THE IMPACT OF ENTREPRENEURSHIP ON JOB CREATION FOR YOUNG PEOPLE IN GHANA: DO ENTREPRENEURIAL AGE DIFFERENCES MATTER?

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LIST OF ACRONYMS

AFDB	African Development Bank
ANOVA	Analysis of Variance
ESTER	Exogenous Switching Treatment Regression
FGD	Focus Group Discussion
GDP	Gross Domestic Product
GSS	Ghana Statistical Service
ICT	Information and Communication Technology
ILO	International Labor Organization
IFAD	International Fund for Agricultural Development
NEIP	National Entrepreneurship and Innovation Program (Ghana)
NGO	Non-Governmental Organization
ODK	Open Data Kit
SSA	Sub-Sahara Africa
UNDESA	United Nations Department of Economic and Social Affairs
YEA	Youth Employment Agency (Ghana)
ZTP	Zero-Truncated Poisson

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EXECUTIVE SUMMARY

Entrepreneurship has been acknowledged as a feasible alternative to the limited opportunities for youth employment in conventional outlets in many developing countries. Although in most countries, youth are the main target of entrepreneurial efforts and campaigns, there is an observed uptake of entrepreneurship by people of all age categories. Nonetheless, there is a dearth of knowledge on the link between entrepreneurial activities, particularly by different age cohorts, and job creation for very young people (below 25 years old). Little is known about how, and to what extent entrepreneurial activities by older people create jobs for young people. More importantly, information on how and to what extent young entrepreneurs also contribute to job creation for fellow young people is almost non-existent. A desire to find answers to these questions inspired this research, which was commissioned by the Anzisha Prize in 2019. The study employs inferential descriptive analysis and an Exogenous Switching Treatment Regression (ESTER) model, applied to a sample of 212 entrepreneurs in Ghana, to attempt finding answers to the questions highlighted.

Findings of the study show that most of the respondent entrepreneurs were engaged in the services and trade sectors and had access to institutional support services at varying degrees. The study revealed that access to credit, training, and participation in business-relevant social groups was low among entrepreneurs. Although nearly all the entrepreneurs expressed need for credit, older entrepreneurs had more access to credit than the younger ones. However, young entrepreneurs had a comparative advantage over older entrepreneurs in terms of knowledge of and experience with information and communication technology tools; access to entrepreneurial training; and family support which are vital to business growth and expansion. Entrepreneurs of all age categories indicated a preference to work with younger people. Regardless, older entrepreneurs appeared to contribute more to young people's employment than young entrepreneurs did. However, the findings suggest that young entrepreneurs' job creation capacities would triple if they assumed the same characteristics and business environment as older entrepreneurs. Interestingly, however, much of the older entrepreneurs' edge over younger ones in terms of job creation abilities are attributable to differences in unobservable characteristics, possibly arising from socio-cultural norms that accord greater advantage to older people. Findings of the study show that several drivers conditioned entrepreneurial activities for job creation for young people. Young entrepreneurs seem to prefer digital and capital solutions to business than labour, as their level of computer literacy and access to credit/finance which appeared to be correlated with increased capital investment, contributed negatively to their job creation abilities. In contrast, although level of digitization and computer literacy was lower among older entrepreneurs, it was a positive contributor to their youth job creation abilities, whereas their access to credit had a negative influence. The study also finds evidence that entrepreneurial training, of which apprenticeship was a prominent feature, and participation in business-relevant social groups were important levers of youth job creation among entrepreneurs. Notably, we find promising complementarities among some of these factors. For example, our analysis showed that the negative effect of credit access on job creation improves remarkably when interacted with participation in groups and access to training, suggesting that group lending strategies and inclusion of training packages in credit/financial services to entrepreneurs could yield much positive returns on funds and by extension increased potentials for job creation for young people. Entrepreneurial activities in the agriculture, service and manufacturing/artisanship sectors also proved to have higher job-generating potentials for young people than activities in trading. Other factors such as migration, gender, entrepreneurial experience

and business co-ownership had varying effects on job creation for young people by both young and older entrepreneurs.

We recommend need-based training programs, along with linking entrepreneurs to credit and wider social capital avenues as levers for increasing job creation. We also recommend provision of digital training avenues to young potential employees to be able to match the skill requirements that may come with the gradual shift of entrepreneurs, especially young ones, towards more digitized ways of doing business.

INTRODUCTION

BACKGROUND OF THE STUDY

With over 42% of global population below the age of 25, the world is currently experiencing its youngest generation ever (UNDESA, 2017). As of 2015, people aged between 15 and 24 in Africa were over 230 million, with 490 million more under the age of 15, putting the continent in a position of doubling its youth population by 2050 (Mastercard Foundation, 2018). These trends pose a huge challenge to finding decent and sustainable livelihoods for young people. Already, most African youth today live on petty and meagre livelihood sources (Mastercard Foundation, 2015). This is partly due to limited opportunities for self-development and employment, especially in the formal sector (IFAD, 2019). White (2012) observes that over half of all unemployed people in Africa are youth.

In Ghana, youth unemployment rates have seen a sharp increase over the past two to three decades despite observed economic growth achieved over this period. Poku-Boansie and Afrane (2011) note that although youth unemployment situations in Ghana have not been favorable over the years, the situation has worsened in the last two decades. The unemployment rate for persons between ages 15 to 24 years in Ghana is estimated to be about 26% (GSS, 2016). Urban youth unemployment is particularly pronounced and severe, with rural-urban migration being a key reason (Poku-Boansi and Afrane, 2011). Many young people are not able to fend for themselves and end up in indecent and illegal acts including armed political vigilantism and terrorism, armed robbery, cyber fraud, drug trafficking (and abuse) and prostitution (Bagchi and Paul, 2018; Cincotta, 2005; Mohammed et al., 2019; Nwogwugwu and Irechukwu, 2015).

To curb youth unemployment and its accordant non-desirable outcomes, the government of Ghana, NGOs and development partners alike have made several efforts, most of which are focused on promoting a shift from the conventional formal government provision of jobs, towards youth entrepreneurship. Introduction of entrepreneurship studies as a compulsory course in some tertiary institutions and the launch of the National Entrepreneurship and Innovation Program (NEIP) as well as an entrepreneurship module under the Ghana Youth Employment Program (YEP) are some evidence of government's commitment to youth entrepreneurship. Other private initiatives include the Ghana Youth Social Entrepreneurship Program and the Youth Forward Initiative led by donor and development organizations such as the MasterCard Foundation. Similarly, there is a lot of focus on development aid targeted at using entrepreneurship to unleash the potential of youth in Africa at large. The Youth Entrepreneurship and Innovation Multi-Donor Trust Fund of the African Development Bank is an example of such attempts. Since 2012 to date, the Anzisha Prize, a partnership between the African Leadership Academy and MasterCard Foundation has also been identifying and awarding very young entrepreneurs (aged between 15 and 22 years old) with cash prizes and other support services. The partnership encourages young Africans to look attentively at entrepreneurship as a potential career option. Further, it strives to research and disseminate stories of the capabilities of young people in contributing to the development of Africa, as well as shaping the African entrepreneurial ecosystem to be supportive of and invest in young people.

In response to such global and national efforts, and as a matter of urgent necessity, some Ghanaian youth, just like others in many African countries, have initiated businesses and innovative ideas at varying scales and in different sectors of the economy ranging from food (processing) and agriculture to service provision. Ghanaian youth continue to establish their own enterprises, despite several challenges, including overcrowding in the informal sector where most Ghanaian entrepreneurs operate, and limited access to start-up capital (Langevang, 2008). Both young men and women are showing positive responses to entrepreneurship, making a promising case for the gender divide. Currently, Ghana is one of the few countries in the world where women are more entrepreneurial than men (Owusu et al., 2016). In addition to the promotion of entrepreneurship among young people, efforts to position the private sector in general (including older entrepreneurs – 35 years and above) to be able to absorb a proportion of unemployed youth is also being promoted (Poku-Boansie and Afrane, 2011). These trends are promising for the fight against youth unemployment as they do not only provide a source of livelihood to the entrepreneurs, but also have potentials of creating jobs for more young people.

The National Youth Policy document of Ghana (2010) defines youth or young people as persons aged between 15 and 35 years. Thus, persons aged above 35 years are categorized as older people. For the purpose of this study, each of these two broad age groups is further categorized into two sub-groups based on when they started their businesses. For youth (between 15 and 35 years), people who started their businesses when they were between the ages of 15 and 22 are referred to as *Very young entrepreneurs*, whereas those who started their businesses after age 22 are referred to as *Young entrepreneurs*. Older people (above 35 years old) were also categorized into two groups – older people who started their businesses before or at age 35 (*Older entrepreneurs A*) and those who started their businesses above age 35 (*Older entrepreneurs B*).

STATEMENT OF THE RESEARCH PROBLEM AND MOTIVATION FOR THE STUDY

Entrepreneurship is receiving a lot of attention as a feasible alternative to conventional formal employment. The focus of governments, development and aid partners on youth entrepreneurship as a strategy to boost youth development in Sub-Sahara Africa (SSA) cannot be overemphasized. Similarly, there are testimonies of youth uptake of and engagement in entrepreneurial activities at least in their basic forms. Furthermore, campaigns targeted at leveraging the private sector, including entrepreneurship among older people to be able to offer employment to youth are ongoing.

There is evidence of the contribution of youth engagement in entrepreneurial activities to their own livelihoods. There is however little evidence on how entrepreneurship by young people contributes to the creation of employment opportunities for other young people. Further, little is known about how, and to what extent older entrepreneurs contribute to job creation for the youth. Young and older entrepreneurs are two unique categories of people who offer different but important potentials to creating employment for young people. For example, young entrepreneurs could easily bring other young people on board their businesses as shown in the communication of innovation theory by Rogers and Shoemaker (1971). On the other hand, older entrepreneurs could have the scale and capability to absorb younger people. Indeed, Poku-Bonsie and Afrane (2011) posit that older employers in Ghana are gradually shifting towards engaging youth because of their innovation and energy. Therefore, exploring the role of each of these groups of entrepreneurs in contributing to

reducing unemployment among young people is important to identifying viable pathways to leveraging entrepreneurship properly for job creation for the youth.

Against this backdrop, Anzisha, which is engaged extensively in developing entrepreneurial capabilities of young people in Africa, commissioned this research to make a contribution to this discussion while finding answers to the questions highlighted; and to provide a feasible direction for positioning entrepreneurship properly for further job creation for youth, hence the motivation for this study.

AIM AND OBJECTIVES OF THE STUDY

Against the background of the problem discussed above, the aim of this study was to examine the impact of entrepreneurial age differences on job creation for young people (below 25 years of age) To achieve this aim, the study sought to address the following specific objectives:

- To describe, characterize and compare socioeconomic, institutional, job creation and general characteristics between young entrepreneurs and older entrepreneurs in Ghana;
- Examine how and to what extent young entrepreneurs contribute to creating jobs for young people; and
- Examine how and to what extent older entrepreneurs contribute to creating jobs for young people.

CONTRIBUTION TO KNOWLEDGE AND SIGNIFICANCE OF THE STUDY

As evidenced by Anzisha's work and efforts of other development and donor organizations, and governments of developing countries, there is a global promotion of innovation and entrepreneurship as alternatives or complements to conventional formal employment outlets. This study seeks to contribute to these efforts by providing empirical evidence of how entrepreneurial activities, both by young people and older people, contribute to creating jobs for youth (under 25 years). While determining the impact of each entrepreneurial age group on youth job creation, focus is placed on the various drivers that condition entrepreneurship for job creation for young people. These will help in identifying viable stimulants of job creation by entrepreneurs.

Commissioned by Anzisha, this study provides information on strategies that could be adopted by Anzisha to incorporate a job creation dimension to their operations. Currently, Anzisha's support to entrepreneurship focuses primarily on the entrepreneurs themselves and their businesses. This study provides the Anzisha team a blueprint for redesigning their programs such that strategies are mindful of the trickle-down potentials of network entrepreneurs by way of their ability to create (more) jobs for other young people. This will contribute to efforts geared towards the achievement of Anzisha's ultimate goal of increasing the number of job-generative entrepreneurs in Africa.

As it is the case in most African countries, currently, Ghana's youth employment and entrepreneurial programs, although with common goals, appear to be implemented in parallel. There is no explicit harmonious intersection between entrepreneurship and further job creation. At the best is a program design which promotes self-employment through entrepreneurship (with little or no explicit focus on job creation for others). This study contributes to bridging this gap by providing information on how

support to entrepreneurship could be designed to induce and perpetuate a cycle of job-generative entrepreneurship in Africa. This is expected to contribute to African countries' efforts towards achieving a reduction in, and the ultimate elimination of youth unemployment, as outlined in the African Union's Agenda 2063 and the African Youth Charter. Using Ghana as a case, the research further makes a contribution to the country's long-term goals of building an industry-and-innovation-driven economy that has potentials of providing decent jobs for everyone, and in the process, consolidating the country's middle-income status. Specifically, the study contributes to attempts directed towards the realization of the vision of enabling Ghanaian youth to develop their full potential and self-esteem in order to contribute meaningfully to community and national development, as enshrined in the National Youth Policy document of Ghana (2010).

Findings of this study will be valuable to government ministries and departments; international and local donor and development agencies; and NGOs interested in youth development, as it provides information on some effective entry points to leveraging entrepreneurship for job creation for young people.

CONTEXTUAL OVERVIEW OF COUNTRY AND STUDY AREAS

COUNTRY: GHANA

Ghana is located in West Africa with a total land size of 238, 537 square kilometers and a tropical climate. Ghana is divided into 16 administrative regions with 230 districts. The country is bordered by Burkina Faso to its north, Togo to its east, Cote d'Ivoire to its west and the Atlantic Ocean to its south. Ghana's population is estimated at 29.6 million (2018) with a GDP per capita of US$ 2,202 (World Bank, 2019). Ghana has a young population considering that its majority (57%) are below 25 years old (Ghana Statistical Service, 2019). The country has an urban population of 56.7% with an urbanization rate of 3.34%. Ghana is fairly agrarian and cocoa is the chief agricultural export and main cash crop of the country. The country is endowed with natural resources including petroleum, gold, timber, industrial diamonds, bauxite, manganese, fish, rubber, hydropower, silver, salt and limestone which yield the country significant foreign exchange (Awumbila et al., 2013). The judicious use of these resources has the potential of diversifying the economy, thereby reducing the country's dependency on agriculture, and ultimately increasing employment in other sectors and reducing poverty.

Despite the country's inability to achieve its 2019 gross domestic product (GDP) growth target of 7.2%, it recorded a significant GDP growth of 6.2% (Government of Ghana (GoG), 2019). This growth is accrued to the growth in the three major sectors of the economy: agriculture (2.7%), industry (7.3%) and services sectors (5.4%). The annual growth in GDP has translated into reduction of national poverty rates from 24.2% to 23.4% between the period of 2012/2013 to 2016/2017 (GSS, 2018). Economic growth in Ghana rebounded from 3.4% in 2016 to an average of 7% in the last two years (GoG, 2019). It is noteworthy that, over the past decade, the growth in the GDP of Ghana has been spiralled by the discovery of oil. Although the services sector remains the major contributor to GDP, the agricultural sector makes significant contributions to employment creation, poverty reduction and food security. Recent data on employment rate by sectors indicate that the agricultural sector of Ghana is the second largest employer employing about 36% of the labor force, after the services sector which employed about 46%. The industry sector, being the smallest employer in the country, employed 18% of the labor force (GSS, 2016).

Despite the observed growth of Ghana's economy, the country continues to face some development challenges such as unemployment, which is currently 6.8% of the total labor force (International Labor Organization, 2019). This unemployment rate represents an increase from the 2018 unemployment rate of 6.7%. The Ghana Statistical Service (2016) reports that the unemployment rate of persons between the ages of 15-24 years is significantly high at 25.9%. It is expected that growth and development in many countries partly mirror the absorption of people into the labor market of the sectors of the economy (Affum-Osei et al., 2019). However, slow pace in absorptions into the labor markets is in sharp contrast with the purported economic performance of Ghana's economy. Even when employment opportunities are created, they are dominantly in the informal sector where the jobs are characterized by low incomes and poor conditions of service (World Bank, 2016). This gives rise to a significant working poor population. Further, large numbers of graduates are continuously being produced by tertiary education institutions. The situation of unemployment in Ghana has

worsened owing to the recent retrenchment and dissolution of several financial institutions which employed a significant proportion of graduates. This has further increased the number of job seekers, increasing labor supply in the face of relatively very few avenues of labor demand. It is particularly difficult for young people in Ghana to find jobs due to their lack of relevant experience, skills and jobs which match their career interest (Biney, 2019).

The situation of limited jobs in both the formal and informal sectors, have triggered government's promotion of entrepreneurship (self-employment) as an alternative employment outlet, especially for youth. Such efforts are evident in the establishment of the National Entrepreneurship and Innovation Program (NEIP), and the entrepreneurship module under the national youth employment authority, among others. However, entrepreneurship activities in Ghana, especially by youth is predominantly in the informal sector of the economy and are usually done at small scales. According to the Ghana Statistical Service (2016), self-employed persons in Ghana account for 64.1% of the labor force and are dominated by non-agriculture self-employed persons. Of the number of self-employed persons, 52.5% are between the ages of 15-35 years, with 36.6% being between 15-24 years (GSS, 2016).

STUDY AREAS

Greater Accra

The Greater Accra Region is in southern Ghana and houses the seat of government in Ghana. Among the country's 16 administrative regions, the Greater Accra Region has the smallest land coverage of 3,245 sq km, representing 1.36% of the country's total land area. The study site, the Greater Accra metropolis, has a total population of 4.6 million with an urban population of 2.27 million, making it the 11th largest metro in Africa (World Bank, 2017). The relatively high urban population implies that Greater Accra is highly urbanized. In Ghana, urbanization has a strong correlation with unemployment (GSS, 2016). The major employment sub-sectors in the region include civil service, public service, parastatals, NGOs (local and international), international organizations/diplomatic missions, and the private sector. These sectors combined, employ about 68% of labor force in the region, and of these sectors, the private sector, of which the informal sector dominates, is the highest employer of youth. Other economic activities in the private sector include agriculture, trade (wholesale/retail of goods), fishing, manufacturing and other activities including repair of cars and electronic devices. According to GSS (2016), the region has high unemployment rates of 19.1% among youth in general, and 30% among very young people (15-24 years) in particular. These statistics on unemployment in the Greater Accra Region are significantly higher than the national average (GSS, 2016).

Over the years, entrepreneurship or self-employment activities in the region has been predominantly found among the economic activities in the private sector owing to the paucity of formal employment opportunities in the region, especially among young people in the urban centers (Biney, 2019). In Greater Accra, 55% of the urban population are self-employed (GSS, 2016). Entrepreneurship among young people in this region is largely small-scale, owing to challenges including inadequate capital and limited access to financial credit especially in cases where collateral security is required.

Ashanti Region

The Ashanti Region is the third largest region by land coverage among the administrative regions of Ghana and it is bordered by six administrative regions including Eastern Region, Western North

Region, Ahafo, Brong Ahafo, Bono East and Central Region. The region covers an area of 24,389 square kilometers, representing 10.22% of Ghana's land size. Kumasi is the capital city of the Ashanti region and it is the second largest city in Ghana after Accra. The total population of the Ashanti region is 5.8 million (GSS, 2019) which accounts for 19.6% of Ghana's total population, making the region the most populous and the most rapid growing region in the country. This region is highly urbanized considering that 60.6% of the region's population live in the urban areas (GSS, 2013). Results of the 2010 population census indicate that most (62%) of the urban dwellers who are of the working age in the Ashanti region are self-employed (GSS, 2016). According to this report, the Ashanti region had a young population with youth accounting for 58% of the total population in the region. This further implies that entrepreneurship would be significantly present among the youth in the region. Major occupations among the labor force of the Ashanti region include service and sales workers, skilled agricultural, forestry and fishery works, craft and related trades workers, plant and machine operators and assemblers and elementary occupations. The regional capital, Kumasi and its peripheries, which account for the biggest share of urban populations in the region was selected for the study. This city is a major destination for most migrants from the Northern and middle belts, and self-job-creation and entrepreneurial activities especially in the informal sector are dominant, making it a suitable area for a study of this nature.

METHODOLOGY

RESEARCH DESIGN

The study used a cross-sectional research design which focuses on establishing relationships between variables at a single point in time. This research design was used to establish the impact of entrepreneur age differences (young and older) on job creation for young people in Ghana. The study collected both quantitative and qualitative data on socio-demographic and institutional support factors that drive entrepreneurship activities for job creation. The study then used an impact analysis tool, based on econometric theory, to establish the impact of entrepreneurial age differences on youth job creation using the number of young people employed by each entrepreneur as an indicator of job creation for young people.

SAMPLING PROCEDURE

The sample for the study was focused on youth and older entrepreneurs in Accra and Kumasi, respectively, in the Greater Accra and Ashanti regions of Ghana. The study used a stratified sampling technique to select entrepreneurs. The entrepreneurs were grouped into four (4) different strata based on the major sectors of the economy namely, agriculture (and agribusiness); trade; manufacturing; and services. From each stratum, the study applied a simple random sampling technique to randomly select participants.

Implementing this, a list of young and adult entrepreneurs specific to the two study areas was accessed at National Entrepreneurship and Innovation Program (NEIP) to serve as the sampling frame. This provided information on the proportionate representation of the various sectors (strata) and age categories of entrepreneurs and their contact details and locations. The study set out to sample a total of 200 entrepreneurs, but for the purposes of unforeseen circumstances, 240 were sampled. Due to data protection and similar concerns raised by the NEIP, sampling from the list was done together with 2 selected officials of the office, before contact details of the selected entrepreneurs were released. Owing to variations in the representation of sectors (strata) in the population, the number of entrepreneurs sampled into each strata was proportionate to their size in the sampling frame. For each stratum (sub-frame representing sectors) within the sampling frame, a simple random technique was used to select participants for the study (using random number tables). This was to ensure that each unit within a given stratum had equal chance of being selected. Having successfully sampled respondents, we liaised with the NEIP to send text messages to the sampled entrepreneurs seeking their informed consent to be a part of the study. A total of 223 out of the 240 sampled entrepreneurs responded indicating their approval to be part of the study. A link to a Google form was sent to the respondents to indicate their available times and locations for a face-to-face administration of questionnaires. Trained Field enumerators were sent out with the location of each respondent between January 9 and January 20, 2020 to administer questionnaires to the respondents. The response rate was high (95%), as 212 of the 223 entrepreneurs who agreed to join the survey were able to participate fully in the study. As per the design of the questionnaire, in addition to the entrepreneurs, up to two of their employees were also requested to briefly respond to some survey questions. In all, survey data was collected from 212 entrepreneurs and 93 employees, for quantitative analysis.

DATA CAPTURE

A semi-structured questionnaire was used to collect quantitative data on socio-demographic, socio-economic, institutional support and organizational factors from participants of the study. This was collected using the Open Data Kit (ODK) software, captured in Statistical Package for Social Sciences version 21 (SPSS 21) and analyzed using STATA version 14. The questionnaire was pretested prior to the main survey, and was administered face to face.

Qualitative data collected through a Focus Group Discussion (FGD) was also utilized. The FGD was conducted on December 21, 2019 in Accra, with participants drawn from both Accra and Kumasi. In attendance were 9 participants: five youth entrepreneurs (two females and three males) and four older entrepreneurs (two females and two males). Information from this discussion was used to get better insights of the issues under discussion. This helped to reshape our questionnaire suitably before the main survey. Also, the information was used to confirm and explain some of the findings from our quantitative analysis.

DATA ANALYSIS

Descriptive statistics involving means and frequencies were used to characterize young and older entrepreneurs in terms of their socio-demographic characteristics, number of employed persons and their socio-economic characteristics, and institutional and technical characteristics. Where possible, analysis of variance (ANOVA), t-tests and chi-square tests were used to test statistical differences between young and older entrepreneurs in terms of these variables. Results of the descriptive analysis were presented in tables and charts. For the descriptive analysis, the following age categorizations earlier defined were used:

- ***Very young*** - entrepreneurs who were 35 years or below at the time of the survey and started their businesses when they were between the ages of 15 and 22.
- ***Young*** - entrepreneurs who were 35 years or below at the time of the survey but started their businesses after age 22.
- ***Older entrepreneurs A*** - entrepreneurs who were above 35 years of age at the time of the survey but started their businesses at or before age 35.
- ***Older entrepreneurs B*** - entrepreneurs who were above age 35 and started their businesses after age 35.

An econometric strategy discussed in detail in the next section was used for the empirical analysis.

EMPIRICAL MODELLING

The Exogenous Switching Treatment Effect Regression (ESTER) model was used to estimate different equations for young entrepreneurs and old entrepreneurs, hence capturing the interaction between entrepreneurship (by age difference) and other covariates. In this model, the four categories of entrepreneurs used for descriptive analysis were collapsed into two broad age categories of entrepreneurs – ***young entrepreneurs*** (15 to 35 years) and ***older entrepreneurs*** (above 35 years), based on Ghana's official definition of youth. This was necessitated by the fact that the model cannot accommodate four groups, and also requires a sufficiently large sample size in each group. The number

of young people (under age 25) permanently employed by an entrepreneur was used as the measure of job creation for young people.

The exogenous switching treatment effect regression

In analyzing the impact of a binary variable on an outcome, a pooled regression model comes with the assumption of common slope coefficients for the two groups. In other words, the set of explanatory variables in the model have the same influence on the two groups captured by the binary variable. This assumption makes the appropriateness of such an approach to a binary regression situation questionable (Kassie et al., 2014). In assessing the extent to which young entrepreneurs and older entrepreneurs create jobs for young people, an application of a pooled regression would imply that the age group of an entrepreneur (young or older) only has a parallel shift (intercept) effect on the extent of job creation. This implies that the age group of an entrepreneur will have the same effect irrespective of the values taken by other factors that determine job creation. However, in reality, it is possible that the effect that a specific variable has on young entrepreneurs is different from the effect the same variable will have on older entrepreneurs. In essence, coefficient estimates that are age-group-specific are more likely to be informative in determining disaggregated entry points to leveraging entrepreneurship for job creation for young people, hence the choice of the ESTER model. The ESTER framework estimates two separate equations each for young entrepreneurs, and older entrepreneurs. By this, the interactions between entrepreneur's age-group and other individual and institutional characteristics are appropriately captured.
Estimating the two separate equations, the ESTER model is specified as follows:

$$\begin{cases} C_y = x_y\beta_y + u_y \; if \;\; E = 1 \\ C_o = x_o\beta_o + u_o \;\; if \;\; E = 0 \end{cases} \tag{1}$$

Where C indicates youth job creation by the two entrepreneurship groups, measured by the number of young people (under age 25) employed by a sampled entrepreneur. Subscripts y and o show young and older entrepreneurs respectively; E is the binary entrepreneurial age category variable which is equal to *0* for older entrepreneurs and *1* for young entrepreneurs. The two x vectors are vectors for socioeconomic and institutional support services that affect job creation; and β are the parameters to be estimated, and the μ's are error terms with a constant variance and zero means. To estimate the effect of entrepreneur age differences on job creation for young people, Equation (1) was used to estimate the counterfactual extent of job creation for each age group of entrepreneurs – i.e., what would the extent of youth job creation by young entrepreneurs be if the coefficients (returns) on their socioeconomic and institutional characteristics had been synonymous to those of older entrepreneurs, and vice versa. A comparison of the extent of job creation under actual and counterfactual situations provides the basis for determining the impact of the two entrepreneurial age groups on youth job creation. The counterfactual and actual scenarios of job creation by both groups (young and older entrepreneurs) are presented as follows, following Carter and Milon (2005):

$$P(C_y|E = 1) = x_y\beta_y \tag{1a}$$

$$P(C_o|E = 0) = x_o\beta_o \tag{1b}$$

$$P(C_o|E = 1) = x_y\beta_o \tag{1c}$$

$$P(C_y|E = 0) = x_o\beta_y \tag{1d}$$

Where P is the expected operator of the extent of youth job creation. Equation (1a) and (1b) represent the actual extent of job creation by young and older entrepreneurs respectively, while equations (1c)

and (1d) are their respective counterfactual expected extent of youth job creation. These conditional expectations, along with the (binary) entrepreneur age group as a treatment variable, provide the final framework for calculating the impact of entrepreneur age differences on job creation for young people as follows:

If the characteristics of young entrepreneurs had the same coefficients as the characteristics of older entrepreneurs, then the entrepreneur age-group effect on the extent of youth job creation by young entrepreneurs *(YC)* would be obtained by subtracting equations (1a) and 1(c), as follows:

$$YC = P(C_y|E = 1) - P(C_o|E = 1) = x_y(\beta_y - \beta_o) \quad (2)$$

Consequently, the entrepreneur age-group effect on the extent of youth job creation by older entrepreneurs *(OC)* if the coefficients of their characteristics were synonymous to the coefficients of the characteristics of younger entrepreneurs will be given by the difference between equations (1b) and (1d):

$$OC = P(C_o|E = 0) - P(C_y|E = 0) = x_o(\beta_o - \beta_y) \quad (3)$$

From above, the *YC* and *OC* parameters give the expected extent of job creation of a randomly selected entrepreneur from the young entrepreneur and older entrepreneur groups, respectively, given that they assumed the respective characteristics of their opposite numbers. These two outcomes (Equations 2 and 3) capture the average treatment effect on the treated and on the untreated, respectively, as it is in the impact evaluation literature.

Ideally, young entrepreneurs and older entrepreneurs may not have the same capacity for job creation for young people even if their observed characteristics or returns to their observed characteristics (coefficients) are the same. For instance, older entrepreneurs could have a higher employment capacity due to other endogenous determinants of job creation (such as differences in quality of social networks, and access to and control over societal resources). This interaction is defined as the base heterogeneity effect (Carter and Milon, 2005), and tested by getting the difference between Equations (1a) and (1d) and the difference between Equations (1b) and (1c) as shown below:

$$HE_y = P(C_y|E = 1) - P(C_y|E = 0) \quad (4)$$

$$HE_o = P(C_o|E = 0) - P(C_o|E = 1) \quad (5)$$

As already mentioned, the outcome variable, job creation *(C),* was measured as the ***number of young people (under 25 years)*** employed by a respodent entrepreneur. Poisson regression was thus the natural starting point for estimating β_y and β_o because of the count nature of this outcome variable. However, the presence of a significant number of *zero (0)* values due to the presence of entrepreneurs who had not employed any young persons required the use of a refined version of the original Poisson model. To do this, a two-hurdle approach was employed. In the first step, a binary Probit regression model was used to estimate the probability of an entrepreneur employing a young person (*i.e. the probability of an entrepreneur having a non-zero positive response to job creation for a young person*). In the second stage, a Zero-Truncated Poisson (ZTP) model was used to estimate the extent of job creation for young people, given that an entrepreneur actually employed any (*a positive non-zero response to job creation*). Considering the two-step strategy, reporting the impact of entrepreneur age differences on job creation for young people, two sets of outcomes are considered: the probability of job creation and the extent of job creation. In addition to this approach providing a solution to an econometric

problem, it also helps to exhaustively assess not only extent of entrepreneurs' job creation and their determinants, but also, their probability of employing a young person in the first place. Therefore, in the ESTER model, the conditional expectations, treatment effects and heterogeneity effects are computed for both the probability of job creation and the extent of job creation as shown in Table 1.

Table 1 Summary of the ESTER Parameters and effects

Entrepreneur's age category	**Actual outcome**	**Counterfactual outcome**	**Treatment Effect**
Young Entrepreneurs	(a) $P(C_y \mid E = 1)$	(c) $P(C_o \mid E = 1)$	$YC = a - c$
Older Entrepreneurs	(b) $P(C_o \mid E = 0)$	(d) $P(C_y \mid E = 0)$	$0C = b - d$
Heterogeneity Effects	$HE_y = a - d$	$HE_o = b - c$	

Notes:

1. Cells (a) and (b) denote the actual observed probability/extent of job creation for young people in the sample; cells (c) and (d) denote the counterfactual probabilities/extent of job creation.
2. *E = 1* if the entrepreneur is young; *E = 0* if the entrepreneur is older.
3. *Cy = probability/extent of job creation for young people by Young entrepreneurs.*
4. C_o = probability/extent of job creation for young people by Older entrepreneurs
5. HE_y and HE_o are the differences in probability/extent of job creation for young people between the Young entrepreneurs and Older entrepreneurs, respectively, arising from unobserved factors (i.e. the heterogeneous effects)
6. YC and OC represent the treatment effects of entrepreneurship (by age groups) for entrepreneurs randomly selected from young and old categories, respectively.

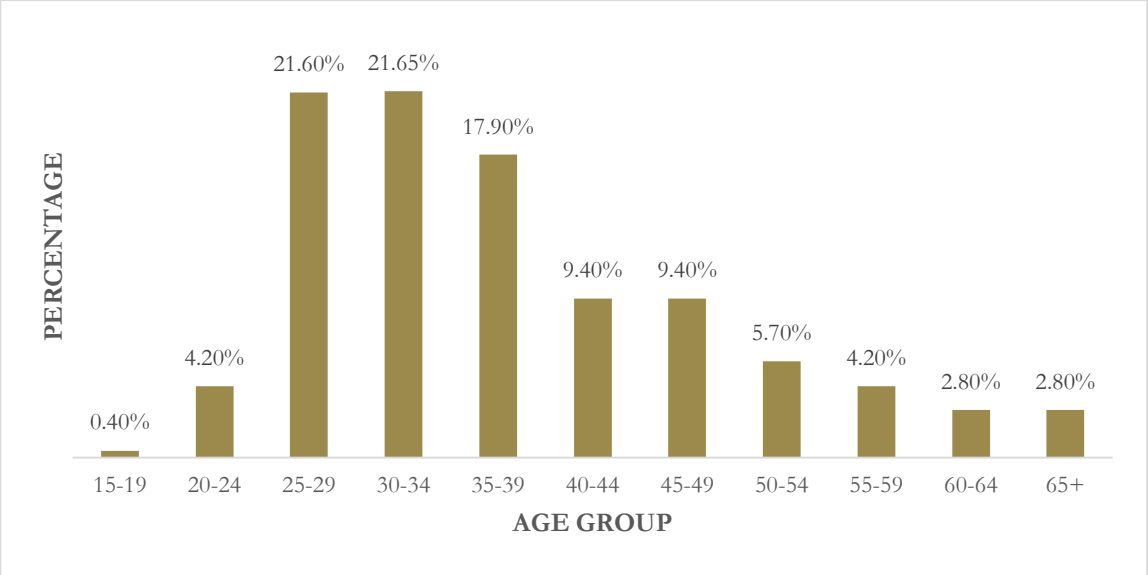
RESULTS AND DISCUSSION

CHARACTERIZATION OF ENTREPRENEURS

Age distribution of entrepreneurs

Figure 1 presents the age distribution of respondent entrepreneurs. The results revealed that a significant percentage of entrepreneurs (54%) were youth (15-35 years) at the time of the survey, and this could be a reflection of the generally youthful population structure of Ghana (GSS, 2016), or evidence of a positive response to entrepreneurship by the youth. Out of the total youth representation in the sample, entrepreneurship was most popular among those aged between 25 to 34 years, whereas only a few (4.6%) were within the age range 15 to 22 years at the time of the survey. However, about 28 persons (13%) out of all the youth entrepreneurs (35 years and below) were between ages 15 to 22 years when they started their businesses. The figure shows that entrepreneurship increases with age as individuals approached the peak of their youth, and decreases as individuals left their youth, making the peak of the youthfulness (age 35) the turning point of entrepreneurship.

Figure 1 Age distribution of entrepreneurs

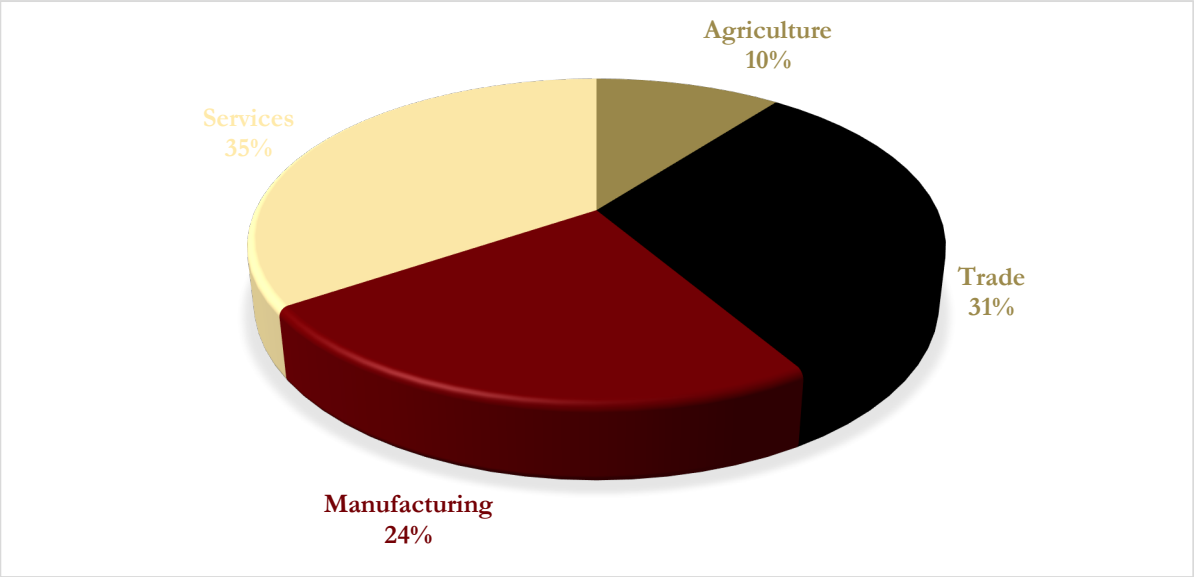


Sectorial distribution of entrepreneurs

The study categorized entrepreneurs into four main economic sectors (agriculture, manufacturing, trade and services) as presented in figure 2, based on the nature of their entrepreneurial activities. The services sector had majority (35%) of entrepreneurs in the sample. This is not surprising as the services sector is the largest sector of Ghana's economy (GSS, 2019). Further, engagement in this sector requires less physical and financial capital. The trade sector was the second largest, engaging up to 31% of entrepreneurs. Although it is capital-intensive to engage in the manufacturing sector of Ghana, a significant (24%) proportion of entrepreneurs were involved in this sector. Discussion with entrepreneurs in the manufacturing sector revealed that most entrepreneurs penetrate this sector through apprenticeship, where they get the opportunity to learn how to undertake the activities that

are pertinent to the sector. After years of learning, their mentors/trainers or employers sometimes give them an end of training settlement to set up a business of the same kind. The agricultural sector, on the other hand, had the least percentage (10%) of entrepreneurs involved in it. This could be attributed to the capital-intensive nature of agriculture; and the fact that our sample was predominantly from urban settlements, and some entrepreneurial and agri-business activities on the fringes of agriculture such as agro-input dealership; and food and fruit processing entered our sample as manufacturing.

Figure 2 Distribution of entrepreneurs across sector of engagement



Socioeconomic and entrepreneurial characteristics of entrepreneurs

Table 2 presents some socioeconomic and entrepreneurial characteristics of respondent entrepreneurs. Regarding youth (15-35 years) entrepreneurs, the results showed that the average age of very young entrepreneurs (i.e. youth who started their businesses before age 23) was 26.6 years whereas that of young entrepreneurs (i.e. youth who started their business after age 22) was 30.3 years. Older entrepreneurs who started their businesses before age 35 were 43.7 years on average, while those who started their business after age 35 had an average age of approximately 54. Age was significantly different among these entrepreneurs at 1% confidence level. Although not significantly different but expected, older entrepreneurs who started their businesses after age 35 had the highest average household size (5.2).

On years of formal education, the study found that youth entrepreneurs had more years of schooling than older entrepreneurs with very young entrepreneurs schooling for 14.3 years on the average and young entrepreneurs schooling for 14.7 years on average. The results revealed that older entrepreneurs who started their businesses before age 35 had fewer years of schooling (12.8) than entrepreneurs who started their businesses after age 35 (14).

As expected, average monthly business income was higher for older entrepreneurs than both very young and young entrepreneurs. The results showed that among entrepreneurs of the youth cohort, young entrepreneurs had a higher business income (GH¢[1] 1,890.6) than very young entrepreneurs (GH¢ 1,794.5). For older entrepreneurs, those who started their businesses after age 35 had a higher average business income (GH¢ 4,060.9) than those who started when they were youth (GH¢ 2,859.1). This finding indicates that for each age category (youth and older), entrepreneurs who started their businesses later earned relatively high income.

Table 2 Socioeconomic and entrepreneurial characteristics of entrepreneurs by age groups

Variable	Very Young n = 28	Young n = 87	Older (A) n = 68	Older (B) n = 29	Anova
Age	26.6[a***]	30.3[e***]	43.7[bd***]	53.8[cf***]	0.0000***
	(4.1)	(3.2)	(7.4)	(9.2)	
Household size	4.3	4.4	4.5	5.2	0.5776
	(3.1)	(3.1)	(2.3)	(1.6)	
Education	14.3	14.7	12.8[d**]	14	0.1084
	(4.5)	(4.3)	(5.2)	(6.1)	
Income	1794.5[e**]	1890.6[e***]	2859.1	4060.9	0.0524**
	(2870.8)	(2208.7)	(4046.2)	(7548.6)	
Experience (Number of years of doing own business)	7.4[ac**]	3.4[de***]	16.9[b***]	11.9[f***]	0.0000***
	(5.5)	(2.4)	(10.4)	(8.4)	
Number of entrepreneurs in household	1.7	1.4	1.3	1.1	0.3819
	(2.1)	(1.2)	(1.2)	(0.9)	
Age of becoming entrepreneur					
	19.2[ab***]	26.5[e***]	26.9	41.8[cf***]	0.0000***
	(3.8)	(2.7)[e***]	(6.3)[d***]	(6.5)[c***]	
Computer literacy	6.0[b*]	6.4	4.7	4.0	0.0002***
	(2.7)	(2.9)	(3.1)	(2.8)	

***Note**: *, ** and *** denote statistical significance at 10 %, 5 % and 1 % levels of significance respectively; Standard deviations are in parentheses*

a= Young vs Very young, b = Older (A) vs Very young, c = Older (B) vs Very young, d = Older (A) vs Young, e = Older (B) vs Young, f = Older (B) vs Older (A)

The study results showed that older entrepreneurs had been doing business longer than young entrepreneurs. Very young entrepreneurs had been self-employed for an average of 7.4 years, which is longer as compared with young entrepreneurs (3.4 years on average). On average, very young entrepreneurs ventured into entrepreneurship at age 19, whereas young entrepreneurs started at age 26. This indicates that most of the very young entrepreneurs ventured into entrepreneurship almost immediately after completion of the second cycle education (senior high school and technical and vocational education and training). The study found that older entrepreneurs who started their businesses before age 35 had been in business for a longer period (16.9 years) than those who started after age 35 (11.9 years). Further, on average, the former became entrepreneurs when they were as young as 27 years, whereas the latter became entrepreneurs when they were quite older (42 years). In the case of older entrepreneurs who started businesses after age 35, the observed late entry into entrepreneurship is explained by information from the FGD which revealed that some entrepreneurs

[1] GH¢ represents Ghana Cedi (GH¢ 1 was equivalent to USD 0.185 at the time of the survey)

ventured into entrepreneurship after they had been employed for some years in the private or public sector, citing reasons including the relative lucrative nature of entrepreneurship and relative flexibility associated with running one's own business. According to an older participant of the FGD,

> *….most people will not want to start life with uncertainty. Starting life as an entrepreneur is starting life with uncertainty. From my experiences, given that people have the skills and qualifications to earn regular income at the start of life, they will always go for that than the hustle of starting something that is not assured to succeed. Usually, after some years of being in paid job positions, they realize that that cannot pay their bills any longer, then they think about starting their own businesses, and surely, by then they would have saved enough money as start-up capital.*

Another participant added,

> *…the benefits of an entrepreneur far outweigh that of being an employee because when you are an entrepreneur you have the luxury of managing your own business. If you are an employee you need to report to your manager or your superior but if you are an entrepreneur you don't need to report to anybody else, you are the manager of your business and whether your business rises or falls it is your responsibility. But if there is an opportunity, it is best to go through being an employee to raise some money first.*

A possible motivation for venturing into entrepreneurship could be the presence of practicing entrepreneurs in one's household. The study found that youth entrepreneurs had more entrepreneurs in their households than older entrepreneurs. Very young entrepreneurs had an average of 1.7 self-employed persons in their households, whiles young entrepreneurs had an average of 1.4 entrepreneurs in their households. For older entrepreneurs, those who started their businesses before age 35 had more (1.3) self-employed persons on average than those who started their businesses after age 35 (1.1).

In the era of the fourth industrial revolution, computer literacy is key to finding improved ways of doing business, hence scaling up entrepreneurship. The findings of the study showed that among the respondents, youth entrepreneurs were more computer literate than the older entrepreneurs.

Table 3 presents results of other socio-demographic characteristics of respondent entrepreneurs. The results show that majority of the entrepreneurs were male. There were more males than females among both groups of youth entrepreneurs. However, within the older entrepreneurs, there were more females among those who started their businesses after age 35 (55%) than those who started their businesses before age 35 (45%).

Table 3 Socio-demographic characteristics of entrepreneurs by age groups

Characteristic	Very young n = 28	Young n = 87	Older (A) n = 68	Older (B) n = 29	Chi²
	%	%	%	%	
Gender:					
Male	64	74	76	45	0.012***
Female	36	26	24	55	
Educational level:					
None		1.2	5.9	3.45	0.138
Primary	7	1.2	4.4	3.45	
JSS/Middle school	7	18.4	32.3	31.03	
SSS/TVET	29	24.1	29.4	24.14	
Diploma	7	8.0	7.4	6.9	
Polytechnic/University	46	43.7	17.6	31.03	
Postgraduate	4	3.4	3		
Marital Status:					
Single	82	68	29	17	0.000***

Characteristic	Very young n = 28	Young n = 87	Older (A) n = 68	Older (B) n = 29	Chi²
	%	%	%	%	
Married	8	32	71	83	
Household head (yes)	39	44	82	66	0.000***
Migrant (yes)	32	26	32	48	0.190
Dependents (yes)	50	68	94	100	0.000***
Contribution to household expenses (yes)	89	90	99	100	0.043**

***Note**: ** and *** denote statistical significance at 5 % and 1 % levels of significance*

The study ascertained the highest level of formal education attained by respondent entrepreneurs. It was not surprising to find that a higher proportion of older entrepreneurs than young entrepreneurs had not received any form of formal education. However, attainment of tertiary education was significantly high across the various age groups and was more dominant among youth entrepreneurs than it was among older entrepreneurs. More (46%) very young entrepreneurs had received tertiary education as compared with young entrepreneurs (44%). On the other hand, a higher proportion (31%) of older entrepreneurs who started their businesses after age 35 had received tertiary education than those who started their businesses before age 35 (18%). The relatively high level of education of entrepreneurs who started their businesses after age 35 might have given them opportunities to occupy reputable positions as employees in the public or private sector. This could explain why they started their businesses at a latter age. One of the FDG participants noted that

> *There are many others who use that time to focus on other things like getting higher academic degrees or things like that. I have many colleagues who could not combine school with anything else. So they wanted to achieve their desired level of education before starting anything: whether looking for a job or doing their own business. And sometimes for such people, after school, they spend a lot of years looking for a job, and when the job is not forthcoming, they decide to venture into entrepreneurship. For some too, they find a job, work for a while before they join entrepreneurship.*

As expected, there were more married older entrepreneurs than young entrepreneurs. The results revealed that within both cohorts of young and older entrepreneurs, more of those who started their businesses after age 22 (32%) and after age 35 (83%) were married compared with entrepreneurs who started their businesses before age 22 (8%) and before age 35 (71%). It was found that most of the older entrepreneurs were household heads. However, there were more household heads among older entrepreneurs who started their businesses before age 35 (82%) than those who started their businesses after age 35 (66%). This finding could be explained by the fact that most of the sample of older entrepreneurs who started their businesses after age 35 were female and might be married with their husbands being the head of their households. Even though most of the youth entrepreneurs were not married, majority of them had dependents and contributed to household expenses. On the other hand, nearly all the older entrepreneurs had dependents and contributed to household expenses.

On migration, relative to young entrepreneurs, a higher percentage of older entrepreneurs had migrated to their current places of business. Considering that national statistics suggest an increasing rate of migration among young people, this result suggests that most young migrants move "in search of jobs", but not to create jobs for themselves.

Institutional and entrepreneurial characteristics of entrepreneurs

Table 4 presents results of some institutional and entrepreneurial characteristics of entrepreneurs. Need for credit was found to be more intense among older entrepreneurs (72%) than young

entrepreneurs (68%) and as expected, older entrepreneurs had more access to credit than youth entrepreneurs. Within the youth category, a higher proportion of young (25%) than very young (17%) entrepreneurs had access to credit. Among older entrepreneurs, 24% of those who started their businesses before age 35 had access to credit, whereas 28% of entrepreneurs who started their businesses after age 35 had access to credit. This finding indicates that access to credit among entrepreneurs is low. A participant of the FGD explained that

> *I have never had any form of access to credit and it is very very tough trying to seek for some loan from the banks. You know their interest is so crazy, you understand. It is currently within two digits and the time frame to pay back the money is so short: 15 months. So access to credit is very tough.*

Another participant added,

> *It is very difficult for someone with no financial security to secure a loan from the bank or a microfinance company…. Usually it is people who are on government payroll or with a formally verifiable source of income that can get bank loans quite easily.*

The relatively low access to credit among young entrepreneurs could account for the relatively higher family support received by them. The results show that 57% and 68% of very young and young entrepreneurs, respectively, received some form of family support. On the other hand, older entrepreneurs who started their businesses before age 35 had more (51%) family support than those who started their businesses after age 35 (38%). This support mainly came in the form of financial, moral, social and technical assistance.

Some entrepreneurs were members of various social groups including agribusiness groups, community groups, and groups that served their line of business. Being a member of a group is a good measure of social capital because individuals can interrelate to build beneficial relationships (Kilpatrick et al., 1999). Among entrepreneurs in the youth bracket, the results showed that relatively, more (29%) very young entrepreneurs were members of groups than young entrepreneurs (23%). More (41%) older entrepreneurs who started their businesses after they were 35 were members of groups than those who started their businesses when they were youth (29%).

Table 4 Institutional and entrepreneurial characteristics of entrepreneurs by age groups

Characteristic	**Very young n = 28** **%**	**Young n = 87** **%**	**Older (A) n = 68** **%**	**Older (B) n= 29** **%**	**Chi²**
Need for credit *(yes)*	68	68	72	72	0.925
Access to credit *(yes)*	17	25	24	28	0.202
Family support *(yes)*	57	62	51	38	0.136
Access to training *(yes)*	46	39	26	34	0.223
Group membership *(yes)*	29	23	29	41	0.296
Digitalization *(yes)*	71	59	51	14	0.000***
Partnership *(yes)*	25	11	15	10	0.310
Assistants *(yes)*	25	37	57	62	0.002***
Job Preference					
Entrepreneurship	91	84	94	97	0.458
Employed by others	9	15	6	3	
Indifferent		1			

***Note**: *** denotes statistical significance at 1 % level of significance.*

Membership of groups could give participants of such groups a comparative advantage since the social capital that is associated with group membership could be functional in securing many institutional support services and benefits. For instance, a young entrepreneur in the FGD explained,

> *I have been fortunate to have a number of NGO support, and almost each of those opportunities, I got to know about it from such groups. Also, you get to have people at hand anytime you want something. For example, there was a time my company wanted to put up a rice mill, like a rice processing plant. It is through connections from such groups that I got people that have been in that business before, and their contribution was awesome.*

Despite the importance of training to growth of entrepreneurship, access to entrepreneurial training or mentorship was relatively low among all age groups of entrepreneurs. Regardless, access to training was more popular among young entrepreneurs than older entrepreneurs. The results revealed that very young entrepreneurs had more (46%) access to training than young entrepreneurs (39%). On the other hand, more (34%) of the entrepreneurs who started their businesses above 35 years had access to training than the ones who started their businesses when they were youth (26%). The relatively high entrepreneurial training experience among youth entrepreneurs could be attributed to the increased attention on youth entrepreneurship in Ghana and Sub-Saharan Africa, of which a core part is training support.

Further, the results demonstrate that the use of digital or information and communication technology (ICT) tools for business varied among the various age groups of entrepreneurs. The digital divide between young and older entrepreneurs was very large. Among the youth entrepreneurs, most very young entrepreneurs (71%) used some form of digital approaches to business relative to young entrepreneurs (59%). Among older entrepreneurs who started their businesses after age 35, the use of ICT tools was low (14%), but it was significantly higher (51%) among older entrepreneurs who started their businesses when they were youth. The results demonstrate a strong association between younger entrepreneurs and adoption and use of ICT.

The study further found that, as compared to young entrepreneurs (11%), more (25%) very young entrepreneurs were into partnerships, or co-owned their businesses with others. Among the older entrepreneurs, co-ownership of business was higher (15%) among those who started their businesses before age 35 than those who started their businesses after age 35 (10%). The results show that although partnerships are quite low in the entire sample, younger entrepreneurs were more likely to be engaged in one. A possible explanation could be that young entrepreneurs usually need to partner with others to raise sufficient start-up capital and/or skills for a business. This view was a major highlight from young entrepreneurs in the FGD. A very young entrepreneur posited,

> *I think that is just the best way to start. I started with two other persons who brought information technology (IT) skills. You see, as young people, we do not have sufficient funds so we pool skills and resources together to make things work. In my case for instance, I owned the idea and the business direction, but I had some I.T. dimensions to the idea, of which I did not have the I.T. skills to build the computer/mobile application, so I brought these guys on board to partner with their skills.*

In some instances, entrepreneurs required casual labor assistance to undertake some tasks intermittently**.** The results showed that more (62%) older entrepreneurs who started their businesses after age 35 than those who started before 35 (57%) needed occasional casual labor to undertake some tasks. Compared with older entrepreneurs, few youth entrepreneurs (25% and 37% very young and young respectively) needed such assistance.

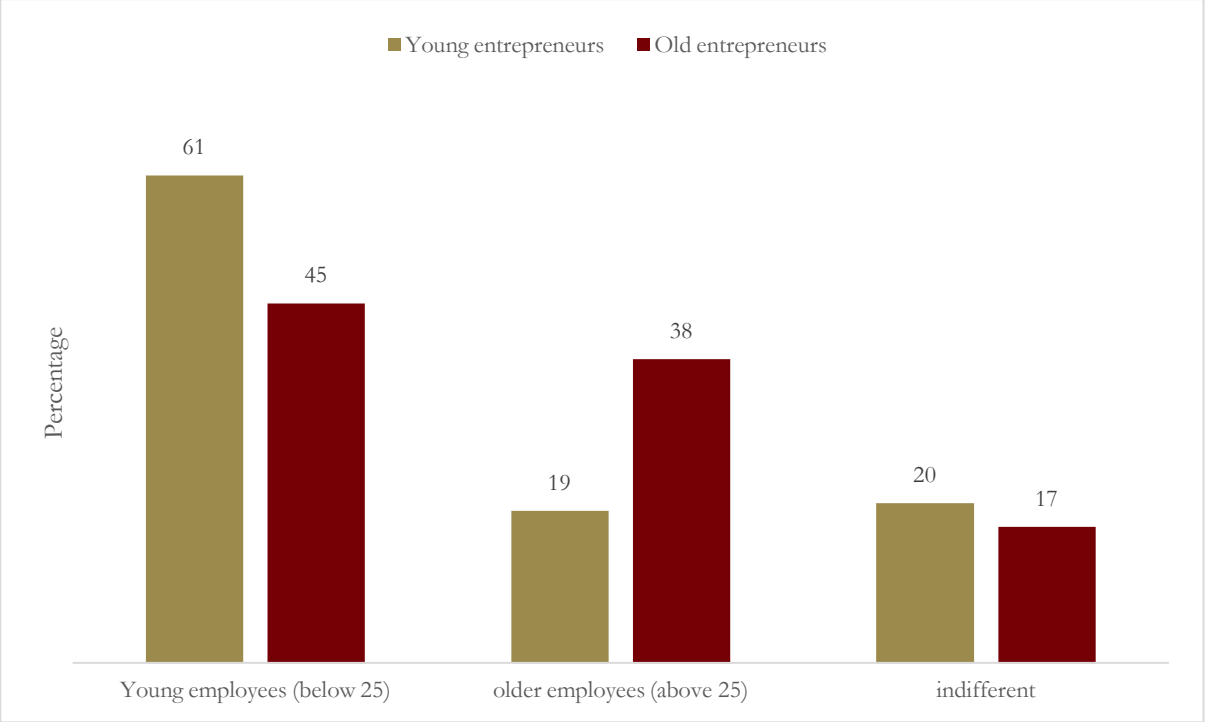
On job preference, the study revealed that almost all the entrepreneurs, both youth and older, preferred being self-employed over being employed by others. This could be promising for the promotion of entrepreneurship as an alternative or a complement to formal employment, and as a possible solution to growing unemployment situations.

JOB CREATION CHARACTERISTICS OF ENTREPRENEURS

Employee preferences

Respondent entrepreneurs were asked to state their employee preference by age categories (below 25 years or above 25 years). As shown in figure 3, generally, both young entrepreneurs (15 to 35 years) and older entrepreneurs (above 35 years) showed a strong preference for younger employees (below 25 years). The main reason cited by many of the entrepreneurs for this preference was that young people are more vibrant and energetic. However, as expected, the preference of younger entrepreneurs was more inclined towards younger employees than that of older entrepreneurs. About 61 % and 45 % of young and older entrepreneurs, respectively, stated their desire to work with younger employees than older ones. Similarly, while 38% of older entrepreneurs stated their preference for older employees, only 19% of young entrepreneurs stated that they preferred to employ older people. 20% and 17% respectively of young and older entrepreneurs were indifferent about their choice of preferred employees by age.

Figure 3 Entrepreneurs' employee preferences (by age differences)



Results of other dimensions of job creation by young and older entrepreneurs are presented in Table 5. The study found that overall, older entrepreneurs employed more people than young entrepreneurs.

Entrepreneurs of the two older categories employed an average of 3.7 people, whereas on average, young and very young entrepreneurs employed 1.7 and 1.2 people, respectively. This suggests that there exists a positive association between job creation and the age of entrepreneurs. A possible explanation to this finding is that older entrepreneurs have the resources to operate on a larger scale, hence the need for more employees.

The results further demonstrate variations in the employment of people of different age groups. The two groups of young entrepreneurs both employed an average of 0.9 people aged under 25 years, whereas older entrepreneurs who started their businesses before and after 35 years, respectively, employed an average of 1.8 and 1.7 people aged under 25. On average, the two groups of older entrepreneurs both employed 1.6 people who were between 26 and 35 years, while very young entrepreneurs employed fewer people (0.3) of this group than young entrepreneurs (0.6). Generally, youth entrepreneurs had very low employment of person above age 35. Whereas young entrepreneurs employed an average of 0.2 people above age 35, very young entrepreneurs had no employees at all in this age category. This low level of employment of older people (above 35 years) by young people could be due to the inability of youth entrepreneurs to manage this group considering the age difference. Older entrepreneurs on the other hand employed an average of 0.4 people who were above age 35. These results show a reflection of the entrepreneurs' stated preferences for young employees, as earlier discussed. It also suggests strongly that entrepreneurship has potentials for boosting youth employment.

Table 5 Job creation characteristics of entrepreneurs by age groups

Variable	Very Young n = 28	Young n = 87	Older (A) n = 68	Older (B) n = 29	Anova
Total number of employees	1.2[b*]	1.7[e**]	3.7[d*]	3.7[c**]	0.0356**
	(2.3)	(3.8)	(6.8)	(6.8)	
Employees below 25 years	0.9	0.9	1.8[d**]	1.7	0.1191
	(1.6)	(1.7)	(3.5)	(0.7)	
Employees between 26 and 35 years	0.3[b*]	0.6	1.6[d**]	1.6[c*]	0.0898*
	(0.8)	(1.9)	(3.7)	(4.5)	
Employees above 35	0	0.2	0.4	0.4	0.3831
	(0)	(1.1)	(1.3)	(0.9)	
Proportion of young employees	0.9	0.7	0.5[d**]	0.6[c**]	0.0751*
	(0.2)	(0.4)	(0.4)	(0.4)	
Number of male employees	0.6[b**]	1.1	2.2[d**]	1.4	0.0883*
	(1.1)	(3.1)	(4.2)	(1.9)	
Number of female employees	0.6[c*]	0.5[e**]	1.5	2.3	0.0978*
	(2.0)	(1.2)	(5.0)	(5.6)	

***Note**: *and ** denote statistical significance at 10 % and 5 % levels of significance respectively*
b = Older (A) vs Very young, c = Older (B) vs Very young, d = Older (A) vs Young, e = Older (B) vs Young,

For each entrepreneur, we computed the proportion of their total number of employees who were 25 years or below. This was to get an insight into the proportion of the employment capacity of entrepreneurs that was dedicated to very young people. The results show that very young entrepreneurs dedicated more (90%) employment space to young people than young entrepreneurs (70%). Older entrepreneurs who started their businesses before age 35 employed relatively more young people (60%) than those who started their business after age 35 (50%). This finding indicates that although entrepreneurs of all age groups stated and actually showed preference for young employees, relatively, very young and young entrepreneurs have a stronger actual preference to work

with young people. Similarly, although in absolute figures, older entrepreneurs employed more young people, as a proportion of total employment, younger entrepreneurs employed more young people than older entrepreneurs. This could be because they can easily manage employees of this age group. This again suggests that entrepreneurial activities by young people is key to job creation for other young people.

The study found that, generally, more males were employed than females. The results revealed that while young entrepreneurs employed more males (1.1) than females (0.5), very young entrepreneurs employed equal numbers of males and females (0.6). On the other hand, older entrepreneurs who started their businesses before age 35 employed more males (2.2) than females (1.5), whereas those who started their businesses after age 35 employed more females (2.3) than males (1.4).

Patterns of job creation by entrepreneurs

Figure 4 presents the employment patterns of young and older entrepreneurs by age. The results revealed that job creation by youth (15-35 years) entrepreneurs increased with age. That is, youth entrepreneurs tend to employ more people as they grow older. This is intuitive because entrepreneurs are more likely to expand their business with time, which would require an increased number of employees.

Figure 4 Employment patterns of young entrepreneurs (15-35)

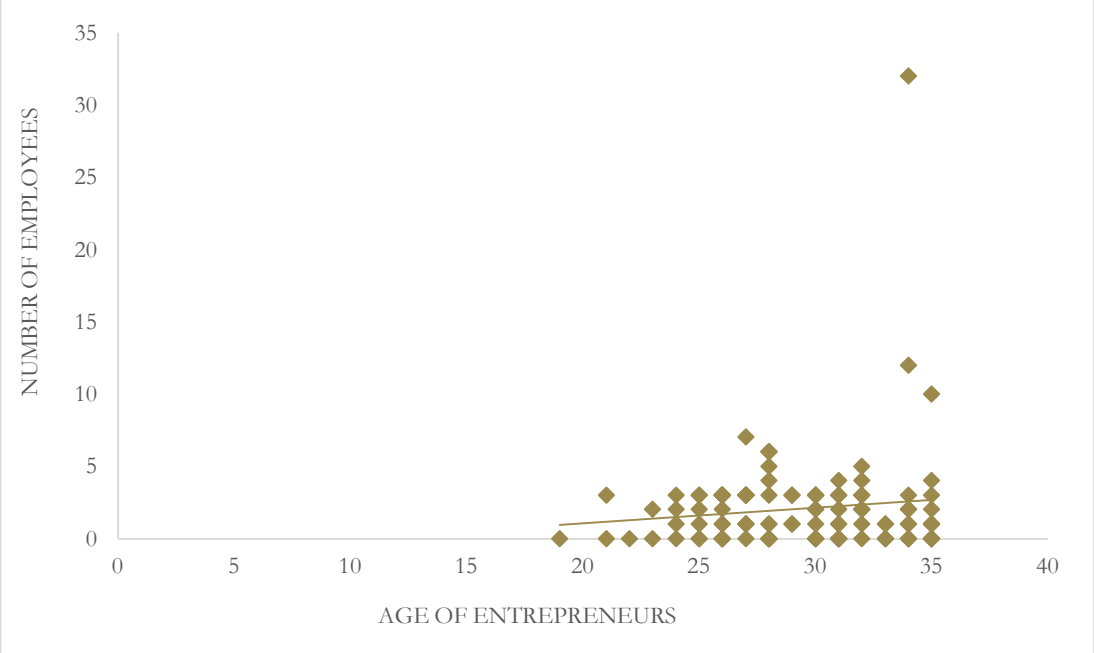
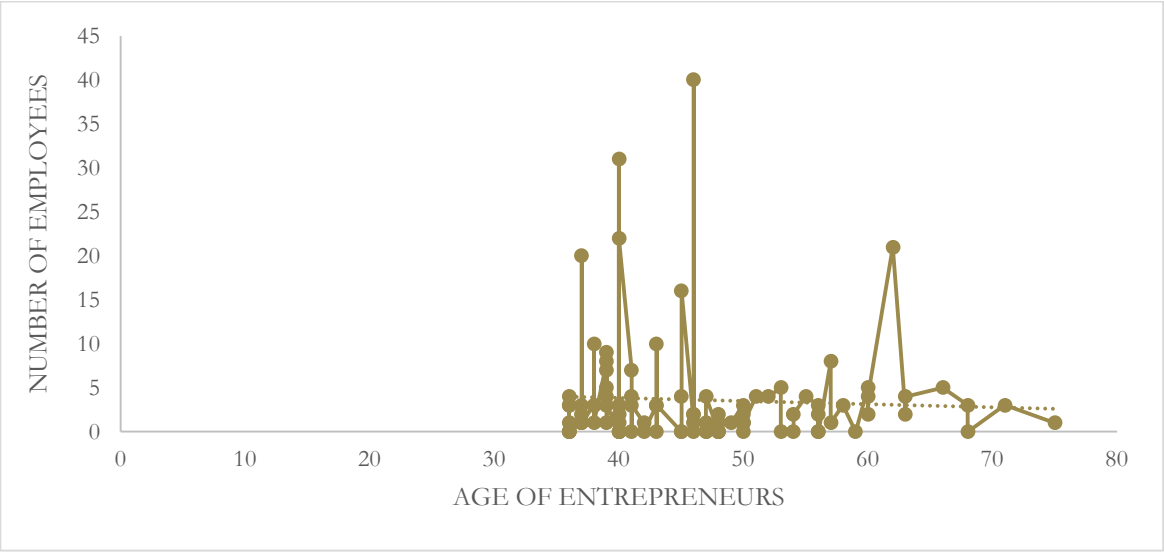


Figure 5 presents the employment patterns of older entrepreneurs. The results revealed that employment patterns varied across the different age groups within the cohort of older entrepreneurs. However, generally, employment decreased with age after entrepreneurs had exit the youth bracket.

Figure 5 Employment patterns of older entrepreneurs (above 35)



CHARACTERIZATION OF EMPLOYEES

Upon ascertaining various characteristics of the entrepreneurs, the study delved into the characteristics of employees employed by the sample entrepreneurs. Due to the presence of entrepreneurs who did not have any employees, and the fact that some employees declined to take part in the survey, only 93 employees responded and were included in this analysis. Distribution of employees across very young entrepreneurs (earlier defined to be youth who started their businesses between 15 and 22 years) and older entrepreneurs who started their businesses after age 35 showed a lot of missing values, making a comparison across these two entrepreneurial age groups infeasible. Therefore, comparisons in this section were made between employees of entrepreneurs between 15 and 35 years old (*young entrepreneurs*) and those of entrepreneurs above 35 years old (*older entrepreneurs*). For the employees, age categorization was 15 to 25 years (*young employees*) and above 25 years (*older employees*).

Sectorial distribution of employees by age groups

Table 6 presents the distribution of employees by age groups and sectors. Findings of the study indicate that entrepreneurs in the agricultural sector only engaged young employees. This finding appeals to logic considering the labor-intensive nature of the activities in the Agricultural Sector coupled with the fact that younger people are in the physical prime of their lives - making them relatively energetic as compared with the older employees. According to the results, entrepreneurs in the services sector were the highest employers of people of all age categories; however, most of their employees were young. Next to the services sector, entrepreneurs in the trade sector had the highest total number of employees, and nearly all of the employees in this sector were young. As expected, the entrepreneurs in the manufacturing sector employed more young people than older people due to the labor-intensive nature of activities in this sector.

Table 6 Sectorial distribution of employees among age groups

Age/sectors	Pooled n = 93		Agriculture n = 7		Trade n = 25		Manufacturing n = 24		Service n = 37	
	frequency	%	frequency	%	frequency	%	frequency	%	frequency	%
15-19	14	15	0		3	12	4	16.6	7	19
20-24	33	36	4	57	11	44	7	29.2	11	30
25-29	24	26	3	43	4	16	7	29.2	10	27
30-34	9	10	0		5	20	1	4.2	3	8
35-39	5	5	0		1	4	2	8.3	2	5
40-44	6	6	0		1	4	2	8.3	3	8
50-54	1	1	0		0		1	4.2	0	
55-59	1	1	0		0		0		1	3

Socio-economic characteristics of employees by employee age groups

Table 7 presents results of some socio-demographic, socioeconomic, and welfare indicators of young employees (15 to 25 years) and older employees (above 25 years) employed by sampled entrepreneurs. The results show that majority (54%) of the respondent employees were males. Across age groups, majority (58%) of young employees were males, whereas majority (51%) of older employees were females.

On household characteristics, only a few (26%) of the employees were household heads. There were more (46%) older employees who were household heads than very young employees (11%). This was expected since only a few Ghanaians who are 15 to 25 years live in their own homes. However, about 16% of these very young entrepreneurs had dependents. On migration, less than half (44%) of the employees were migrants. Most (62%) of the older employees had migrated to their current locations of work, whereas only 31% of the young employees were migrants.

Most (74%) of the employees were engaged in some form of (money) savings. The results showed that more (87%) of older employees saved part of their incomes as compared with the young employees (64%). This finding is not surprising as it was found that older employees had a slightly higher income, hence a higher propensity to save. As already suggested by their high savings behavior, borrowing to supplement income was found to be low (18%) among respondent employees. This could be attributed to the findings of the study which indicated that most (71%) of the employees expressed satisfaction with the salary/wage they received. Further, nearly all (93%) of the employees indicated they were usually paid on time, reducing the propensity to borrow to smoothen consumption in wait for salaries/wages to be paid. Despite the satisfactory salary/wages and timely payment of these wages, majority (60%) of the employees had intentions of leaving their current place of work, with many of them expressing a desire to start their own businesses, and in the case of a few young employees, a desire to go back to school. Relatively more (61%) young employees had intentions of leaving their current jobs than older employees (56%).

Table 7 Socio-economic characteristics of employees by employee age groups

Characteristic/Age	**Pooled n = 94**		**Very young employees (15-25 years) n = 55**		**Older employees (Above 25 years) n = 39**		**Chi²**
	Frequency	**%**	**frequency**	**%**	**Frequency**	**%**	
Gender:							
Male	51	54	32	58	19	49	0.364
Female	43	46	23	42	20	51	
Household head (yes)	24	26	6	11	18	46	0.000***
Migrant (yes)	41	44	17	31	24	62	0.004***
Dependents (yes)	33	35	9	16	24	62	0.000***
Savings (yes)	70	74	36	64	34	87	0.024**
Borrowing (yes)	17	18	10	18	7	18	0.119
Intention to exit current job (yes)	56	60	34	61	22	56	0.524
Salary satisfaction (yes)	67	71	41	75	26	67	0.426
Receives payment on time (yes)	87	93	52	95	35	90	0.697

***Note**: ** and *** denote statistical significance at 5 % and 1 % levels of significance respectively;*

Table 8 presents results of other socioeconomic characteristics of employees. The results showed that the average age of the respondent employees was 26 years. The average age of young employees was 22, whereas that of older employees was 33 years. This again confirms that employees of the sample entrepreneurs are generally youth.

The average number of years of schooling of respondent employees was 13. This total average was the same for both young and older employees. This finding shows that employees of sample entrepreneurs had completed at least second cycle education (senior high school, or technical and vocational education training). Thus, most of the employees of entrepreneurs were literate.

On average, employees of entrepreneurs earned GH¢ 466 per month. According to the 2016 Labour Force Report of Ghana, employees who are mainly engaged in the informal sector, particularly services and trade sectors, earn an average monthly wage of GH¢ 483.66 which is consistent with the average wage of the sample entrepreneurs. Older employees earned more (GH¢ 566) than very young employees (GH¢ 400). This could be attributed to differences in seniority levels at their place of work, or a stronger bargaining power among older employees.

On average, employees had been working with the respondent entrepreneurs for 3 years 2 months at the time of the survey. Older employees had worked for 2 years 7 months longer, on average, than very young employees.

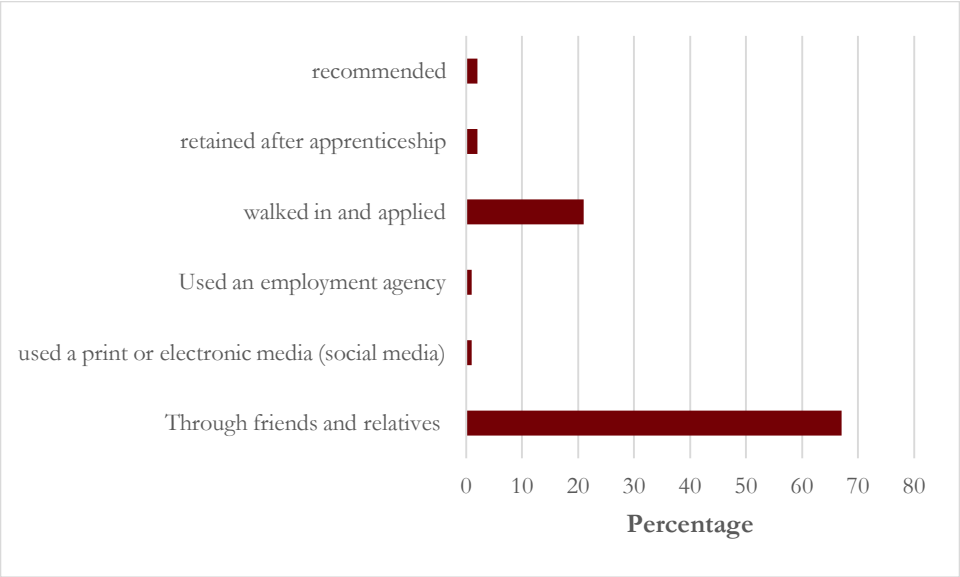
Table 8 Socioeconomic characteristics of employees by employee age groups

	Pooled n = 94	**Young(15-25 years) (A) n = 55**	**Older(above 25 years) (B) n = 39**	**Difference (A - B)**
Age	26.4	21.6	33.1	-11.5***
	(0.8)	(0.3)	(1.3)	
Education	13.0	13.0	13.0	0
	(0.4)	(0.5)	(0.7)	
Income	466.3	399.9	565.9	-166**
	(34.2)	(35.3)	(64.2)	
Years of employment	3.2	2.1	4.8	2.7***
	(0.4)	(0.2)	(0.7)	

***Note**: ** and *** denote statistical significance at 5 % and 1 % levels of significance respectively; Standard deviations are in parentheses*

In the midst of rising unemployment, it is important for potential employees to acquire knowledge on the possible methods that can be used to find jobs. The results showed that various methods were used by the sample employees to find their current jobs. These methods included recommendations from friends/relatives to prospective employers; walking in to apply; being retained after apprenticeship; going through an employment agency; or using print or electronic media. The study found that most (71%) of the employees gained employment by talking to friends and relatives about vacancies. Some (22%) of the employees gained employment by applying directly for jobs at the place of business of entrepreneurs. Only a few of these employees were recommended, retained after apprenticeship and applied through employment agencies.

Figure 6 Job search methods



Comparison of welfare characteristics of employees by entrepreneur age group

Table 9 presents results of some selected welfare indicators of employees who are employed by young and older entrepreneurs. The results revealed that more (74%) of the employees employed by older entrepreneurs expressed satisfaction in their salary/wage compared to employees employed by young entrepreneurs (62%).

Table 9 Selected welfare indicators of employees across young and older entrepreneurs

Variable	Employees of young entrepreneurs (%)	Employees of older entrepreneurs (%)	Chi²
Salary satisfaction	67	74	0.487
Timely payment	93	92	0.852
Savings	72	78	0.510
Borrowed	21	16	0.540

A possible reason for this is that older entrepreneurs are relatively more resource-endowed than young entrepreneurs. Thus, the former is more capable of giving relatively higher rewards for labor. The study further found that nearly all the employees received timely payment of these salaries. The relatively high level of salary satisfaction and its timely payment could account for the impressively high savings behavior among the respondent employees. Regardless, more employees of older entrepreneurs (78%) engaged in savings than employees of young entrepreneurs (72%). Consequently, borrowing was slightly lower (16%) among employees of older entrepreneurs than employees of young entrepreneurs (21%). This suggests that although welfare characteristics were similar among all employe+es, employees of older entrepreneurs were slightly better off.

EMPIRICAL RESULTS

This section presents results of the Exogenous Switching Treatment Regression (ESTER) of a binary probit model and a Zero-truncated Poisson (ZTP) model. The measurements and descriptive statistics of the variables used in the regression analysis are presented in Appendix 1 and 2. Two separate regressions: one each for the probit and the ZTP were run. In the first, we used the probit model to compare the probability of job creation for young people in a "young entrepreneur versus older entrepreneur" situation. In the second, the ZTP model was used to compare the extent of job creation for young people between the two groups. In the immediate next section, the determinants of job creation for young people, disaggregated along the lines of young entrepreneurs (between 15 and 35 years) and older entrepreneurs (above 35 years) are discussed before we proceed to discuss the causal impact of entrepreneurial age differences on job creation for young people.

Determinants of job creation for young people by young and older entrepreneurs

Results of the estimated coefficients of the determinants of job creation for young people by older and young entrepreneurs are presented in Tables 10 and 11 respectively. Each of the tables has two panels. The first presents results of the probit model showing the probability of job creation. Here, the dependent variable is a binary *youth job creation* variable which equals 1 if an entrepreneur employed any young person, and 0 if they did not employ any. In this model, marginal effects computed at the means, are reported along with their standard errors. The second panel shows results of the ZTP model showing the extent of youth job creation given that an entrepreneur employed a young person. Here, the dependent variable used is the number of young people (under age 25) employed by an entrepreneur, given that they employed any. Coefficients and standard errors are reported in this model. It is observed that as per the two-step approach, all zero (0) responses in the first stage (probit model) are truncated in the second stage (ZTP model), hence the number of observations reduce in the second stage.

As can be seen in Table 10 and 11, the respective marginal effect (MEs) and coefficient parameters are different for older entrepreneurs (Table 10) and young entrepreneurs (Table 11). This lends support to our choice of a switching model to run separate regressions for young and older entrepreneurs. Indeed, some of the covariates that significantly explained the job creation behavior of young entrepreneurs were different from those that explained the job creation behavior of older entrepreneurs, and vice versa. Similarly, some of the covariates explained the probability of job creation and the extent of job creation differently - also validating our decision not to pull zero responses together with positive ($C > 0$) responses. It must be noted that log versions of all non-categorical variables were used to reduce the effect of extreme values (outliers), hence their effects are interpreted in terms of percentage changes.

Determinants of job creation for young people by older entrepreneurs

The results show that both institutional support and individual-level factors influenced the job creation behavior of older entrepreneurs. There was a total of 97 older entrepreneurs in our sample. However, close to 50% reported that they had not employed any young people, and therefore, only 48 (who had employed one or more young people) were included in the second stage of analysis. The results revealed that among the older entrepreneurs, the older they get, the less likely to employ young people they become. Similarly, for those who employed, the older an entrepreneur, the lower the number of

young people employed. This could be due to the strong connections between people of the same age group. If older entrepreneurs are to connect with people for employment, they are more likely to connect with the older people who dominate their networks. It may also be due to their long service in business which may mean that people they employed while young, may have grown to be older employees. From the analysis, a percentage increase in age of an older entrepreneur decreased his/her probability of employing a young person by over 60% and the number of young people employed by more than one person. There was however a weak statistical significance (10%) associated with the effect on the extent of job creation (number of young people employed).

Gender appeared to have an effect on the probability of job creation for young people by older entrepreneurs but had no influence on the extent of job creation. According to the analysis, being a male older entrepreneur reduced the probability of employing a young person by about 17%. In essence, among older entrepreneurs, females are more likely than their male counterparts to employ young people. This could be because, in a typical African setting, older females are more likely to supply fewer hours of labour owing to their household responsibilities, hence the need for employees.

Number of years of formal education had no association with the probability of youth job creation by older entrepreneurs, but it was negatively associated with the extent of job creation. The results revealed that a percentage increase in the number of years that an older entrepreneur has been in school decreased the number of young people employed by about 0.59 (persons). This could be because well-educated entrepreneurs could be employed in other avenues of income, hence less focus on entrepreneurship.

It was also found that among older entrepreneurs, being a migrant was associated with a lower likelihood of employing a young person. However, migration had no statistically significant association with the extent of employment. Being an older migrant entrepreneur in any of the two cities included in this study reduced the probability of creating a job for a young person by about 18%. This implies that relative to migrants, older non-migrant entrepreneurs are more likely to employ young people. This may be due to the fact that non-migrants may have more access to and use of community resources and stronger local social networks, giving them an edge over their migrant colleagues in freeing up resources for employing labour.

Average monthly income received from business by an entrepreneur, a proxy for business growth, was found to be a positive determinant of the probability, but not the extent of job creation for young people by older entrepreneurs. A percentage increase in the incomes of older entrepreneurs increased their probability of employing young people by about 12%. A thriving business may require the services of additional labour to undertake the expectedly expanding operations.

Table 10 Determinants of job creation for young people by older entrepreneurs

VARIABLES	Probability of job creation		Extent of job creation	
	Marginal Effects	Standard Errors	Coefficients	Standard Errors
Log (Age)	-0.689**	(0 .258)	-1.434*	(0.841)
Gender (Male)	-0.169*	(0.099)	-0.430	(0.316)
Log(Years of formal education)	0.074	(0.067)	-0.592***	(0.211)
Migration (Yes)	-0.175**	(0 .082)	-0.144	(0.233)
Log (Entrepreneurship experience)	0.009	(0 .066)	0.066	(0.182)
Log (Monthly income in GH¢)	0 .124***	(0 .035)	0.184	(0.128)

VARIABLES	Probability of job creation		Extent of job creation	
	Marginal Effects	Standard Errors	Coefficients	Standard Errors
Assistantship (engaged occasional casual employees)	-0.061	(0.082)	-0.259	(0.210)
Received Training	-0.052	(0.094)	0.777***	(0.277)
Received Credit	-0.140	(0.091)	-0.632**	(0.296)
Group membership	0.152*	(0 .089)	0.732***	(0.253)
Received Family Support	0.087	(0 .087)	0.322	(0.255)
Partnership	-0.299**	(0 .114)	-0.637	(0.549)
Computer Literacy	-0.013	(0 .016)	0.108***	(0.0409)
Sector (*ref: Agriculture*)				
Trade	-0.074	(0.178)	-0.218	(0.361)
Manufacturing	0.060	(0 .182)	0.448	(0.402)
Service	0.105	(0 .176)	0.574	(0.368)
Location (Kumasi)	-0.474***	(0.094)	-1.107***	(0.364)
Constant			5.764**	(2.918)
Regression diagnostics				
Model chi-square	47.86		66.68	
Prob > chi-square	0.000		0.000	
Pseudo R^2	0.356		0.271	
Observations	97		48	

***Note**: *, ** and *** denote statistical significance at 10 %, 5 % and 1 % levels of significance respectively*

The results also showed that for older entrepreneurs, being a member of a group increased both the probability and extent of job creation for young people. This could be because participation in a group increases one's social network connections and increases the pool of young people that may demand job avenues from an older entrepreneur. For instance, discussions with entrepreneurs in both cities revealed that for most of the older entrepreneurs, recruitment of persons as employees was mainly done through recommendations by their social contacts, mostly through relatives and friends. In most cases, children of these friends and relatives or their close associates were those recommended. From the analysis, an older entrepreneur's participation in a group increased their probability of job creation for young people by 15%, and the extent of job creation by about 0.73 (persons).

The results also revealed that older entrepreneurs who jointly owned or managed their businesses with others, in the form of a partnership, were less likely to employ young people. Such an arrangement however had no influence on the extent of job creation.

While access to training by older entrepreneurs had no impact on their probability of job creation for young people, it had a significant positive effect on the extent of job creation. Older entrepreneurs who had received some entrepreneurial-related training employed about 0.77 (persons) more than their counterparts who had not received any such training. This could be as a result of the indirect benefits that could be associated with receiving technical, financial, marketing and other valuable training. Trained entrepreneurs could be having businesses that are well-structured to accommodate the services of many people: young ones included. One thing worth noting is that for some older entrepreneurs, some of these trainings came in the form of apprenticeship, of which entrepreneurs who went through this system utilized the same strategies in their businesses in the form of paid apprenticeships/internships to young people. This was particularly the situation in the case of entrepreneurship in the areas of artisanship such as carpentry, fashion designing and shoemaking.

Furthermore, the level of computer literacy of older entrepreneurs appeared to increase their extent of youth job creation, but not their probability of job creation. A unit[2] increase in the level of computer literacy of an older entrepreneur increased his/her employment of young people by an additional 0.73 (persons). This could be because computer literacy exposes older entrepreneurs to smarter ways of doing business, and the need for people with such skills to work with. Young people are more exposed to the digital world and may thus be the preference for older entrepreneurs with similar exposures. This finding corroborates with Poku-Boansie and Afrane (2011) who observed a gradual shift of Ghanaian adult employees towards the engagement of youth because of their innovative drive.

Finally, an interesting finding among older entrepreneurs is that those who had access to credit, employed about 0.63 (persons) less, relative to those who did not receive credit. Although this striking finding was not expected, it may be as a result of the ability of older entrepreneurs who accessed credit to invest more in capital-intensive projects. In such a situation, capital may appear to crowd out labor, which may further affect the employment of young people negatively. Indeed, from our analysis, a t-test to compare the monetary worth of business assets between older entrepreneurs who accessed credit and those who did not, showed that those who had access to credit had a significantly higher worth of assets, but employed relatively lower numbers of people in general and youth in particular.

Determinants of job creation for young people by young entrepreneurs

Results of the factors influencing job creation for young people by young entrepreneurs is presented in Table 11. A total of 115 young entrepreneurs were interviewed, but almost 60% reported that they had not employed any young person (under 25 years). Therefore, in the second step of analysis (extent job creation), only 45 respondents who had positive values for the number of young people employed were used for analysis. A number of individual and institutional factors were found to condition the youth job creation abilities of young entrepreneurs. The results show that although gender differences among young entrepreneurs did not affect their probability of creating jobs for fellow young people, gender was the most important determinant of the extent of youth job creation (in terms of magnitude). Relative to being female, being a young male entrepreneur increased the number of young people employed by almost two (persons). In a typical Ghanaian setting, young male entrepreneurs are mainly engaged in the agriculture; services; and local manufacturing and artisanship (sectors) of the economy, which usually require the use of additional labor regardless of the scale of business, whereas young female entrepreneurs are usually engaged in the trade and sales at quite humble scales (GSS, 2016). Thus, the former is more likely to employ more people.

The results also revealed that entrepreneurship experience, defined as the number of years one has been engaged in entrepreneurial activities, did not matter for the probability of job creation. However, it proved to be an important factor influencing the extent of job creation. A percentage increase in the number of years a young person has been an entrepreneur increased the number of young people employed by 0.68 (persons). Apart from having on-the-job experiences of business operations and management, entrepreneurs who have been doing business for a long time might have more established businesses which can accommodate employment of more people. Start-ups and infant businesses may not have the capacity in terms of scale and need, to employ more people.

Further, just like it was in the case for older entrepreneurs, migrant young entrepreneurs were less likely to employ a young person. As earlier explained, this could be due to the limited access of

[2] Level of computer literacy was measured using a Likert scale of 0 to 10 in ascending order; where 0 represents no computer knowledge.

migrants to productive resources and their weaker social networks, relative to non-migrants. A migrant young entrepreneur was found to be about 19% less likely to create jobs for young people, compared to non-migrant young entrepreneurs. Being a migrant, however, had no influence on the extent of job creation.

The results further revealed that group membership, which is a proxy for social capital and network is crucial to the job creation abilities of young entrepreneurs for young people. A young entrepreneur's participation in a group was found to be associated with a 21% probability of employing a young person. Similarly, relative to those who were not members of any group, a young entrepreneur who belonged to a group was likely to employ approximately one additional young person. Being a member of a group increases one's social connections (Moluccio and May, 2000) and the pool of young people to choose from. As already mentioned, the main channels through which most young people are employed is recommendations by family/relatives and friends. This further underscore the role of social connections to both job search and job creation for young people. In essence, an entrepreneur who is more connected socially is more likely to employ young people, and to employ large numbers of young people. More broadly, membership of groups and social capital in general are usually associated with increased access to several support services (Mwangi and Ouma, 2012; Semi and Fox, 2015). This could imply that young people who belong to groups could be having access to a variety of services that support the performance of their businesses to leverage them for further job creation as may be required by scale and by need.

Table 11 Determinants of job creation for young people by young entrepreneurs

VARIABLES	Probability of job creation		Extent of job creation	
	Marginal Effects	Standard Errors	Coefficients	Standard Errors
Log Age	0.093	(0.345)	0.0441	(2.079)
Gender (Male)	0.143	(0.096)	1.920***	(0.627)
Log(Years of formal education)	0.267	(0.170)	0.0139	(1.028)
Migrant	-0.189*	(0.091)	0.310	(0.420)
Log (entrepreneurship experience	0.079	(0 .055)	0.681**	(0.301)
Log (monthly income in GH₵)	0.053	(0 .044)	-0.299	(0.198)
Engaged occasional casual employees	0.125	(0 .098)	0.764	(0.502)
Received Training	0 .094	(0 .091)	0.178	(0.359)
Received Credit	0.016	(0.104)	-0.121	(0.425)
Group membership	0.212**	(0.104)	0.925**	(0.418)
Received Family Support	0.075	(0 .086)	-0.282	(0.320)
Partnership	0.027	(0.113)	-1.043*	(0.543)
Computer Literacy	-0.057**	(0.021)	-0.286***	(0.103)
Sector (*ref: Agriculture*)				
Trade	0.080	(0.161)	-0.925	(0.608)
Manufacturing	-0.081	(0.158)	-2.061***	(0.766)
Service	0.048	(0 .156)	-0.641	(0.663)
Location (Kumasi)	-0.266**	(0 .108)	-1.018*	(0.586)
Constant			2.550*	(6.088)
Regression diagnostics				
Model chi-square	36.74		53.55	
Prob > chi-square	0.003		0.000	
Pseudo R^2	0.239		0.336	
Observations	115		45	

***Note**: *, ** and *** denote statistical significance at 10 %, 5 % and 1 % levels of significance respectively*

It was also found that young entrepreneurs who had partners or co-owned their business with others, employed fewer young people. This is not surprising as responses from the FGDs showed that for most young entrepreneurs, most business operations were undertaken by themselves. This implies that having a partner somehow meant having more labor at hand, hence reducing the need for employing more. This is captured by remarks from some entrepreneurs in the FGD. One young entrepreneur revealed,

> *at the initial stages (of business), the business owner is the employee number one….. You only bring others in when the demand for your products requires that you expand. So if you happen to have partners, i.e. more than one person as full-time owners of a business, you may not need employees at all. So definitely, if you have more partners especially at an earlier stage, it is an opportunity to cut down on your overhead cost of labor, and that is what every wise businessman will want to do.*

An older participant added,

> *If someone starts a business and wants to bring an employee on board, it is not for the beauty of it oh. Business people don't employ just because they want to solve employment problems. No no. If the demand for your products increases and you need more hands to meet up that demand, that is when you go for more hands. If you alone, or together with your partners can do the job, you will always prefer that than to spend money to employ someone else.*

These examples could explain why businesses which were co-owned created fewer jobs for young people.

Finally, our results provided some evidence to support the notion that the rising surge in artificial intelligence and digitization, although desirable, might compromise job creation. The results show that young entrepreneurs with higher levels of computer knowledge employed fewer people. Young entrepreneurs who are more exposed to digitized ways of doing business could be applying knowledge from there to execute some tasks that would have otherwise been taken on by an employee(s). For instance, quite a number of young people reported using platforms such as Facebook and WhatsApp to showcase and market their products. This could, for instance, be offsetting a gradual and structural shift away from the typical Ghanaian marketing strategy where young people are recruited to carry products around for exhibition and sales. Our results show that among young entrepreneurs, an increase in computer literacy by one unit (Likert scale), reduced the number of young people employed by 0.29 (persons). However, this factor did not matter for the probability of job creation.

The results also show that relative to the agriculture sector, the engagement of young entrepreneurs in the manufacturing sector reduced their extent of employment of young people. An in-depth presentation of youth job creation by sectors is presented in section 4.4.

THE ROLE OF INSTITUTIONAL SUPPORT SERVICES

Before presenting the final results of the impact model, this section probes in detail how entrepreneurship (by young and older people) contributes to job creation for young people. The focus here was on institutional support factors and the economic sectors of engagement. The first part of this section discusses the job creation effects of interactions among institutional variables: training, credit, group membership and computer literacy; with the following subsection dedicated to a "sector-versus-sector" correlation matrix of the job creation effect of economic sectors (agriculture, trade, manufacturing and services).

Joint effects of institutional factors

As has been seen from the previous section, institutional factors such as training, credit, group membership and computer literacy had varying effects on the probability and extent of youth job creation by young and older entrepreneurs. In this section we create interactions among these variables to see their outcomes on job creation to identify the best possible ways to administer support in such areas. To do this, the basic model (presented in the previous section) is modified to include interaction terms of the institutional variables of interest. But the results presented in this section are estimated coefficients and standard errors (in parentheses) of only the interaction terms. The hypothesis being tested here is that the behavior of each of the institutional variables discussed earlier, changes when interacted with others.

Results in Table 12 show that the probability of creating jobs for young people by older entrepreneurs is not responsive to any of the interactions. However, interacting training with group membership increased the extent of older entrepreneurs' job creation (for young people) by close to two (persons). Previously, group membership and training executed independently, contributed to creating 0.77 and 0.73 more jobs. This implies that a group-based approach to administering entrepreneurial training to older entrepreneurs could be more beneficial to creating jobs for young people. Similarly, compared with its individual effect, the contribution of older entrepreneurs' computer literacy on the extent of their job creation increases by 0.09 (persons) and 0.16 (persons) when combined with training and group membership respectively. This again underscores the importance of training and group membership among older entrepreneurs.

It is interesting to note that the negative influence of older entrepreneurs' access to credit on their extent of job creation is neutralized (becomes insignificant) when it is combined with all other institutional support services. This gives a hint about some potential positive pathways to be mindful of in administering credit/finances to older entrepreneurs as far as job creation is concerned. For example, agencies and organizations supporting older entrepreneurs with credit and financial services may include compulsory training support packages to improve financial and general business management and basic computer skills of beneficiaries. These financial services along with these complementary services could be delivered through groups: for instance, through group lending vehicles. Improved knowledge from training and a collective approach to funds management (and in some cases, repayment) could help limit diversion of business funds and ensure that contracts are adhered to (Aryeetey, 2005). This could ensure enterprise growth and success to lay a foundation for job creation.

Table 12 Effects of interactions among institutional factors on job creation for young people by older entrepreneurs

VARIABLES	Probability of employment		Extent of employment	
	Coefficients	Standard Errors	Coefficients	Standard Errors
Group*Credit	-0.380	(0.580)	0.0757	(0.454)
Training*Credit	-0.942	(0.580)	0.0452	(0.463)
Credit*Computer	-0.0793	(0.0874)	0.0372	(0.0666)
Training*Group	0.508	(0.496)	1.829***	(0.387)
Training*Computer	-0.0511	(0.0766)	0.194***	(0.0437)
Group*Computer	0.0497	(0.0830)	0.267***	(0.0568)
Observations	97	97	48	48

***Note**: *** denote statistical significance at 1 % level of significance*

For the probit model, marginal effects for the interaction variables could not be computed, hence only the direction of the effects (but not the coefficients) are discussed.

For young entrepreneurs, a towering observation was that unlike for older entrepreneurs, a number of the interactions among institutional variables proved to influence both the probability of job creation and extent of job creation.

Results in Table 13 show that the interaction between young entrepreneurs' access to credit and group participation increased both their probability and extent of job creation for young people. Independently, credit access was not a significant determinant of job creation by young entrepreneurs in the basic model. However, when combined with group membership, young entrepreneurs who had access to credit could create up to about 1.36 (persons) more jobs. Similarly, compared with group membership standing alone in the basic model, the interaction with access to credit increases the extent of job creation by about 0.43 (persons). This suggests that just as it is the case for older entrepreneurs, social capital, proxied by participation in groups, and access to credit are positive complements to each other in contributing to job creation by young people for young people.

Table 13 Effects of interactions among institutional factors on job creation for young people by young entrepreneurs

VARIABLES	Probability of job creation		Extent of job creation	
	Coefficients	Standard Errors	Coefficients	Standard Errors
Group*Credit	0.947*	(0.549)	1.358**	(0.675)
Training*Credit	0.130	(0.533)	0.337	(0.568)
Credit*Computer	-0.195**	(0.0821)	-0.294***	(0.103)
Training*Group	0.969**	(0.468)	1.050**	(0.481)
Training*Computer	-0.173**	(0.0804)	-0.274**	(0.106)
Group*Computer	-0.111	(0.0824)	-0.200*	(0.102)
Observations	115	115	45	45

***Note**: *, ** and *** denote statistical significance at 10 %, 5 % and 1 % levels of significance respectively*
For the probit model, marginal effects for the interaction variables could not be computed, hence only the direction of the effects (but not the coefficients) are discussed.

Interestingly, the effect of credit access by young entrepreneurs (for both probability and extent of job creation) becomes negative when combined with computer literacy. Young entrepreneurs' computer literacy on its own has been shown to be a negative contributor to job creation for young people. The magnitude of the negative impact on the number of young people employed again increases when combined with credit (from -0.286 to -0.294). Considering the strong correlation between access to credit and capital investment, this result could imply that highly computer-literate young entrepreneurs are more inclined towards capital and digital oriented solutions to their business than the use of labor. In other words, young entrepreneurs may be more likely to choose capital and digital inputs ahead of labor in their activities. These were evident in some narratives given by some young participants of the FGD. For example, one young participant noted that

> *The first loan I got was from my parents. That was after I had started my business. At first, I used to cut the leather for the shoes manually and this required me to employ some people to help me with that. Immediately, I got my first loan, I used the money to buy a cutting machine, so I had to ask my workers to leave. Also, now I have a social media page manager who helps me with marketing online. Because of this, I no longer need the services of my marketers.*

Another young participants revealed

Digital marketing is simple and less expensive, and could reach out to many people in a short time. It pays off. It is difficult using it at the start, but once a few people start patronizing your products and services online, you begin to penetrate a wide market and you build the digital trust as well.

If we want to use the old school strategy of sending people out to showcase our products, just imagine the number of people we will have to recruit and pay. We can't even afford it, and I don't think they can reach out to the number of people we reach out to via digital platforms. Innovation is our key strategy, not energy.

The results also showed that the interaction between training and group membership increased both the probability and extent of young entrepreneurs' job creation abilities. Whereas group membership boosts the effect of access to training by young entrepreneurs, which was not significant in the basic model, the individual effect of group membership increased from 0.93 (persons) to 1.05 (persons) when combined with training. This implies that the job creation benefits of entrepreneurial training administered to young entrepreneurs could be more pronounced when combined with group activities.

Similarly, the results prove that the individual negative impact of young entrepreneurs' computer literacy on job creation reduces when combined with group membership and training. The impact of the interaction between group membership on the extent of job creation by young entrepreneurs is -0.20 (persons), which is about a 0.09 (persons) improvement over the influence of computer literacy alone (-0.29). A similar observation is made when computer literacy is combined with access to training, the negative impact of the former reduces by about 0.20 (persons). This suggests that although young entrepreneurs appear to prefer digital solutions than labor, exposure to training and social interactions in the form of group activities could alter their taste in favour of slight increases in employment of young people.

Sectorial influence

To gain insights into the contribution of the 4 major economic sectors of the country to job creation for young people by entrepreneurs (younger and older), the original model was run with a categorical variable capturing these sectors as the **only** variable. Interpreting the results of this regression must thus be done with caution because other confounding factors were not included.

The purpose of this analysis was to understand how, relative to each other, entrepreneurial engagement in each sector contributes to the probability and extent of job creation. This is presented in Table 14 (older entrepreneurs) and Table 15 (young entrepreneurs). In both tables, the dependent variables were a binary for whether or not an entrepreneur employed a young person (for the probability of job creation); and conditional on whether they employed any young people, how many were employed (extent of job creation). Presenting the results, each sector is used as a reference category and the employment potentials of the others tested against it.

The results suggest that for both old and young entrepreneurs, the sector in which an entrepreneur is engaged has no effect on their probability of employing a young person. In other words, whether an entrepreneur chooses to employ a young person or not is not influenced by the sector in which they are engaged. However, there were a number of interesting connections when it comes to the extent of job creation.

Firstly, for older entrepreneurs, the results show that taking agriculture as the reference category, trade and manufacturing sectors contributed negatively to job creation for young people. In other words, relative to agriculture, older entrepreneurs who were engaged in trade and manufacturing employed fewer young people. Trade and manufacturing employed 0.54 and 0.57 fewer young people respectively, compared with agriculture. This means that for older entrepreneurs, agriculture is a better employer of young people than trade and manufacturing. There was no significant association between agriculture and services and no significant relationships observed amongst the other sectors as well.

For young entrepreneurs, taking agriculture as the reference category, trade and manufacturing employed 1.40 (persons) and 1.25 (persons) less, respectively. This means that just as it was the case for older entrepreneurs, among young entrepreneurs, agriculture was a better employer of young people than trade and manufacturing. There was no significant relationship between agriculture and the service sector. The results further reveal that for young entrepreneurs, taking the service sector as the reference category, entrepreneurs in the trade and manufacturing sectors were again the lowest employers of young people. Relative to the service sector, young entrepreneurs in trade and manufacturing employed 1.04 (persons) and 0.89 (persons) fewer young people. This means that among young entrepreneurs, the service sector is a better employer of people than trade and manufacturing. Thus, young entrepreneurs with businesses in the agriculture and service sectors are the top employers of young people.

The results of this interactive matrix suggest that for both older and young entrepreneurs, the agriculture sector, followed by services, have the highest potentials for creating jobs for young people. Considering its negative effects relative to other sectors, the trade sector is the lowest employer of young people. This is not surprising as our field interactions suggested that trading activities were the least labor-intensive.

Table 14 Sector to sector matrix of sectorial influence on job creation by older entrepreneurs

SECTORS	Probability of employment (Probit model)				Extent of employment (ZTP model)			
	Agriculture	Trade	Manufacturing	Services	Agriculture	Trade	Manufacturing	Services
Agriculture#	00	-0.0431	-0.0658	-0.383	00	-0.538*	-0.574*	0.281
	00	(0.439)	(0.468)	(0.439)	00	(0.277)	(0.311)	(0.248)
Trade#	0.0431	00	-0.0227	0.426	0.538*	00	-0.0355	-0.257
	(0.439)	00	(0.354)	(0.314)	(0.277)	00	(0.287)	(0.217)
Manufacturing#	0.0658	0.0227	00	-0.449	0.574*	0.0355	00	0.293
	(0.468)	(0.354)	00	(0.353)	(0.311)	(0.287)	00	(0.258)
Services#	0.383	-0.426	0.449	00	-0.281	0.257	-0.293	00
	(0.439)	(0.314)	(0.353)	00	(0.248)	(0.217)	(0.258)	00
Observations	97	97	97	97	48	48	48	48

***Note**: * denote statistical significance at 10 % level of significance*
Standard errors in parentheses; # denotes reference categories for each row

Table 15 Sector to sector matrix of sectorial influence on job creation by young entrepreneurs

SECTORS	Probability of employment (Probit model)				Extent of employment (ZTP model)			
	Agriculture	Trade	Manufacturing	Services	Agriculture	Trade	Manufacturing	Services
Agriculture#	00	-0.275	-0.176	0.0954	00	-1.396***	-1.247***	-0.355
	00	(0.442)	(0.455)	(0.435)	00	(0.407)	(0.461)	(0.307)
Trade #	0.275	00	-0.451	-0.180	1.396***	00	0.149	1.041***
	(0.442)	00	(0.323)	(0.294)	(0.407)	00	(0.493)	(0.352)
Manufacturing#	0.176	0.451	00	-0.271	1.247***	-0.149	00	0.893**
	(0.455)	(0.323)	00	(0.313)	(0.461)	(0.493)	00	(0.414)
Services#	-0.0954	0.180	0.271	00	0.355	-1.041***	-0.893**	00
	(0.435)	(0.294)	(0.313)	00	(0.307)	(0.352)	(0.414)	00
Observations	115	115	115	115	45	45	45	45

***Note**: ** and *** denote statistical significance at 5 % and 1 % levels of significance respectively*
Standard errors in parentheses; # denotes reference categories for each row.

IMPACT OF ENTREPRENEURIAL AGE DIFFERENCES ON JOB CREATION FOR YOUNG PEOPLE

Having successfully identified the factors that condition job creation for young people by older and younger entrepreneurs, this section presents results of the impact of entrepreneurial age differences (old versus young) on the probability and extent of job creation for young people. The estimated coefficients of the Exogeneous Switching Treatment Regression (ESTER) model presented in Tables 4.9 and 4.10 were used to compute conditional expected probability and extent of job creation for young people, to be able to evaluate the treatment effects of the age differentials**.** In Tables 16 and 17, cells (a) and (b) show the actual/observed probability of job creation for young people by young and older entrepreneurs respectively, and cells (c) and (d) are their respective counterfactuals.

In Table 16, a comparison of the values in cells (a) and (b) for the outcome variable shows that the probability of job creation for young people by older entrepreneurs is 10% higher, on average, than that of the young entrepreneurs. However, such a simple comparison of actual outcomes may not give a correct representation of the probability of job creation for young people if a comparable group based on observable and unobservable determinants of job creation is not established. This is because young entrepreneurs and older entrepreneurs have different individual socioeconomic and institutional characteristics.

To circumvent this issue, a comparison is drawn between the actual (cells a and b) and counterfactual (cells c and d) probabilities/extents of job creation. We set out to answer the question, what will the probability and extent of job creation for young people by young entrepreneurs be, if along with their observed characteristics, they were given the characteristics of older entrepreneurs, and vice versa? By doing this for young entrepreneurs, we compare the actual outcome (cell a) with their counterfactual outcome (cell c); and for older entrepreneurs, we compare cell a (actual) with cell d (counterfactual)

Impact of entrepreneurial age differences on the probability of job creation for young people

Results of the impact of entrepreneurial age differences on the probability of job creation shows that per their observed characteristics, older entrepreneurs had a higher (49.5%) average probability of creating jobs for young people than young entrepreneurs (39.5%). This implies that older entrepreneurs, on average, are 10% more likely to create jobs for young people than young entrepreneurs. However, imposing the counterfactual condition, the probability of young entrepreneurs creating jobs for young people increased to 67.9%, signifying a 28.4% increase (treatment effect). This suggests that given the characteristics and business environments of older entrepreneurs, young entrepreneurs could be about 29% more likely to create jobs for young people than they currently do. By this, young entrepreneurs overturn the 10% observed probability deficit and gain an 18.4% higher probability (over old entrepreneurs) of creating jobs. To note is that the treatment effect for older entrepreneurs is also positive: i.e. older entrepreneurs could also do more if they had the same returns as young entrepreneurs, but the impact is relatively smaller. This implies that if older entrepreneurs are also accorded some characteristics of young entrepreneurs, together with theirs, they could create more jobs. For instance, the result shows a wide digital/computer literacy gap between young and older entrepreneurs. However, relative to young entrepreneurs the minimal computer literacy of older entrepreneurs contributed to creating more jobs than highly computer literate young entrepreneurs did. This suggests that in addition

to their own advantages in other factors, if older entrepreneurs could adopt digitization as much as young people did, they could create more jobs than they currently do. This is because older entrepreneurs would have to employ young computer literates to manage their digital systems.

Table 16 Average probability of job creation, treatment and heterogeneity effects

Entrepreneurs' Age Group	Actual	Counterfactual	Treatment Effect
Young	(a) 0.395	(c) 0.679	-0.284***(0. 027) *a-c*
Old	(b) 0.495	(d) 0 .640	-0.145***(0.031) *b-d*
Heterogeneity Effect	BH_y=-0.245***(0.040) *a-d*	BH_o= 0.184*** (0.043) *b-c*	

***Notes**: *** denote statistical significance at 1 % level of significance*
Standard errors in parentheses; cells (a and b) and (c and d) represent the actual and counterfactual outcomes respectively

Impact of entrepreneurial age difference on the extent of job creation for young people

Table 17 presents results of the impact of entrepreneurial age differentials on the extent of job creation for young people. The results show that the average number of young people employed by young and older entrepreneurs are 1.663 (persons) and 2.533 (persons) respectively. This implies a job creation gap of 0.9 (persons) - i.e., on average, an older entrepreneur employs about one younger person more than a young entrepreneur does. However, imposing the counterfactual condition, the average number of young people employed by young entrepreneurs increases from 1.66 to 4.92, representing a positive treatment effect of 3.257 (persons) (about 66% gain). This would mean that the 0.9 youth job creation deficit of young entrepreneurs would have been overturned and an advantage of 2.387 gained over old entrepreneurs. This suggests that if young entrepreneurs are accorded the business environment and other characteristics of older entrepreneurs, their level of job creation for young people could triple.

Table 17 Average extent of job creation, treatment and heterogeneity effects

Age Group	Actual	Counterfactual	Treatment Effect
Young	(a) 1.663	(c) 4.920	-3.257***(0.577) *a-c*
Old	(b) 2.533	(d) 10.466	-7.907 ***(2.297) *b-d*
Heterogeneity Effect	BH_y=-8.803***(2.257) *a-d*	BH_o= 2.387*** (0.638) *b-c*	

***Notes**: *** denote statistical significance at 1 % level of significance*
Standard errors in parentheses; cells (a and b) and (c and d) represent the actual and counterfactual outcomes respectively

Interestingly, the base heterogeneity result (BH_y) shows that even if older entrepreneurs were given the same observable returns/characteristics as young entrepreneurs, the remaining unobservable differences arising from age differences would make older entrepreneurs have a far higher extent of job creation capacity than young entrepreneurs. This suggests that regardless of their observable characteristics (factors included in the model), there are systematic sources of variations between the two groups that account for young entrepreneurs creating fewer jobs for young people. In a typical Ghanaian context, sources of variation in these unobservable characteristics may include age-specific cultural and social norms that treat older people differently, and in fact more advantageously compared to younger people. For example, in most parts of Ghana, younger people are considered to be subordinates to older people, hence giving older people better control over many spheres of activity and resources. For instance, in terms of family support to entrepreneurs, older people are more likely to be entrusted with such assets as land and other valuable family assets than younger people.

It is however refreshing to note that, in addition to their own characteristics, if young entrepreneurs are given the same observable characteristics of older entrepreneurs, their job creation capacity triples as shown by the treatment effect. This implies that there is a potential window of intervention for youth entrepreneurs to thrive despite the systematic disadvantages.

CONCLUSIONS AND POLICY IMPLICATIONS

Entrepreneurship has been recognized as a feasible option to counter the growing limited opportunities in formal employment in many parts of Africa. In Ghana, uptake of entrepreneurship has matched up with entrepreneurial promotional efforts of government, NGOs and other development agencies quite well. Understanding the channels through which entrepreneurship contributes to human welfare has become vital. While much effort has been committed to establishing the contribution of entrepreneurship to job creation for, and welfare enhancement of the entrepreneurs themselves, little focus has been given to its trickle-down effect of entrepreneurial activities on job creation for others. More specifically, little is known about how and to what extent young and older entrepreneurs create jobs for younger people.

Using quantitative data from 212 entrepreneurs largely engaged in the informal sector in Ghana, this study assessed the extent to which young and older entrepreneurs create jobs for young people (below 25 years), and the factors that condition their respective job creation behaviors. We hypothesized that young entrepreneurs were less likely to create more jobs for young people, but they could do more if they are exposed to the perceived favorable conditions under which older entrepreneurs work. Along with questions on their individual socioeconomic, institutional and business characteristics, all entrepreneurs indicated the number of young people employed in their businesses, through a survey questionnaire administered face-to-face.

Results of both descriptive statistics and econometric analysis suggest that, relative to older entrepreneurs, young entrepreneurs create fewer jobs in general. In absolute terms, older entrepreneurs employed more young people than young entrepreneurs. However, as a proportion of total employment space dedicated to young people, younger entrepreneurs contributed more to youth job creation than older entrepreneurs. Regardless, both groups indicated a preference for younger employees. Both groups of entrepreneurs had varying levels of the characteristics we studied, and these had many different repercussions on their job creation abilities. The descriptive statistics revealed that apart from access to credit and social capital, young entrepreneurs had a comparative advantage over the older entrepreneurs in terms of computer literacy, training and family support. Also, there were statistically significant differences among entrepreneurs across sectors and age groups in terms of some selected socio-demographic, socioeconomic and entrepreneurial factors. Employees engaged by the sample entrepreneurs expressed satisfaction with their wages and indicated receiving them on time. Consequently, savings and borrowing behaviours among them were in appreciably desirable directions. Most of them however expressed a desire to quit being employees and opening their own businesses soon.

The econometric results confirmed our hypothesis that, based on actual characteristics, older entrepreneurs are more likely to create more jobs for young people. However, the results provide credence to the fact that observable characteristics alone are insufficient to explain this difference. Indeed, employing the exogenous switching treatment regression model, we prove that under counterfactual conditions where young and older entrepreneurs are made more similar in terms of returns to their observable characteristics, young entrepreneurs were almost twice as likely than before, to create jobs for young people; and if they did, their extent of job creation tripled. It must be noted that the job creation abilities of older entrepreneurs also increased when they were accorded values of young entrepreneurs' characteristics along with theirs.

On factors that conditioned the job creation abilities of the two groups, results show that entrepreneurship training, and computer literacy were positive predictors of job creation by older entrepreneurs, whereas entrepreneurship experience was more important for young entrepreneurs. Social capital, proxied by group membership proved to be a vital determinant of job creation for both groups, while being migrant, being female and having business partner(s) reduced their job creation potentials. For young entrepreneurs, computer literacy appeared to limit their job creation potentials, seemingly because they prefer digital solutions to business, whereas for older entrepreneurs, access to credit negatively predicted their employment of young people probably because they substitute them with investment in and employment of more capital.

An evaluation of the joint effects of some institutional variables showed that for older entrepreneurs, the negative impact of access to credit is offset when credit is combined with group membership and training. Similarly, the positive impact of computer literacy on job creation by older entrepreneurs increased when combined with training and group membership. For young entrepreneurs, access to credit proved important for job creation when combined with group membership. However, the negative impact of its (credit) combination with computer literacy further emphasized the seemingly high preference of young entrepreneurs for capital and digital solutions to business than labor. The negative impact of computer literacy on young entrepreneurs' job creation abilities was reduced by a good margin when combined with training and group membership.

The results further showed that the most important economic sectors as far as entrepreneurship in Ghana's informal sector is concerned are agriculture and the services sectors. Although the sectorial effects were not significant for the probability of employment, the results showed that agriculture was the single most important sector for employment of young people by older entrepreneurs, whereas agriculture, followed by the services sector proved most important for employers among young entrepreneurs. Relative to all the other sectors, trade was the lowest employer for both groups.

Several policy implications arise from these results. Disparities arising from the heterogeneous and treatment effects imply that although some of the age differences in leveraging entrepreneurship for job creation for young people could be addressed through policy interventions, some important differences (arising from unobserved characteristics) - presumably linked to age-specific social norms and variations in the way young and older people are treated in society - would still exist, and would be difficult to tackle through policy. However, based on findings of this study, there are several opportunities and entry points to leveraging entrepreneurship for job creation for young people, mindful of entrepreneurial age differences.

Considering the remarkable effect of training on job creation for young people, Government of Ghana and development partners alike should capacitate entrepreneurs through different types of entrepreneurial training. This will equip the entrepreneurs with necessary skills and knowledge to devise innovative ways of growing their businesses, thereby increasing employment opportunities for young people since business growth is positively related to employment opportunities/vacancies, hence increased labour requirement. Training could be organized/executed through existing entrepreneurship groups or by creating sector/activity-specific groups for entrepreneurs. Further, training programmes can be disseminated with the use of information and communication technology (ICT). Considering the upsurge of internet platforms (social media), dissemination of training through digitalization would ensure a wide coverage both for entrepreneurs who are group members and those who are not members of groups and/or are not willing to join groups.

Group membership was found to be critical to increasing employment for young people by young and older entrepreneurs. On this basis, the importance of group membership in terms of the potential benefits of group membership (such as entrepreneurial training and networking opportunities) should be explicitly made known to both young and older entrepreneurs. This will encourage entrepreneurs who are currently not members of groups to participate in groups that meet their entrepreneurial needs. Further, training that is conducted for members of entrepreneurial groups should be targeted at digitalization and ICT to ensure that the full potential of entrepreneur group membership in employment creation is realized.

The possible intensification of acquisition of capital (such as plant and machinery, and digital or ICT tools) which reduces employment for young people owing to access to credit/finane by entrepreneurs, imply the possible presence of job skills mismatch among young people in Ghana. From this indication, young people (potential employees) should be given the necessary practical trainings through both formal and informal mediums to enable them to acquire skills that meet the expansion of business by entrepreneurs that is accrued to credit/financial access. Financial institutions should also be encouraged to adopt group approaches to administering credit and should include business and financial management and ICT training components to credit packages, especially for older entrepreneurs.

Computer literacy creates awareness and use of digital solutions to challenges encountered by both young and older entrepreneurs. This requires incentivizing older entrepreneurs to participate in ICT trainings and be members of groups which offer ICT trainings. This will ensure the internalization of the benefits of computer literacy and the need for application of digital solutions to business among old entrepreneurs, thereby increasing the need for employment of young people. Since computer literacy was shown in this study to reduce employment of young people by young entrepreneurs, there is the need for promotion of digital trainings such as what has been started by the African Development Bank to equip young people with digital skills, thereby making them employable by old and young entrepreneurs in the fourth industrial revolution.

Again, based on the observation that younger entrepreneurs appear to be more inclined towards digital solutions to business, we recommend creation of digital training avenues for prospective young employees. This could be done by providing need-specific (career path) digital training modules to school curriculums, or through training workshops targeted at out-of-school young people. These skills will equip young employees with skills that will serve as compliments, rather than substitutes to digitization and capital-intensive ways of production and doing business.

RECOMMENDATIONS FOR ANZISHA

Regarding training and mentorship, the focus of Anzisha has so far been skewed towards its fellows. However, to realize increased job creation for young people through entrepreneurship, provision of platforms that equip prospective young employees for the kind of employment opportunities available in the entrepreneurship space is equally important and necessary. We therefore recommend that Anzisha partners with other development agencies to provide practical training platforms to African youth, particularly the unemployed ones, on applied ICT as deemed relevant in identified areas/sectors of employment opportunities, or in areas of their employment interest. This will equip potential young employees with required hard and soft skills needed to be employable in the digital world. This recommendation is based on the finding that young entrepreneurs seem to be inclined to modern technology and digitization, whereas highly digitized older entrepreneurs employed more young people, seemingly to manage their digital systems. Again, on training, an intriguing finding of the study was that apprenticeship provided an interesting platform for creating a job-generative business environment through a continuous cycle of raising job-generative business owners. Based on this, we recommend that Anzisha includes an apprenticeship/mentorship component in its annual award package. Practically, this could be done by tasking Anzisha fellows to identify and recruit paid apprentices/mentees. Following the traditional apprenticeship models, the apprentice would work as an employee while learning operational, technical and business management skills from their boss/mentor. Aside tasking Anzisha fellows to be job-generative, this system could also be a good way of raising more entrepreneurs, and in actuality, raising a generation of entrepreneurs who are job creators by training and by operation.

Social capital, which was proxied with membership to a group, has proven to be critical to entrepreneurial growth and development, and by our findings, increased entrepreneurial job creation potential. In view of this, Anzisha should encourage effective networking among its fellows. This could be done through creation of avenues that frequently bring fellows together, both physically and virtually. This will increase bonding among fellows and encourage sharing of success/failure stories that could have mutual benefits amongst them. Also, a group approach to delivering essential resources and support services including training could be adopted. This could promote a sense of collective action and responsibility amongst the fellows to ensure that the support services are adequately adopted and put to the most effective use. A key finding of this study was that the effects of some institutional support services such as training and financial support on job creation, improved when interacted with participation in groups. Also, by way of encouraging and building social networks beyond amongst the fellows themselves, we recommend that Anzisha stimulates the social networking abilities of fellows. This can be promoted through increased training on the need for and strategies to social networking, and through the regular distribution of web links to resources that have contents of social networking.

The need for financial assistance in the entrepreneurship ecosystem cannot be overemphasized. Thus, after a thorough monitoring and evaluation of the performance of Anzisha fellows, additional financial support could be provided to fellows whose businesses have evidence of job creation potentials or are actually creating jobs for other young people. This may come in the form of credit facilities with lower interest rates based on a fellow's job creation performance. Further, Anzisha should encourage families of its fellows to provide them with moral, social and financial support where possible to help enhance business expansion. Evidence from the study suggests that at very early ages, the immediate family of very young entrepreneurs tend to discourage entrepreneurship attempts of children, with the perception that the children may trade off education.

Further, although Anzisha's focus is very young entrepreneurs, this study found that entrepreneurs of all age categories prefer younger employees. In fact, older entrepreneurs employed more young people, and showed potentials for improvement. We therefore recommend that with the goal of increasing employment for young people, Anzisha should offer technical and financial support where possible, to older entrepreneurs who have shown youth job creation potentials. These support services specifically include financial support, entrepreneurial and technical training, and ICT tools. Considering the role of older people's participation in groups on job creation potentials, delivery of such services through groups could yield positive results as far as job creation for young people is concerned. Anzisha could, therefore, expand their operations to offer such support to older entrepreneurs through the strategies outlined.

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APPENDICES

Appendix 1: Description of measurement of variables included in the econometric model

Variable	Description/Measurement/Units
Age	Age (in years) of entrepreneur
Gender	Sex of entrepreneur (Male=1, Female=0)
Years of formal education	Number of years of formal education
Migrant	Entrepreneur is a migrant in his current place of business (Yes=1, No=0)
Entrepreneurship experience	Number of years a respondent has been engaged as an entrepreneur
Monthly income	Average monthly income from entrepreneurship (in Ghana Cedis)
Assistantship	Entrepreneurs engaged the use of occasional casual labor in the last six months (Yes=1, No=0)
Received Training	Respondent has ever received some form of entrepreneurial training (Yes=1, No=0)
Received Credit	Entrepreneur has received credit in the last two years (Yes=1, No=0)
Group membership	Entrepreneur is a member of a social group (Yes=1, No=0)
Received Family Support	Entrepreneur has received/receives support from family for his/her business (Yes=1, No=0)
Partnership	Entrepreneur has a partner(s) or co-owns the business with other person(s) (Yes=1, No=0)
Computer Literacy	A rank of entrepreneur's own perceived level of computer knowledge (between a scale of 0 to 10 in ascending order)
Sector	Economic sector an entrepreneur is engaged in (Agriculture=0, Trade=1, Manufacturing=2, Services=3)

Appendix 2: Summary statistics of variables included in the econometric model

	Young (between 15 and 35) n = 97 (54.25 %)		Old (above 35 years) n = 115 (45.75)	
Continuous variables	**Means**	**Standard deviations**	**Means**	**Standard deviations**
Number of young people employed	0.89	1.65	1.64	2.79
Age (years)	29.41	3.78	46.73	9.17
Years of formal education	14.58	4.31	13.12	5.47
Entrepreneurship experience (years)	4.67	3.70	15.39	10.09
Monthly business income (GHC)	1867.28	2373.55	3218.40	5324.63
Computer Literacy (scale: 1 to 10)	6.27	2.82	4.52	3.01
Categorical/dummy variables	**Percentage (%)**		**Percentage (%)**	
Gender: Male	71.30		67.01	
Female	29.70		32.99	
Migrant: Yes	27.82		37.11	
No	72.18		62.89	
Assistantship: Yes	33.91		58.76	
No	66.09		41.24	
Received Training: Yes	40.87		28.87	
No	59.13		71.13	
Received Credit: Yes	20.87		24.74	
No	79.13		75.26	
Group membership: Yes	24.34		32.99	
No	75.66		67.01	
Family Support: Yes	60.86		47.42	
No	39.14		62.58	
Partnership : Yes	14.78		13.40	
No	85.12		86.60	
Sector: Agriculture	9.57		11.34	
Trade	29.57		32.99	
Manufacturing	26.09		21.65	
Service	34.78		34.02	
Location: Accra	45.22		60.82	
Kumasi	54.78		39.18