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Determinants of Women Participation in Micro and Small Enterprises in Hadiya Zone, Ethiopia

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The study was undertaken with the objective of assessing determinants of women participation choice and intensity of participation in Micro and Small Enterprises in Hadiya zone, Ethiopia. Within the zone three town administrative were selected based the largest number of economic activities. The investigation was grounded on cross-sectional review information from 385 women Micro and Small Enterprise's undertakings participant and non-participant that were assigned using semi-structured interview schedule, key informants interview, focus group discussion, and personal observation. Secondary data was acquired from empirical reports, government policy documents, national statistical reports, journal articles and reports of different organizations. Heckman's two-stage selection model was applied to recognize factors influencing women's participation decision and intensity of participation in MSEs. The first level of probit model estimation results reveal that educational status, business experience, access to credit, access to training, achievement motivation, receiving remittance, information seeking behaviour and initial capital were emphatically and fundamentally impact the likelihood of women participation decision in MSE while age was negatively related and does significantly determine the participation choice of the women. The after effects of the second stage Heckman model demonstrated that the intensity of participation in Micro and Small Enterprises was significantly and positively influenced by

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educational status, access to market, access to transportation, and achievement motivation. Hence, this study recommends that government and concerned bodies are anticipated to enhance the educational level, skill, and knowledge development training, provide aids and subsidized to income, credit facilities, and the remittance-receiving channels. It is also suggested that women should formulate their own goals and they should participate in business by their own choice nevertheless of other alternatives accomplish well and actions need to be accepted to offer incentives for women who have faced a lack of available initial capital in the study area.

Keywords: Women; participation; micro and small enterprises; Heckman two stage selection model.

1. INTRODUCTION

A micro and small enterprises has increasingly been seen as to be the driver of income creation; industrial propensity and ultimately reducing poverty in the world [1]. It has been widely accepted as an engine of employment creation then it contributes positively to the income-earning. Experimental examinations have discovered that the extent of employment made by the MSEs sector on the world is about 48% of the employment in North Africa, 6.2% in the United States, 22.3% in China, 80% in India, 67% in Japan, 51% in Latin America and 65% in Asia (Endalsasa, 2012 as cited in Fesseha [2]). Thus, participation in MSE is important for the generation of income for the basic goods and services and thereby reducing poverty.

Most importantly developing countries have been generally recognized the role of MSE for poor people particularly for women is evident from their relatively large share of economic growth. It is accounted for that Micro and Small Enterprises in developing nations represent about 60% of the GDP and about 70% of employment [3]. The report unveiled that Micro and Small Enterprises not just had a commitment to the employment creation yet in addition the area has become a point of convergence of easing of poverty through income generation in non-industrial nations. Additionally, the Micro and Small Enterprises ventures are significant in light of the fact that the sector assumes a huge part in poverty easing by enhancing income-earning and acquisition of assets [4].

Growth and transformation plan of Ethiopia has given due attention to MSEs as an essential to providing as a source of employment for the poor people then generating income for instance, has predicted that MSEs create employment for about 1.2 million people and thereby increase income, domestic saving and reduce poverty, particularly helping women [5]. It is clear that Micro and Small Enterprise is important in improving the pay of needy individuals. This improved salary utilizes the poor to obtain better schooling, sound health, and empowers them to alleviate poverty.

Women form an imperative part of the workforce and the development pretended by them can't be isolated from the financial perspectives [6]. The role of women participation in MSEs on income generation and ultimately poverty alleviation is one of the areas that have recently created debate among scholars. A study conducted by Ebisa [7] showed that about 65% of women in Ethiopia engaged in micro-enterprises while 26% of them in small scale enterprises. Their participation in micro and small enterprises directly helps for the alleviation of poverty by increasing their income level. In this case, women in the MSEs sector enabled them to earn income. This earned income uses them to become free of poverty. For that reason, shreds of evidence from (Christiana, [8]) suggested that the MSEs empowered women to increase their income, acquire assets, and provide basic needs, for instance, health, food, education, and clothing. In addition, it is clear that through participation in micro-enterprises, women allowed to sustain the livelihood of them and their households. This is because MSEs are mainly used by women to deal with the viewpoint for independent work which indicates an opportunity to misuse their capacities, simultaneously give a positive impact on the formation of assets and promoting income-earning and then alleviating poverty [9].

Though the participation of women in MSEs has a great potential in income generation, acquisition of the asset, and thereby alleviation of poverty, their participation is controlled by multifaceted but then exactly untested elements that do affect in the sector such as insufficient institutional support, lack of sufficient capital to expand their business, lack of business networks, lack of training and access to market [10]. Women participation are not constrained

only to influencing factor alone but also they have experienced the joint result of poor information flow, negative attitude of society to their business and lack of social acceptability [11]. Also, women share an important role in MSEs which the government of Ethiopia has formulated and applied as a strategy for income-earning, and ultimately poverty reduction, their participation in the MSE has not made a substantial effect on growth [12]. Furthermore, the policymakers and others did not look at the way in which the women's participation in MSE is affected with different limiting factors due to the lack of empirical shreds of evidence that help to understand well the determinants of participation choice and intensity of participation. As the outcome, there is a gap towards the factors affecting women's participation choice and intensity of participation in MSE in Ethiopia when all is said in done and in the investigation region specifically. Among the various discussions, there is almost no exact proof on the determinants of women participation choices and level of participation in MSE utilizing econometric methods. Various investigations have been completed on this issue are descriptive and qualitative in nature. With this, there are no investigations that delivered sound experimental outcomes utilizing the Heckman two-stage determination model that can connect the research gap and policy makers for ameliorative exercises. Consequently, this examination means to give observational proof on the determinants of ladies' cooperation in MSE in Ethiopia utilizing data gathered from the three administrative towns of the Hadiya zone. It is normal that the outcomes may use to knowledgeable dynamic cycles at various levels for planning poverty reduction strategies and enhance inspiration to an energetic argument that has happened concerning the women's participation in Micro and Small Enterprises as a significant strategy against poverty alleviation.

2. RESEARCH METHODOLOGY

2.1 Description of the Study Area

Hadiya Zone is one of the Zones of Southern Nation, Nationalities and People Region (SNNPR). The capital of the Zone, Hosanna town is situated at 237 km Addis Ababa city, the capital of Ethiopia. It is located in the Northwestern part of the Southern Ethiopia with the estimated population of the 1,611,119 whereby 801,476 (49.75%) males and 809,643 (50.25%) females [13]. The zone has three agro-ecological zones namely *dega, woinadega and Kola* with altitude ranges from 501 to 3000 meters above sea level. The average annual rainfall of the Zone ranging from 801mm to 1400 mm. Zone has about 346958.5 hectare total land mass with average annual temperature ranging from 12.6°C to 27.51°C respectively. The economy of the Zone is predominantly agriculture-based followed by formal and informal business activities. The Micro and Small Enterprises play a vital role in creating employment opportunities and generating income resulting valuable impact on poverty alleviation in the Zone. As indicated by Hadiya zone Enterprises and industry development office [14] about 4098 MSEs were owned by women operator in the Zone. According to the Zone Enterprises and Industry development office (2018), there are 1906 MSEs were established which consists of trade 459 (42.74%), service 345 (32.12%) and manu-facturing 270 (25.14%) which created jobs for poor women in the towns. More specifically, in terms of the economic activities most of the study towns women engaged in leather and leather products, cafeteria and restaurant, municipal services, beauty saloons, internet café,wood and wood products, metal work and products,food and beverages, metal works, furniture products, cloth selling, retail shops,whole sale of local products, retail trade, coffee and tea, agro-processing, and maintenance are dominant women participated activities contribute a noteworthy proportion to earn income. Besides, women in the study towns largely involved in informal business activities However, the study town has not yet exploited their potential very well to contribute towards poverty alleviation and the country as a whole. Their contribution to the poverty reduction remains much limited [15].

2.2 Sample Size Determination

The sample size was determined by using simplified formula provided by Cochran [16]. Based on simplified formula provided by Cochran [16] women MSEs participants were determined probability proportional to size employed to determine sample size from each MSEs women was selected using systematic sampling. In the formula, n is the sample size of the examination and e is the desired degree of precision,5%, Z is the confidence interval which is 1.96 for 95% of the confidence, P is the estimated proportion of participants on the total population, which is 0.57 and Q is the expected proportion of non-

participants on the targeted population which is Q=0.44.

$$n = \frac{Z^2PQ}{e^2}$$

2.3 Sampling Technique

The multistage sampling procedure was utilized for choosing a representative sample from the objective populace in this study. In the primary stage, three administrative towns such as Gimbichu, Jajura, and Shone were selected purposively from the targeted zone because of the larger number of women MSEs participants present in the towns rather than in other woredas. In the second stage, among five MSEs sector namely construction, urban agriculture, trade, service and manufacturing, the trade, service and manufacturing sectors were selected purposively from each sample administrative town because of the largest numbers of women involved there rather than others. In the third stage, stratified random sampling technique was employed to select the sample unit from the identified economic activities in the study area. The use of stratified random sampling technique was justified on the milled that the population of interest is heterogeneous namely women MSEs and informal sector participants. To this end, the proportional allocation procedure was done to determine the sample size of participants and non-participants in the each sector based on ratio of sample size and the total population, in this case,215/ 1074=0.2 is the multiplication factor to the proportional sample size of participants in each town. From participants 89 from Gimbichu, 60 from Jajura, and 66 from Shone town. Similarly, sample size from women informal sector were again proportionally distributed to each town based on the 170 /832 = 0.20432 is the multiplication factor whereby the total number of non-participants in each town are multiplied to provide the proportional sample size in each town that is the sample of 170 non-participants in this case 62 from Gimbichu, 53 from Jajura and 55from Shone. Finally, a total of 385 sample women respondents that consists of 215 participants and170 non-participants were selected using systematic sampling technique through sampling fraction such as K=N/n formula whereas K= sampling fraction= total population, n=sample size of the study by taking their lists from each town administration of enterprise and industry development and trade and industry development office. This is because of systematic random sampling every woman in the population could have the same chance of being sampled. Therefore, systematic random sampling was used through the selection of (K=1906 /385=4.95 which is 5) every fifth (5th) woman from the frame.

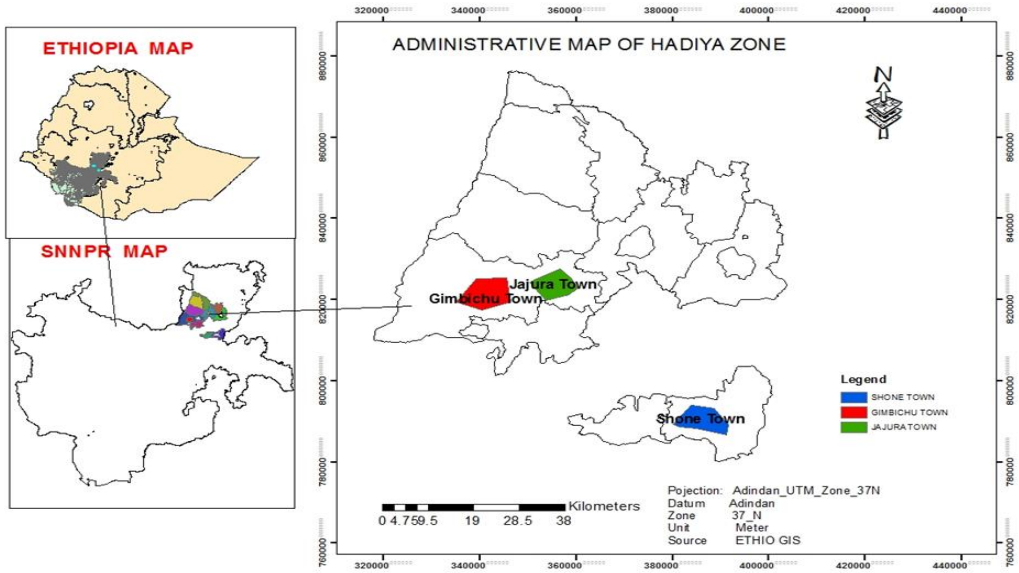

Fig. 1. Map of the study area

2.4 Methods of Data Collection

Quantitative and Qualitative data were gathered from primary and secondary sources. The primary quantitative data from primary sources were assembled through a semi-structured interview schedule with a plan while qualitative data was obtained through Focus Group Discussion, key Informants Interview, and Personal observation. Pre-testing of the interview schedule was directed to update those interview schedules that couldn't pass on the necessary message to the respondents. It could use as an open door for the researcher to alter the research instruments to furnish responses that were in accordance with the investigation objectives and questions. So as to conduct the data collection process with two enumerators for every sample town were recruited based on their knowledge of the socio-economic concepts, the culture of the society, and proficiency of the local language. All the enumerators were prepared before the data collection work. In like manner, to make the successful interview process, the training was given by the researcher to the enumerators on the objectives of the investigation, on the substance of the interview, interview procedure, the nature of the data collection method, and on the requires ethics during the data collection process. Secondary data was procured from a literature review of the published or unpublished materials including journals, books, newspaper, and review of dissertations relating to MSEs, written documents from each town of enterprises and industry development office, trade and industry development office, microfinance institution, women, children and youth office of the study area.

2.5 Method of Data Analysis

Two types of data analysis namely descriptive statistics and econometric models were used to analyze the data collected from sample women of the study area.

2.5.1 Descriptive statistics

Descriptive method of data analysis refers to the use of percentages, means and standard deviation in the process of comparing socio-economic, demographic, psychological and institutional characteristics of the households. Besides inferential statistics namely chi-square and t-tests were utilized to test association and mean the difference between independent and dependent variables respectively.

2.5.2 Heckman two selection model

Methodological framework and selection of econometric models depend on the objectives to be achieved and the hypothesis to be verified. In this investigation, Heckman's two-stage selection model was adopted in light of its favorable circumstances over the Tobit model in its capacity to remove selectivity bias and it isolates the impact of factors on the likelihood of participation [17]. Heckman advocates a two-stage assessment technique to exact the inclination because of self-choice in the choice to partake in MSEs and result. In the first stage, the probit model assessment was actualized so as to recognize factors that influence the participation decision in MSE. Here, the dependent variable is hence dichotomous; showing whether or not participated in MSE [18]. In the second phase of the Heckman model, the intensity of participation in terms of the sales volume of products or services or sales index was utilized in the model.

$$Y* = P^{,}\alpha + \varepsilon_1 \quad (1)$$

Y=1 if $Y^{*} > 0$

Y= 0 if $Y^{*} \leq 0$

Where, $Y*$ =is the dependent variable that takes an estimation of 1 if women participated in MSEs and 0 otherwise., P is the vector of explanatory factors expected to decide the participation decision of women, is the vector parameter to be estimated, is the model the error term that is ordinarily circulated with mean zero and standard deviation in the choice and catches every single unmeasured variable, Y is a dependent variable which takes the worth 1 if a woman participated in MSEs, and 0 otherwise. The Probit model estimation unable to show how much a specific variable increase or decrease the probability of participation through independently variables on the probability of a woman to involve in MSEs. In this case, for continuous independently variables, the marginal effect was determined by increasing coefficient estimate by the standard likelihood of participation by holding other independently and examined by contrasting probabilities of that outcome when dummy factors take their two distinct values (1 if participated and 0 otherwise while holding other independent factors at their sample mean values [18]. Consequently, the log-probability function which uses to secure parameter estimates and conforming marginal effects were accepted as:

$$Ln\ \ L\left(\frac{\alpha}{Y}, P\right) = \Sigma_{y=1} \ln\left(\phi\left(P^{'}\alpha\right)\right) + \Sigma_{y=0} \ln\left(1 - \Phi\left(P^{'}\alpha\right)\right) \quad (2)$$

The second-stage Heckman choice model [17] was finished utilizing OLS regression alongside the probit estimate of the inverse mill's proportion to recognize factors that decide the intensity of participation. The Heckman selection equation is specified as:

$$Pi^*=Wi\ \alpha+ €_2 \quad (3)$$

$$Pi=Pi^* \text{ if } Pi^* > 0$$
$$P_i= 0 \text{ if } Pi^* \leq 0$$

Where,* Pi*= is the latent demonstrating the intensity of participation is represented by the annual sale of products or services of sales index included which is observed if Pi *> 0 and unobserved, in any case, Pi is the observed significance of products and services in terms of annual sales, Wi=vector of the covariate for the unit i for determination equation which is a subset of P, α is a vector of coefficients for choice condition, €2 is a random disturbance for unit i for section equation. The limitation with the two equations (1 and 3) is that two-stage decision-making processes couldn't be independent because of unmeasured factors characterizing both discrete and continuous decisions consequently prompting the connection between errors of equations. The Mills proportion was made utilizing predicated likelihood values which are gotten from the first-stage probit model of participation choice. In addition, in the second step mills ratio was involved as one of the independent factors in the intensity of participation.

$$V = W_i\alpha + \lambda\left(\frac{\phi(Wi\alpha)}{\Phi(Wi\alpha)}\right) + \varepsilon_3 \quad (4)$$

Where, v = the amount of annual sales of products or services and observed if only participation is yes, that is v = 1

$\phi(.)/\Phi(.) =$ is the Mill's ratio

$\lambda =$ is the coefficient on the Mills ratio

$\phi =$ Denotes standard normal probability density function

$\Phi =$ Indicates standard cumulative distribution function

ε_3 =is not correlated with $\varepsilon_1, \varepsilon_2$ and other independent variable.

Table 1. Hypothesized explanatory variables of women participation decision and intensity of participation in MSE

Variables	Description and measurements of variables	Expected sign
AGE	Age of the women in years	-ve
EDUCA	Education level in years of schooling	+ve
ACLFORC	Active labor force in number	-ve
DPRATIO	Dependency ratio in numbers	-ve
MARSTUS	Marital status in categorical value such as 1=single 2=married 3= divorced 4=widowed	-ve
EXPER	Business experience in years	+ve
TRAIN	Business training (1= if women received training and 0 otherwise)	+ve
MARK	Access to market (1= if women have access to market for the their products or services and 0 otherwise)	+ve
TRANPO	Access to transportation (1= if women have access to transportation for their products or services and 0 otherwise)	-ve
CREDIT	Access to credit (1= if women have access to credit and 0 otherwise)	+ve
MAMED	Mass media devices (1=if women have radio and or television and 0 otherwise)	+ve
INICAP	Amount of initial capital in Ethiopian Birr	+ve
HHSSET	Household assets of women in estimated value of Ethiopian Birr	-ve
RECMM	Remittance (1= if women received remittance and 0 otherwise)	+ve
ACHMOT	Achievement motivation (1=if women have motive and 0 otherwise)	-ve
INFOSEK	Information seeking behavior(1=if women have information seeking behavior and 0 otherwise)	-ve

3. RESULTS AND DISCUSSION

This chapter presents results of descriptive and econometric analysis of the study. Descrptive analysis was used to describe characteristics of household on participation decision on MSEs economic activities .Econometric analysis was used to identify determinants of participation decision and level of participation in MSE in terms of volume of sales in the study area.

3.1 Household Characteristics

Age (Age): Women within the economically active age group are likely to make better participation in MSEs. The discoveries of the investigation uncovered that the normal age of the member and non-member was 30.72 and 33.61 separately. This indicates that women participant have relatively younger age likely to participate in MSE compared with non-participants of the MSE Subsequently; t-test confirmed that the variable had significant difference among participants and non-participants under 1% likelihood level. This implies that women with younger age more probable to have better energy and speed that could help to participate in MSE in the study area (Table 2).

Educational level (EDUCA): Educational level of women respondent enables them to get information and ability and this, thus, expands their participation decision in MSEs. It also allows them to be innovative and imitate various strategies to compete within the market and to increase their success in MSE [19]. The descriptive results of this study indicated that the average year of schooling of the participants and non-participants was 8.13 and 6.77 respectively. This shows that the better educational levels of participants are likely to more participation and skill of business activities compared with those non-participants. The educational level of the participants and non-participants was statistically significant under 1% likelihood level. Hence, women with more education are more probable to participate in micro and small enterprises. This finding does conclusively suggest that the educational level of women influences their participation in the study area (Table 2).

Business experience (EXPER): With respect to business experience of women the study indicates that the mean business experience of members and non-members were 3.03 and 1.91 individually. This shows that moderately members had generally more business experience than non-members. The t-test uncovered that experience had a huge contrast among members and non-members under 1% likelihood level. From this analysis one could assume that the business experience could be one amongst the factors affecting participation in MSEs in the study area (Table 2).

Initial capital (INICAP): Women with available of initial capital are expected to participate in MSE since it serves them as financial bases for participation. The aftereffects of the examination show that the mean initial capital of the participants and non-participants was 17930.37and 6647.33 Birr respectively. This implies that participants started their business with high initial capital and it is assumed that in this study that woman with the availability of initial capital was likely to be participated in MSEs. The after effect of the t-test confirmed that initial capital has a measurably noteworthy mean contrast among members and non-members under 1% likelihood level (t=-10.4503; p= 0.0000).This indicates that the availability of initial capital is more to be expected to participation in MSEs. Dagmawit et al., [12] in their study argue that initial capital is likely to give women participation capabilities which can assist participants as important input for their participation (Table 2).

Table 2. Characteristics of respondents (continuous variable)

Variables	Participants (n=215)		Non-participants (n=170)		t-test value	p-value
	Mean	SD	Mean	SD		
Age of women (years)	30.72	4.70	33.61	4.44	6.126	0.0000***
Education(years)	8.13	3.40	6.77	3.95	-3.625	0.0003***
Household asset (Birr)	37706.89	19623.71	29418.86	12448.5	-4.796	0.0000***
Experience (years)	3.03	2.66	1.91	1.71	-4.774	0.0000***
Initial capital (Birr)	17930.37	13978.44	6647.33	1837.76	-10.450	0.0000***

****,** and * critical at 1%, 5%, and 10 % likelihood level individually. Source: Survey results (2020)*

Use of credit (CREDIT): Access to credit refers to provision of credit for the availing resources for meeting initial capital for the participation in business activities. Women with and without use of credit have significant difference in participation of MSEs. As result 65.1% and 35.3% of the participant and non-participant had got access to credit respectively while 34.9% of the participant and 64.7% of the non-participants have no access to credit for their intended purpose. The χ2-test asserts that access to credit has significant relationship with participation in MSE under 1% likelihood level. Hence, use of credit influences the participation in MSEs and to take advantage of the MSE opportunity (Table 3).

Access to market (MARKET): Access to market for product or service enables women to participate in the MSEs. Results from the study revealed that 74.4% and 70.6% of the participants and non-participants had no access to market while 25.6% and 29.4% of the women participant and non-participant had access to market for their products or services respectively. From this data analysis one could observe that women who have better access to market might have better participation decision than those of lack of access to market. The χ^2-test reveals that the variable had no significant relationship with participation in the study area (Table 3).

Access to transportation (TRANPO): Access to transportation could help women to reduce the time wastage, extra payment and high price of products or serves and it also contributes to participation decision towards enterprises. The descriptive result study confirmed that about 79.1% and 74.7% of the participant and non-participant had access to transportation for their products or service. On the other hand 20.9 % of the participants reported that had access to transportation while 25.3% of the non-participants stated that they had no access to transportation for their products or services. The result of χ2-value shows that the variable has no a significant relationship with participation in MSE. This indicates that the access to transportation has no significant effect on the women participation in MSEs in the study area (Table 3).

Receiving Remittance (REMMTA): Receiving Remittance provides financial support in the form of money or kind and it positively related to women participation in MSEs by helping them for financial need for the participation [20]. The results indicate that about 45.1% and 23.5% of participants and non-participants in the population have received remittance whereas about 54.9% and 76.5 % of the participants and non-participants did not receive remittance. However, the results of χ2 value demonstrated that there is a critical connection between remittance and participation under 1% likelihood level. This shows that the reviving remittance has significant effect on the women participation in MSEs in the study area (Table 3).

Participation in training (TRAIN): Women who had access to business training are expected to have positive influences on participation in MSEs. The results of this indicate that 67.4% of the participants did get training and the rest 32.6 of the participants did not get training while 75.9% of non-participants didn't have access to training and the remaining 24.1% of non-participants did get training. The χ2-value reveals can affirm that access to training was noteworthy at a less than1% likelihood level. This infers that women may build their investment choice through more accessible training for miniature and little undertakings (Table 3).

Achievement motivation (ACHMOT): Achievement motivation in this examination refers to the women entrepreneur trait and motive to business activity. It is the aspiration of women to reach standard of excellence and expand effort to outshine. In view of the consequences of Table 2 showed that 72.1 % of members and 65.3% of non-members wanted to take an interest to participate in MSEs. About 27.9% of participant's and 34.7% of non-participants testified that they had no motive to participate in MSEs respectively. The χ2-test confirmed that the variable had significant relationship with participation under 5% likelihood levels which suggest that achievement motivation could affect women participation decision in MSEs in the study area (Table 3).

Information seeking behavior (INFOSEK):- Information seeking behavior is the needs to which women are willing to get information from different sources about MSE. From the analysis majority of the respondent, 55.8 % of participants and 67.6% of non-participants were reported that they had no information seeking behavior to the MSE The study further indicates that 44.2% of participants and 32.4% of the respondents described that they had information seeking behavior about MSE participation. The χ2-test revealed that the variable had significant relation with participation at less than 1% probability level

(χ2 =5.5897, p=0.018) which indicates that women who have more information seeking behavior about MSE may increase their participation in micro and small enterprises in the study area (Table 3).

3.2 Determinants of Women Participation Decision in MSEs: First Stage Heckman Selection Model

The probit model has been estimated by maximum likelihood method. The overall model is significant at less than 1% probability level as indicated by the log likelihood of -141.346. The goodness-of-fit of the model is assessed from the Adjusted $R2$.Moreover based on the pseudo $R^{2.}$ the model appears to have a good to fit the data Pseudo $R2$ is defined as the proportion of the variance of the latent variable that is explained by the covariates. Pseudo $R2$ that displays goodness-of-fit when the value of pseudo $R2$ small for a case of excellent fit [21]. The pseudo $R^{2.}$ in this study indicated that a goodness-of-fit of 0.4651, this revealed that the predictors were good for the model. The value indicates the amount of variance in the dependent variable by each of the predictor variables, with the average of 0.4651 degree of variance. That means the maximum degree to which the amount of variance in the dependent variable is explained by the predictor variables account for 46.51% of the variance.The probit treatment effect result indicates that out of the 16 explanatory variables, 9 variables explained probability of participation decision in MSEs. These variables are age, educational status, business experience, access to credit, access to training, achievement motivation, receiving remittance, information seeking behaviour and initial capital (Table 4)

Age of the household (AGE): Women participation in MSEs was negatively and significantly affected under 1% likelihood level in both participants and non-participants. The negative and critical connection between the two factors demonstrates that old women are not more likely to participate in MSEs. The marginal effect indicates that probability of participation in MSEs decrease by 1.81%,all different components held steady as the age of the household increments by a year.To put it another way, women are most likely to participate in MSE when they have an age of younger. This is because when women get older and older, they shift to the products or services of smaller labour rigorous business options; additionally the more youthful are more responsive to ground breaking thoughts and are less danger unwilling than the more established. Further, an age increases of women was associated with lack of abilities to holder more worrying situations and older may increase less susceptible to adopt innovative behavior [22]. The consequence of this examination is disagree with the works of [23] found that age of MSEs participants was significant and had positive effects on enterprises performance.

Table 3. Characteristics of respondents (discrete variables)

Dummy Variables	Categories	Participant (n=215)	Non-participant (n=170)	χ2-value
		Percent	Percent	
Use of credit	0=No	34.9	64.7	33.8240 ***
	1=Yes	65.1	35.3	
Access to market	0=No	74.4	70.6	0.7022
	1=Yes	25.6	29.4	
Access to transportation	0=No	20.9	25.3	1.0253
	1=Yes	79.1	74.7	
Receiving remittance	0=No	54.9	76.5	19.2999 ***
	1=Yes	45.1	23.5	
Participation in training	0=No	20.9	25.3	1.0253
	1=Yes	79.1	74.7	
Achievement motivation	0=no	27.9	34.7	2.0549
	1=yes	72.1	65.3	
Information seeking behavior	0=no	55.8	67.6	5.5897 **
	1=yes	44.2	32.4	

****,**significant at 1% and 5% significance levels respectively. Source: Survey result (2020)*

Educational level of the household (EDUCA): The result of first stage heckman selection model in this study show that, educational level of the households was emphatically and fundamentally influenced by the participation in MSE at under 1% likelihood level. Actually, the peripheral impact showed that if the education of women increments by one year would expand the likelihood of participation in MSEs by 1.41% while assuming all other factors remain constant. This implies that women had acquired one more additional year of schooling enables them to be more aware of participation in MSEs and more possible to participate than uneducated women. The explanation for this result is somewhat clear. This further implies that education increases knowledge and skill and hence, increases the chances of the participation in MSE. Findings of the Mbugua et al., [24] disclosed that education had positive impacts on the women participation decision in micro and small enterprise. Along these lines, an improvement in the education of women can build their participation interest in MSEs in the investigation region.

Business experience (EXPER): The model outcome shows that business experience was decidedly and altogether influences the likelihood of the women participation interest at under 1% likelihood level. This positive relationship between business experience and participation could be attributed with the more experienced a woman with business is, the more they tend to decide to participate in MSE. The marginal effect demonstrated that business experience increments by one year would expand the likelihood of the women to participate in MSE by 2.85%, all different components stay steady. This implies that women who had prior experience lead to towards narrowing business management gap and to a higher initiate of the participation. Worth noting was that study like [25] found significant and positive association between business experience and participation. The results of this study can also agree with studies conducted by Selig [26] showed that business experience had positive impact on the participation in MSEs.

Participation in training (TRAIN): Access to training was decidedly and essentially influenced the women in MSEs participation at under 1% likelihood level. The negligible impact demonstrated that a likelihood of participation in MSEs would lead to increase by 22.35% as access to training increases while supposing all different elements stay consistent. This implies that in the investigation territory women had one or more access of business training lead to towards narrowing knowledge and skill gap in the operation of the business. This further suggests that training enhances women capabilities and likely increases the ability of them to accept more attitudes towards risk taking of business. Besides, women that had pleased of skilled are probable to become more efficient over time and would be able to narrow the information gap. Empirical study also showed that a availability of training contributes to the positive effect of participation in MSE [27]. Then again, the aftereffects of Ruth et al*.,* [28] pointed out that lack of training has significant and negative effects on the participation in MSEs.

Use of credit (CREDIT): Credit access was positively influenced participation at less than 5% probability level in MSEs. Women with credit access are more likely to participate in MSE than those women who have not used credit. The marginal effect indicated that a use of credit increases that would increase the probability of participation by 9.24% while keeping all others variables remain constant.This implies that use of credit would have enabled women to overcome the financial constraint.This finding confirms the assumption that women with use of credit are more probable to have participation in micro and small enterprises .Indeed, use of credit improves the financial capacity, in this way expanding participation which is pondered the development of enterprises. This finding is in accordance with Netsaalem [27] found that credit access had a positive and huge impact on participation. This outcome negates with the aftereffect of Haftom et al., [29] which specified that access to credit from budgetary institutions had significant and negative impact on the MSEs participation.

Receiving remittance (REMMTA): Receiving remittance was positively and significantly affected to women participation at under 1% likelihood level. The positive relationship between receiving remittance and participation could be attributed with the getting remittance in terms of in kind and money a woman with business is, the more they tend to decide to participate in MSEs. The marginal effect explained that if receiving remittance increases, would increase the participation decision of women in MSEs by 10.36%; all other factors held constant. This implies that women receiving remittance are bound to participate in MSEs than not used remittance. Actually, receiving remittance utilizes for financial support in the form of money or in kind [20]. Therefore,

receiving remittance in the form of money or kind increases women participation in MSEs. This agreements with the finding of Carolin et al., [30] who expressed that women who have got various financial option from various sources like remittance would help as the initial capital and for the expansion of existing business due to the fact that women able to participate in MSE.

Achievement motivation (ACHMOT): The achievement motivation was positively and significantly affects the participation in MSE at under 5% levels of significance. The negligible impact showed that when motivation of women increases, the participation decision would increase by a total change of 11.27 %, all other factors held constant. This might be due to provisions observed by women can able with larger motive to run the units effectively to active the business growth. This is in accordance with the discoveries of Dagmawit, et al., [12] found that motivation had a positive and huge impact on the participation of MSEs.

Information seeking behaviour (INFOSEK): The consequence of first stage Heckman model revealed that the variable was positively and significantly influenced women participation decision at under 5% probability levels. The positive and noteworthy relation between the variable and participation indicate that women with having more information seeking behaviour about MSE bound to participate in MSEs. The marginal effect of this variable confirmed that information seeking behaviour increases by the respondents, would increase the probability of participation decision in by 8.89 % while keeping all others variables remains constant. This implication in that women with high information are seeking behaviour is likely to decide to participate in MSEs.

Initial capital (INICAP): Initial capital had positive and huge impacts on the participation decision at not exactly a 5% likelihood level. The negligible impact revealed that the initial capital increments by one birr, it would build the likelihood of women to partake in MSEs by 19.37%, all different elements held steady. The purpose is observable initial capital is bases for the involvement of women in business; hence those women who have available initial capital are more likely to participate in MSE. This might be due to precautions observed by women able with initial capital to run the business effectively to increase the participation. In other words, they were forced to use the available inputs wisely to increase their participation. This result of this examination is in accordance with the consequences of Habtamu et al., [31] found that initial capital influences participation in MSE positively and significantly. Controversial, this findings are not concurring with study conducted by Solomon et al., [32] found that an initial capital was negatively correlated and encounter to participation in MSEs.

3.3 Factors Affecting the Intensity of Women Participation in MSEs: Second Stage Heckman Selection Model

Soundness of the model was established by Wald test. The results of the second stage Heckman selection estimation for the amount of sale of the products or services in Ethiopian Birr. The overall joint goodness of fit for the Heckman selection model parameter estimates is assessed based on the Wald-chi-square test. The Wald test of the women owned MSEs $\chi 2$ (16)= 0.004.The null hypothesis test is that all coefficients are jointly zero. The model chi-square test applying an appropriate degree of freedom indicated that the overall goodness of fit for the Heckman selection model is statistically significant at less than a 1% probability level. This shows that jointly the independent variables included in the selection model such as educational level, access to market, achievement motivation and access to transportation are significantly affected sales volume of the products or services (Table 5).

Educational level (EDUCA):-Educational level had positively and essentially influenced the quantity of yearly deals of the products and services at under 10% likelihood levels. The positive result indicates that more educated women are more participated in MSEs, more increase the volume of sale rather than uneducated. The result reveals the educational level of women increases by one year that would increases the likelihood of the amount of sale volume of the products or services by 0.00618%,, all other factors held constant. This implies that the higher educational attainment level is the better access to various technology and output market and to collect constructive information from peers. Therefore, education increases the women knowledge and the skill of them to increase the amount sales of products or services. This is likewise reliable with an investigation completed by Mbugua et al., [24] found that the educational level of the business people positively affected the firm achievement.

Table 4. Determinants of probability of women participation choices in MSEs

Variables	Marginal effect	Coefficient	Std.err	Z	P>|z|
Constant		2.092011	1.676273	-5.82	0.000***
Age	-.0181242	-.0870289	.0037056	-4.89	0.000***
Educational level	.014094	.0676766	.0049657	2.84	0.005***
Marital status	-.0221739	-.1064749	.0190958	-1.16	0.246
Active labor force	.0098274	.0471892	0116855	0.84	0.400
Dependency ratio	.0200661	.0963537	.0320382	0.63	0.531
Business experience	.0285022	.136862	.0084721	3.36	0.001***
Participation in training	.2235285	1.073341	.0319956	6.99	0.000***
Use of credit	.0924112	.4437404	.0376767	2.45	0.014**
Access to market	-.048759	-.2341312	.0453059	-1.08	0.282
Access to transportation	.045392	.2179637	.0482962	0.94	0.347
Receiving remittance	.10361	.4975148	.0390409	2.65	0.008***
Mass media ownership	.060604	.2910085	.0463859	1.31	0.191
Achievement motivation	.1127064	.5411944	.0454913	2.48	0.013**
Information seeking behaviour	.0889034	.4268967	.043565	2.04	0.041**
Initial capital	.191377	.9189551	.028794	6.65	0.000***
Household asset	.0495424	.2378931	.0309968	1.60	0.110
Number of observation =385 LR chi2(16) = 245.76 Log pseudo likelihood = -141.34597 Pseudo R^2= 0.4651					

****, **, * are significant at 1, 5 and 10 percent probability level, respectively Source: Own computation (2020)*

Table 5. Heckman second stage results for sales volume by participants

Variables	Coefficient	Std.err	Z	P>|z|
Age of the household	.0000263	.0000263	-0.94	0.347
Educational level	.0000618	.000033	1.87	0.061*
Active labor force	.0000503	.0000774	0.65	0.516
Dependency ratio	.0000937	.0001956	0.48	0.632
Business experience	5.01e-06	.0000457	0.11	0.912
Access to training	.0003578	.000287	1.25	0.212
Access to market	.0005074	.0002714	1.87	0.062 *
Access to transportation	.0006351	.0002838	2.24	0.025**
Mass media ownership	.0000483	.0003213	0.15	0.880
Achievement motivation	.0009915	.0002907	3.41	0.001***
Information seeking behaviour	.0003675	.0002466	1.49	0.136
Initial capital	.0003472	.0002174	1.60	0.110
Constant	-.0018453	.0024638	-0.75	-0.75
Mills/lambda	.0007279	.0004404	1.65	0.098*
Number of observation = 385 Censored observation = 170 Uncensored observation = 215 Wald chi2(17) = 28.94 Prob > chi2 = 0.0040 rho=0.46964 sigma=.00154992				

****, **, * are significant at 1, 5 and 10 percent probability level, respectively*
Source: Own computation (2020)

Access to market (MARKET): The second stage Heckman selection model reveals that admittance to the market was emphatically and significantly influences the amount of sale of the products or services at under 10% likelihood level, meaning that access to market reveals a positive relationship with amount of annual sales of the products or services. The coefficient of the

model shows that when the access to market for the products or services increases, the amount of sale of the products or services increased by 0.051%,, all different elements held consistent. The suggestion is that the availability of market information, linkage and appropriate market place to the products or services increases the chance of women to have a good sale for their products or services. Study by Abraham et al., [23] found that access to market for the products or services was measurably critical and positively affected the performance of the enterprises. Also, an examination led by Chuthamas et al., [33] uncovered that admittance to the market has a critical constructive outcome on the development of MSEs in terms of amount of annual deals.

Access to transportation (TRANPO): Access to transportation was emphatically and fundamentally impacted the amount of sales at not exactly at 5% likelihood level. This shows that access to transportation for women product or services increases that would in the amount of sales by 0.064%,, all different components held steady. This notification that women with available admittance to transportation is critical to speed up their business activity particularly for service and or products [25]. The findings concur with study by Belay [34], on the relationship of motivational and success factors with entrepreneurial success.The study stated that access to transportation contributes to the finding new markets and importing raw materials from where it widely available and positively influences. Similarly, the presence of trans-portation services for products or services offers women with high chance to have good sales.

Achievement Motivation (ACHMOT): Achievement motivation affects positively and significantly the annual sales of the products or services at less than 1% probability level. Other things holding constant, when motive of women increases, the amount of sales would increase by 0.092%.This might be due to provisions observed by women able with higher motive to run the business effectively to active the business success. This is in accordance with the discoveries of Abdullahi et al., [35] indicated that great need of achievement could enable women to produce more outputs and expand their business and hence, it has a positive effect on MSE success.

Lambda: The coefficient of mills ratio with Heckman two-stage estimation was significant at the probability of less than l0%.This indicates that sample selection bias existence of some unobservable variables household characteristics determining the likelihood to participation choices in micro and small enterprise and thereby affecting the level of participation.

4. CONCLUSION AND IMPLICATION

The principal point of this examination was to analyze the determinants of women's participation decision in MSEs and intensity of participation in the Hadiya zone, Ethiopia. The outcomes from the Heckman two-stage choice model indicated that women participation in MSE was positively and significantly affected by educational status, business experience, access to credit, access to training, achievement motivation, receiving remittance, information seeking behavior and initial capital while variable age was negatively related and does significantly determine participation decision of the women in the investigation territory. The Heckman two-stage selection model demonstrated that the intensity of women participation in Micro and Small Enterprises was significantly influenced by educational status of the household, access to market, achievement motivation and access to transportation. Hence, the government and concerned bodies should give due attention to those variables which significantly influencing women participation decision in MSEs and its intensity in the study area. Therefore, it is important that the concerned bodies should launching particular micro-finance services that help women must be stimulated, provide skill and knowledge development training before and after their participation in MSE, awareness and skills acquisition training for women should be established at the grass roots level by the local government authority to ensure participation and success of their participation, and there should be adjusted well-known relations among the MSEs which are established with experience like business planning, organization and overall operating systems of MSE activities and the remittance receiving channels like banks and post-offices. It is also suggested that women should formulate their own goal to achieve their activity by their own attention and they participate in business by their own choice nevertheless of other alternatives accomplish well and actions need to be accepted to offer incentives for women who have faced lack of available initial capital. It is also important to better understand the enabling women participated business interconnecting with other business would lead

them cooperatively rather than competitively, business systems administration and sub-contracting with different business is a crucial to boost annual sales of products or services. In addition, the government and concerned bodies should facilitate the access of transportation through rehabilitation of road in the investigation zone. Overall, the findings of this study recommended that there is need to encourage women to join MSEs sector as well as they should shift from informal economic activities to the formal sector because of this study has found women participation in micro and small enterprises raise income as a result poverty alleviation.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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