

## Determinants of Entrepreneurial Tendencies among Tanzanian University Graduates: A Case of University of Dar-es-Salaam

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### Abstract:

*Entrepreneurship is an essential contributor to innovation and job-creation; it also plays a key role in economic growth. Cognizant of its importance, most governments in the world are encouraging graduates to consider entrepreneurship as an alternative career. Graduates should have reasonably higher entrepreneurial tendencies if they are to benefit from various government initiatives towards entrepreneurship. Prior research has not addressed fully entrepreneurial tendencies of graduates, especially in developing economies like Tanzania where poverty and graduate unemployment are high. This paper presents factors influencing Tanzanian graduates' entrepreneurial tendencies using the University of Dar-es-salaam as a case in point. A cross-sectional design was employed; graduates were sampled using systematic random sampling. A semi-structured questionnaire which included the General Enterprising Tendencies Test was applied in gathering information. Data were analyzed using descriptive statistics and the binary logistic regression. Entrepreneurship education, parents' education and number of children in a family determine entrepreneurial tendencies of*

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*Tanzanian graduates. Graduates with training in entrepreneurship and those coming from educated families had greater overall entrepreneurial characteristics, higher achievement motivation, more personal control, risk-taking propensity and greater self-esteem than a comparable cohort. Courses focusing on preparing the future entrepreneur are highly recommended. Higher learning institutions countrywide are urged to establish business incubator programmes in order to tap and develop the entrepreneurial talents at an early stage.*

**Key words:** General enterprising tendencies test, entrepreneurial tendency, business startup, entrepreneurship education, university graduates, university of Dar-es-salaam, Tanzania.

## **1. Introduction**

Entrepreneurship is regarded to have contribution towards employment creation, self sufficiency and wealth for nation and individuals (Olufunso 2010). Focus on entrepreneurship has revealed that both the nature and the role of entrepreneurs are essential for economic growth and business development (Rasli *et al.* 2013). Different scholars define entrepreneur and entrepreneurship differently (see O'Neil *et al.* 1999; Nieman Hough and Nieuwenhuizen 2003; Ismail 2009; van der Berg 2007; Siyanbola *et al.* 2009). This paper adopts the definitions used by Brockhaus (1980) and Gartner (1988) to define entrepreneur and entrepreneurship. Brockhaus (1980) defines entrepreneur as a major owner and manager of a business venture while, Gartner (1988) defines "Entrepreneurship as the creation of new organizations." He further explains that what differentiates entrepreneurs from non-entrepreneurs is that entrepreneurs create organizations (business ventures) while non-entrepreneurs do not. In this sense entrepreneurship can broadly be defined as a process of starting and running one's own business.

Entrepreneurial tendencies are referred to as characteristics that make one person an entrepreneur and another one not an entrepreneur (Mazzarol 2007). These are personality characteristics and environmental forces that shape individuals' behaviour and determine whether they will or will not engage in entrepreneurial activities (Bird 1988). According to Mazzarol (2007) the key factors likely to influence the propensity for entrepreneurship are: The need for achievement, a tolerance for ambiguity, the propensity for taking calculated risks, internal locus of control and the desire for personal control. Factors likely to trigger entrepreneurial behaviour might also include the individual's previous work or career history. Other characteristics include a person's gender, education level, family background and ethnicity. According to the author, these qualities have been identified in different combinations as those that characterise the typical entrepreneur.

Literature on African entrepreneurship especially on graduates' entrepreneurial tendencies is scanty. Most scholars in the field have concentrated in on Europe, America, Australia and Asia (see Ajzen 1987 and 1991; Chen, Greene and Crick 1998; Shapero 1982; Mazzarol 2007; Nabi and Holden 2008; Ismail 2009; Wang, Lu and Millington 2011; Ali; Lu and Wang 2012). Besides, the available little literature on African entrepreneurship has been on entrepreneurial intention (Olufunso 2010; Siyanbola *et al.* 2009; Maina 2011).

The increasing interest in entrepreneurship in most parts of the world, especially in developing economies is due to the fact that entrepreneurial activities (typified by new venture formation) are increasingly being considered as a means of invigorating the economy and a way of coping with unemployment problems that characterize most developing economies (Mahadea 2013). Thus, more people, and very recently graduates, are being encouraged into owning and growing businesses.

Regarding antecedent factors, Tanzania presents an interesting case here; during colonial days a consistent policy was adopted to limit participation of indigenous Africans, and to a lesser extent, Asians, in business activities (Olomi 2009). Therefore, at independence, the indigenous population was marginalized and had not developed entrepreneurial skills enough to excel in the competitive business environment; hence, they could not compete in an international market. For example, in 1961, about 34,581 Africans and 7,500 Asians held retail trading licenses, but Asians handled well over two-thirds of the trade volume (Rweyemamu 1979).

In 1967, the post-colonial government adopted a radical transformation to development, through the Arusha Declaration and “Ujamaa policy” (socialist policy) whereby all major means of production in the country were nationalized. During this epoch, not only did the state become the major owner, controller and manager of the state owned enterprises but also the sole employer (Ngowi 2009); hence hindering entrepreneurship as a sector. Entrepreneurs were regarded as exploiters and “enemies of the state”. Likewise, Tanzanians were indoctrinated to hate virtually everything capitalistic including entrepreneurship. The slogan “*Ubepari ni Unyama*” (capitalism is inhuman) was heard on the radio after every news bulletin. Thus, entrepreneurship was made attractive only for the morally deviant individuals (Chiraka 2012).

Ujamaa policy failed and the country entered into economic crises in the 1980s when there was virtually scarcity of every consumer good. The economic crisis forced the government to liberalize trade and start implementing a radical transformation programme under the support of the World Bank and the International Monetary Fund (IMF) from 1986 (Olomi 2009). The Economic Restructuring Programme (ERP) involved liberalization of virtually all sectors of the economy and privatizing all of the nationalized ones. Under the ERP, the government gradually changed its economic policy from

reliance on state-run enterprises to promotion of foreign investment and local entrepreneurship. The private sector is now viewed as the engine of economic growth and the role of government has been re-defined to focus on facilitation rather than direct ownership, control and operation of enterprises. In addition, education authorities started to see entrepreneurship education as important for the development of the country. They started to incorporate entrepreneurship education in their syllabi (Chiraka 2012). This has happened largely because the government has realized that it cannot absorb all the graduates as their number is increasing daily while the capacity of the government is on a diminishing trend.

For the stated policy changes to have positive effects in Tanzania, a systematic analysis of entrepreneurial tendencies of graduates who are among major beneficiaries of policy changes is required. As of recent, such studies have not been documented. This paper tries to fill this knowledge gap by presenting a Tanzanian case using the General Enterprising Tendencies (GET) Test and the Logistic Regression analysis. Specifically, this paper assesses the determinants of entrepreneurial tendencies amongst university graduates in the country. In so doing, it tries to answer two key questions: “how inclined are Tanzanian graduates towards entrepreneurship?” and “what factors most significantly influence their entrepreneurial tendencies?”

## **2. Entrepreneurship: A Theoretical Reflection**

Numerous sociological, economic, cultural and psychological theories have been put forward to explain the science of entrepreneurship (Islam 1989; Islam and Mamun 2000; Alam and Hossan 2003; Kinunda-Rutashobya and Olomi 1999; Ebeling 2001). In his theory on need for achievement David McClelland (1961) emphasized the relationship of achievement motivation or need for achievement (symbolically written as n

Ach) to economic development via entrepreneurial activities. He wrote "the presumed mechanism by which n-Achievement level translate itself into economic growth is the entrepreneurial class. If the n- Achievement level is high, there will presumably be more people who behave like entrepreneurs" (Islam 1989).

According to McClelland (1961) one would expect a relatively greater amount of entrepreneurship in a society if the average level of need achievement in a society is relatively high. Consequently, McClelland advocates increasing level of need-achievement in a society in order to stimulate entrepreneurship and economic growth. He also suggests that the n Ach level can be increased in an individual through training and by creating appropriate culture (Islam and Mamun 2000). However, Everett Hagen's argues that certain social change causes psychological changes in a group or in an individual. He believes that the initial condition leading to eventual-entrepreneurial behaviour is the loss of status by a group (Islam 1989). According to Hagen, loss of status can occur in one of the four ways:- i) the group may be displaced by force; ii) it may have its valued symbols denigrated; iii) it may drift into a situation of status inconsistency and iv) it may not be accepted in a new society, and the outcomes or reactions of the loss of status are retreatism, ritualism, innovation, reformism and rebellion. Among these reactions retreatism is important for entrepreneurship. Because retreatism is characterized by psychological repression of the trauma associated with the status loss (Alam and Hossan 2003). According to these theories, certain attitudinal and psychological attributes differentiate entrepreneurs from non-entrepreneurs, and successful entrepreneurs from unsuccessful ones. Personality or trait theories have nevertheless been heavily criticized. Critics have argued that entrepreneurial outcomes and activities cannot be solely explained by the psychological attributes of the individual person. Factors external to the entrepreneur or firm ought to be considered. These are the environmental or

contextual factors (Kinunda-Rutashobya and Olomi 1999).

In his theory on protestant values Max Weber argued that protestant or Calvinistic logic or values were instrumental in promoting capitalist enterprise. These values included an emphasis on the inherent goodness of work itself. A person's work was regarded as a calling in the very literal rendering of the concept of vocation. Moreover, the experience of financial rewards from one's work was regarded as a manifestation that one was blessed by God, a number of elect few predestined to share this grace. Robert Park in 1928 introduced the Marginal and Tension Theory which states that a marginal man is one whose fate has condemned him to live in two societies. The two societies are not merely different but antagonistic cultures like occidental and oriental culture. Sometimes, for their existence, the marginal men engage themselves in business because marginal man can't be accepted widely in any society. So, from the group of marginal man there is a likelihood of creating more entrepreneurs (Islam and Mamun 2000).

The Marginal and Tension Theory of entrepreneurship fits into the context of this paper because Tanzanian graduates today, come out of universities as marginal citizens threatened by un-employment in labour markets. Marginality as a feeling or attitude of being threatened by job-lessness, can explain the attitude of creativity and self-employment not because they want to be self-employed, but as a defensive mechanism against marginalization. However, this is debatable and may be pursued as further research concept.

Economic theorists on the other hand, view entrepreneurship and economic development as being interdependent. Economic development takes place when a country's real national income increases overall period of time wherein the role of entrepreneurs is an integral part. Schumpeter's theory of innovation is a pioneering work of economic theories which argues that the innovation and technological change of a nation comes from the entrepreneurs,

or wild spirits (Islam 1989). Hence an entrepreneur is seen as the one who perceives the opportunities to innovate and carry out new combinations or enterprises. According to Kirzner what guides entrepreneurs in this task is the anticipation of profits and revenues in excess of the expenses to bring goods to market and the avoidance of losses (Ebeling 2001).

This study situates itself in the domain of the Theory of Planned Behaviour which tries to explain entrepreneurship as a product of career choice process. The Theory of Planned Behaviour is much more appropriate in predicting and understanding people's intentions to engage in various activities, in this sense the graduates' intentions to engage in self-employment as a career. The Theory of Planned Behaviour is an extension of the Theory of Reasoned Action (Ajzen and Fishbein 1980; Fishbein and Ajzen 1975). A central factor in the Theory of Planned Behaviour is the individual's inclination to perform a given behaviour. As a general rule, the stronger the inclination to engage in behaviour, the more likely should be its performance (Ajzen 1991). It should be clear, however, that a behavioural inclination can find expression in behaviour only if the behaviour in question is under volitional control, that is, if an individual can decide at will to perform or not perform the behaviour (Ajzen 2001). Many studies continue to demonstrate the applicability of the theory in choosing a career (Vincent *et al.* 1998).

Douglas and Shepherd (2002) further explain that psychologists have examined the relationship between entrepreneurial behaviour and personality characteristics such as creativity and the need for achievement. Sociologists on the other hand, have identified group characteristics such as religion and so-journing status that have been linked with entrepreneurship behaviour. At the same time, economists have attempted to explain entrepreneurship through the interaction of economic conditions and psychological factors. Douglas and Shepherd (2002) further suggest that, in all these three

disciplines, researchers have typically asked either of two basic questions: Who is an entrepreneur? When does entrepreneurial behaviour arise? The answers to these questions vary depending on the discipline, but in many instances there has been a strong reliance on the assumption that entrepreneurship is associated with some stable set of individual characteristics. There is little appreciation of the possibly transitory nature of the entrepreneur's status. Hence, there has been little or no research on the process of becoming an entrepreneur through self-employment and the sociological and organizational contexts in which it unfolds.

### **3. Methodology**

This study involved the University of Dar-Es-Salaam graduates regardless of their locations in the country. A cross-sectional design was employed and individual graduates formed the sampling unit. The sample involved graduates of the University of Dar-es-Salaam from 2000/2001 to 2010/2011. Graduates were grouped into two clusters: those who had studied entrepreneurship (graduates of the University of Dar-es-Salaam Business School-UDBS) and those who had not studied entrepreneurship (graduates of the College of Arts and Social Sciences-CASS). The sample size was 308 graduates, whereby 119 out of 2436 graduates were from UDBS and 189 out of 6889 graduates were from CASS. This sample size was considered adequate at 95% confidence level, 5.5% margin of error and 50% skewness level. Systematic random sampling (SRS) was used to get the required sample size. The systematic random sampling was repeated in order to replace the sampled graduates who were not alive or were not living in the country at the time of this study. Fortunately, none of them were deceased but seven of them (two from CASS and 5 from UDBS) were not living in the country.

A semi-structured questionnaire which included the

General Enterprising Tendencies (GET) Test was used in collecting data. The GET test was slightly modified to include examples which are relevant to the Tanzanian context. The GET test has 54 questions arranged in a matrix form and measures entrepreneurial tendencies based on the five measurable traits (Mazzarol 2007). Five entrepreneurial traits were: the need for achievement which was considered high if a respondent scored between 9 and 12, and low if he/she scored below 9. The need for autonomy and independence was high if a respondent scored 4 - 6 and low if scored below 4. Other traits were: the creative tendency propensity which was recorded high if a respondent scored 8-12 and low if scored below 8. Moderate/calculated risk-taking was high if a graduate obtained 8 -12 points and low if he/she obtained lower than 8. The final trait was the drive and determination which was considered high if the graduate scored 8 -12 points and low if scored lower than 8 points.

The gathered data were then analysed using the Statistical Package for Social Sciences (SPSS) and the Microsoft Excel (MS Excel) computer packages whereby descriptive statistics and logistic regression were used. Logistic regression analysis was applied to test the extent to which social-demographic and economic factors such as entrepreneurship education, age, sex, birth order position of a respondent, parents/guardian occupation, parents/guardian alien status, and ethnicity influences graduates' enterprising tendencies. Graduates' Enterprising Tendencies was the binary dependent variable (measured as 1 = High if the graduate had high scores on the attribute; or 0 = Low if the graduate had low scores on the attribute). For more definition of variables see Table 1. The binary logistic regression is a generalized linear model used for binomial regression. In this study, the following binary logistic model was used:

$$\text{Logit}[p(x)] = \log\left[\frac{p(x)}{1-p(x)}\right] = \alpha + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \dots + \varepsilon \dots\dots\dots 1$$

Logistic regression involves fitting an equation of the following form to the data:

$$\text{Logit}(p_i) = \alpha + \beta_1x_{1,i} + \beta_2x_{2,i} + \beta_3x_{3,i} + \dots + \beta_px_{p,i} + \varepsilon \dots\dots\dots 2$$

Where:

$\text{Logit}(p_i) = Y$ ; is binary and represents the probability of having high or low entrepreneurial tendencies, coded as 0/1 respectively

$\beta_1 - \beta_p$  = Regression coefficients

$\alpha$  = Intercept

$x_{1,i} - x_{p,i}$  = Independent variables or predictor variables

$\varepsilon_i$  = Error term

Variable	Variables definition and unit of measurement
Dependent variable	
Entrepreneurial tendencies	Binary: Y = 0 Low entrepreneurial tendencies Y = 1 High entrepreneurial tendencies
Independent variables	
AGE	Age of the respondent in years
SEX	Sex of the respondent (1= Female, 0= Male)
EED	Respondents' entrepreneurship education (dummy, measured as 1= if studied entrepreneurship; 0 = if not)
BOP	Birth order position of a respondent;
POC	Parents/guardian occupation (dummy, 1 = if self employed; 0 = if otherwise)
ETH	Ethnic origin of a respondent (dummy, 1= if mchagga/mhindi/Mkinga; 0 = Otherwise);
NCP	Total number of children parents had;
MSJ	Months a graduate spent jobless;
PED	Parents' education level measured in number of years spent schooling;
TFG	Time since first graduation in months;
MRT	Marital status of the respondent (1= married; 0 = Otherwise);
DPS	Degree Programme studied (dummy, 1 = Business related; 0 = Otherwise)

**Table 1: Definition of model variables**

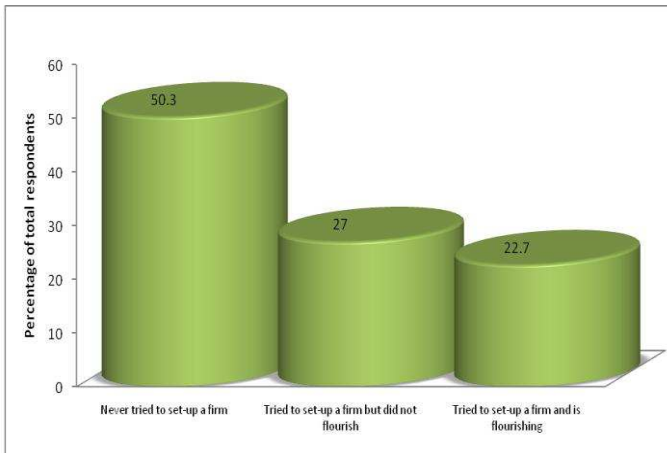
The binary logistic regression was preferred in analyzing data because the dependent variable was dichotomous, that is, high

or low entrepreneurial tendencies based on its merits compared to others. Logistic regression is regularly used rather than discriminant analysis when there are only two categories of the dependent variable. Logistic regression is also easier to use with SPSS than discriminant analysis when there is a mixture of numerical and categorical independent variable, because it includes procedures for generating the necessary dummy variables automatically, requires fewer assumptions, and is more statistically robust (O'Connell 2005). The use of binary logistic regression in education research and higher education research in particular is very popular (see Austin, Yaffee and Hinkle 1992; Cabrera 1994; Okun, Benin and Brandt-Williams 1996; St. John, Paulsen and Starkey 1996; Peng and So 2001; Saha 2011).

## **4. Results and Discussion**

### **4.1 Setting up and owning firms**

Findings from the survey indicate that 50.3% of the interviewed graduates reported that they had never established any firm, 27% had tried at one point in time to establish a firm but unfortunately the firm could not flourish. Only 22.7% had established their own firms and they were flourishing (See Figure 1). These findings imply that the majority of the surveyed graduates had never established their own firms. Consequently, they depended strongly on formal employment opportunities as their source of living. It is important to note that these findings even if they are low, show a slight increase in percentage of graduates establishing their own firms in Tanzania. This is because prior studies has reported very low figures, Mukyanuzi (2003) for example found self-employment rates amongst graduates in Tanzania standing at 10%.



**Figure 1: Setting up and owning firms**

Among the cohort that had not studied entrepreneurship, 58 % of the graduates had never established any firm compared to 46% of those who had studied at least one entrepreneurship course during their undergraduate studies. Besides, 32 % of graduates who had studied entrepreneurship reported to have tried to establishing firms but were unsuccessful while 27.6 % of those who had not studied entrepreneurship had tried to establish firms but without success. Equally important, 22 % of those who had studied entrepreneurship reported to have set up their own businesses and perceived that they were successful; compared to only 14.4% of the cohort that had not studied entrepreneurship. The findings imply that graduates who had studied at least one entrepreneurship course during their undergraduate studies had intentions to establish their own firms (see Figure 2).

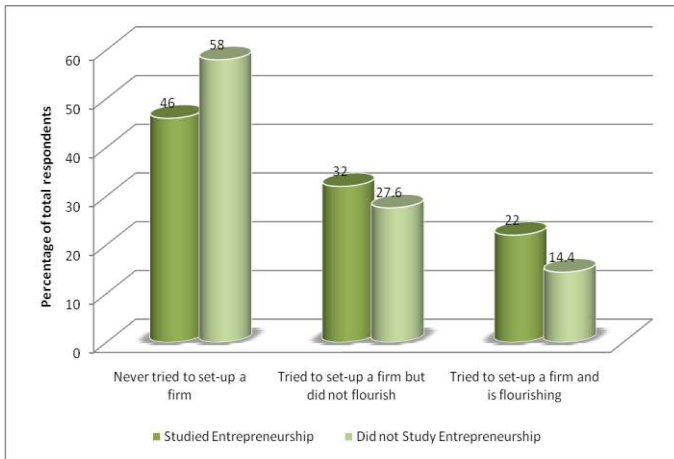


Figure 2: Comparing different cohorts in setting-up and owning firms

#### 4.2 Determinants of entrepreneurial tendencies among graduates

To get general determinants of graduates' entrepreneurial tendencies, the General Entrepreneurship Tendencies Index (GETI) was developed. First, total individual scores from the GET test on the five attributes, that is, the need for achievement, need for autonomy, creative tendency, calculated risk taking and drive and determination were added up to obtain a single figure for each respondent. Then, the total scores were transformed using the "transform-record into different variable" SPSS data analysis option to get an index whereby respondents who scored 0-32 points on the scale were coded as low and those who scored above 32 points were coded as high.

Findings from an estimated general binary logistic regression model indicate a moderate relationship between prediction and grouping. The Hosmer and Lemeshow test the null hypothesis that there is a linear relationship between the predictor variables and the log odds of the criterion variable. A p-value of 0.353 on the Hosmer and Lemeshow test indicates that there is no linear relationship between the predictor variables and the log odds of the criterion variable; hence, the

null hypothesis is rejected. Similarly, the model generated a -2 Log likelihood of 387.432, Cox and Snell R Square of 0.299 and the Nagelkerke R Square of 0.398. Besides, the model generated a Chi-square of 8.877 for the Hosmer and Lemeshow Test which was not significant at p-value = 0.353. When Hosmer and Lemeshow Test shows an insignificant figure, it means the model adequately fits the data.

#### **4.2.1 Effect of entrepreneurship education on entrepreneurial tendencies**

The Omnibus Tests of Model Coefficients was statistically significant at p-value = 0.001 and produced a Chi-square of 32.043. When the Omnibus Tests of Model Coefficients is statistically significant, means that there is adequate fit of the data to the model and that at least one of the covariates is significantly related to the response variable. The Wald criterion shows that entrepreneurship education made a significant contribution in predicting entrepreneurial tendencies of the surveyed graduates. The model produced a p-value of 0.005 and the Wald of 7.899. Exp(B) values which indicated that when entrepreneurship education is increased by 0.483 courses the odds ratio is -0.727 times as large and therefore graduates are - 0.727 times more likely to have higher entrepreneurial tendencies. Similar findings were obtained by Siyanbola *et al.* (2009) who studied the determinants of entrepreneurial propensity of Nigerian undergraduates and found that entrepreneurial education, among other things influenced entrepreneurial propensity of Nigerian undergraduates. The authors further argue that entrepreneurship training and communication initiatives are key sources of positive entrepreneurial influence.

#### **4.2.2 Effect of number of children on entrepreneurial tendencies**

The findings further, indicate that number of children in a family was another strong predictor of graduates' entrepreneurial tendencies. The predictor scored a P- Value of 0.029, Wald of 4.793 and Exp (B) of 0.882. A Wald test of 4.793 demonstrates that number of children, contributed significantly in graduates' entrepreneurial tendencies. Exp (B) value indicates that when number of children is increased by 0.882 the odds ratio is - 0.125 times as large and therefore graduates are - 0.125 times more likely to have higher entrepreneurial tendencies. The findings correspond to those by Ramsোধ (2013) who found that household size had a significant coefficient and marginal effect on the probability of becoming an entrepreneur. Like in the study by Ramsোধ (2013) in this study it was found that household size had a negative relation with the probability of becoming an entrepreneur.

#### **4.2.3 Effect of parents' education on entrepreneurial tendencies**

Likewise, parents' (father, mother or guardian depending on who was the household head) education level was another factor with a very strong contribution to predicting graduates' entrepreneurial tendencies. These results were statistically highly significant at P-value = 0.000, Wald = 12.541 and Exp (B) = 0.373. Moreover, a Wald statistic of 12.541 shows that parent's education level, contributed highly to predicting graduates' entrepreneurial tendencies. Results further indicates that, when the parent's education level is raised by 0.373 schooling years the odds ratio is - 0.986 implying that graduates are - 0.986 more likely to have higher entrepreneurial tendencies (see Table 2). These findings confirm the findings by Van Praag (2005) who observed that parental background characteristics such as education or job level of the father and sometimes mother influence the probability of starting up a firm but not

entrepreneurial performance. People are more likely to become entrepreneurs if their father was also an entrepreneur and /or if their father had a higher qualified job or a higher level of education (Van Praag 2005).

Variable	Coefficient (B)	S.E.	Wald	Df	Sig.	Exp (B)	Chi-square	R Square
Months spent without job after graduation	- 0.002	0.002	0.726	1	0.394	0.998		
Number of children in a family	- 0.125	0.057	4.793	1	0.029	0.882		
Entrepreneurship Education	- 0.727	0.259	7.899	1	0.005	0.483		
Gender of the respondents	0.134	0.281	0.229	1	0.632	1.144		
Marital status of the respondent	- 0.014	0.262	0.003	1	0.957	0.986		
Parents' education	- 0.986	0.278	12.541	1	0.000	0.373		
Parents' occupation	- 0.245	0.477	0.264	1	0.608	0.783		
Age of the respondent	- 0.379	0.309	1.506	1	0.220	0.684		
Birth order position	- 0.026	0.151	0.030	1	0.862	0.974		
Ethnic origin	- 0.323	0.295	1.201	1	0.273	0.724		
Constant	2.417	0.632	14.633	1	0.000	11.209		
Omnibus Tests of Model Coefficients				11	0.001		32.043	
Hosmer & Lemeshow Test				8	0.353		8.877	
-2 Log likelihood		387.432 <sup>a</sup>						
Cox & Snell R Square								0.299
Nagelkerke R Square								0.398

**Table 2: General results of the estimated binary logistic regression model**

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than 0.001.

*i) Determinants of graduates' need for achievement*

Birth order position of graduate was found to be a good predictor of the graduate's need for achievement trait. The Findings were statistically significant at p-value = 0.044 and Exp (B) = 0.910. Moreover, a Wald test of 1.763 shows that birth order position, significantly contributed in predicting

graduates' need for achievement. The findings further indicate that when the birth order position is raised by 0.910 level, the odds ratio is - 0.094 implying that graduates are 0.094 more likely to have higher need for achievement.

Birth order generally refers to the sequence by which children are born into a family. The most important birth order positions according to Sulloway (1999) are eldest, middle and youngest. As a rule, birth order differences in personality arise as a result of how children are raised (functional birth order or rearing order) rather than the sequence in which they are born. He postulated further that by influencing the strategies that siblings develop in competition for parental favour, birth order fosters differences in personality that in turn correlates with differences in creative achievement. According to him, first-borns tend to be conscientious, obedient, hard-driving and bossy. Later-borns are more flexible, innovative, laid-back and sociable. These characteristics can impact entrepreneurs from the start: Older siblings often go for the safe bet, while the younger ones are likely to be risk-takers. First-borns might make better franchisees, while later-borns often undertake more experimental and quirkiest businesses. However, Sulloway's premise may be true in certain contexts, and it is difficult to substantiate in others. For example, in an African family where a man is likely to get married to more than one wife, even wives compete for favours. In this context, where there can be more than one first and last borns, it is difficult to catalog who falls where in the birth order. But in European context, where a man is most likely to get married to only one wife such scenarios can be common. Again in a context where a family has the only child, this categorization does not have any meaning and the child is most likely to grow up without any competition.

Findings indicated as well that parents' education level is a strong predictor of the graduate's need for achievement. The findings were statistically significant at P-value = 0.005

and Exp (B) = 0.432. Additionally, a Wald of 8.065 illustrates that parent's education level, contributed significantly in predicting graduates' need for achievement. Results further indicated that when the parent's education level is raised by 0.432 schooling years, the odds ratio is - 0.838 implying that graduates are - 0.838 more likely to have higher need for achievement (for more results see Table 3). These findings compare to Djankov *et al.* (2004) who observed that higher levels of parents' education are significantly positively associated with entrepreneurship, and this effect is quite robust.

Variable	Coefficient (B)	S.E.	Wald	Df	Sig.	Exp (B)	Chi-square	R Square
Gender of the respondents	0.043	0.304	0.020	1	0.888	1.044		
Age of the respondent	0.004	0.022	0.028	1	0.868	1.004		
Months spent without job after first graduation	- 0.002	0.002	0.873	1	0.350	0.998		
Number of children Parents had	0.037	0.057	0.435	1	0.510	1.038		
Birth order position	- 0.094	0.071	1.763	1	0.044	0.910		
Entrepreneurship Education	- 0.441	0.508	0.756	1	0.385	0.643		
Time since first graduation in months	- 0.018	0.039	0.214	1	0.644	0.982		
Ethnic origin	- 0.012	0.027	0.196	1	0.658	0.988		
Marital status of the respondent	0.286	0.315	0.824	1	0.364	1.331		
Degree programme studied	- 0.069	0.309	0.050	1	0.824	0.933		
Parents' education	- 0.838	0.295	8.065	1	0.005	0.432		
Parents' occupation	- 0.226	0.575	0.154	1	0.694	0.798		
Constant	1.347	1.027	1.719	1	0.045	3.846		
Omnibus Tests of Model Coefficients				13	0.266		15.700	
Hosmer & Lemeshow Test				8	0.354		8.863	
-2 Log likelihood		355.792 <sup>a</sup>						
Cox & Snell R Square							0.053	
Nagelkerke R Square							0.073	

**Table 3: Results of the estimated binary logistic regression model for “need for achievement”**

a. Estimation terminated at iteration number 8 because parameter estimates changed by less than 0.001.

*ii). Determinants of graduates' need for autonomy and independence*

Regarding determinants for the graduates' need for autonomy and independence, findings show that age of the respondent is a strong predictor of the graduate's need for autonomy and independence. The findings were statistically significant at P-value = 0 .026 and Exp (B) = 0 .945. A Wald of 3.341 demonstrates that age of the graduate, contributes significantly in predicting graduates' need for autonomy and independence. Results further indicated that when the age of the graduate is raised by 0.945 years, the odds ratio is - 0.057 implying that graduates are - 0.057 more likely to have higher need for autonomy and independence. Older age correlates with more successful entrepreneurs up to the age of 40, after which it has limited or no impact. This is true because in most cases older individuals have generally completed more complex projects such as buying a house, or raising a family (Ressi 2011). In addition, older people have developed greater vocational skills than their younger counterparts in many, but not all, cases. It is argued that the combination of successful project completion skills with real world experience helps older entrepreneurs identify and address more realistic business opportunities.

Parents' occupation significantly predicts the graduates' need for autonomy and independence (p-value = 0.042 and Exp (B) = 0.318). The model scored a Wald of 3.157 which implies that parents' occupation contributes significantly in predicting graduates' need for autonomy and independence. Findings further indicated that when parents' occupation is raised by 0.318 units, the odds ratio is -1.145 implying that graduates are -1.145 more likely to have higher need for autonomy and independence. For more findings on determinants for the graduates' need for autonomy and independence, see Table 4.

According to Lindquist *et al.* (2012), parents' occupation matters. They argue that in most cases, an entrepreneurial parent will have an entrepreneurial child. They further emphasised that parental entrepreneurship increases the probability of children's entrepreneurship by about 60%. They further show that for adoptees, both biological and adoptive parents make significant contributions. These effects, however, are quite different in size. The effect of post-birth factors (adoptive parents) is approximately twice as large as the effect of pre-birth factors (biological parents). Many local examples exist in Tanzania (among the Wachaga, Wakinga and Tanzanians with Indian origin) as well to support this argument. This is because children of entrepreneurs have the opportunity to learn how to run businesses, as their parents act as their role models.

Variable	Coefficient (B)	S.E.	Wald	Df	Sig.	Exp (B)	Chi-square	R Square
Gender of the respondents	0.101	0.346	0.085	1	0.770	1.106		
Age of the respondent	-0.057	0.037	3.341	1	0.026	0.945		
Months spent without job after first graduation	-0.001	0.004	0.160	1	0.689	0.999		
Number of children Parents had	0.070	0.061	1.304	1	0.254	1.072		
Birth order position	-0.076	0.080	0.902	1	0.342	0.927		
Entrepreneurship Education	0.399	0.316	1.592	1	0.207	1.490		
Time since first graduation in months	0.487	0.384	1.611	1	0.204	1.627		
Ethnic origin	0.465	0.348	1.780	1	0.182	1.592		
Marital status of the respondent	0.053	0.345	0.024	1	0.878	1.054		
Degree programme studied	-0.199	0.692	0.083	1	0.774	0.820		
Parents' education	-0.039	0.330	0.014	1	0.907	0.962		
Parents' occupation	-1.145	0.780	3.157	1	0.042	0.318		
Constant	0.735	1.195	0.379	1	0.538	2.086		
Omnibus Tests of Model Coefficients				13	0.329		14.658	
Hosmer & Lemeshow Test				8	0.400		8.351	

-2 Log likelihood	291.033 <sup>a</sup>						
Cox & Snell R Square							0.047
Nagelkerke R Square							0.074

**Table 4: Results of the estimated binary logistic regression model for “need for autonomy and independence”**

a. Estimation terminated at iteration number 8 because parameter estimates changed by less than 0.001.

*iii). Determinants of graduates’ creative tendency*

Two variables were found to determine graduates’ creative tendency propensity; these are: The number of children in a family and parents’ education. The number of children in a family significantly predicted graduates’ creative tendency propensity with p-value = 0.010 and Exp (B) = 1.202. Important to note also is the Wald test; the model had a Wald of 6.711 which implies that number of children in a family significantly contributed in predicting graduates’ creative tendency propensity. Findings further indicated that if number of children in a family is increased by 1.202 children, the odds ratio is 0.184 implying that graduates are 0.184 more likely to have higher creative tendency propensity. Families and businesses have often been treated as naturally separate institutions (Aldrich and Cliff 2003). In this paper it has been found that families and businesses are inextricably intertwined; the family composition and relations have implications for the emergence of new business opportunities, opportunity recognition, business start-up decisions, and the resource mobilization process.

Equally important is the parents’ education level which was found to be a good predictor of graduates’ creative tendency propensity. The model produced statistically significant results for this variable at p-value = 0.040, Exp (B) = 1.681 and Wald = 3.056. These findings further demonstrated that when parents’ education level is increased by 1.681 schooling years, the odds ratio is 0.519 implying that graduates are 0.519 more likely to have higher creative tendency propensity (Table 5 presents

more findings). These findings underline the importance of parents and parents' education in shaping their children's career aspirations. The findings correspond with those by Udofia and Akpan (2013).

Variable	Coefficient (B)	S.E.	Wald	Df	Sig.	Exp (B)	Chi-square	R Square
Gender of the respondents	- 0.410	0.296	1.923	1	0.166	0.663		
Age of the respondent	- 0.022	0.031	0.526	1	0.468	0.978		
Months spent without job after first graduation	0.005	0.016	0.090	1	0.765	1.005		
Number of children Parents had	0.184	0.071	6.711	1	0.010	1.202		
Birth order position	- 0.019	0.073	0.067	1	0.796	0.981		
Entrepreneurship Education	0.305	0.282	1.175	1	0.278	1.357		
Time since first graduation in months	- 0.312	0.345	0.817	1	0.366	0.732		
Ethnic origin	0.309	0.315	0.959	1	0.328	1.362		
Marital status of the respondent	0.198	0.307	0.418	1	0.518	1.219		
Degree programme studied	0.216	0.592	0.133	1	0.715	1.241		
Parents' education	0.519	0.297	3.056	1	0.040	1.681		
Parents' occupation	0.151	0.503	0.090	1	0.764	1.163		
Constant	-1.400	1.047	1.788	1	0.041	0.247		
Omnibus Tests of Model Coefficients				13	0.075		20.874	
Hosmer & Lemeshow Test				8	0.528		7.084	
-2 Log likelihood		346.309 <sup>a</sup>						
Cox & Snell R Square								0.066
Nagelkerke R Square								0.094

**Table 5: Results of the estimated binary logistic regression model for “creative tendency”**

a. Estimation terminated at iteration number 8 because parameter estimates changed by less than 0.001.

*iv). Determinants of graduates' calculated risk-taking*

Regarding determinants of graduates' moderate or calculated risk-taking propensity, the findings show that entrepreneurship education was a strong predictor of the trait with p-value = 0.045 and Exp (B) = 1.589. Likewise, the model

produced a Wald of 3.166 which implies that entrepreneurship education contributes significantly in predicting graduates' calculated risk-taking propensity. It was further found that when entrepreneurship education is increased by 1.589 it causes the odds ratio to be 0.463 implying that graduates are 0.463 more likely to have higher risk-taking propensity. This suggests that graduates with entrepreneurship education are more likely to have higher risk taking propensity than their counterparts. Unfortunately very few graduates had entrepreneurship education; this is one among reasons why the majority of graduates had never established their own firms.

Another good predictor of risk-taking propensity is the parents' education with p-value = 0.031, Exp (B) = 1.787 and Wald = 4.662. The findings further demonstrates that, when parents' education level is increased by 1.787 schooling years the odds ratio is 0.580 implying that graduates are 0.580 more likely to have higher risk-taking propensity. This means that parents with higher education are more likely to have children with high calculated risk-taking propensity. However, very few parents were educated beyond primary school education. This is because, during Universal Primary Education (UPE) in Tanzania, the emphasis was for every citizen to be able to read and write. Lower risk-taking propensity again explains in part why many graduates had never thought of establishing their own firm (Table 6 presents more details).

Variable	Coefficient (B)	S.E.	Wald	df	Sig.	Exp (B)	Chi-square	R Square
Gender of the respondents	0.344	0.288	1.424	1	0.233	1.410		
Age of the respondent	- 0.002	0.004	0.167	1	0.683	0.998		
Months spent without job after first graduation	0.029	0.019	2.518	1	0.113	1.030		
Number of children Parents had	0.071	0.058	1.484	1	0.223	1.074		
Birth order position	- 0.053	0.068	0.614	1	0.433	0.948		

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Entrepreneurship Education	0.463	0.260	3.166	1	0.045	1.589		
Time since first graduation in months	- 0.162	0.286	0.319	1	0.572	0.851		
Ethnic origin	0.257	0.290	0.785	1	0.376	1.293		
Marital status of the respondent	- 0.077	0.269	0.081	1	0.776	0.926		
Degree programme studied	- 0.420	0.593	0.502	1	0.479	0.657		
Parents' education	0.580	0.269	4.662	1	0.031	1.787		
Parents' occupation	- 0.249	0.481	0.268	1	0.605	0.780		
Constant	-1.421	0.581	5.982	1	0.014	0.241		
Omnibus Tests of Model Coefficients				13	0.092		20.146	
Hosmer & Lemeshow Test				8	0.242		10.335	
-2 Log likelihood	387.904 <sup>a</sup>							
Cox & Snell R Square								0.064
Nagelkerke R Square								0.087

**Table 6: Results of the estimated binary logistic regression model for “calculated risk-taking”**

a. Estimation terminated at iteration number 7 because parameter estimates changed by less than 0.001

*v). Determinants of graduates' drive and determination*

Entrepreneurship education is a good predictor of graduates' drive and determination. The model produced a statistically significant result at p-value = 0.006, Exp (B) = 2.056. Besides, the model produced a Wald of 7.642 signifying that entrepreneurship education contributes significantly in predicting graduates' drive and determination propensity. It was found that when entrepreneurship education is increased by 2.056 courses the odds ratio is 0.721 implying that graduates are 0.721 more likely to have higher drive and determination propensity. It can be argued that graduates who attended at least one entrepreneurship course had high drive and determination. Besides, few graduates had had an opportunity to attend entrepreneurship courses, and that is why most of them had never established their own firms.

Another important determinant of graduates' drive and determination is parents' education. The findings show that

parents' education significantly predicts graduates' drive and determination with p-value = 0.040, Exp (B) = 1.751 and Wald = 4.224. The findings further show that when parents' education level is increased by 1.751 schooling years the odds ratio is 0.560 implying that graduates are 0.560 more likely to have higher drive and determination propensity (For a detailed analysis see Table 7). Like in calculated risk-taking tendency, few parents had higher education which partly explains why most graduates in the country never considered entrepreneurship as an alternative career choice (Table 7 presents details).

Variable	Coefficient (B)	S.E.	Wald	Df	Sig.	Exp (B)	Chi-square	R Square
Gender of the respondents	- 0.010	0.274	0.001	1	0.971	0.990		
Age of the respondent	- 0.001	0.003	0.249	1	0.618	0.999		
Months spent without job after first graduation	0.001	0.002	0.560	1	0.454	1.001		
Number of children Parents had	0.075	0.063	1.415	1	0.234	1.078		
Birth order position	0.037	0.066	0.310	1	0.577	1.038		
Entrepreneurship Education	0.721	0.261	7.642	1	0.006	2.056		
Time since first graduation in months	0.026	0.275	0.009	1	0.925	1.026		
Ethnic origin	0.014	0.286	0.002	1	0.962	1.014		
Marital status of the respondent	0.082	0.261	0.099	1	0.753	1.086		
Degree programme studied	- 0.542	0.565	0.919	1	0.338	0.582		
Parents' education	0.560	0.273	4.224	1	0.040	1.751		
Parents' occupation	0.067	0.464	0.021	1	0.885	1.070		
Constant	-1.022	0.561	3.314	1	0.069	0.360		
Omnibus Tests of Model Coefficients				13	0.136		18.593	
Hosmer & Lemeshow Test				8	0.628		6.176	
-2 Log likelihood	402.261 <sup>a</sup>							
Cox & Snell R Square								0.059
Nagelkerke R Square								0.079

**Table 7: Results of the estimated binary logistic regression model for “drive and determination”**

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than 0.001.

## 5. Conclusions and Recommendations

This study concludes that six factors contribute in predicting entrepreneurial tendencies of the surveyed graduates. These factors are: Entrepreneurship education, parents' education level, number of children in a family, parents' occupation, age and birth order position. The study also concludes that some individual entrepreneurial determining factors such as age and birth order position cannot be changed, hence very little can be done if any to improve them. But most of the entrepreneurial determining factors in this study can be improved.

It is fair to conclude that of all the factors, entrepreneurial education played a significant role to entrepreneurship as graduates who had studied entrepreneurship courses are more likely to be interested in start-ups. This partially explains why few graduates had established their own businesses, since a small number of them had studied entrepreneurship courses. Parents' education level strongly contributed in predicting graduates' entrepreneurial tendencies. Having Parents with good education increases ones' possibility of having higher entrepreneurial tendencies. However, Very few graduates had Parents with good education level. Most of them had parents with primary education and this may to some extent explain why most graduates had opted for formal employment rather than establishing their own firms.

Moreover, demographic characteristics such as number of children in a family significantly contributed in predicting entrepreneurial tendencies of the university graduates in the country. It is further concluded that, social context plays an important role in shaping aspirations of graduates. Thus, entrepreneurship could be seen as an outcome of a social

influence process. Since the family is the major agent of socialization, it may be pertinent to deduce that graduates who have established their own firms and become successful are to somewhat motivated by their family status.

From these conclusions several policy implications for university educators, administrators and policy makers can be put-forward:

- i. Since entrepreneurship education has the potential of improving entrepreneurial propensity, universities and colleges in Tanzania should continue emphasizing entrepreneurial courses in their syllabus to reflect a broadening market interest in entrepreneurial education. In addition to courses focusing on preparing the future entrepreneur, institutional frameworks should be developed in order to tap and develop the talents at an early stage. This may help raise graduates' entrepreneurial tendencies and improve on self-belief and attitude towards career alternatives. Attitude towards career alternative constitutes an important part of entrepreneurship development and must be developed during one's study. Therefore, if a student is not fully aware of entrepreneurship as an alternative employment, the student will never develop a positive attitude towards it. The student will instead develop a positive attitude towards employment career alternatives with which he is very familiar.
- ii. Since education of the parent partly contributes to graduates' entrepreneurial propensity and since parents as role models influence their children's attitude towards entrepreneurship; the government is urged to continue emphasizing on adult education. A compulsory, more structured and tailor made adult education which is effective in changing parents' perception over entrepreneurship is highly required, because very few graduates had parents with reasonable

- education levels. It is also suggested that, the government should introduce entrepreneurship courses within the adult education curriculum.
- iii. Another policy suggestion emanating from this study relates to establishment of business incubator programmes. The suggested incubator programmes will not only support the graduates to improve their attitudes towards starting up firms but also facilitate emergence of new, technology-based firms from universities. Despite the fact that many higher learning institutions in the country have introduced entrepreneurship courses and programmes none of them has a well developed, readily functioning business incubator.
  - iv. There are several issues on graduate entrepreneurship in Tanzania that call for further studies; this study draws attention to only one of them, that is, the level of risk aversion. This study did not analyse the level of risk aversion among the graduates. Hence, it will be very interesting to investigate perception of risk among the graduates in the country considering the fact that risk taking is recognized by scholars as a trait of a successful entrepreneur.
  - v. Since birth order position matters sometimes, graduates are urged to join forces with their siblings, if possible in forming and owning firms. Together they can offset their "inborn or rearing weaknesses" and can build a better business.

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