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What Determines Micro - Enterprises Competitiveness? Firm Level Evidence

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Abstract
The micro enterprises sector is characterized by highly diversified activities which can create job opportunities for a substantial segment of the population in both developed and developing economies. Similarly, the sector comprises the largest share of enterprises and employment in the non-agricultural sector in Ethiopia. Despite the notable growth trends in the numeric figures of these enterprises recorded over the last decade, the sector essentially remains weak. Hence, an effective government policy to promote capital formation in the country should stimulate competitive enterprises and expand new businesses. To this effect, policy formulation process requires measuring and identifying the determinants of competitiveness of these enterprises. In this respect, this study intends to show what really determines the competitive power of small firms in Adama city taking owner, firm and inter-firm factors in to account. To achieve objectives of the study both qualitative and quantitative data type from both primary and secondary sources were used and analyzed using OLS multiple linear regression with the help of STATA 12 software. The output of this research would provide pertinent information to policy makers and development planners working on the promotion and creation of favorable environment for micro level firms to help them to be a competitive enterprise than their current stand.
Keywords: Ethiopia; Firm Factors; Inter-firm Factors; Multiple Linear Regression; Owner Factors

Introduction

The significance of micro enterprises is acknowledged worldwide. The growth and graduation of these enterprises to small and medium enterprises is a critical ingredient in the sustainable development of developing economies. The history of economic development tells us that promotion of infant industries is one of the major drivers behind the success of industrialization in Europe (Rostow, 1960). Furthermore, improvement in micro enterprises productivity and size is also cited as a crucial phase in the successful implementation of export led growth (ELG) strategy employed by East Asian tiger countries which resulted in a remarkable increase in economic growth in those countries (Singh, 1999).

Micro -enterprises comprise the largest share of enterprises and employment in the non-agricultural sector in Ethiopia. To curb unemployment and facilitate the environment for new job seekers and self-employment a direct intervention and support of the government is crucial. Therefore, the sector have been a special focus of the government and the promotion and development of these enterprises was emphasized as one of the most effective means for achieving faster development and creating job opportunities, especially for women and the youth. To this effect, the government has formulated a national micro and small enterprises development and promotion strategy, which enlightens a systematic approach to alleviate the problems and promote the growth of micro and small enterprises. Hence, growth and competitiveness of these diversified sectors is a crucial step in the development process. For better support service provision, the policy makers themselves should know factors which are responsible in determining the competitiveness of these enterprises.

The number of micro enterprises in Ethiopia is steadily growing. But much more important than their number, is their current status, stage and pace of development (Andualem 1997). However, the rate of development of micro enterprises in Ethiopia is very slow. For instance, it has been taking a long and hard time for these enterprises to graduate at small and medium enterprises (Gebremedhine, 2010). This could be attributed to several aspects including firm specific, environmental and external factors (Andualem, 1997; Sethuraman, 1997). While a significant number of researches have been done on the determinants of growth of micro and small enterprises (Assefa, 1997; Getachew, 1997), little attention is given to study the determinants of competitiveness of these enterprises. Therefore, it is very essential to investigate the competitiveness factors separately from growth factors. For instance, Porter (1992) identified competitiveness as more dynamic progression, innovation and ability to cope up change, while growth is a piece of component under competitive strategy. In this respect, this study intends to show what really determines the competitive power of micro enterprises in Adama city of Ethiopia through a series of empirical literature driven hypotheses.

Brief Literature

Micro and small enterprises (MSEs) have been defined in a variety of ways using various factors. Although many countries around the globe seem to be using common factors in their definitions, the degree of emphasis and measures used differ quite considerably. These factors include number of employees, volume of sales, and

the capital value of the business. In the case of Ethiopia, paid up capital and number of employees are used to define MSEs. According to the revised micro and small enterprises growth stages guide line No. 004/2011, the revised definition considers employed labor force including family labor; total assets without working building and the division of sub sector in to services and manufacturing are the main criteria. In the Industry sector (includes manufacturing, construction and mining sub sectors), micro enterprises refers as a business enterprises which employs not more than five labor force including business owner and family labor and/or the monetary value of the enterprise's total assets is not more than 100,000 birr. Whereas in the services sector, micro enterprises refers to a business enterprise which employs not more than five labor force including business owners and family labor and/or the monetary value of the enterprise's total assets is not more than 50,000 birr.

Competitiveness is a multi-dimensional concept. This is evident, for instance, in the analysis of its nature, types and levels in manufacturing industries and trade by Kathuria (1995), Narayana (1993), Siggel (2001), Banwet et al. (2002) and Gowswami and Dollar (2002). Macro, me so - and microeconomic approaches all define competitiveness differently. Hence, viewing competitiveness on a firm level, some definitions refer to the lower cost production principle (Buzzigoli &Viviani, 2009). In contrast, Porter (1992) considers competitiveness as a function of dynamic progressiveness, innovation, and an ability to change and improve. While Porter and Krugman are frequently in opposing positions, they agree that the core principle of competitiveness is efficiency (Martin, 2005).

The main measures of competitiveness are in financial or marketing terms as identified by Riley (2012). For example, a competitive business might be expected to achieve one or more of the following (1) A higher growth rate (sales, revenues) than competitors and the market as a whole (2) Higher-than average net profit margin (compared with others in the same industry) (3) Better than average returns on investment (e.g. ROCE, ROI) again, compared with competitors (4) A high (and perhaps leading) market share, measured in either value or volume terms. The leading firms in a market usually enjoy a significant proportion of the available revenues or customer demand, unless the market is highly fragmented.

The above measures of competitiveness are pretty easy to measure. Widely available financial information makes it easy to see which firms are achieving the highest profits in an industry (certainly those of any significant size) and which products and brands have the highest market share or growth rate. Indeed, there are whole industries devoted to measuring these kinds of things and then selling the information to firms in each industry. However, there are many other measures of competitiveness which link directly to the other functional areas of the business. These can sometimes be harder to measure (or to find publicly available data), but they are still very significant. In the context of this study competitiveness is measured using the first parameter (annual growth rate in sales value/revenue). Because such measures is considered as appropriate given that availability of data on other parameters and the nature of micro and small businesses (Gebremedhine, 2010).

Materials and Methods

To achieve objectives of the study, both quantitative and qualitative research approach was used. The study is based on ontological framework, i.e. determinants of competitiveness to be examined with a set of hypotheses (positivist epistemology) about exogenous variables. The data used is mainly primary data collected through semi-structured questionnaire. Moreover, data from secondary source was used to shore up the information gathered through primary sources.

In Ethiopia MSEs are established in various forms like sole proprietorship, cooperatives, Share Company, and partnership. Out of other forms of MSEs establishment, this study has drawn sample respondents from single (sole proprietorship) businesses. In Adama city as per 2012 report by MSEs development agency, there were 1178 individual owned micro enterprises. Thus, we took this figure as the target population of the study. Applying the scientific formula given by Yemane (1967), sample size becomes 123 at 8.5 percent precision level. We set the precision level considering the time and financial resources. We employed the systematic random sampling technique in order to select respondents from exhaustive list of sample frame.

Variables and Hypotheses

The hypotheses are driven after an extensive literature review and the factors that are to be examined in this study are from owners' (entrepreneurs) characteristics (gender, age, and level of education), firm factors (size, sector, operation diversity, initial capital, and location) and inter firm factors (market linkage).

Gender: The gender difference in competiveness is one of the most debatable issues in recent empirical studies. Some studies showed that, the fact that women are lower than men in entrepreneur orientation placed them at lower business competitiveness (Ishengoma, 2004). Similarly, other country evidence indicated same results in which male are more competitive than female (Robert, 2000). Hence, the next hypothesis is formulated:

H1: Men owned micro enterprises are more competitive than women owned counter parts.

Age of the operator: The age of individual has significant impact on the competitiveness of the business firm as per previous researchers finding. Following Fantu (2001) argument, a younger individual may have a higher

need for additional income. The burden of supporting a family and meeting mortgage payments generally declines with age. However, while younger individuals have more motivation to expand their business they also may have fewer financial resources and fewer networks. The limited empirical evidence suggests that the owner-manager's age tends to be negatively related to competitiveness (Banwet, 2002). Hence, the next hypothesis is formulated:

H2: The competitiveness of micro enterprises decreases as age of operator increases.

Age of the business: firm age is found the significant variable in most of studies on firm competitiveness and growth (Morone & Testa, 2005).

H3: Competitiveness of micro enterprises increases as age of the firm increases.

Literacy level of operator: Education level of individuals operating enterprise affects competitiveness' of the firm. In recent studies, marketing capabilities is defined as the process of applying knowledge, skills and organization resources to create value added to goods and services meet competitive demand and respond to the needs associated with market (Robert, 2000). Specifically, the effect of education has been widely studied. Most empirical studies surveyed by Cooper et al. (1992) found a positive relationship between prior level of education and firm performance. Hence, for these arguments the next hypothesis is formulated:

H4: The education level positively affects the competitiveness of micro enterprises.

Innovation: Most important and fundamental mechanisms of creating sustainable competitive advantage in today's dynamic environment is to pertain innovation in products and services (Gowswami & David, 2002). Creating new ideas and processes is the way in which organizations can comply with their environment and to achieve competitive advantage. Similarly, firms' long-term competitiveness crucially depends on their ability to innovate and learn continuously (Florida, 1995; Cooke, 2001). Hence, for these arguments the next hypothesis is formulated:

H5: Innovation has positive impact on the competitiveness of micro enterprises.

Work shop Location/market accessibility: The early theories of industrial location concentrated on analyzing simple frameworks, where the location and spatial diversification were simply determined by an adjustment between location and weight distance characteristics of inputs and outputs (Weber, 1999). Various literatures recommend that location can be a contributing factor to the competitiveness of a firm (Grant, 1991). Hence, for these arguments the next hypothesis is formulated:

H6: micro enterprises operating at market center are more competitive than others.

Size (total employees) vs. competitiveness: - As various literatures revealed the fact that the size of the company matters and the effect of firm size as measured by company employees on competitiveness was found to be mixed. The general intuition is that, since small firm have less power than larger firms they may find difficulty to compete with larger firms particularly in competitive markets. Thus, the following hypothesis is formulated.

H7: The larger the size the higher will be the competitive advantages of micro enterprises.

Linkage between firms: - The effect of the linkage or inter firm network on the competitiveness of the firm is more positive that the strong utilization of it results enhanced competitiveness of that firms. (Arimah, 2001), and, based various literature found the following hypotheses is formulated.

H8: The more the micro enterprises linked with other firms the more it will be competitive

Sector: Previous studies of firm performance have found substantial differences by industry, with small firms in retail and personal service sectors having lower competitiveness rates (Banwet et al, 2002).

H9: micro enterprises operating in manufacturing sector are more competitive than others

Initial capital: The indication of various literatures shows the tendency of the impact of the initial capital on competitiveness in positive. Resource endowment, capabilities and competitive advantages are major determinants of firm competitiveness as per resource-based view (RBV) since resources are basis for profitability (Grant, 1991). Likewise, MSEs that started operation with higher initial investment are more likely to compete than their counter parts that are started operation with relatively smaller initial investment (Barney, 1991; Cellini & Soci, 2002). Thus, the following hypothesis is considered in this regard.

H10: The higher initial capital of the firm the more micro enterprises competitive

Econometric Model: In this study the dependent variable (competitiveness) is measured by annual sales value (in Birr), which is the continuous variable; hence, the application of OLS is appropriate given the nature dependent variable. Therefore, multiple linear regression models could be specified as:

$$Y_i = \beta_1 + \beta_2 X_i + \cdots .. \beta_n X_n + \varepsilon_i \quad \ldots\ldots 1$$

Yi represents competitiveness of micro enterprises, β_1 is constant, β_2 -β_n is slope coefficients of explanatory variables, $X_i - X_n$ is explanatory variables and ε_i is the stochastic error term.

Results and Discussions

Out of 123 questionnaires distributed to respondents, we were able to collect 120 questionnaires and hence were used for analysis purpose. The Cronbach's Alpha was used to check both consistency and internal stability of

data. Thus, the coefficient (Cronbach's Alpha), in this case is 0.76 indicating the data that were collected for this research were considered to be internally stable and consistent.

We used pair-wise correlations analysis to determine whether variables are correlated. The Pearson correlation matrix show that the correlation between and among each independent and dependent variable is not strong, suggesting multi-collinearity problems are either not severe or nonexistent. Since as a general rule multi-collinearity is a problem, when the correlation result is above 0.80 and below -0.80 (Stock & Watson, 2007), but, in this case it is under 0.69 and over -0.42. Moreover, Variance inflation factor (VIF) was used to check for multicolinearity problem among and between continuous and discrete variables. Chattereje, Hadi and Price (2000) set the general rule for multi-collinearity to be a severe problem, if the mean value of VIF exceeds ten and falls below one (i.e., *1 < mean VIF < 10*). In our case, the mean value of VIF indicates 2.66 point. Hence, there is no severe multicollinearity problem among variables in the data set.

The ''*hettest*'' was used to check whether there is heteroskedsticity problem or not and the *ovttest* was carried out to check whether there is any neglected non linearity in the data or not. Hence, Breusch-Pagan/Cook-Weisberg test shows, the null hypothesis (i.e., Ho: Constant variance) was accepted and the Ramsey RESET test, shows the null hypothesis (i.e., Ho: model has no omitted variables) was accepted. Additionally, the robust regression was carried out to get more efficient and correct estimates.

Descriptive analysis indicates that out of 120 respondents, there was more male operator than female operators. The results exhibited that 63.3 percent of the respondents are male and the remaining 36.7 percent are female. The majority of respondents 62 (51.67 percent) were adult aged between 25 to 45 years old, 38.33 percent (46) were aged between18 to 25, 10 percent (12) were aged above 45 years old. There are 5 (4.167 percent) respondents illiterate, 26 (21.67 percent) respondents were Primary School complete, 35 (29.167 percent) were Secondary School complete, 43 (35.83 percent) were certificate/Diploma holders, 11 (9.167 percent) were Degree holders. Considering the age of business, 65 (54.167 percent) were aged below 5 year, 38 (31.67 percent) aged between 6 – 10 years and 17(14.167 percent) are above 10 years of operation. Most of micro enterprises were engaged in provision of single product line/service. The survey result indicates that only 23 (19.167 percent) enterprises are engaged in provision of two types of product line/services while others are limited to the provision of either single product line or service type.

With regard to work shop location, 55(45.83 percent) located at city centre, 30 (25 percent) were located in traditional market place, 21(17.5 percent) were found out of city/marginal area, and the remaining 14 (11.67 percent) were operating in the kebele house/residential area. Most enterprises 48 (40 percent) have had total asset of Birr 25001 – 35000, 39(32.5 percent) has asset of Birr 15001 – 25000 while 21 (17.5 percent) and 12(10 percent) were having a total asset of less than Birr 15000 and above Birr 35000, respectively. Majority of micro enterprises 90 (75 percent) were linked only with one other business typically marketing and supply linkage.

In terms of their sectorial composition, micro enterprises are diverse which are classified into service (like coffee house), trade, construction and manufacturing, and others. Accordingly, service takes about 16 percent (19 enterprises), construction and manufacturing takes about 46 percent (55 enterprises), trade takes 29 percent (35 enterprises) and others accounted for 9 percent (11 enterprises). The seed up capital of sampled enterprises ranges between Birr 12,000 and 95,000. The following table shows the summary of descriptive statistics on variables included in the study.

Table 1: Descriptive Statistics of main variables

Variables	Competitive Status			
	Mean	Std. Dev.	Min.	Max.
Annual sales	11661.3	119.76	1000	105000
Gender of operator	.4173913	.4952867	0	1
Age of operator	35.33913	8.904845	22	62
Literacy level of operator	2	1.444894	0	5
Age of enterprise	6.018261	4.737765	.5	23
Product/service diversity	.6125	.4017506	0	2
Workshop location	1.3304348	1.472428	1	3
Natural log of asset (Size)	11.81344	1.257301	9.160519	14.81551
Inter firm network	1.382609	.5553979	1	3
Sector	2.391304	1.189837	1	4
Initial capital	20251.6	1956.71	12000	95000

Source: Survey data (2014)

Inferential Statistics

The Multiple Regression Analysis was used to determine whether the main independent variables, included in the model are statistically significant and to determine the extent of their effect on the competitive power of micro enterprises.

$$loganusal = 1.125 + .0077gen + .015age + .025edu - .026agebss - .174inov + .062loct + .67lnsize + .21linge + .045sect + 3.80e\,06inicap + \varepsilon_t$$

……2

Table 2: Regression result

Loganusal	*Coef.*	*Robust Std. Err.*	*P>|t|*	*Direction of effect on dependent variable*
Gen	-.0077623	.122409	0.150	Inverse
Age	.0147504	.006483	0.025**	Positive
Edu	.0253553	.0292776	0.008 *	Positive
Agebss	-.0258625	.029474	0.002 *	Inverse
Inov	-.1740739	.1412606	0.221	Inverse
Loct	.0624658	.1082127	0.051***	Positive
Lnsize	.6678152	.0951199	0.000 *	Positive
Linge	.2097697	.243252	0.390	Positive
Sect	.0447345	.0399712	0.066 ***	Positive
Inicap	0.380	0.11906	0.002 *	Positive
_cons	1.125255	1.194998	0.000	-

F(10, 110) = 56.54
Prob > F = 0.0000
R-squared = 0.5509
Root MSE = .51103

Source: Survey data (2014)

*,**,*** indicates the level of statistical significance at 1; 5; and 10%, respectively.

The multiple linear regression result above vividly indicates owner- manager education level, age of business, size and start-up capital were found statistically significant determinants of micro-enterprises competitiveness at 1 percent. Besides, age of the entrepreneur was found significant at 5 percent while business location and sector of enterprise were significant at 10 percent. Therefore, the discussion below shows effect of significant factors on the dependent variable (competitiveness) which is measured using natural logarithm of annual sales.

In relation to the age of microenterprises owner, it is found that the competitiveness level of these enterprises is directly influenced by the age of the owner. The coefficient 0.01475 shows that as the age of the owner increases by one year, the competitiveness of microenterprise increases by 1.475 units ceteris paribus. In line with the hypothesis of the study, the educational status of the microenterprises operator positively affects the competiveness of these enterprises. The coefficient 0.025 indicates that as education of the owner (operator) increases by one year (one level), the competitiveness of microenterprise increases by 2.5 percent, ceteris paribus.

Age of business (micro enterprises) is found to influence the competitiveness of microenterprises inversely. As a result, the coefficient of this variable (-0.026) shows that as age of the business increases by on year, the competitiveness of microenterprises decreases by 2.6 unit. The operating location of micro enterprises has been found the significant factor to competitiveness. Thus, the coefficient of 0.062 indicates that being located at city centre increases the competitiveness of micro enterprises by 6.2 percent, keeping other factors fixed. Therefore, this variable is found the significant and positive factor affecting the competitiveness.

As hypothesized by the investigators of this study based on the previous empirical evidences, there is a positive relationship between the size of enterprise and the competitiveness of microenterprise where the magnitude of the effect of this variable on the competitiveness of microenterprise is 0.668, indicating that as the size of the business increases by one birr, the competitiveness of microenterprise increases by 66.8 percent. As per the conformity of hypothesis of the study, the initial capital of the microenterprises positively affects the competiveness of these enterprises. The coefficient 0.38 indicates that as initial capital increases by one Birr, the competitiveness of microenterprise increases by 38 percent. In line with the hypothesis of the study, the sector of the microenterprises positively affects the competiveness of these enterprises. Micro enterprises operating in manufacturing sector are more competitive by 4.47 percent than other sectors. In this study gender, innovation and inter-firm network were found statistically insignificant.

Conclusion and Policy Implication

This paper aims at understanding the determinants of microenterprises' competitiveness. As a result, data from 120 sampled micro enterprises was used to investigate what determines the competitiveness power of these enterprises specifically considering the firm own factors. Analysis was conducted using both descriptive statistics and inferential statistics (multiple linear regression analysis) to identify the determinants of competitiveness of enterprises. Out of variables included in the study age of the owner, educational status, age of the business, business location, business size, sector and initial capital were found the significant factors determining the competitiveness of micro enterprises. Whereas gender, innovation, and business linkages were statistically insignificant. The findings of this study have important implications for interventions designed to enhance the competitiveness of microenterprises.

Future studies should try to model micro enterprises competitiveness in the context of panel framework including a number of regions of Ethiopia in order to improve the representativeness of the sample to the whole country. Additionally, as this study was based only factors related to the firm, future researches can investigate the competitiveness of these enterprises by taking economy/macro level factors.

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Appendices

- pwcorr loganusal gen age edu agebss inov loct lnsize linge sect inicap

loganusal	gen	age	edu	agebss	inov	loct	lnsize	linge	sect	inicap
loganusal	1.0000									
gen	-0.2786	1.0000								
age	-0.0358	-0.2611	1.0000							
edu	0.2645	0.0245	-0.2884	1.0000						
agebss	-0.0157	-0.1300	0.4816	-0.2691	1.0000					
inov	-0.3199	0.0617	0.0054	-0.1058	0.0395	1.0000				
loct	-0.1192	0.0427	-0.1603	0.1414	-0.2022	0.2958	1.0000			
lnsize	0.6897	-0.3130	-0.1297	0.2896	-0.0355	-0.2688	-0.1267	1.0000		
linge	0.0535	-0.1711	0.4400	-0.2514	0.1041	-0.0708	-0.1183	0.0221	1.0000	
sect	0.2746	-0.1158	-0.0855	0.1939	0.0186	-0.4204	-0.1540	0.2208	0.1166	1.0000
inicap	0.5715	-0.0889	-0.1260	0.1806	-0.0588	-0.2074	-0.1122	0.6876	-0.0508	0.2036	1.0000

- vif

Variable	VIF	1/VIF
agebss	6.89	0.145215
linge	6.68	0.149621
lnsize	2.66	0.376105
inicap	2.15	0.464271
age	1.51	0.663001
inov	1.47	0.679349
sect	1.37	0.728087
gen	1.31	0.760798
edu	1.30	0.769847
loct	1.30	0.771565
Mean VIF	2.66	

- hettest

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of loganusal
chi2(1) = 4.54
Prob > chi2 = 0.3332

- ovtest

Ramsey RESET test using powers of the fitted values of loganusal
Ho: model has no omitted variables
F(3, 117) = 24.85
Prob > F = 0.0000

- reg loganusal gen age edu agebss inov loct lnsize linge sect inicap, robust

Linear regression Number of obs = 120
F(10, 110) = 56.54
Prob > F = 0.0000
R-squared = 0.5509
Root MSE = .51103

	Robust				
loganusal	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]
gen	-.0077623	.122409	-0.06	0.150	-.2505039 .2349793
age	.0147504	.006483	2.28	0.025	.0018945 .0276064
edu	.0253553	.0292776	0.87	0.008	-.0327033 .0834139
agebss	-.0258625	.029474	-0.88	0.002	-.0843106 .0325856
inov	-.1740739	.1412606	-1.23	0.221	-.4541989 .1060511
loct	.0624658	.1082127	0.58	0.051	-.152124 .2770556
lnsize	.6678152	.0951199	7.02	0.000	.4791889 .8564414
linge	.2097697	.243252	0.86	0.390	-.2726082 .6921476
sect	.0447345	.0399712	1.12	0.066	-.0345298 .1239989
inicap	0.380	0.11906	3.19	0.002	1.44e-06 6.16e-06
_cons	1.125255	1.194998	0.94	0.000	-1.244471 3.494982

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