



Constraints for the Growth of women Entrepreneur s: In the case of Amhara Women Entrepreneurs Association (AWEA), In Amhara Regional State, Ethiopia.

Alemnew Getnet Bayeh¹, Prof. N. Subba Rao², Dr.D.Ashalatha (Associate professor)³

¹Research Scholar, Department of Economics, Andhra University, Visakhapatnam, India.

²Principal Guide, Department of Economics, Andhra University, Visakhapatnam, India.

³Joint Research Guide, Department of Economics, Andhra University, Visakhapatnam, India.

Abstract- This research presented findings about the constraints for the growth of women entrepreneurs in the case of Amhara Women Entrepreneurs Association (AWEA), Amhara Regional State, Ethiopia. Different people have defined the term "Entrepreneur" differently, and no single universally accepted definition has been reached. But for shared understanding, an entrepreneur is a person who sets up businesses, takes on risks in the hope of profit, and organizes a venture to benefit from an opportunity rather than working as an employee. According to different literatures, gender discrimination, lack of enterprise culture, inadequate business support systems, and underdeveloped markets and infrastructure are problems that affect women entrepreneurs in developing nations. For this research, the researcher used multistage sampling methods and took 389 sample sizes. Structured questionnaires, interviews, and Focus Group Discussions (FGD) were instruments for the data collection. The logit model was applied to identify the main constraints for the growth of women entrepreneurs. Employment and capital growth rates were taken as an indicator for the growth of women entrepreneurs. Access to finance, access to raw material/inputs, stiff Competition, educational status, marital status, access to training, access to infrastructures, access to working premises, access to information and modern technology, tax Burden, amount of initial capital, age of respondents, age of the business and family size were the included independent variables for growth constraints of women entrepreneurs. Among the respondents, 35.73% were aged 31 to 40, 51.41% completed grades 11th and 12th, 75.84 % were married, 57.58% had a family size of 4 to 6, 31.36% were engaged in mini-market business, 65.79% started without making a market survey, 98.46% did not get training before starting the business, 77.12% didn't have appropriate working premises. The annual average growth rate of women entrepreneurs' business measured by the growth rate of employees was 0.68%, with the smallest -20% and a maximum of 50%. When measured by the capital growth rate, it was 7.4%, with a minimum growth rate of 5.3% and a maximum of 13.4%. The average initial working capital was 45,685 ETB with a minimum of 2,000 and a maximum of 150,000 ETB. On average, 67% of women's enterprises were in positive progress during the survey period. Among the included independent variables, except family size, age of respondents and age of the business, all other variables are statistically significant and influence the growth of women entrepreneurs. Since women entrepreneurs significantly contribute to economic growth and employment creation, the government and other stakeholders should support women entrepreneurs by solving constraints for their business growth.

Key words: AWEA, Capital growth, Employment growth, logit model, Women Entrepreneurs.

Introduction

The word "entrepreneur" comes from the French verb "entreprendre," which means "to take on" ((Acs et al., 2008). The term "entrepreneur" has been defined in a variety of ways by different persons, and no universally agreed meaning has emerged. An enterprise can range from opening a small shop to establishing a high-tech industry (Sinha, 2003). As a result, an entrepreneur can be distinguished not only by the activities he or she engages in, but also by his or her lifestyle, attitudes, values, and behavior, all of which contribute to the entrepreneurial personality. As a result, various academics and business organizations offer the following expressions.

An entrepreneur, according to Merriam-Webster, is "one who organizes, manages, and assumes the risks of a business or venture."

"A person who organizes and manages any company, especially a business, usually with much initiative and risk," according to Dictionary.com.

A person who performs entrepreneurial tasks such as coordination, organization, supervision, and risk-taking (Say 1827).

An extraordinary innovator with boundless energy, clarity of vision, and the ability to act (Hébert & Link, 2006).

High desire to solve problems, create objectives and achieve these goals via one's own efforts (McClelland, 1961; Rao & Mehta, 1978).

An entrepreneur is someone who starts and runs a business or economic activity (Pareek & Nadkarni, 1978).

Women's companies are one of the world's fastest-growing entrepreneurial groups (Brush and Cooper, 2012). In all economies, they contribute significantly to innovation, job growth, and wealth development (Maheshwari, 2000; Headd, 2000; Davidsson, 2005; Brush and Cooper, 2012).

In Ethiopia, it has been recognized that women substantially contribute to GDP and employment. Women played an essential part in retail and wholesale commerce, ensuring families' survival. However, in many nations, the remarkable expansion of women-owned firms has slowed.

Today, women entrepreneurs face a fork in the path. The present incentive structure, trade policies, financial institution rules, and other policies do not satisfy the sector's demands or the problems provided by the new economy in this situation. Women entrepreneurs need incentives and assistance to grow competencies and remain ahead of the competition in both domestic and international markets. Many governments strive to build initiatives to recruit, retain, and promote women; however, the majority of women work in small enterprises that are less lucrative.

The Amhara Women Entrepreneurs Association (AWEA) is a private regional non-profit organization for female entrepreneurs that were founded in 2004. Bahir Dar, Gondar, Dessie, and Debre Markos are the four places where AWEA was founded. The organization is currently growing its branches. It has around 88 branches in various cities and villages, with over 30,000 female members. The headquarters are in Bahir Dar (AWEA annual report, 2019).

Statements of the Problem

Women entrepreneurs have not achieved their full potential in a male-dominated business society due to the innumerable constraints they face in their endeavour to set up viable business ventures. Most women entrepreneurs mainly practice cross-border trade; some are informal (Mauchi, 2014). A closer look at the business world reveals that men rule it. Despite representing 50% of the population, women, in general, face many challenges in business.

The extent and form of women's participation in the market differ from that of men entrepreneurs. The reasons are strongly linked to the roles and positions of women in Ethiopian society. According to research findings, women entrepreneurs in developing countries suffer from gender discrimination in society and laws, underdeveloped enterprise culture, an inadequate support system for businesses, and underdeveloped markets and infrastructure.

Women-owned businesses, concentrated in the low growth segment, face constraints such as poor access to finance, lack of business development services and business networks, limited exposure to business management experience, and the challenges of juggling business with household and family responsibilities (Solomon, 2010).

Storey (2016) states that there is no greater initiative a country can take to accelerate the pace of entrepreneurial activity than to encourage more women to participate. It has been established that the male rate of entrepreneurial activity range over 3 times that of females, especially in the developing world, whereas it is almost identical in the developed world (Reynolds et al., 2005). Studies by Nijhawan and Dubas (2007) found that entrepreneurial activities result in spillover benefits, thus satisfying public good characteristics.

Much research has not been done, especially on "constraints for the growth of women entrepreneurs' business in Ethiopia. Even though few types of research have been done on the challenges of women entrepreneurs, descriptive methods did all. Since this research is done using econometrics models, the results helped identify the significant constraints for the growth of women entrepreneurs in Amhara Women Entrepreneurs Association (AWEA), Amhara Regional State, Ethiopia, and tried to show the impact of each variable.

Objective of the Study: The main objective of the study is to identify constraints for the growth of women entrepreneurs in the case of Amhara Women Entrepreneurs Association (AWEA) Amhara Regional State Ethiopia.

Research Hypothesis

A hypothesis is a tentative relationship or testable assumption/prediction/conjecture between two or more variables that gives a direction to a search. This research formulated the following hypotheses and tested them after collecting necessary data and regression analysis.

- H₁: There is no statistically significant relationship between access to finance and women's enterprises' growth.
- H₂: There is no statistically significant relationship between access to raw materials/ inputs and the growth of women's enterprises.
- H₃: There is no statistically significant relationship between stiff competition and the growth of women's enterprises.
- H₄: A higher level of Education does not affect the growth of women's enterprises.
- H₅: There is no statistically significant relationship between the marital status of respondents and the growth of women's enterprises.
- H₆: Access to training does not improve women's enterprises.
- H₇: There is no statistically significant relationship between access to infrastructure and women enterprises' growth.
- H₈: Availability of Working premises and marketplace do not affect the growth of women's enterprises.
- H₉: There is no statistically significant relationship between access to information and modern technology and the growth of women's enterprises.
- H₁₀: Higher tax burden does not significantly impact the growth of women's enterprises.
- H₁₁: There is no statistically significant relationship between the growth of women's enterprises and the amount of their initial capital.
- H₁₂: The age of women doesn't significantly impact the growth of women's enterprises.
- H₁₃: There is no statistically significant relationship between the growth of women's enterprises and the age of the business in the market.
- H₁₄: Family size does not significantly influence the growth of women's enterprises.

Review of Related Literatures

Early in the 18th century, the French economist Cantillon provided the first formal definition of entrepreneurship as: “self-employment, regardless of the nature or direction, and when the risk tolerance and the organization of production factors are needed to produce a good or service in the market” (Landström, 2010).

Singh and Saxena (2000) mentioned that in India, shyness in business interactions, low achievement motivation, risk-averse attitude, lower level of education, the burden of family obligations, gender bias at the level of family and society, lack of managerial skills and experience, lack of business-related information, non-availability of finance are some of the challenges for women entrepreneurs.

Singh and Belwal (2008) found that the main problems in the areas of securing finances for establishing and running Small businesses in Ethiopia are; lack of entrepreneurial and management competence and exposure, problems in finding the markets and distribution networks; limited opportunities for promotion and participation; a limited amount of government and institutional support; absence of technological know-how and integration mechanism; and rampant corruption in an undisguised or disguised form.

In another study conducted by Tesfaye (2003) in Ethiopia, social acceptability, gender biases, family responsibilities, political instability, poor infrastructure, high production costs, poor access to market information, limited access to technology and finances, poor linkages with support services, gaps between policy and its implementation, and an altogether unfavorable business environment were found as constraints of women entrepreneurs.

According to Okafor and Mordi (2010), 70% of women entrepreneurs with small businesses started as microenterprises and grew. They also found that lack of suitable location or sales outlet, stiff competition, the low purchasing power of the local population, lack of marketing know-how, seasonal nature of the business, lack of market information, inadequate infrastructure, and lack of time (due to multiple tasks), lack of raw materials, and lack of working capital are constraints of women entrepreneurs in Ethiopia.

Methodologies

In this study, multi-stage sampling designs were used to select sample respondents. The researcher purposefully selected ten branches (Debre Markos, Mota, Kombolcha, Dessie, Mekiet, Debre Tabor, Woreta, Bahir Dar, Gondar, and Injibara) based on their number of members, distance from the headquarter (Bahir dar), cost and time for data collection, and duration of the establishment. From the selected sample branches (14,061 members), the researcher took 389 samples by the proportional method.

The sample size (n) was taken using Yamane’s formula (1967).
$$n = \frac{N}{1+N(e^2)} \text{----- (1)}$$

Where “n” is the sample size, “N” is the total population, “e” is the desired level of precision (5%).

$$n = \frac{14,061}{1+14,061(0.05)^2} = 389.$$

This study used both secondary and primary data sources. Primary data was collected through structured questionnaires, interviews, and Focus Group Discussions (FGD).

Secondary data was also collected from offices' annual, quarterly, and monthly reports, publications, journals, books, and websites.

Econometrics Model Specifications and Variables

Various econometrics models can be used to establish a relationship between the dependent and independent variables.

According to (Hosmer and Lemeshow 2000), Logistic regression is a popular modelling approach when the dependent variable is dichotomous or polychotomous. This model allows one to predict the log odds of outcomes of a dependent variable from a set of variables that may be continuous, discrete, categorical, or a mix of any of these.

In this research, the outcome of the dependent variable (growth of women's enterprise) is binary (when there is the growth of the business, "success" = 1, or "no growth/ fail" = 0). Binary logistic regression can describe the

relationship between one or more independent variables and a binary outcome variable with only two possible values.

When we compared the Logistic model with its competitor, the probit model, it is less sensitive to outliers and easy to correct a bias (Copas, 1988). In instances where the independent variables are categorical or a mix of continuous and categorical, logistic analysis is preferred to discriminant analysis (Agresti, 2002). The assumptions required for statistical tests in logistic regression are far less restrictive than those for ordinary least squares regression. Hosmer and Lemshew (2000) pointed out that logistic regression has an advantage over others in analysing dichotomous outcome variables. It lends itself to a meaningful interpretation. The logit model is simpler in estimation than the probit model. Therefore, a binary logistic regression model is used in this study.

Following Gujarati and Porter (2004), the logistic distribution function for the growth of women's enterprises can be defined as a probability function.

$$P(Y=\frac{1}{X}) = P(y = \frac{1}{x_1, x_2, \dots, x_k}) \dots \dots \dots (2)$$

Where, "X" denotes the set of explanatory variables or $X_1, X_2 \dots X_k$ separately independent variables.

In a binary response model, interest lies primarily in the response probability

$$P(y = \frac{1}{X}) = F(\beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_k X_k) \dots \dots \dots (3)$$

Where "F" is a function taking on values between zero and one: $0 \leq F(Z) \leq 1$, for all real numbers Z., because the probability is non-negative and not more than one.

$$P_i = E(Y = 1/X_i) = \frac{1}{1 + e^{-(\beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_k X_k)}} \dots \dots \dots (4)$$

Where, $Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_k X_k$ the above formula can be rewritten as shown below for easy understanding.

$$P_i = \frac{1}{1 + e^{-Z_i}} = \frac{e^{Z_i}}{1 + e^{Z_i}} \dots \dots \dots (5)$$

The above formula indicates that as the value ranges from the negative infinitive to the positive infinitive, P_i , the probability of the occurrence of the dependent variable oscillates between 0 and 1. Therefore, when (P_i) is the probability of growth of women's enterprises and $(1-P_i)$ is the probability of not the growth of women's enterprises.

This can be represented as:

$$1 - P_i = \frac{1}{1 + e^{Z_i}} \dots \dots \dots (6)$$

Now the most important element in the logistic regression i.e., odds ratio that can be obtained from equations (4) and (5) which is represented as $\frac{P_i}{1-P_i}$ as shown in the following expression:

$$\frac{P_i}{1-P_i} = \frac{1 + e^{Z_i}}{1 + e^{-Z_i}} = e^{Z_i} \dots \dots \dots (7)$$

When we take the natural logarithm of equation (6), we can obtain the following formula for logit model, which is mostly represented as L_i :

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = \ln e^{Z_i} = Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 \dots + \beta_k X_k \dots \dots \dots (8)$$

Then if the disturbance/error term U_i is taken into account the logit model becomes:

$$Z_i = \beta_0 + \sum_{i=1}^m \beta_i X_i + U_i \dots \dots \dots (9)$$

Where: β_0 = the intercept. It is the value of the log odds ratio $\left(\frac{P_i}{1-P_i}\right)$ when X or explanatory variable is zero.

β_1 = The slope measures the change in L (logit) for a unit change in explanatory variables (X);

Generally, the specific logit model for the growth of women's enterprises can be defined as:

$$Y_i = \beta_0 + \beta_1 ACFIN + \beta_2 ACRAWM + \beta_3 STIFCOM + \beta_4 EDUN + \beta_5 MARTSTAT + \beta_6 ACTRAIN + \beta_7 ACCINFRA + \beta_8 ACCWOKPREM + \beta_9 ACCINFOMOTECH + \beta_{10} TAXBURDN + \beta_{11} INICAPTA + \beta_{12} AGERSPOND + \beta_{13} AGEBUSINE + \beta_{14} FAMSIZ + \epsilon_i \text{-----}(10)$$

Where, Y_i is growth of enterprises in terms of employment and capital, β_i are slope parameters to be estimated, ϵ_i is the error term.

Variables

Dependent Variable: The researcher took as a dependent variable the growth of the enterprises (Y_i) expressed by the growth of employment and capital either simultaneously or separately. When we say there is growth in a woman's enterprise, we are saying either her labour employed increases, the volume of sales increases, or capital increases. The result of the dependent variable is a binary outcome. Either "growth" or "no growth". If there is an increase (positive) relative to a reference period, we took it as "growth", or if there is no change or reduction relative to the reference period, we took it as "no growth/ reduction".

Given this, the outcome of the i^{th} respondent Y_i is measured as a dichotomous variable.

$$Y_i = \begin{cases} 1 & \text{if the } i^{\text{th}} \text{ woman's business grows} \\ 0, & \text{otherwise} \end{cases}$$

Measurement of growth of Women's enterprises

Measuring of Employment growth

$$\text{Employ annul avara growth rate } (r_1) = \frac{\text{no of emplo in current time} - \text{no employees in initial period}}{\text{no of employees in initial period}} * \frac{1}{\text{ageof business}}] * 100 \text{--} \text{---}(11)$$

If the value of the growth rate is positive, it shows that there was "growth" in women entrepreneurs; otherwise (if it is zero or negative value), there was "no growth" within their duration in the business activity.

Unfortunately, for this research, getting recorded data on women entrepreneurs was challenging. Therefore, the researcher tried to collect primary data by survey method.

Measuring Capital growth

Capital growth is the appreciation of the value of an asset over time. It is usually calculated and presented on an annual or Year-on-Year basis, in the form of a percentage.

The researcher used general formula of compound interest to know the growth rate of women entrepreneurs' capital.

$$\text{Capital growth rate } (r_2) = \left(\frac{FV}{PV} \right)^{\frac{1}{t}} - 1 \text{-----} (12).$$

Where, r_2 = capital growth rate, Fv = current amount of capital for women entrepreneurs.

PV = amount of capital when they started their business, t = time of duration in the business activity.

If the value of " r_2 " is positive, on average, the capital of women entrepreneurs "was growing" within their duration in the business activity. If " r_2 " is negative, this shows that, on average, their business activity was "not growing" (it is declining).

Independent Variables

Based on different kinds of literature and from the researcher's experience, the following variables are expected to affect the dependent variable and will be included in this study.

A. Access to Finance (ACFIN; Dummy: 1 = yes, or 0 = no access): It was hypothesized to have a positive impact on the growth of women enterprises.

B. Access to raw material/inputs (ACRAWM; dummy: 1 = yes, or 0 = no access)

For the type of product they produce, women entrepreneurs use raw materials as one factor of production. The availability of the supply of raw material (input) expects to increase the growth of women enterprises. Therefore, it is hypothesized that the availability of the supply of raw materials will have a positive impact on the growth of women's enterprises.

C. Stiff Competition (STIFCOM : (dummy: 1 = yes, or 0 = no competition). It is expected to affect women entrepreneurs' production negatively.

D. Education (EDUN; Categorical): It was taken as a categorical variable by representing 0 for "grade 1st to 6th," 1 for "grade 7-10th," 2 for "grade 11th to 12th ", 3 for "Vocational training", and 4 for "degree+".

Here level of education expects to have a positive effect on the growth of women's enterprises.

E. Marital Status (MARTSTAT: Categorical). It was taken as a categorical variable by representing 0 for "Single," 1 for "married," 2 for "divorced," and 4 for "widowed" women entrepreneurs.

F. Access to Training (ACTRAIN: Dummy; 1 = Yes or 0 = no Access). Accessibility to different skill trainings might positively affect the growth of women entrepreneurs.

G. Access to Infrastructures (ACCINFRA: Dummy; 1 = yes or 0 = no Access). Access to purified water, electric power supply, and safe road taken as infrastructures. Thus, the availability of these infrastructures expects to have a positive impact on the growth of women entrepreneurs.

H. Access to working premises and market places (ACCWOKPREM: Dummy, 1 = yes or 0 = no access)

In business activity, an appropriate working premise is important for success. When women entrepreneurs do not have their appropriate working premises, they rented shops from others. This might reduce the growth of their business.

I. Access to information and modern Technology (ACCINFOMOTECH: dummy; 1 = yes, or 0 = no access)

Information and modern technology use to get market information easily, to advert about products/ services or to make market linkage with other entrepreneurs. It might increase the growth of women's enterprises.

J. Tax burden (AXBURDN: Dummy; 1 = yes/ based on income or 0 = not based on level of income)

In Ethiopia, the tax rate ranges from 10% to 35% of the level income. Three categories of taxpayers A, B & C. Imposing a high level of tax may reduce the growth of women entrepreneurs.

K. Initial Capital (INICAPTA): In this research, initial capital indicates the total amount of capital women entrepreneurs had when they started their business. It was taken as continues variable.

L. Age of Respondents (AGERSPOND): Age for women entrepreneurs, it is expected to have positive and or negative influence on the growth of women entrepreneurs.

M. Age of the Business (AGEBUSINE): This is the total number of years from the business started and to the survey period.

1. Family Size (FAMSIZ (Categorical 0 = (1 – 3), 1 = (4 – 6), 2 = (7 and above)).

Results and Discussions

I. Descriptive Statistics Results

Age of Respondents: It is taken as a categorical variable. According to the survey data, among the respondents, 0.50% (2) of them aged below 20 years old, 19.02% (74) were between 21 and 30 years, 35.73% (139) of them were aged between 31 and 40 years, 31.11 % (121) were 41 to 50 years old and 13.62 % (53) accounts above 50 years old.

Educational Status: Categorical; 51.41% (200) of the respondents completed Grades 11th to 12th, 16. 97% (66) also had an educational status of Grades 7th to 10th, 13.88% (54) of respondents were Grade 1 to 6th completed, 6.68% (26) had vocational training, and 11.05% (43) had degree+ educational status at the survey time.

Marital Status: Categorized as married, single and divorced. Thus, among the respondents, 75.84 % (295) were married, 12.34 % (48) were single, 10.8% (42) of them were divorced from their husbands, and the rest 1.028 % (4)'s husbands died during the survey period.

Family size: Family size was categorized from 1 to 3, from 4 to 6 and 7 & above. Based on the survey data, 57.58% (224) had a family size between 4 and 6, 41.9% (163) had 7 and above 10 families.

Table 1. Distributions of Demographic Characteristics of Respondents

| Age category of Respondents | Frequency | Percentage | Cumulative |
|-------------------------------|-----------|------------|------------|
| Below and = 20 years | 2 | 0.51 | 0.51 |
| 21 – 30 years | 74 | 19.02 | 19.54 |
| 31- 40 | 139 | 35.73 | 55.27 |
| 41- 50 | 121 | 31.11 | 86.38 |
| Above 51 | 53 | 13.62 | 100.00 |
| Total | 389 | 100.00 | |
| Educational Status | | | |
| Grade 1-6 | 28 | 7.20 | 7.20 |
| Grade 7-10 | 73 | 18.77 | 25.96 |
| Grade 11-12 | 218 | 56.04 | 82.01 |
| Vocational training | 26 | 6.68 | 88.69 |
| Degree and above | 44 | 11.31 | 100.00 |
| Total | 389 | 100.00 | |
| Marital Status of respondents | | | |
| Married | 333 | 85.60 | 85.60 |
| Single | 19 | 4.88 | 90.49 |
| divorced | 32 | 8.23 | 98.71 |
| widowed | 5 | 1.29 | 100.00 |
| Total | 389 | 100.00 | |
| Family Size of respondents | | | |
| 1 - 3 | 2 | 0.51 | 0.51 |
| 4 - 6 | 224 | 57.58 | 58.10 |
| 7 and Above | 163 | 41.90 | 100.00 |
| Total | 389 | 100.00 | |

Source: Own Computation based on the survey data, 2021

Business Type, selection and Age of the Business.

Types of Business Engaged: In this study, the researcher categorized their activities as "café and restaurant, Boutiques, Mini market, Spices, Beauty salon, shoe shops and others. Therefore, 31.36% (122) of them engaged in Mini markets, 23.39 % (91) in Boutiques, 20.57% (80) had shoe shops, 5.66% (22) engaged in women's Beauty salons, 11.05 % (43) in spices and others during the survey period in the study areas.

Year of Business started: Year of business started indicates the age of the business. As shown in Table 2, 5.14% of women entrepreneurs started their business recently (two years and recent), and 55% (214) of them started their business before 5 years of the survey period. 24.68% (96) started before 10 years and 15% (59) engaged in their existing business before 15 years.

Table 2. Occupation, and age, selection criteria and growth rate of the businesses.

| Variables | Frequency | Percentage | Cumulative |
|--------------------------------------|-----------|------------|------------|
| Types of Business Engaged | | | |
| Cafe and restaurant | 31 | 7.97 | 7.97 |
| Boutiques | 91 | 23.39 | 31.36 |
| Mini market | 122 | 31.36 | 62.72 |
| Shoes shop | 80 | 20.57 | 83.29 |
| Beauty salon | 22 | 5.66 | 88.95 |
| Spices | 18 | 4.63 | 93.57 |
| Others | 25 | 6.43 | 100.00 |
| Total | 389 | 100.00 | 100.00 |
| Year of Business Started | | | |
| Before 2 years | 20 | 5.14 | 5.14 |
| Before 5 years | 214 | 55.01 | 60.15 |
| Before 10 years | 96 | 24.68 | 84.83 |
| Before 15 years | 59 | 15.17 | 100.00 |
| Total | 389 | 100.00 | 100.00 |
| Business Selection criteria | 39 | 7.85 | 4.11 |
| Related with their profession | 16 | 3.22 | 0.51 |
| Not many people are doing it | 2 | 0.40 | 84.06 |
| By making market survey | 327 | 65.79 | 27.76 |
| Randomly without market analysis | 108 | 21.73 | 0.00 |
| Simple to start in capital and skill | 0 | 0.00 | 1.29 |
| New product/service in the market | 5 | 1.01 | 127.76 |
| Total | 497 | 100.00 | |
| Growth rate of capital | | | |
| 0. No | 126 | 32.39 | 32.39 |
| 1. Yes | 263 | 67.61 | 100.00 |
| Growth rate of Employment | | | |
| 0. No | 127 | 32.65 | 32.65 |
| 1. Yes | 262 | 67.35 | 100.00 |
| Growth rate of the business | | | |
| 0. No | 127 | 32.65 | 32.65 |
| 1. Yes | 262 | 67.35 | 100.00 |

Source: Own Computation based on the survey data, 2021

Business Selection Criteria:

The main objective of any business enterprise, directly or indirectly, is profit maximization. Their business selection criterion depends on different aspects. As shown in Table 2, surprisingly, only a few followed formal procedural business selection criteria. For example, 65.79% (327) started randomly, without making a market survey. 7.85% (39) selected the business related to their profession and experience. 21.73% (108) selected by its simplicity to startup, and 1.01% (5) used other methods. Only 0.40% (2) of the respondents started their business by making a market survey and worked on the same business during the survey period.

Training, Working premises and Tax paying category

Table 3. Training, working premises Tax paying category, and problems

| Variables | Frequency | Percentage | Cumulative |
|--|-----------|------------|------------|
| Did you get training to start your business | | | |
| No | 383 | 98.46 | 98.46 |
| Yes | 6 | 1.54 | 100.00 |
| Total | 389 | 100.00 | |
| Is your working premise appropriate for market | | | |
| No | 300 | 77.12 | 77.12 |
| Yes | 89 | 22.88 | 100.00 |
| Total | 389 | 100.00 | |
| Is it your premise? | | | |
| No | 319 | 82.00 | 82.00 |
| Yes | 70 | 18.00 | 100.00 |
| Total | 389 | 100.00 | |
| Taxpayer category | | | |
| A | 148 | 38.05 | 38.05 |
| B | 183 | 47.04 | 85.09 |
| C | 58 | 14.91 | 100.00 |
| Total | 389 | 100.00 | |
| Problems faced when they started | | | |
| Lack of initial capital | 389 | 20.23 | 100.00 |
| lack of working premise | 389 | 20.23 | 100.00 |
| Lack of skill | 314 | 16.33 | 80.72 |
| Lack of confidence | 113 | 5.88 | 29.05 |
| Difficult to promote | 126 | 6.55 | 32.39 |
| Gender biased problem | 274 | 14.25 | 70.44 |
| Market problem | 282 | 14.66 | 72.49 |
| Difficult to get business license | 36 | 1.87 | 9.25 |
| Total | 1923 | 100.00 | 494.34 |

Source: Own Computation based on the survey data, 2021

Training: The researcher asked women entrepreneurs whether they took different training related to their job or not before they began their current businesses. Accordingly, 98.46% (383) did not get training before starting the job. Instead, they gradually adopted the job. They also incurred higher costs due to low skill or knowledge of the business they started. Sometimes they shut down their business due to a lack of skill and negative profit.

Accessibility to working premises: In this research, women entrepreneurs were asked about the location of their working premises to customers and their ownership of it. Therefore, 77.12% (300) replied that they didn't perceive their working premises were appropriate. It is far from their home, far for their customers, or located at the backside and not shown to customers, or it is located with no parking and display space, or it was not a safe and secured place. Others also replied as they were working by renting.

Ownership of working premises: As mentioned in Table 3, 82% of women entrepreneurs did not have their working premises; instead, they were running their business by renting from others, and some were selling on public roads left and right sides.

Tax-paying category: In Ethiopia, taxpayers are divided into three main categories, taxpayer "A," taxpayer "B," and taxpayer "C." A body or any other person having an annual gross income of ETB 1,000,000 or more is categorized as taxpayer "A". If A person other than a body has an annual gross income of ETB 500,000 or more but less than ETB 1,000,000, it is classified as taxpayer B. If a person other than a body has an annual gross income of less than ETB 500,000, the taxpayer is categorized under taxpayer C. Among the respondents, 38%

(148) are under category “A”, 47% (183) were categorized as taxpayer “B”, and the remaining 15% (58) were taxpayer “C”. Therefore, most of the respondents were under the category of taxpayer “B”.

Problems when they started their Business: Starting a new job or business is not a simple task in developing countries, especially in Ethiopia. As a result, according to the survey data, 100% (389) of respondents faced initial working capital and working premises problems, 80.72% (314) faced a lack of skill/ experience problems, 72.49% (282) could not get an appropriate market or customers, 70.44% (274) of the respondents also reported as they faced gender-biased problems, 29.05 % (113) replayed as they did not have the self-confidence to run the business by themselves, 9.25 % (36) of the respondents, faced bureaucracy to get a business license from the local trade and industry offices.

Long lasting and Existing Problems for women Entrepreneurs

In this sub-portion, the researcher tried to see women entrepreneurs' problems during the survey period. As shown in Table 4, it was tried to rank the main problems that women entrepreneurs faced during the survey period. As a result, for 92% of the respondents, finance was their first problem during the survey. 55% chose working premises and rental cost as their second problem; family burden and business conflict was the 3rd rank problem for 52% of the respondents. According to the survey data, COVID -19 was their 4th problem for 50 % of them during the survey period. Fluctuation of inputs and outputs price in the market was ranked 5th for 47% of women entrepreneurs. 46% of the respondents replied that less accessibility of infrastructures (like electricity, purified water, road, internet...) in the area where they were working was the 6th problem for them. A higher tax burden was also considered the 7th rank problem for 32% of the respondents. Unfortunately, during the survey period of this research, there was internal conflict and political instability in Ethiopia. As a result, 31% of the respondents mentioned political instability and civil war as their 8th problem during the survey period. Illegal and legal (seller of similar goods and services with lower prices) competition was also mentioned as the 9th problem for 30% of women entrepreneurs. Generally, even though the degree of severity was different, those discussed above and other problems were identified as the main growth constraints for women entrepreneurs in the study areas.

Table 4. Main problems for women Entrepreneurs and source of finance and their perception for bank loan

| Variables | Frequency | Percent of response | Percent of cases |
|---|-----------|---------------------|------------------|
| Finance Problem | 358 | 21.18 | 92 |
| working premises and rental cost | 214 | 12.65 | 55 |
| Family burden and conflict with business | 202 | 11.95 | 52 |
| Expansion of COVID -19 | 194 | 11.47 | 50 |
| Fluctuation of inputs and outputs price | 183 | 10.82 | 47 |
| Less accessibility of infrastructures | 179 | 10.58 | 46 |
| Higher tax burden | 124 | 7.33 | 32 |
| Internal conflict & political instability | 120 | 7.10 | 31 |
| High illegal and legal competition | 117 | 6.92 | 30 |
| Total | 1691 | 100.00 | |
| Source of initial capital | | | |
| personal saving | 13 | 3.34 | 3.34 |
| From family | 325 | 83.55 | 86.89 |
| Loan from friends and relatives | 16 | 4.11 | 91.00 |
| Loan from financial institutions | 31 | 7.97 | 98.97 |
| Loan from informal lenders | 4 | 1.03 | 100.00 |
| Total | 389 | 100.00 | |
| Why didn't women get loan from Banks | Frequency | Percent of response | Percent of cases |
| They don't know the procedure | 6 | 0.45 | 1.54 |
| It requires high value collateral | 358 | 26.96 | 92.03 |
| The interest rate is high | 313 | 23.57 | 80.46 |
| It is risky | 226 | 17.02 | 58.10 |
| Banks don't rely on small women | 341 | 25.68 | 87.66 |
| Banks don't lend at individual level | 29 | 2.18 | 7.46 |
| Their religion don't allow to borrow | 17 | 1.28 | 4.37 |
| If other , specify | 38 | 2.86 | 9.77 |
| Total | 1328 | 100.00 | |

Source: Own Computation based on the survey data, 2021

Sources of initial capital: Based on the survey data, 83.55% (325) of sample respondents got their initial working capital from their families, 4.11% (16) got from friends and relatives, 7.97% (31) got from financial institutions, 3.34% (13) got from personal savings and 1.035% (4) got from informal lenders. According to the respondents' report, only a few got initial capital from formal financial institutions or banks.

Banks as sources of finance: During the research survey, Ethiopia had 18 operating banks, two of which were governmental (Development Bank and Commercial Bank of Ethiopia. According to the respondents' report, banks refused to lend to small business owners who lacked collateral to guarantee loan repayments, such as women entrepreneurs and other low-income business owners. In this regard, the researcher gathered information on how women entrepreneurs perceive bank lending criteria. 91 % (354) of participants replied that banks don't lend to them when they need money, and only 9 % (35) said banks might lend to them if they want to borrow. As a result, most women entrepreneurs had a negative impression about asking for and borrowing money from banks.

The researcher gathered information from women entrepreneurs to know why banks refused to lend to them. As a result, 1.54 % of respondents (6) replied that they did not know how to apply for a bank loan, 92.03% (358) perceived as higher-value collateral is required, 80.46 % (313) of the respondents believed that the interest rate is higher, 58.10 % (226) were risk averse to borrow from banks, 7.46 % (29) understood as banks could lend at the individual level. Other 4.37 % (17) don't want to borrow from interest-bearing banks due to religious conflict. The remaining 9.77 % (38) of respondents refused to take a loan from a bank for different reasons.

Measurement of Growth of Businesses and Source of initial working capital

Business growth measurement is complicated, and many aspects are included to measure it. The researcher tried to measure the growth of women entrepreneurs' businesses using the growth rate of employees and capital growth rate as indicators.

A. Employment Growth rate of women Entrepreneurs'

It is known that when a business grows, it hires more employees to expand its production and increases profit. The employment growth rate is one proximate measurement of the growth of a business.

Note: If the initial no of employees was zero, the researcher calculated the annual average growth rate by dividing the current no of employees by the age of the business to avoid zero on the denominator in equation 3 (Liedholm, 2002; Lafuente & Rabetino, 2007).

Based on equation (11) and the survey data, the annual average growth rate of women entrepreneurs' businesses measured by the growth rate of employment was only 0.685%. The minimum growth rate was negative (-20%), and the maximum was 50%.

B. Measuring Capital Growth rate

Capital growth is the appreciation of the value of an asset over time. It is usually calculated and presented *on an annual or Year-on-Year basis* in the form of a percentage. The researcher used the general formula of compound interest to know the growth rate of women's enterprises in terms of capital (equation 12).

By equation (12) and the survey data, the annual average growth rate of capital was 7.4%, with a minimum of 5.3% and a maximum of 13.4%.

II. Econometrics Models and Results

(Using equations 8). The regression coefficients indicate the extent of the effect in the log odds, being the category of interest of the response variable for a unit change in the predictor variables. If the value of the odds ratio is positive ($\exp(B) > 1$), the chance of growth of women's enterprise is higher for a member of the group in the reference category. The reverse is true when the odds ratio is less than 1 ($\exp(B) < 1$) about the reference category (Pituch & Stevens, 2015); Walker, 1996).

Table 5. Logistic regression model results for the constraints for the growth of women entrepreneurs.

| Logistic regression | | Number of obs | | = | 389 | | |
|-----------------------------|--|---------------|-----------|-------|--------|----------------------|----------|
| | | LR chi2(24) | | = | 408.96 | | |
| | | Prob > chi2 | | = | 0.0000 | | |
| Log likelihood = -41.233733 | | Pseudo R2 | | = | 0.8322 | | |
| Groth_of_Business | | Odds Ratio | Std. Err. | z | P> z | [95% Conf. Interval] | |
| ACFIN | | | | | | | |
| 1. Yes | | 22.35185 | 16.60772 | 4.18 | 0.000 | 5.210261 | 95.88871 |
| ACRAWM | | | | | | | |
| 1. Yes | | 3.502562 | 2.376334 | 1.85 | 0.065 | .9265803 | 13.24002 |
| STIFCOM | | | | | | | |
| 1. Yes | | .1749679 | .1677381 | -1.82 | 0.069 | .0267257 | 1.145481 |
| EDUN | | | | | | | |
| 1. Grade 7-10 | | 547.7996 | 6257.697 | 0.55 | 0.581 | 1.04e-07 | 2.90e+12 |
| 2. Grade 11-12 | | 134.0899 | 236.0491 | 2.78 | 0.005 | 4.255583 | 4225.065 |
| 3. Vocational training | | 11.28549 | 22.17126 | 1.23 | 0.217 | .2400303 | 530.6094 |
| 4. Degree and above | | 189.8763 | 401.6151 | 2.48 | 0.013 | 3.006489 | 11991.73 |
| MARTSTAT | | | | | | | |
| 1. Single | | .0612866 | .0658129 | -2.60 | 0.009 | .0074696 | .5028434 |
| 2. divorced | | .0777559 | .0828763 | -2.40 | 0.017 | .0096267 | .6280411 |
| 3. widowed | | .2936734 | .6994682 | -0.51 | 0.607 | .0027573 | 31.27863 |
| ACTRAIN | | | | | | | |
| 1. Yes | | 23.30195 | 21.3132 | 3.44 | 0.001 | 3.880058 | 139.9415 |
| ACCINFRA | | | | | | | |
| 1. Yes | | 16.29877 | 13.91848 | 3.27 | 0.001 | 3.056776 | 86.90523 |
| ACCWOKPREM | | | | | | | |
| 1. Yes | | 5.230089 | 3.646519 | 2.37 | 0.018 | 1.333628 | 20.51083 |
| ACCINFOMOTECH | | | | | | | |
| 1. Yes | | 6.314919 | 5.737648 | 2.03 | 0.043 | 1.064089 | 37.47639 |
| TAXBURDN | | | | | | | |
| 1. B | | 13.08498 | 10.00342 | 3.36 | 0.001 | 2.924375 | 58.54816 |
| INICAPTA | | | | | | | |
| | | 1.000039 | .0000122 | 3.23 | 0.001 | 1.000015 | 1.000063 |
| AGERSPOND | | | | | | | |
| 1. 21 - 30 | | 16.66125 | 98.23557 | 0.48 | 0.633 | .0001596 | 1739542 |
| 2. 31- 40 | | 75.91975 | 966.4572 | 0.34 | 0.734 | 1.11e-09 | 5.20e+12 |
| 3. 41- 50 | | 214.4059 | 2735.31 | 0.42 | 0.674 | 2.96e-09 | 1.55e+13 |
| 4. Above 51 | | 31747.3 | 409911 | 0.80 | 0.422 | 3.25e-07 | 3.11e+15 |
| AGEBUSINE | | | | | | | |
| 1. Before 5 years | | 2.123951 | 2.160862 | 0.74 | 0.459 | .289168 | 15.60051 |
| 2. Before 10 years | | 8.508031 | 15.4851 | 1.18 | 0.239 | .2402115 | 301.3452 |
| 3. Before 15 years | | 2.968488 | 6.023358 | 0.54 | 0.592 | .0556369 | 158.3828 |
| FAMSI2 | | | | | | | |
| 1. 4 - 6 | | .9239499 | 1.078957 | -0.07 | 0.946 | .0936794 | 9.11282 |
| 2. 7 and above | | 1 | (omitted) | | | | |
| _cons | | | | | | | |
| | | 3.51e-07 | 4.54e-06 | -1.15 | 0.250 | 3.45e-18 | 35781.32 |

Source: Own Computation based on the survey data, 2021

When odds ratio < 1(B= coefficient is negative) then the odds (or the likelihood) of not growing a business is higher for the reference category.

Availability of access to finance increases the probability of the growth of their firms by 22 times compared to those women entrepreneurs who do not have access. The relationship level was statistically significant at 5% ($p = 0.00$; H_1).

Access to raw materials and inputs or finished products for resale purposes nearer to their working premises improves the probability of the growth of their business by 3.5 times compared to those women entrepreneurs who do not have access. It is statistically significant at 10% ($p = 0.065$; H_2).

According to the respondents' report, stiff competition indicates the existence of unfair competition. According to the regression result, when there is stiff competition with women an entrepreneur, the likelihood of their business growth reduces by 0.175 times compared to proper completion. The variable's regression coefficient is 0.175 and is negative (when odds ratio < 0), and the relationship level was statistically significant at 5% ($p = 0.069$; **H₃**)

The level of education has an impact on the probability of growth of women entrepreneurs. As a result, a degree holder or higher level of education has 189.87 times greater chance of growing their business than grade 1- 6th holders. In conclusion, the alternative hypothesis, that there is a positive and statistically significant relationship between the growth of women's businesses and their educational status, is accepted due to the null hypothesis being rejected (**H₄**).

Businesses owned by single women entrepreneurs had 0.06 times lower chance of growth than businesses owned by married women entrepreneurs. Therefore, the alternative hypothesis that the marital status of respondents' affects the growth of women's businesses is statistically significant and is accepted due to the null hypothesis being rejected (**H₅**).

Access to training when women entrepreneurs started their business and at the time of working was hypothesized to affect the growth of women's businesses. Getting different training increases the probability of women entrepreneurs' business growth on average by 23 times compared to those women entrepreneurs who did not have training access; (**H₆**) is rejected.

Access to infrastructures improves the probability of the growth of their businesses by 16 times compared to those women entrepreneurs who do not have access. It is statistically significant at 1% ($p = 0.001$; **H₇** is rejected).

Compared with those who did not have their working premises, having working premises increases the probability of the growth of their business by 5 times. It is statistically significant ($p = 0.018$), and the null hypothesis is rejected (**H₈**) in favor of the alternative.

Accessibility to information and modern technology for women entrepreneurs increases the odds of the growth of their businesses by 6 times compared to those women entrepreneurs who did not have access. It is statistically significant at 5% ($p = 0.043$) and (**H₉**) is rejected.

When women entrepreneurs pay fair tax, the odds of the growth of their enterprises increases by 13 times as compared with those women entrepreneurs who paid over tax rate. The relationship level was statistically significant at 5% ($p = 0.001$; **H₁₀**). This shows that a high tax burden negatively and significantly influences the odds of the growth of women's enterprises in the study area.

As shown in table 5, the likelihood of the growth of women's businesses increases when their initial capital increases. The relationship level was positive and statistically significant at 1% ($p = 0.001$). This shows that a higher initial capital positively and significantly influences the odds of the growth of women's enterprises in the study area.

Among the included independent variables, age of the respondents, age of the business and family size were statistically insignificant to influence the growth of women entrepreneurs in the study area.

Summary and Conclusion

According to the survey data, 100% (389) of respondents faced initial working capital problems and appropriate working premises. Finance, working premises and rental cost, family burden and business conflict, COVID -19, fluctuation of inputs and outputs prices, less accessibility of infrastructures, a higher tax burden, conflicts and political instability, higher illegal and legal competition were identified as the main growth constraints for women entrepreneurs in the study areas.

The annual average growth rate of women entrepreneurs' businesses measured based on the growth rate of employment was 0.68%, with a minimum of - 20% and a maximum of 50%. On the other hand, the annual average growth rate of women entrepreneurs' businesses measured by capital growth rate was 7.4%, with a minimum growth rate of 5.3% and a maximum of 13.4%. The average initial working capital was 45,685 ETB with a minimum of 2,000 and a maximum of 150,000 ETB.

Among the included independent variables, except family size and age of respondents, all other variables are statistically significant and influence the growth of women entrepreneurs.

Formulating an appropriate intervention for transforming the status of women both within and outside their homes has to be one of the significant preoccupations of development practitioners. Strategies should be formulated to raise women's status through education, training, access to finance and family and business

management, and access to legal counseling. Politically, has to be made to raise the proportion of female participants in representative organizations. There should be financial institutions that supply finance, especially for women, with less bureaucracy and smooth services, led by women.

Cultural values and gender-related constraints should be withdrawn for women. Husbands' and other family members' support should be significant to simplify the multiple roles of women entrepreneurs. Lack of self-confidence is better avoided through training and experience sharing.

Generally, the government, non-governmental organizations, and other stake holders should participate actively and positively participate in supporting women entrepreneurs. Especially banks and small micro finances should supply working premises and finance for women entrepreneurs. They are almost half of the society.

References

- Acs, Z. J., Desai, S., & Hessels, J. (2008). Entrepreneurship, economic development and institutions. *Small business economics*, 31(3), 219-234.
- Agresti, A. (2002). Logistic regression. *Categorical data analysis*.
- Brush, C. G., & Cooper, S. Y. (2012). Female entrepreneurship and economic development: An international perspective. *Entrepreneurship & Regional Development*, 24(1-2), 1-6.
- Copas, J. B. (1988). Binary regression models for contaminated data. *Journal of the Royal Statistical Society: Series B (Methodological)*, 50(2), 225-253.
- Davidsson, P. (2005). Paul D. Reynolds: Entrepreneurship research innovator, coordinator, and disseminator. *Small Business Economics*, 24(4), 351-358.
- Headd, B. (2000). The characteristics of small-business employees. *Monthly Lab. Rev.*, 123, 13.
- Hébert, R. F., & Link, A. N. (2006). The entrepreneur as innovator. *The Journal of Technology Transfer*, 31(5), 589-597.
- Hosmer, W.D. & Lemeshow S. (2000). *Applied Logistic Regression* (2nd Ed.). John Wiley and Sons, New York.
- Lafuente, E., & Rabetino, R. (2007). Human Capital as a Determinant of Small Firms' Growth in Romania: A Quantile Approach. *CEBR WP*, 03.
- Landström, H. (2010). The roots of entrepreneurship and small business research. In *Pioneers in entrepreneurship and small business research* (pp. 27-58). Springer, Boston, MA.
- Liedholm, C. (2002). Small firm dynamics: evidence from Africa and Latin America. In *Small firm dynamism in East Asia* (pp. 227-242). Springer, Boston, MA.
- Maheshwari, V. U. (2000). WOMEN ENTREPRENEURS SOCIO-ECONOMIC STATUS IN DINDIGUL DISTRICT.
- Mauchi, F. N. (2014). Challenges faced by women entrepreneurs: a case study of Mashonaland central province.
- McClelland, D., Princeton, N., & Nostrand, V. (1961). The Achieving Society D. Van Nostrand Co. Inc., Princeton, New Jersey.
- Nijhawan, I. P., & Dubas, K. (2007). Entrepreneurship: Public or private good. *Academy of Entrepreneurship Journal*, 13(2), 99-108.
- Okafor, C., & Mordi, C. (2010). Women Entrepreneurship Development in Nigeria: the Effect of Environmental Factors. *Petroleum-Gas University of Ploiesti Bulletin, Economic Sciences Series*.
- Pareek, U., & Nadkarni, M. (1978). Development of entrepreneurship: A conceptual model.
- Pituch, K. A., & Stevens, J. P. (2015). *Applied multivariate statistics for the social sciences: Analyses with SAS and IBM's SPSS*. Routledge.
- Rao, T. V., & Mehta, P. (1978). Psychological factors in entrepreneurship. *Developing Entrepreneurship—A Hand Book Learning Systems*, 4-13.
- Reynolds, P., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., ... & Chin, N. (2005). Global entrepreneurship monitor: Data collection design and implementation 1998–2003. *Small business economics*, 24(3), 205-231.
- Say, J.B. (1827). production, distribution and consumption of wealth, John Gragg No. North forth, sheet, Philadelphia.
- Singh, G., & Belwal, R. (2008). Entrepreneurship and SMEs in Ethiopia: Evaluating the role, prospects and problems faced by women in this emergent sector. *Gender in management: An international journal*.

- Singh, S., & Saxena, S. C. (2000). Women entrepreneurs of eastern UP: Challenges and strategies of empowerment. *Indian Journal of Industrial Relations*, 36(1), 67-78.
- Sinha, P. (2003). Women entrepreneurship in the North East India: motivation, social support and constraints. *Indian Journal of Industrial Relations*, 425-443.
- Solomon, D. (2010). *Desk review of studies conducted on women entrepreneurs in Ethiopia*. Chamber of Commerce and Sectoral Association.
- Storey, D. J. (2016). *Understanding the small business sector*. Routledge.
- Tesfaye, A. (2003). The impact of microfinance on poor women: (MA thesis), Addis Ababa University, p. 43.
- Walker, J. (1996). *Methodology Application: Logistic Regression the Using CODES Data* (No. HS-808 460).