The Characteristics and Determinants of Entrepreneurship in Ethiopia

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Abstract

Using Global Entrepreneurship Monitor (GEM) approach, the study analyzes the characteristics and determinants of entrepreneurship in Ethiopia. Primary data are collected through the Adult Population Survey (APS) and analyzed using Probit model. To overcome the hetroscedasticity problem, which is prevalent in cross-section studies, robust standard errors were employed. The findings of the study reveal that about 53% of the adults in Ethiopia are potential entrepreneurs. The perceived opportunity rate in Ethiopia (65%) is above the average for factor-driven economies (63%); while the perceived capabilities rate (69%) is below the average for factor-driven economies (71%). Ethiopia's rate of entrepreneurial intention (22%), early-stage entrepreneurial activity rate (12.2%), and established business activity rate (8.3%) are below the average for both factor-driven economies and Sub-Saharan African countries. The econometric analysis indicates that demographic variables such as age, level of education, societal attitude towards entrepreneurship, and social networks (knowing someone in business) are significant in influencing potential entrepreneurship and entrepreneurial intensions in Ethiopia. In early-stage entrepreneurial activity (TEA),"Fear of failure" is found to have a negative and statistically significant effect. On the other hand, the probability of engaging in TEA significantly differs between those living in urban and rural areas. Furthermore, the results provide basic data to develop national entrepreneurship strategy, consistent with the MSE development strategy and other macro and sectoral level strategies. Thus, the low rate of TEA and

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established business in Ethiopia can be improved by expanding the quantity and quality of support services. Moreover, there is also a need to develop region-specific entrepreneurial development plan to reduce region to region or urban-rural differences.

Keywords: Global Entrepreneurship Monitor (GEM), Perceived Opportunities and Capabilities, Total Early-Stage Entrepreneurial Activity (TEA)
JEL codes: L26.

1. Introduction

The government of Ethiopia has developed a five-year Growth and Transformation Plan (GTP) (2010/11 - 2014/15), which aims at maintaining a two-digit economic growth per year that has been achieved over the past seven years. The GTP focuses on: (i) equitable or inclusive economic growth; (ii) support the development of agriculture to serve as a major source of growth; and (iii) promotion of women and youth employment. As part of GTP, the government has implemented the five-year Micro and Small Enterprise (MSE) Development Strategy (2010/11-2014/15), which emphasizes on expanding youth employment in urban areas. To this end, the government has been providing support services to MSE operators in five major areas: (a) providing production and marketing space; (b) skill and business development services; (c) technology support; (d) market development and linkage; and (e) financial access.

Although the government has been committed and spent huge resources to implement the mega-MSE development program, interventions to improve the entrepreneurial ability and capabilities of MSE operators were hardly given any focus in the strategy. With the exception of a small entrepreneurship development program implemented recently, supported by UNDP, there have not been any tailored support programs by government and others to promote entrepreneurship in the country. Moreover, there is hardly any evidence and baseline survey to show the current status, characteristics and determinants of entrepreneurship in Ethiopia, which would assist policymakers to make informed decisions and formulate a strategy or program to promote entrepreneurship. This is a modest attempt to

fill the research gap by applying the approach and methodology of the Global Entrepreneurship Monitor (GEM), which uses standard and similar questionnaire for the adult population survey and the national expert survey in all the 69 countries, participating in GEM surveys.

The present study is related to the broad literature on determinants of entrepreneurship. Early empirical studies identified liquidity constraints as a crucial factor affecting the probability of starting a business (Evans and Jovanovic 1989; Evans and Leighton 1989). Thus, lack of institutions that can provide the necessary start-up restrain entrepreneurship (Nykvist, 2008). Institutions also influence entrepreneurial activity through the legal system, which affects investor protection laws and private property development (Stephen *et al.*, 2005). In addition, socio-political variables are shown to be vital in enhancing social entrepreneurship (Griffiths *et al.*, 2013).

Even though, previous studies documented certain factors that can stimulate or impede the emergence of entrepreneurship, little is known about the state of entrepreneurship and its determinants in Ethiopia. Besides, the influence of the entrepreneurial activity depends on a county's level of development (Stephen *et al.*, 2005). Using GEM 2012 data set, the present study makes an attempt to contribute to the literature by exploring the characteristics and determinants of entrepreneurship in Ethiopia.

The Global Entrepreneurship Monitor (GEM) is a research program which was initiated in 1997 as a joint venture between London Business School and Babson College, with the aim of obtaining an internationally comparable high quality data on entrepreneurial activity. The academic research consortium made its first survey in 1999 with 10 participating countries and continued to increase the number of participating countries every year. While the first GEM reports included high-income countries only, the ambition has always been to include as many countries as possible in order to support policymakers in their efforts to stimulate economic development through entrepreneurial activities. In 2012, the number of countries participating in GEM rose to 69, where Ethiopia was included as one of the participating countries.

The aim of GEM is to investigate the role of entrepreneurship in the economic growth of a nation. GEM defines entrepreneurship as "any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business" (Global GEM report, 2012). Furthermore, GEM captures both informal and formal activity that encompasses those in the process of starting as well as those running new and established businesses which have a comprehensive account of business activities. Traditional analyses of economic growth and competitiveness have tended to neglect the role played by new and small firms in national economies. In contrast, GEM takes a comprehensive approach and considers the degree of involvement in entrepreneurial activity within a country, identifying different types and phases of entrepreneurship.

1.1 Objectives of the Study

The main objective of this paper is to analyze the status, characteristics and determinants of entrepreneurship in Ethiopia by applying the GEM approach and comparing the results with the rest of the world. The specific objectives include:

(i) providing baseline information on the status of entrepreneurship in Ethiopia;
(ii) studying the characteristics of entrepreneurial activity in Ethiopia and compare the results with countries participating in GEM surveys;
(iii) identifying factors which encourage and/or hinder entrepreneurial activity; and
(iv) contribute towards the formulation of effective and targeted policies aimed at stimulating entrepreneurship in Ethiopia.

1.2 Sampling and Method of Data Collection

One of the key purposes of GEM is to provide reliable data on entrepreneurship which will be useful in making meaningful comparisons overtime, both internally and between economies. For this reason, all participating economies make use of standard research instruments. The data for this study are collected through the Adult Population Survey (APS).The Ethiopian team conducted the Adult Population Survey (APS) using a random representative sample of 3,005(18 to 64-yearoldage cohort adults) from all regions. The survey was conducted using a standardized questionnaire developed by the GEM consortium. The raw data were sent directly to the GEM data team for inspection and uniform statistical calculations before being made available to the Ethiopian team for analysis and interpretation, and, ultimately, compilation of the annual national report.

1.3 GEM's Conceptual and Empirical Framework to Study Entrepreneurship

The GEM approach views entrepreneurship as a process comprising different phases, from intending to start a business, to just starting, running new or established enterprises and even discontinuing a business. To this end, data are collected across several phases of entrepreneurship. Since individuals may respond differently to policy interventions depending on the specific position in the entrepreneurship process, a dynamic approach of analyzing entrepreneurship activities provides valuable information to policymakers. For example, it might be the case that substantial awareness for entrepreneurship as a career choice exists within a country and that many people expect to start a business within the next few years. In that same country, however, low rates of nascent entrepreneurship may exist as compared to countries with similar level of economic development. Such a discrepancy in entrepreneurship involvement rates across several phases may call for targeted policy interventions to ameliorate the transformation between phases, from intentions to actual steps to start a new business. According to the 2012GEM report, the entrepreneurship process and framework of GEM’s approach are defined as follows:

Potential entrepreneurs**:** potential entrepreneurs are individuals who have not yet taken steps to start a business, but they have the beliefs and abilities to start a business. In other words, individuals are considered to be potential entrepreneurs when they believe they have the knowledge and skills to start a business and/or when they see opportunities for setting up a business in the area where they live in. Furthermore, potential entrepreneurs should not be afraid of business failure. It should also be emphasized that any support provided to potential entrepreneurs should not have high expectation on success rates.

Entrepreneurial intent**:** potential entrepreneurship is followed by entrepreneurial intent. This phase includes individuals who have actual intentions, alone or together with other individuals, to start a new business within the next three years.

Total early-stage entrepreneurial activity**:** GEM's primary measure of entrepreneurship is total early-stage entrepreneurial activity (TEA), which consists of nascent entrepreneurs and new business owners. Nascent entrepreneurs include individuals who are actively involved in setting up a business they will own or co-own; and this business has no paid salaries, wages, or any other payments to the owners for more than three months. On the other hand, new business entrepreneurship refers to individuals who are currently owner-managers of new businesses, i.e. owning and managing a running business that has paid salaries, wages, or any other payments for more than three months, but not more than 42 months.

Established entrepreneurship**:** the early-stage entrepreneurial activity (TEA) is followed by established business ownership. Owners of established business entrepreneurs are individuals who are currently owner-managers of established businesses, i.e. owning and managing a running business that has paid salaries, wages, or any other payments for more than 42 months.

Business discontinuance: this includes individuals who have, in the past 12 months, discontinued a business, either by selling, shutting down, or

otherwise discontinuing an owner/management relationship with the business. However, this is not a measure of business failure.

GEM approach takes a comprehensive snapshot of entrepreneurs around the world, measuring the attitudes of a population and the activities and attributes of individuals participating in various phases of this activity. The approach also considers the aspirations of these entrepreneurs regarding their businesses, along with other key features of their ventures. GEM's Total Early-stage Entrepreneurial Activity (TEA) index gauges the level of dynamic entrepreneurial activity in an economy by considering the incidence of start-up businesses (nascent entrepreneurs) and new firms (up to3.5 years old) owned by the adult population (i.e. individuals aged18–64 years).

Another important feature of GEM's approach is the distinction it makes between different types of entrepreneurship and how these contribute to economic growth and job creation. Individuals who start businesses in response to a lack of other options for earning an income are deemed to be necessity-driven entrepreneurs, while those who start businesses with the intention of exploiting an opportunity are identified as opportunity-driven entrepreneurs. The latter may include individuals whose aim is to maintain or improve their income, or to enhance their independence.

Since economic development and entrepreneurship differs along the different phases of economic development, the GEM experts categorized the participating countries into three groups: factor-driven, efficiency-driven and innovation-driven economies. Moreover, productivity and competitiveness are influenced by various factors and the intensity of their effect depends on the country's stage of economic development.

Factor-driven economies: countries in this phase are dominated by subsistence agriculture and extraction businesses, with a heavy reliance on (unskilled) labor and natural resources. The factor-driven economies are countries with less than 2,000 USD GDP per capita, while those in transition from factor to efficiency-driven countries have a GDP per capita, ranging from 2,000 to 2,999 USD (World Economic Forum's *Global*

Competitiveness Report 2012/13).Countries in this phase are characterized by massive unemployment which forces individuals into self-employment so as to make a living, which creates necessity-driven entrepreneurship. The focus of factor-driven economies is geared towards building a sufficient foundation for basic requirements such as infrastructure, health and primary education, institutional development and macroeconomic stability. Ethiopia is classified as a factor-driven economy.

Efficiency-driven economies: *c*ountries in this phase are more competitive with further development accompanied by industrialization and an increased reliance on economies of scale, with more dominant large organizations which are capital-intensive. The efficiency-driven economies have a GDP per capita, ranging between 3,000 and 8,999 USD, while those in transition towards innovation-driven have a GDP per capita ranging from 9,000 to 17,000 USD (World Economic Forum's *Global Competitiveness Report 2012/13)*. This phase is generally accompanied by improved (and improving) basic requirements, and attention is then directed towards developing higher education and training, financial market, labor and goods market efficiency, technological readiness and market size.

Innovation-driven economies: these countries are characterized by more knowledge intensive and expanded businesses. The innovation-driven economies have a GDP per capita of more than 17,000 USD (World Economic Forum's *Global Competitiveness Report 2012/13)*. The key focus for innovation-driven economies is business sophistication and innovation. Business sophistication consists of two elements that are intricately linked: the quality of a country's overall business networks and the quality of individual firms' operations and strategies. Innovation, on the other hand, includes sufficient investment in Research and Development (R&D), presence of high-quality scientific research institutions which deliver new technologies and protection of intellectual property rights.

2. Entrepreneurial Characteristics of the Adult Population in Ethiopia

This section focuses on the analysis of entrepreneurial perceptions and intentions among the Ethiopian sample adult population. Attempts are also made to compare the results of the survey with the averages of the 13 factor-driven economies and 10 Sub-Saharan African countries which serve as benchmarks. The analysis of entrepreneurial perceptions indicates whether individuals perceive entrepreneurial opportunities in their environment, how they perceive their own entrepreneurial ability, and what their perception is towards business failure. The entrepreneurial intentions are expected to provide concrete dynamic measures of entrepreneurial activity in Ethiopia. To this end, individuals were asked about their intentions to start a business within the next three years. Attempts are also made to assess the characteristics of adults, who are in the process of starting a new business or running an existing new business, which is measured using the rate of Early-stage Total Entrepreneurial Activity (TEA). The whole objective is to investigate the prevalence rate of TEA in different demographic categories of the early-stage entrepreneurs.

2.1 Potential Entrepreneurs in Ethiopia

Individuals in the survey are considered to be potential entrepreneurs when they perceive that they have good opportunities in their living area for setting up a business, and when they have the required capabilities to start a business. The first step in the entrepreneurship process occurs when people perceive favorable business opportunities in their area. Business opportunities originate as perceptions on what individuals believe can be done to earn a profit. Opportunities are therefore both real and subjective (Lewin, 2012). Perceived capabilities refer to the percentage of individuals who believe they have the required skills, knowledge and experience to start a new business.

Table 1 indicatesthat65% of the adult population perceives a good business opportunity to start a business in the next six months. Ethiopia's perceived

opportunity rates are higher compared to factor-driven economies (63%) but it is lower when compared with the average for Sub-Saharan economies involved in GEM surveys (70%). On the other hand, individuals in Sub-Saharan African countries are likely to believe that they have the skills and knowledge necessary to start businesses (76%). Of the sample adult population in the Ethiopia, 69% of the respondents believe that they have the skills to pursue a business opportunity. Nevertheless, Ethiopia's perceived capability rate is lower as compared with the average for both factor-driven economies and Sub-Saharan African countries. In terms gender differentiation, the rate of perceived opportunities for female respondents (62%) in Ethiopia is lower compared to their male counterpart (68%), and regarding the belief on one's entrepreneurial capability to pursue a business, the rates for female respondents (65%) are lower as compared with their male counterparts (72%).

Table 1: Perceived opportunities and capabilities of the adult population in Ethiopia and other economies

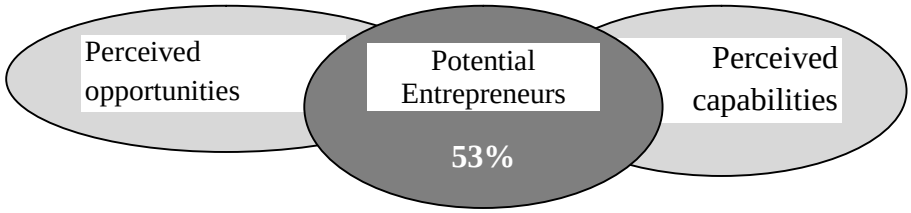
Phase of economic development	Perceived opportunities	Perceived capabilities
Factor-driven economies: averages	63%*	71%
Ethiopia (as factor-driven economy)	65%	69%
Efficiency-driven economies: averages	41%	52%
Innovation-driven economies: averages	31%	36%
Sub-Saharan Average	70%	76%

* Read as: On average factor-driven economies have a perceived opportunity rate of 63%.

As depicted in Figure 1, cross-tabulating the number of adults who perceive that there is good business opportunities (65%) with those who believe that they have entrepreneurial capabilities(69%) shows that there is a clear overlap of the two responses (53%). This constitutes the size of Ethiopia's pool of potential entrepreneurs, meaning the pool of those who see enough opportunities in their living area for setting up a business and believe that they have entrepreneurial capabilities to start a business. In other words, entrepreneurial perception rates are high suggesting that individuals are

willing to act on the opportunities they perceive by applying their entrepreneurship capabilities to start businesses. However, since this is based entirely on self-reported perceptions, there is a need to compare it with the reality. It should be noted that believing that one has the skills to start a business and actually having them are two different things.

Figure 1: Ethiopia's pool of potential entrepreneurs



The quality of the educational system in a factor-driven economy, such as Ethiopia, affects the quality and characteristics of entrepreneurship. The result of the adult population survey indicates that the perceived entrepreneurial capability increases as one's education level increases. All of the adults with a second degree believed that they are capable of pursuing new business; whereas only half of the individuals with pre-primary education believed that they have the skill to pursue a new business (53%). It should be noted that Ethiopia's primary education net enrolment is among the lowest in the world, 122 out of 144 countries (World Economic Forum's *Global Competitiveness Report 2012/13)*, which contributed to low entrepreneurial quality. For Ethiopia, as being a factor-driven economy, meeting basic access to health services and primary education is one of the criteria to improve entrepreneurship.

2.2 Entrepreneurial Intentions of Adults in Ethiopia

Once a potential entrepreneur expresses his/her intention to start a new business in the foreseeable future, understanding the entrepreneurial intentions of respondents provide valuable information about the dynamics of entrepreneurial activity in Ethiopia. To this end, respondents were asked whether they intend to start a business, alone or with others, in the coming

three years. As per the survey results (Table 2), Ethiopia's rate of entrepreneurial intention is found to be 22%, which is much lower than the average rate for factor-driven economies (49%) and the average rate for Sub-Saharan African countries (53%).Although Ethiopia has relatively the highest perception in entrepreneurial opportunities and capabilities, the intention to start a new business is relatively very low.

The result of the adult population survey in Ethiopia indicates that female respondents (19%) have relatively lower entrepreneurial intensions compared to male respondents (24%). However, given the socio-cultural and other barriers of women in Ethiopia, one would have expected much lower rate of entrepreneurial intentions, perceived opportunities and capabilities. With regard to regional differences, the survey result indicates that the adult population in Gambela region has the highest entrepreneurial intentions (82%), followed by Dire Dawa (50%), Addis Ababa (28.6%), Oromia (25.2%), Amhara (18.6%), and Tigray (17.5%). The adult populations of Harari and Somali regions have the lowest entrepreneurial intensions compared to other regions.

Table 2: Entrepreneurial intentions in Ethiopia and other economies, 2012

Phase of economic development	Entrepreneurial intentions
Factor-driven economies: averages	49%*
Ethiopia (as factor-driven economy)	22%
Efficiency-driven economies: averages	27%
Innovation-driven economies: averages	13%
Sub-Saharan Africa: Average	53%

* Read as: On average factor-driven economies have an entrepreneurial intention rate of 49%.

According to the 2012 GEM report of South Africa, an individual's entrepreneurial intention is influenced firstly by the perception of the extent to which it is desirable (attractive and credible) to become an entrepreneur. Secondly, it is influenced by perceptions of feasibility, which focus on the

individual's ability to adopt entrepreneurial behavior.GEM distinguishes between three entrepreneurial attitudes: individuals' opinions about entrepreneurship being a desirable career option, individuals' opinions about the level of respect and status that entrepreneurs have, and respondents' assessments of the media attention on successful entrepreneurs. The three attitudinal measurements assess societal impressions and the visibility and attractiveness of entrepreneurship in a specific community. Positive views on these measures can influence not only the willingness of individuals to become entrepreneurs, but also the likelihood that others in society will support their efforts, with some, possibly, becoming stakeholders such as investors, suppliers, customers and advisors.

Table 3 shows the entrepreneurial attitudes of the Ethiopian sample adult population by comparing the results with Sub-Saharan Africa and other GEM participating countries. As per the survey results, entrepreneurship is considered as a desirable career option for 74% of the adults in Ethiopia, which is slightly lower than the average for factor-driven economies (76%) and Sub-Saharan Africa countries (76%). Moreover, about 91% of the adult population believes that the society gives a high status to successful entrepreneurs, which is much greater than the averages for factor-driven economies (80%) and Sub-Saharan Africa countries (80%). About 72% of the respondents have a positive attitude towards media attention for entrepreneurs, which is higher than the average for factor-driven economies (68%) but less than the Sub-Saharan Africa average (77%).

Even though society's attitude towards entrepreneurship is positive in Ethiopia, only 22% of the respondents intend to engage in business, whenever they have opportunities. Potential entrepreneurs may not be encouraged to take risk and start a new business if they fear humiliation by their peers, in the event of business failure. The findings of the adult population survey in Ethiopia prove that fear of failure is a disincentive to start a new business. Out of the 65% who perceive that there are good business opportunities, 35% fear failure, and only 22% of the respondents reported that they have entrepreneurial intentions.

Table 3: Entrepreneurial attitudes in Ethiopia and other economies, 2012

Phase of economic development	Entrepreneurship as good career choice	High status to successful entrepreneurs	Media attention for entrepreneurship
Factor-driven economies: averages	76%*	80%	68%
Ethiopia (as factor-driven economy)	74%	91%	72%
Efficiency-driven economies: averages	70%	69%	60%
Innovation-driven economies: averages	55%	70%	56%
Sub-Saharan Africa: Average	76%	80%	77%

* Read as: On average 76% of individuals in factor-driven economies considered Entrepreneurship as good career choice

The result of the survey depicts that entrepreneurial intention of the adult population in Ethiopia increases with the level of education. Adults with a second degree have a higher entrepreneurial intention rate of 50% whereas individuals with a pre-primary education have only 5% rate of entrepreneurial intention. However, the entrepreneurial intention rate for respondents, who have secondary and preparatory level of education, is higher (38%) than the respondents with technical and vocational level (23%), which could be partly the result of inadequate awareness regarding entrepreneurship in technical and vocational schools.

2.3. Entrepreneurial Activity in Ethiopia

GEM studies have attempted to study the relationship between economic growth, measured in terms of GDP per capita, and the level and nature of entrepreneurial activity in an economy. According to 2012 GEM report, economies with low GDP per capita tend to have high TEA rates with a relatively high proportion of necessity-motivated entrepreneurship. However, as the GDP per capita increases, economies tend to have more established firms and lower TEA rates. Table 4 shows that the three measures of entrepreneurial activity decrease as the stage of economic development increases. Since Ethiopia has a low GDP per capita, one would

expect higher level of entrepreneurial activity. However, Ethiopia's TEA rate of 12.2% is far below compared to the average for factor-driven economies (23.7%). The average rates of the adult population, who are taking steps to start a business or nascent businesses (5.6%), and those engaged in businesses for less than 3.5 years or new business owners (6.8%) are lower compared to the average for factor-driven economies, which are 11.8% and 12.7%, respectively.

Entrepreneurs may have different motivations for starting a business. Some people may be pushed into starting a business because they have no other work options and need a source of income which GEM classifies as necessity-driven entrepreneurs. Others start their own business primarily to take the advantage of the good opportunity, which GEM identifies as opportunity-driven entrepreneurs. Furthermore, others may desire greater independence in their work or seek to maintain or improve their income, which GEM identifies as improvement-driven entrepreneurs. The relative prevalence of opportunity-motivated versus necessity-motivated entrepreneurial activity can provide useful insights into the quality of early-stage entrepreneurial activity in Ethiopia.

Table 4: Nascent, new entrepreneurship and TEA rates in Ethiopia and other economies

Phase of economic development	Nascent entrepreneurship	New entrepreneurship	TEA
Factor-driven economies: averages	11.8%	12.7%	23.7%
Ethiopia (as factor-driven economy)	5.6%	6.8%	12.2%
Efficiency-driven economies: averages	7.8%	5.6%	13.1%
Innovation-driven economies: averages	4.2%	3.0%	7.1%

The percentage of Ethiopian adult population that starts a business out of opportunity has outnumbered the percentage of adults that start out of necessity. It is encouraging enough that 61% of early-stage entrepreneurs in Ethiopia are driven by business opportunity, while 29% are driven by necessity. This could be partly the result of the mega-program of the

government, which has been providing diverse support (working place, skill training, extension support, market development, technology support, and access to finance) for MSE operators, particularly in urban areas. The importance of opportunity-driven entrepreneurship in Ethiopia can be assessed by considering the number of jobs that have been created, in comparison to those that have been created by necessity-driven businesses. Table 5 shows that about 52% of the jobs were created through opportunity-driven businesses. On the other hand, 40% of the jobs were created by necessity-driven businesses.

The result of the adult population survey portrays that about 71% of adults with pre-primary education are driven into business by opportunity. However, the percentage of adults involved in opportunity-driven businesses declines as the level of education goes up to the first cycle primary education (52%) and second cycle primary education (48%). The results of the survey also reveal that there is a positive correlation between opportunity-driven business and higher educational attainment - completing secondary and preparatory school (69.7%), technical and vocational education (72.7%), and first degree (70.6%).

Table 5: Percentage of jobs created by opportunity- and necessity-driven businesses in the early-stage entrepreneurial activity (TEA) in Ethiopia, 2012

Number of current jobs	Opportunity-driven businesses	Necessity-driven businesses
No employees	47.73%*	59.68
1 – 5 employees	47.73%	35.48
6 – 19 employees	3.03%	3.23%
20+ employees	1.52%	1.61%
Total	100.00%	100.00%

The findings of the adult population survey in Ethiopia shows that male adults are more likely to engage in the early-stage entrepreneurial activity (opportunity and necessity-driven businesses) than the female adults. Out of

the total adult population engaged in TEA, about 53% of the respondents are male and the remaining 47% are female adults. On the other hand, female adults are more likely to be motivated into entrepreneurship by opportunity compared to their male counterparts. Of the total female adults involved in TEA, about 62% of them are motivated by business opportunity, while 29% of them are motivated by necessity. On the other hand, 59% of male adults in TEA are driven by business opportunity and 27% of them are motivated by necessity.

Table 6 shows the number of jobs which were created by early-stage male and female entrepreneurs in Ethiopia. The early-stage male entrepreneurs (73%) have created a higher number of jobs than the early-stage female entrepreneurs (64%), which is consistent with the GEM findings in other countries over the years. Thus, policies and programs which increase employment access to female adults and their involvement in entrepreneurship should focus on the development of skills to exploit high growth opportunities.

Table 6: Jobs created in the early-stage entrepreneurial activity in Ethiopia by gender, 2012

Number of current jobs	Male early-stage entrepreneurs	Female early-stage entrepreneurs
No employees	27.32%*	36.05%
1 – 5 employees	24.74%	25.00%
6 – 19 employees	3.09%	1.16%
20+ employees	44.85%	37.79%
Total	100.00%	100.00%

The GEM results entails that entrepreneurial endeavors can be started at any time in a person's life, although entrepreneurial activity is mostly prevalent among persons in the 25–34 years age group. These individuals are likely to have had some time to develop their skills and knowledge through education and work experience. The result of the survey indicates that the highest entrepreneurship rates in Ethiopia occur among the 25–34 years age group,

with TEA rate of about 15%. The second highest participation occurs in the age group of 18-24 years with 14% TEA rate. The prevalence of early-stage entrepreneurial activity tends to be relatively low in the 55-64 years cohort (4.5% TEA rate) followed by 45-54 age group (6.9% TEA rate). The findings of the survey show that the relatively higher rate of TEA by the youth is encouraging which might help to reduce the unemployment challenge in the country.

The result of the survey indicates that Dire Dawa has the highest percentage of early-stage entrepreneurs (43%),out of which about 80% is driven by business opportunity and 20% by necessity. Addis Ababa has a TEA rate of 32%, out of which, about 72% and 12% are opportunity-driven and necessity-driven entrepreneurs, respectively. Tigray, SNNP, Oromia and Amhara regions have TEA rates of 19.3%, 16.5%, 10.6%, and 7.1%, respectively. About 55% to 62% of the new businesses created in the four large regions are opportunity-driven. However, Gambela region has the lowest rate of early-stage entrepreneurs. Though Somali region has one of the lowest TEA rates, about 83% of the early-stage entrepreneurs are driven by business opportunity which is the highest compared to the rest of the regions.

The result of adult population survey also shows the positive correlation between level of education of adults and their involvement in early-stage entrepreneurial activities. For example, out of the adult population in Ethiopia with pre-primary level of education, only 3% are involved in early-stage entrepreneurship activities. On the other hand, about 29% of the adults with first degree are likely to be involved in early-stage entrepreneurial activities.

2.4 Established Business Ownership in Ethiopia

Established business ownership refers to the percentage of 18-64-year-old people, who are owner-managers of established businesses, i.e. owning and managing a running business that has paid salaries, wages, or any other payments for more than 42 months. As indicated in Table 7, Ethiopia's

established business activity rate is 8.3%, which is lower compared to the average for factor-driven countries (11%) and the average for Sub-Saharan Africa participating in GEM (12.8%). Moreover, Ethiopia's rate of business discontinuity is 3%.

Table 7: The rate of established business ownership in Ethiopia and other economies

Phase of economic development	Established Business ownership
Factor-driven economies: averages	11.4%*
Ethiopia (as factor-driven economy)	8.3%
Efficiency-driven economies: averages	7.8%
Innovation-driven economies: averages	6.7%
Sub-Saharan Africa: averages	12.8%

The results of the adult population survey reveal that about 8.6% of male and 7.9% of female adults are involved in established businesses. The rate of established business is consistent with the rate of early-stage entrepreneurial activity of male and female adults. However, the rates of established businesses for the adult population vary from region to region.

3. Determinants of Entrepreneurship in Ethiopia

3.1 The Model

Examining the factors that affect potential entrepreneurs (entrepreneurial intentions and capabilities) and early-stage entrepreneurial activity provides a useful insight in identifying tailored interventions aiming at promoting entrepreneurship in Ethiopia. The analysis is also expected to predict the conditional probability that an adult in Ethiopia will be a potential entrepreneur, has entrepreneurial intention and capability to start his/her own business or involve in early-stage entrepreneurial activity. This is analyzed using binary choice models, where the dependent variable has two responses: whether an adult is a potential entrepreneur, has an entrepreneurial intention, or engaged in early-stage entrepreneurial activity. The latent variable potential entrepreneurship level (y*) is the outcome of

the model which depends on a vector of regressors or explanatory variables X. Since we cannot observe full level of entrepreneurship, the probability that an individual is entrepreneur (Pr (y_i=1) has to be defined and as the scale of probability is not identified, a normalization on the distribution of $£_i$ is required. Let our model is given by:

$$y_i = x'\beta + \varepsilon_i$$

Where the dependent variable y_i is a dichotomous taking values 0 or 1. Given this one can consider three models: the Linear Probability Model (LPM), the Probit model and the Logit model. The first model, LPM, is estimated using the OLS regression and works like a normal linear regression except interpretations change as y_i is binary. However, one of the major problems of LPM is that the predicted probability {Pr $(y_i|x) = x'\beta$}can go below 0 or above 1, which is logically inconsistent with the theory of probability. Besides, as the Var$(y_i|x) = x'\beta(1 - x'\beta)$, the regression has variances which varywith the observations and hence the linear probability model violates the assumptionof homoscedasticity. Due to these problems, it is better to resort to Logit or Probit models, which yields similar results but based on different distributional assumptions. And in the current paper, the Probit model is considered.

Our binary choice model (Probit model) used in our paper is described as follows.

$$y^*_i = x'_i + £_i, \qquad £_i \sim NID(0,1)$$
$$y_i = 1 \text{ if } y_i^* > 0$$
$$y_i = 0 \text{ if } y_i^* \le 0$$

Where the $£_i$s are independent of all x_i. The parameters in Probit models is estimated by the method of maximum likelihood. Consequently, the probability that an individual is entrepreneur (Pr(y_i=1)) is defined as:

$$P\{y_i=1\}=P\{y^*_i>0\}=P\{x'_i + £_i>0\}=P\{£_i>-x'_i\}=P\{£_i\le x'_i\}=\Phi(x'_i),$$

Where Φ denotes the Standard Normal distribution function of $-£_i$, or, in the common case of a symmetric distribution, the distribution function of $£_i$

.

Since the model is non-linear in parameters, the partial effect of explanatory variables are derived as $\frac{\partial\Phi(x'_i\ )}{\partial x_{ik}} = ¤(x'_i\ )_k$ for contentious explanatory variables and $\Phi(x'_i \mid x_k = 1) - \Phi(x'_i \mid x_k = 0)$ for discrete (dummy explanatory variables).

3.2 Estimation Results

The data used in this study are obtained from the Adult Population Survey (APS) conducted using a random representative sample of 3,005 (18 to 64 years old age) from all regions and a standardized questionnaire developed by the GEM consortium. A probit model is employed to analyze the data. The regressions on the determinants of potential entrepreneurship, entrepreneurial intention and TEA are carried out by taking dummy variables for the three measures of entrepreneurship as dependent variables. The most common problem in cross-section data is heteroscedasticity of the error terms and it results in inefficient estimates. In the current study, an attempt is made to correct for heteroscedasticity by using robust standard errors.

The regression results of potential entrepreneurship along with the marginal effects are presented in Table 8. The coefficients of age and age squared are significant but only at 10% level of significance. The difference in potential entrepreneurship among male and female adults in the survey is statistically insignificant. On the other hand, proxies that were used to measure the societal attitude towards entrepreneurship such as media attention given to successful entrepreneurs and whether the society considers entrepreneurship as a preferred carrier choice or not, have a significant and positive effect on the likelihood of an adult becoming a potential entrepreneur.

Adults who know someone already engaged in a business, have a higher probability of being potential entrepreneurs than those who do not. Similarly,

individuals living in urban areas have 0.07 higher probability of being potential entrepreneurs than adults living in rural areas. Except for adults with pre-primary schooling and traditional education, the likelihood that an individual becomes a potential entrepreneur decreases as the level of education increases. For instance, adults with first cycle primary level of education have 0.12 higher probability of being potential entrepreneurs than those that have degree and above level of education. One can further notice that the probability an adult becomes potential entrepreneur varies among regions in Ethiopia.

Table 8: Probit regression results: determinants of potential entrepreneurship

	Coefficient estimates	Marginal effect
Age in years	0.0252*	-0.00126
	(0.0149)	(0.000892)
Age squared	-0.000438**	
	(0.000191)	
Male dummy	0.0848	0.0241
	(0.0552)	(0.0157)
Dummy for media attention given to successful entrepreneurs	0.257***	0.0750***
	(0.0656)	(0.0196)
Dummy for considering entrepreneurship as a good career choice	0.688***	0.204***
	(0.0678)	(0.0198)
Dummy for knowing someone in the business	0.962***	0.311***
	(0.0602)	(0.0196)
Urban dummy	0.235***	0.0666***
	(0.0862)	(0.0244)
Dummy for pre-primary education	-0.227	-0.0649
	(0.167)	(0.0480)
Dummy for first cycle primary education	0.426***	0.118***
	(0.150)	(0.0402)
Dummy for second cycle primary education	0.241*	0.0676*
	(0.142)	(0.0393)
Dummy for secondary and preparatory school	0.320**	0.0903**
	(0.136)	(0.0378)
Dummy for technical and vocational training	0.427**	0.117**
	(0.180)	(0.0473)
Dummy for traditional/religious school	0.112	0.0315
	(0.156)	(0.0434)

	Coefficient estimates	Marginal effect
Region dummy for Tigray	1.002***	0.284***
	(0.176)	(0.0490)
Region dummy for Afar	0.119	0.0337
	(0.277)	(0.0783)
Region dummy for Amhara	-0.275*	-0.0777*
	(0.142)	(0.0402)
Region dummy for Oromia	0.371***	0.105***
	(0.138)	(0.0390)
Region dummy for Somalia	1.217***	0.345***
	(0.192)	(0.0535)
Region dummy for SNNP	0.571***	0.162***
	(0.148)	(0.0415)
Region dummy for Benishangul Gumuz	-0.0104	-0.00295
	(0.241)	(0.0682)
Region dummy for Harari	1.008*	0.285*
	(0.567)	(0.161)
Region dummy for Dire Dawa	-	-
Constant	-2.047***	
	(0.326)	
Number of observations	2,852	2,852
Pseudo R2	0.274	

Robust standard errors in parentheses
The standard errors of the marginal effects are calculated using Delta method.
**** p<0.01, ** p<0.05, * p<0.1*

The results in Table 9 show that demographic variables such as age, age squared, gender and urban dummy were found to have insignificant effect on the entrepreneurial intention of adults. The variables which were taken as proxies for societal attitudes: media attentions given to entrepreneurs and society's attitude on entrepreneurship as a preferred carrier choice have a positive impact on the entrepreneurial intention of the adult population. Similarly, knowing someone who started a business has a positive effect on inculcating entrepreneurial intentions in the adult population. In other words, adults who know someone involved in business have 0.035 higher probability of entrepreneurial intention than those who do not know anyone in business. The results in Table 9 also indicate there is no significant difference among the regions in terms of entrepreneurial intention except for SNNP.

The coefficients of all education variables were negative and significant compared to individuals having degree and above level of education, implying that the probability of having entrepreneurial intention increases as education level increases. Surprisingly, the probability of having entrepreneurial intention for adults with annual combined household income of less than 5,000 and from 5, 0001 to 10,000 Birr is higher than people with annual income of more than 100,000 Birr. In other words, as the annual household income declines the probability of having entrepreneurial intention increases.

Table 9: Probit Regression results: Determinants of entrepreneurial intention

	Coefficient estimates	Marginal effect
Age in years	0.00622	-0.00171**
	(0.0183)	(0.000852)
Age squared	-0.000231	
	(0.000243)	
Male dummy	0.00453	0.000925
	(0.0654)	(0.0133)
Dummy for media attention given to successful entrepreneurs	0.168**	0.0331**
	(0.0784)	(0.0149)
Dummy for considering entrepreneurship as a good career choice	0.271***	0.0516***
	(0.0803)	(0.0143)
Dummy for knowing someone in the business	0.173**	0.0352**
	(0.0709)	(0.0144)
Urban dummy	-0.147	-0.0287
	(0.0998)	(0.0188)
Dummy for pre-primary education	-1.086***	-0.141***
	(0.204)	(0.0155)
Dummy for first cycle primary education	-0.582***	-0.0998***
	(0.163)	(0.0233)
Dummy for second cycle primary education	-0.460***	-0.0833***
	(0.155)	(0.0249)
Dummy for secondary and preparatory school	-0.244*	-0.0465*
	(0.145)	(0.0257)
Dummy for technical and vocational training	-0.681***	-0.100***
	(0.211)	(0.0206)
Dummy for traditional/religious school	-0.649***	-0.108***
	(0.177)	(0.0237)
Dummy for individuals in the income group 0 to 5,000	0.856***	0.223***
	(0.274)	(0.0832)
Dummy for individuals in the income group 5,001 to 10,000	0.698***	0.164**
	(0.269)	(0.0707)

	Coefficient estimates	Marginal effect
Dummy for individuals in the income group 10,001 to 20,000	0.451*	0.0982
	(0.268)	(0.0619)
Dummy for individuals in the income group 20,001 to 40,000	0.444	0.103
	(0.270)	(0.0698)
Dummy for individuals in the income group 40,001 to 100,000	0.214	0.0476
	(0.287)	(0.0689)
Region dummy for Tigray	-0.252	-0.0515
	(0.219)	(0.0447)
Region dummy for Afar	0.397	0.0810
	(0.305)	(0.0622)
Region dummy for Amhara	0.222	0.0453
	(0.179)	(0.0365)
Region dummy for Oromia	0.287	0.0585
	(0.177)	(0.0361)
Region dummy for Somalia	-	-
Region dummy for SNNP	-0.618***	-0.126***
	(0.196)	(0.0399)
Region dummy for Benishangul Gumuz	-0.327	-0.0667
	(0.394)	(0.0804)
Region dummy for Harari	-	-
Region dummy for Dire Dawa	-0.451	-0.0921
	(0.536)	(0.109)
Constant	-1.540***	
	(0.447)	
Number of observations	2,671	2,671
Pseudo R2	0.094	

Robust standard errors in parentheses.
The standard errors of the marginal effects are calculated using Delta method.
**** p<0.01, ** p<0.05, * p<0.1*

Table 10 presents the probit estimation results for TEA and indicates that age has a positive effect on the early-stage entrepreneurial activity of adults but only at 10% significance level. As age increases by 1 year, the probability that an individual will be involved in early-stage entrepreneurial activity, on average, decreases by0.0013. Although male adults have a higher probability of being involved in TEA or new businesses, the difference is found to be statistically insignificant. It is expected that society's attitude on entrepreneurship as a preferred carrier choice and media attention on the success of the early-stage entrepreneurial activities have a positive effect on involvement of the adult population in TEA. However, the regression results indicate that media attention and society's attitude towards entrepreneurship as a preferred carrier choice were found to be statistically insignificant in affecting TEA.

On the other hand, the probability that adults with fear of failure will be engaging in TEA or new businesses is lower than those who stated that fear of failure will not prevent them from starting a new business by 0.03. Adults, who know individuals involved in business activities, have 0.08 higher probability of being engaged in TEA than those who do not know anyone. Moreover, individuals living in urban areas were found to have 0.12higher probability of being engaged in TEA or new business than individuals living in rural areas.

Table 10: Probit Regression result: determinants of total early stage entrepreneurship (TEA)

	Coefficient estimates	Marginal effect
Age in years	0.0419*	-0.00139*
	(0.0220)	(0.000712)
Age squared	-0.000788**	
	(0.000306)	
Male dummy	0.0382	0.00659
	(0.0684)	(0.0118)
Dummy for media attention given to successful entrepreneurs	0.0486	0.00837
	(0.0875)	(0.0151)
Dummy for considering entrepreneurship as a good career choice	-0.0264	-0.00455
	(0.0796)	(0.0137)
Dummy for knowing someone in the business	0.485***	0.0837***
	(0.0808)	(0.0139)
Urban dummy	0.677***	0.117***
	(0.0905)	(0.0152)
Dummy for pre-primary education	-0.434**	-0.0749**
	(0.201)	(0.0347)
Dummy for first cycle primary education	-0.0108	-0.00187
	(0.155)	(0.0267)
Dummy for second cycle primary education	0.0620	0.0107
	(0.142)	(0.0245)
Dummy for secondary and preparatory school	0.0726	0.0125
	(0.131)	(0.0227)
Dummy for technical and vocational training	-0.00756	-0.00130
	(0.188)	(0.0324)
Dummy for traditional/religious school	-0.133	-0.0230
	(0.174)	(0.0301)
Dummy for individuals in the income group 0 to 5,000	0.0781	0.0135
	(0.205)	(0.0354)
Dummy for individuals in the income group 5,001 to 10,000	0.0553	0.00954
	(0.195)	(0.0336)
Dummy for individuals in the income group 10,001 to 20,000	0.111	0.0192
	(0.192)	(0.0331)

	Coefficient estimates	Marginal effect
Dummy for individuals in the income group 20,001 to 40,000	0.147	0.0253
	(0.194)	(0.0335)
Dummy for individuals in the income group 40,001 to 100,000	0.373*	0.0643*
	(0.198)	(0.0342)
Region dummy for Tigray	0.350*	0.0604*
	(0.183)	(0.0314)
Region dummy for Afar	0.522*	0.0899*
	(0.309)	(0.0532)
Region dummy for Amhara	-0.239	-0.0412
	(0.161)	(0.0276)
Region dummy for Oromia	-0.126	-0.0218
	(0.149)	(0.0258)
Region dummy for Somalia	-0.568**	-0.0980**
	(0.227)	(0.0393)
Region dummy for SNNP	0.0658	0.0113
	(0.155)	(0.0267)
Region dummy for Benishangul Gumuz	-0.535	-0.0922
	(0.371)	(0.0642)
Region dummy for Harari	-0.712	-0.123
	(0.635)	(0.109)
Region dummy for Dire Dawa	0.225	0.0388
	(0.369)	(0.0636)
Dummy for fear of failure	-0.182***	-0.0306***
	(0.0701)	(0.0115)
Constant	-2.107***	
	(0.442)	
Number of observations	2,827	
Pseudo R2	0.167	

Robust standard errors in parentheses
The standard errors of the marginal effects are calculated using Delta method.
**** p<0.01, ** p<0.05, * p<0.1*

4. Conclusions

The findings of the study reveal that about 53% of the adults in Ethiopia are potential entrepreneurs. The perceived opportunity rate in Ethiopia (65%) is above the average for factor-driven economies (63%); while the perceived capabilities rate (69%) is below the average for factor-driven economies (71%). Ethiopia's rate of entrepreneurial intention (22%) is much lower than the average rate for factor-driven economies (49%) and Sub-Saharan African countries (53%). The early-stage entrepreneurial activity rate (12.2%) is also far below the average for factor-driven economies (23.7%). Similarly, the established business activity rate (8.3%) is below the average for factor-driven countries (11%) and for Sub-Saharan Africa(12.8%).Furthermore, demographic variables such as age, level of education, societal attitude towards entrepreneurship, and social networks (knowing someone in business) are significant in influencing potential entrepreneurship and entrepreneurial intensions in Ethiopia. Besides, adults living in urban areas are found to have a higher probability of being engaged in early-stage entrepreneurial activity (TEA) than individuals living in rural areas. "Fear of failure" is found to have a negative and statistically significant effect on early-stage entrepreneurial activity (TEA).

The low rate of perceived capabilities, entrepreneurial intension and higher percentage of adults who fear a failure in starting and running business can be partly addressed by revisiting and developing tailored interventions in the educational system as a whole. There is also a need to promote entrepreneurial education in order to change the attitude of the entire society. The low rate of early-stage entrepreneurial activity (TEA) and established business in Ethiopia can be improved by expanding the quantity and quality of support services, such as: training (technical and business development services); extension and mentoring services; production and marketing services; infrastructure support; backward and forward market linkages; access to sub-contracting; technological support; one-stop-shop services; access to finance; creating an enabling policy and regulatory environment; and developing incentive mechanisms to small and new businesses. Since the rate of potential entrepreneurship, early-stage entrepreneurial activity, and established businesses vary from region to region or between urban and rural areas, there is a need to develop region-specific entrepreneurial

development plan. Moreover, the study provides a unique data base (the first of its kind) on the characteristics and determinants of entrepreneurship in Ethiopia, which can be used to develop national entrepreneurship strategy, consistent with the MSE development strategy and other macro and sectoral level strategies.

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Annex1: Summary statistics of the dependent and independent variables

Variable	No. Obs	Mean	Std. Dev.	Min	Max
Entrepreneurial intention Dummy	3005	0.1291	0.3354	0	1
Potential Entrepreneurship Dummy	3005	0.5255	0.4994	0	1
TEA	3005	0.1218	0.3271	0	1
Age in years	2997	34.6627	11.8442	18	64
Age squared	2997	1341.7380	922.7240	324	4096
Male dummy	3005	0.4955	0.5001	0	1
Dummy for media attention given to successful entrepreneurs	2992	0.7206	0.4488	0	1
Dummy for considering entrepreneurship as a good career choice	2962	0.7549	0.4302	0	1
Dummy for knowing someone in the business	2991	0.5433	0.4982	0	1
Urban dummy	3005	0.2093	0.4069	0	1
Dummy for pre-primary education	2929	0.1588	0.3655	0	1
Dummy for first cycle primary education	2929	0.1731	0.3784	0	1
Dummy for second cycle primary education	2929	0.2120	0.4088	0	1
Dummy for secondary and preparatory school	2929	0.2031	0.4024	0	1
Dummy for technical and vocational training	2929	0.0369	0.1885	0	1
Dummy for traditional/religious school	2929	0.1656	0.3718	0	1
Dummy for individuals in the income group 0 to 5,000	2992	0.1447	0.3519	0	1
Dummy for individuals in the income group 5,001 to 10,000	2992	0.2620	0.4398	0	1

Dummy for individuals in the income group 10,001 to 20,000	2992	0.3132	0.4639	0	1
Dummy for individuals in the income group 20,001 to 40,000	2992	0.1668	0.3728	0	1
Dummy for individuals in the income group 40,001 to 100,000	2992	0.0876	0.2827	0	1
Region dummy for Tigray	3005	0.0586	0.2349	0	1
Region dummy for Afar	3005	0.0196	0.1388	0	1
Region dummy for Amhara	3005	0.2346	0.4238	0	1
Region dummy for Oromia	3005	0.3651	0.4815	0	1
Region dummy for Somalia	3005	0.0606	0.2386	0	1
Region dummy for SNNP	3005	0.2023	0.4018	0	1
Region dummy for Benishangul Gumuz	3005	0.0106	0.1027	0	1
Region dummy for Harari	3005	0.0027	0.0515	0	1
Region dummy for Dire Dawa	3005	0.0047	0.0681	0	1