean initial capital of the MSE operator respondents' was 5486.31 with standard deviation of birr 9847.42. On the other way round, the non MSE operators respondents had mean initial capital of birr 5453.182 and standard deviation of birr 3751.09.

The mean current capital of the MSE participants was birr 17021.13 with maximum and minimum capital value of birr 70000 and 600, respectively and the non participants owned current mean capital of birr 8310.076 and standard deviation value of birr 4396.379 with maximum and minimum capital holding of birr 2400 and 1000, respectively. Thus, despite the initial capital of the respondents' looks very similar, the current capital of the MSE participants was 2.05 times that of the non-MSE participants. This depicts that the MSE participation has the power to increase the capital holding of the members and this is quite similar with most empirical findings focusing on capital accumulation and MSE participation.

Ensuring financial security of members and reducing the extreme poverty is the ultimate objective of establishing and involving in MSE. According to the study made, there was a change in the income level of the MSE participants and non participants. Income of the MSE operators has increased from time to time. Taking 2008 as a base year of the study, the mean income of the respondents was birr 670.08. Enjoying an average mean income of birr 3084.697 per year, the income of the MSE participants reached birr 4393.64 in 2012.

At an average, the mean income of such respondents had increased by 66.13 percent. Despite, ups and downs was observed in the growth rate of income, the highest mean income growth rate (145.3 %) of the MSE operators had achieved in 2009 and the lowest growth rate (20.4 %) was recorded in 2011.

The non MSE participants were able to generate monthly income of birr 623.257 in 2008 and reached birr 2029.05 in 2012 with average mean income increment of birr 1432.13 per year.

The growth rate of mean income of the non MSE participants had shared the same trend of change like that of the participants. Highest growth rate (66.9%) was recorded in 2009 and the lowest rate of mean income growth (8.8%) was observed in 2011. Moreover, there is statistically significant difference in the growth rate of mean income of the MSE operators and non operators, i.e, the participants were enjoying highest growth rate of mean income. Comparing the current income (2012) of the MSE and non participants, the participant households were able to generate monthly income level of 2.165 times that of their counterpart.

The inequality of income before participation, measured in gini coefficient, was 0.50 in which 0.46 was the inequality in the non- participants and 0.47 in the participants. There was no significant difference between the gini indices of the participants and non participants.

The current income inequality was reduced to 0.47 and significant decrement has been observed in the MSE participants (0.35) and slight increment was recorded in the non-participants (0.48). This shows that participation in MSEs has significant effect to reduce the income inequality as it creates opportunity for households to involve in income generating activity. Thus, the finding is aligned with most empirical works focusing on the theme of participation in MSEs and income inequality.

### Impact Analysis

The impact indicator, on poverty The poverty was explained by the total household consumption expenditure measured in per adult equivalent, used in this study for MSEs was consumption, the food and non-food consumption which was estimated separately and total consumption (food and non-food) in tandem. Consumption was measured as per adult equivalent,

which is food consumption per-adult equivalent, non-food consumption and total consumption expenditure (food and non-food) per-adult equivalent. The food expenditure includes food items that the households consumed/used either from their own produced and/ or purchased. The non-food consumption consists of expenditures on education, medical services, water, electricity and telephone bills, fuel, and personal cares.

The total consumption is the sum total of food and non-food expenditures. A positive value of this indicates that households receiving or participating in the program called MSEs have higher consumption levels.

To carry out the impact evaluation, from the treated and the control groups we selected, 126 MSE participants and 87 non-MSE participants were left. 42 respondents from the MSE participants and 45 from the non participants were excluded by the model.

### **Determinants of Participation**

People have different motives to join micro and small enterprises. Taking whether MSE participation or not as dependent variable (1 if MSE participant and 0 if not), thirteen variables were regressed. As can be seen from table 6, four variables, male adult household members, shocks, family size and sex of the household head were statistically significant variables influencing, to join the operation of MSEs as a tool of generating income and escaping out of poverty, at less than 10 percent level of significance.

Sex of the household head, shocks and family size were determining participation positively and having male adult household member was affecting participation negatively.

The probability of the household to participate in MSE is affected positively by sex of the household head by the odds ratio of 2.19 at one percent level of significance. Family size of the households was determining participation positively by the odds ratio of 0.38, at 10 percent level of significance, and experience of shocks at household level was influencing participation positively by odds ratio level of 1.76. Moreover, having male member in the household was also determining participation negatively by the odds ratio level of 0.67. This might be due to the cultural fact that male members need to shoulder responsibility of households and they need not to let females to participate outdoor activities.

Thus, all the significant variables determining participation were supporting the existing empirical findings focusing on the study of determinants of participation in MSEs.

### **Analysis of Impact on Consumption**

To examine the impact of the program on households'

consumption expenditure, the sample respondents (both the MSEs Participants and non-MSEs Participants) were asked for food consumption expenditure either from owned produced and/or purchased valued in Ethiopian Birr and non-food consumption expenditure. All the quantities derived were converted into values (Ethiopian Birr) using the mean price of the items in the study year.

The per adult equivalent households' consumption expenditure is defined as per capita households' consumption expenditure adjusted for age and gender of household members obtained by dividing the households' consumption expenditure to the adult equivalent family size.

The following two major groups were included in the households' consumption expenditure: food consumption expenditures such as cereals (wheat, barley, sorghum, teff, finger millet, etc.), pulses (peas, beans, etc.), vegetables (onion, potato, garlic, tomato, etc.) cooking oil, meat and other food consumable items, and non-food consumption expenditures such as educational expenses, expenses on clothing, medical expenses, cleaning and personal care items, fuel and related expenses. Note that in this study the researchers used the consumption expenditure per adult equivalent as proxy variable for poverty to evaluate the impact of MSEs on poverty reduction.

### **MSEs Impact on Consumption Expenditure**

The impact of the MSEs on households' consumption expenditure was measured in per adult equivalent. To examine the impact of MSEs on household consumption expenditure the researchers used the household survey data of six months households' consumption expenditure. In evaluating the impact of the program on the households' consumption expenditure, the consumption expenditure was computed as per adult equivalent household consumption expenditure. A positive value of this indicates that households receiving benefits from the program (MSEs) have higher levels of consumption expenditure per adult equivalent than those who did not benefit from the program, the MSE participant households; as a result their poverty level is low in relation to the non-participants. Adult equivalent scale has been used to determine adult equivalent family size (Yibrah H., 2010 and Araya M., 2010).

Table 7 shows that the ATT estimation results of the four matching estimators used for this study. The outcome indicators for consumption expenditure were evaluated based on semi-annual per-adult equivalent household food consumption expenditure. The result of this study revealed that on average, the MSEs participant households consumed more food items in terms of food value as compared to the MSEs non-participant households, which means that the poverty level of the MSEs participants in terms of food consumption

expenditure was much more better than that of the MSEs non-participants participants.

The difference in the mean value of food consumption per adult equivalent between the MSEs participant and MSEs non-participant households was found to be positive and significant. Statistically, this was found to be significant at less than 1 percent significance level based on the NNM (ATT=654.42,  $t= 3.20$ ), stratification (ATT= 774.524,  $t= 4.23$ ), kernel (561.25,  $t=3.62$ ), and radius (ATT= 780.11,  $t=5.22$ ) matching estimators with bootstrapped standard error. Therefore, the overwhelming majority of the MSE participating households' in the program consumed more food items valued in Birr, which indicates that the poverty level of the MSEs participant households' are much more better than that of the MSE non-participant households.

### **MSEs Impact on Total Consumption Expenditure**

Here, the researchers are much more interested on total consumption (food and non-food) expenditure to be used as a proxy variable to evaluate the impact of MSEs on poverty by means of total expenditure per adult equivalent. In this estimation, the total food and non-food consumption items of each respondent households was used to obtain the total per adult equivalent consumption expenditure. Thus, the result indicates that the total per adult equivalent consumption expenditure for the MSEs participant households was found to be higher as compared to that of the MSEs non-participant households, which means that the poverty level of the MSEs participant households is much more better than that of the MSEs non-participant households.

The level of mean consumption expenditure per adult equivalent was birr 362 and 421 for the non MSEs and MSEs participant households, respectively. The estimated results of the PSM techniques indicated that the mean total consumption per adult equivalent of the MSEs participant households was significantly higher than that of the MSEs non-participant households. Statistically, this was found to be significant at less than 1 percent level of significance based on the NNM (ATT= 250.55,  $t=2.65$ ), stratification (ATT=362.15,  $t= 3.21$ ), kernel (ATT= 202.85,  $t= 3.02$ ), and radius (ATT= 198.65,  $t= 3.25$ ) matching estimators with bootstrapped standard error.

### **Challenges in Micro and Small Enterprises**

The well functioning of MSEs was not free of any challenges. Studies carried out with this respect have proved that their normal operation is influenced by financial and non financial difficulties.

According to the study made, MSE operators were exposed to different problems which emanates from the internal activities of the businesses and external situations have also impeded their activities.

#### **Chart 2: Challenges in MSEs**

As depicted in chart 2, financial problem (26.8%) was one of the most impediments facing MSE operators not to run as the required and enable them to bring the desired result. They faced shortage of finance to establish their business, to expand their work and to go with the changing environment. Especially, the intension of the government is to support the cooperative types of business and little attention was given to privately owned MSEs for the financial matters.

The second influencing factors were poor management practices (14.9 %) and poor saving habit (14.9%) of the business owners. The business managers were lacking special talent to run the business, mostly this was observed in the cooperative and partner kinds of MSEs. In addition, this was also a challenge in the privately owned businesses though the degree was low. Further, low saving habit was a common problem to 14.9 percent of the MSE operators.

Among the partner and cooperative types of MSEs, conflict among members and losing the mutual thrust habit was observed. Around 13.1 percent of the MSE operators were challenged their smooth day-to-day operation by the conflict created among and between members. This was expressed by missing the normal assigned tasks, become less responsible and sometimes thefts and embezzlements were created.

The government and other stakeholders having a say on the MSEs are expected to fill the skill and demands of the operators. Mostly, they are responsible to provide training, consultancy and financial demands of the members. However, the training given to MSE operators was not as the need of the members. As such the important and most demanded kinds of traing were not given to customers. 11.9 percent of the operators were not satisfied by the trainings and consultancy services given by the government and stakeholders due to the fact that despite the training is given in a redundancy manner it lacks to relate to the current demands of the MSE operators and there was also partial treatment focusing on the partner and cooperative types of MSEs.

9.5 percent of the MSE operators were facing marketing problem for their products; they had poor market connection for their products. As such, they could not able to get the required income for their consumption and to expand their market and the remaining 8.9 percent (others), problems related to the weak treatment of the local administrators, office of trade and industry-MSE cluster and poor interest of operators after they establish the MSE were influencing the normal operation of the businesses.

## **CONCLUSIONS AND RECOMMENDATION**

The government of Ethiopia has set an urban poverty reduction policy and strategy to reduce if possible to eradicate the extreme poverty in urban areas and empower women through the establishment of MSEs. To study the impact, 300 female respondents were selected from three urban areas of the Central and North Western zones (Adwa, Axum and Shire). Different software packages like STATA V-10, DASP, P-score were used to ensure the quality of the analysis.

The overall incidence of poverty was 0.242 in which the magnitude was less in the MSE participants (0.201) than the MSE non participants (0.272). Poverty was highest in Shire (0.372), followed by Aksum (0.224) and Adwa (0.196).

With mean expenditure of birr 362 and birr 421, for MSE non participants and participants, respectively; there was significance difference among the respondents at all measures of impact (Nearest neighbor, Stratification, Kernel and Radius) at less than one percent level of significance which depicted participation of women on MSEs has a positive impact on poverty reduction.

Despite similarities have been observed in the mean initial capital birr worth of birr 5471.7, current capital of the MSE operators (birr 17021) was higher than the MSE non participants (birr 8310.1). There was a change in the income level of the MSE participants and non participants. Income of the MSE operators has increased from time to time. Taking 2008 as a base year of the study, the mean income of the respondents was birr 670.08. Enjoying an average mean income of birr 3084.697 per year, the income of the MSE participants reached birr 4393.64 in 2012. There were ups and downs on the growth rate of income; highest mean income growth rate (145.3 %) of the MSE operators had achieved in 2009 and the lowest growth rate (20.4 %) was recorded in 2011. There is statistically significant difference in the growth rate of mean income of the MSE operators and non operators, i.e, the participants were enjoying highest growth rate of mean income. Current income of the participants was 2.165 times higher than the non participants ensured the positive impact of participation on MSEs on income. Having income inequality level of 0.47, high income inequality was observed in the MSE non participants (0.48) than the MSE operators (0.35) which depicted participation has positive impact to bring fair distribution of income in the households.

People have different motive to participate in MSEs. Number of male adult household members(-0.67) , experience of shocks(1.76) , sex of the household head(2.19) and family size(0.38) were determining participation on MSEs at 1 and 5 percent level of significance, respectively.

Internal and external challenges were influencing the normal functioning of MSE operators. Financial problem (28.6 %), poor management practices(14.9%), poor saving habit(14.9 %), conflict among members(13.1 %), lack of demand driven training(11.9%), market and promotion problem(9.5 %) and others( partial treatment, administrative problems ...) accounting 8.9 percent of share were the dominant variables.

## **RECOMMENDATION**

As participation on MSEs enables households to improve their income, consumption and capital holding, the government offices which are responsible to support the MSEs have to work hard to mobilize women to participate in MSEs, in order to reduce the incidence of poverty and income inequality. To achieve this, different experience sharing days have to be organized to share the MSE participants to the non-MSE participants on the benefits they enjoy and their current welfares. Thus, Trade and Industry Offices, Woreda Administration and Social Affairs Office and Women, Youth and Children Office are much responsible.

There are different forms of ownership of MSEs that women are participating. It is good and timely important to encourage such diversification for its better performance and risk aversion. As the focuses of the government, to support the MSEs, were geared towards the partnership and cooperatives MSEs, little attention was given to the private one. Since the private constitutes the major share and have significant influence as well as share better performance, the government offices should provide them the necessary supports, encouragements, impartiality, equal access for all, to bring the desired change on poverty. For this, the Woreda Administration, Trade and Industry Office and TVET are expected to discharge this responsibility.

Source of finance is the most challenging thing in the smooth operation of MSEs. Operators were influenced by finance not to expand their business and to provide what the market demands. The poor access for finance is the result of the poor financial system arrangement in the nation and the poor saving habit of the people, MSE operators. The financial difficulty of MSE operators might be solved through establishing a kind of loan given resulting from the saving contribution that MSE operators made. In addition, the contributions of the informal institution like 'Equib' to saving and improving the financial source of the small business operators is very vital. Thus, introducing such local social arrangement, with some improvements like legality and security, will enable to solve financial issues of households for a short period of time. Moreover, providing opportunity and access to finance for the privately owned MSEs like other forms of MSEs helps to reduce their financial difficulty

and improve their competitive power in the market. The office of Trade and Industry, Dedebit Credit and Saving Institution, Woreda Justice Office, and Woreda Administration are the responsible offices to cooperatively solve the obstacles.

Enhancing market opportunity and giving timely demanded trainings for the MSEs operators are key tools to expand their market, improve their technical and managerial skills and enable to generate better income from the sector. Promotional and market linkage works have to be carried out to increase the awareness of the customers towards the locally produced goods and services and to widen the market for MSEs. Different demand driven trainings focusing on conflict resolution, entrepreneurship, business management, work ethics, saving and money management, technical skills have to be given to all the MSE operators. To this end, Trade and Industry Office, TVET, Women, Youth and Children office are much responsible to handle in collaboration with other offices.

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