SELF-EMPLOYMENT INTENTION AMONG UNIVERSITY STUDENTS: TESTING AJZEN'S THEORY OF PLANNED BEHAVIOUR (TPB)

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Abstract

Many graduates are joining the Tanzanian labour market at the end of every academic year. Self-employment category of the labour market has not been given priority in most of our strategies for growth as one of key employment opportunities to these high trained human resources to reduce pressure of unemployment. Guided by the TPB the study aimed on the factors influencing student's self-employment intention. It was found that, parental role model and risks tolerance are key factors and they significantly and positively influence student's intention towards self-employment by 1.180264 and 2.168818 more than the contrary respectively. It was further found that, both male and female students are potential for self-employment if trained and subjected to self-business norms with female demonstrating 0.4113016 higher intention than male and that, it is better to nurture them while they are in the education system at earlier years of their life because the more older they become the lesser the intention they develop with the marginal of 2.01579. Therefore, the study recommended incorporation of student's self-reliance and self-business programs in the education policy with self-employment topics in every programme across all levels of schooling to ensure all our youth get self-employment intention developed

Keywords: *parental role model, self-employment, risk tolerance, labour market, intention.*

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1.0 Introduction

The creation of country's wealth and dynamism depends upon the competitiveness of its own firms and this in return relies fundamentally in the capabilities of its entrepreneurs[1] (Todaro, 2008). *Self-employment*[2] is a resultant of this innate ability in an individual's and in addition it can be developed. Many studies argue that entrepreneurship experience is associated with entrepreneurship intention. Entrepreneurs are assumed to have learned the "craft" of entrepreneurship from their previous start-ups (MacMillan, 1986). As a result, they have more knowledge in this area and more positive attitudes towards entrepreneurship hence self-employment (Westhead and Wright, 1998).

Tanzania is experiencing a period of rapid political and economic change (Brian et al., 2001). Recent economic policies have brought higher changes in employment sector in Tanzania. Employment is no longer automatic as it used to be in the past two decades. Currently the domestic labour supply is higher than the capacities of both public and private sectors to absorb. Yet the upcoming East African Federation is threatening young men and women who will have to strive to acquire job opportunity subject to region competition. The government Employment Policy cites an overall unemployment rate of 13 per cent of which youth unemployment was close to 40 per cent in urban areas (URT, 1997). This indicates the need for more self-employment awareness not only for educators but also to policy makers so that they can help to nurture the valuable spirit among students/youths and this possibly bring out more entrepreneurs hence self-employment.

Kuratko (2005) asserted that an entrepreneurship intention can be developed in an individual since it is related to individual's characteristics of seeking opportunity, taking risks, and giving tendency to push an idea through. One way through which such a perspective can be developed, is through entrepreneurship training at schools and participation in entrepreneurship training programs that have been associated with changes in attitudes and intentions towards self-

[1] A person who sets up a business or businesses, taking on greater than normal financial risks in order to do so (person who assumes risks associated with uncertainty) (concise Oxford Dictionary, 2001)
[2] For the purpose of this research, refer to residual category of gainful employment not remunerated by wage or salary (someone working owners of unincorporated business) (ILO, 1990).

employment. This is because education influences people's aspiration towards entrepreneurship hence self-employment.

Nevertheless, wide-reaching - self-employment for decades has experienced mixed views. For example, Wolff (1998) found that self-employment was substantially over represented in ranks of the rich in 1983, and that they gained shares among the top of the distribution between 1983 and 1995. A year before, Reardon (1997) in his study, affirmed that in Canada and United States, people who were self-employed were older, less likely to be female, more educated and work more than others. Also in Europe sometimes ago, G. Picot et al. (1998) found that self-employment was interpreted as something that people are driven into, by poor opportunities in the wage/salary sector. However, self-employment is now a well-known and a noble option to solving macroeconomic problem of unemployment.

This study use a theory developed by Ajzen's (1991) the TPB that assume self-employment is determined by the individual's intention to undertake or not to undertake. Meanwhile, intention is determined by three antecedents; attitudes, subjective norms and perceived behaviour control. If self-employment is more attractive to a student, his or her intention to self-employment is higher; similarly, the more supportive the social norms for instance the people at the disposal of this student think that he or she should employ him or herself, the higher the intention; and the more perceived feasibility the higher the intention and vice versa ceteris peribus.

Attitudes refer to the degree at which a student has favourable or unfavourable assessment of the action in question. This is to say, a student with an experience of self-employment show more positive attitudes towards employing himself or herself once he or she finish studies and vice versa. Subjective norms refer to the perceived pressure to perform or not to perform. In this case, to undertake self-employment or not once he/she complete his/her studies. Student who have learned or has been trained how to start a business for instance, whose family engage him or her into family business during long vacation has stronger intention towards employing him or herself once he/she finish his/her studies. Perceived behaviour control here is referred to individual's control belief that he/she is capable of employing him/herself. Student with confidence that he/she

is able of starting his/her own business has higher intention of employing himself/herself once he/she finish his/her studies and vice versa.

Therefore the three antecedents are the one which control the intention to do something. In this regards, self-employment is geared with a number of factors such as age, sex, professional, parental role model, risk attitude, environment, government role, labour market behaviour and so forth. All those factors determine the TPB three antecedents which in return determine the intention of an individual towards self-employment.

2.0 Methodology

A case study research was carried out at the University of Dodoma (UDOM), from September 2011 to February 2012. Cohort research design was employed. This is because it deals with group of people with similar characteristics. This design was useful forming groups of students who belong to their fields of studies at the University. The cohort study design was cross-sectional as one shot visit conducted. This research design also helped to get the difference between and among students of different fields by the use of stratified random sample technique. This technique was appropriate because the University does not constitute a homogeneous group. Students are enrolled from different courses and they study different fields varying from commerce, art, engineering, economics, health sciences, informatics and so forth of which each has varieties of professionals. For instance, in commerce field we have accounts, finance, business and entrepreneurship degree programs. Therefore, the research selected randomly from these degree course stratum which have more homogeneous characteristics for more precise estimates.

Sampling frame for the sample comprised 302 students. 91(30%) students from the College of Education, 121 (40%) students from College of Humanities and Social Sciences, 30 (10%) students from College of Informatics and Virtual Education, 15 (5%) students from the rest three colleges based on the proportionate population of these six operating colleges and number of courses in the given colleges. The research took a large sample because probit model require

more cases than OLS regression as it use maximum likelihood estimation techniques and therefore an easy to observe the likelihood (Scott, 1997).

Primary data was collected using questionnaires as a major instrument for primary data collection, which comprised both close and open-ended questions. The secondary data were obtained from UDOM central admission office which involves the number of students enrolled in third years in all colleges and supplemented by particular college various documentations. Also the secondary data which include higher learning institutions in Tanzania and youth employment and unemployment statistics were obtained from Tanzania Commission for Universities and TBS respectively. Furthermore, research reports, journals, newspapers, and information from internet were useful to second the primary data in this study.

In explaining the behaviour of a dichotomous dependent variable, we normally use the Cumulative Distribution Function (CDF)[3]. In this study the suitable chosen estimating model was the probit model – also known as normit model (Gujarati, 2004). Borrowing and modifying probit modelling ideas from Sesabo, et al (2006) was expressed as the general function as follows:

$$I_i = f(x_i \ldots, x_n) \qquad 2.1$$

Where: I represent individual's intention to do something

$x_i \ldots x_n$ represent factors moulding individual's intention to do something

Then, if I^*, the intention to do or behave is unobservable and if it depends on set of observable factors x_i that is

$$I_i^* = \beta x_i + \mu_i \qquad 2.2$$

[3] defined in terms of the probability density function f as $F(x) = \int_{-\infty}^{x} f(t)\,dt.$

Where

I^* is the intention to do

β is vectors of parameters

x_i is vectors of the variables that affect I^*

μ_i is error term normally distributed with zero mean

Subscript i index individuals

The observed binary variables is related to I^* in the following sense

$$I = 1 \text{ if } I^* > 0$$

$$I = 0 \text{ if otherwise} \qquad 2.3$$

Observing the normality assumptions, the probability that I^* is less than or equal to I can be computed from the standardized normal cumulative distribution function as

$$P_i = P(I = 1) = (I^* \leq I) = F(I_i) = \int_{-\infty}^{\beta x_i} f(z)dz \qquad 2.4$$

Where

$f(z)$ = density function,

z = normally distributed with zero mean and unit variance,

P_i = probability that individual's intention to do or behave occurs

This econometric method was used to estimate student's self-employment intention on student's age, student's sex, parental role model, business experience and training and risk attitudes. Because the dependant variable student' self-employment intention was in the form of two outcome, such that nth student's intention to self-employment or not to, depends on latent variable(s) above mentioned. Therefore, the probit model was used and the research denote y = 1 if nth student's intend to employ him/herself; and y = 0 if otherwise.

The method which is best estimating probit model was the Maximum Likelihood Estimation (MLE). The standard MLE inference procedures gave the variance – covariance matrix of estimated ***β***s assuming the observations are independent and identical distributed (i.i.d.). The MLE involved specifying the joint probability distribution function for the sample data. The research had a random sample size of 302 drawn from some probability distribution; for instance - denoted y^*_1 ... y^*_{302} in random variables sampled. Because y^*_1 was continuous random variable, then the probability that y^*_1 would take a particular value y_1 as it is given by probability density function. In general, $f(y_i)$ was depending upon some unknown parameters βs which the research was estimating.

The study choose MLE because, it is a popular estimation technique in probit and that even under relatively weak assumptions, MLE are consistent, asymptotically normal, and efficient (Scott, 1997). Consistency means that as the sample size increases, the maximum likelihood estimate tends in probability to the true parameter value. Moreover, for large sample size, the maximum likelihood calculated estimates with normal distributions are centred on the true parameter value.

Following Ajzen (1991) whose planned behaviour theory has three antecedents – attitude, supportive norm and perceived behaviour control which is fundamentally further determined by student's age, student's sex, parental role model, business experience and training and risk attitudes. The study was considering the fundamental determinants as independent variables – in this case student's age, student's sex, parental role model, degree training, business experience and training and risk attitudes to direct determine the behavioural intention which was self-employment intention.

$$y_i^* = \beta_0 + \beta_1 AGE_i + \beta_2 SEX_i + \beta_3 PAMO_i + \beta_4 BET_i + \beta_5 RITO_i + \beta_6 DETRA_i + \mu_i$$

Where

- The research was observing y = 1 if $y^* > 0$ and y = 0 if $y^* < 0$ which gives the probability that student intend to employ him/herself and it was a dummy taking value of 1 and 0 if otherwise. This was guided by the question: *After study, do you intend to employ yourself?*

Yes/No. It was also denoted SEMIT meaning self-employment intention on the STATA regression output.

- AGE was a ratio scale variable of student's age measured in number of years.
- SEX was a dummy variable of student's sex measured by 1 if Male and 0 otherwise.
- PAMO was a dummy variable of student's parental role model measured by 1 if family member is self-employed and 0 otherwise.
- DETRA was a dummy variable of student's degree training which is measured by 1 if nth student's degree program he/she pursue offer self-employment training.
- BET was a dummy variable of student's business experience and training measured by 1 if nth student had business experience and/or training and 0 otherwise.
- RITO was a dummy variable of student's risk attitude measured by 1 if nth student has risk tolerance and 0 otherwise.
- $\boldsymbol{\beta}$s (1, 2… 6) are K – vector of parameters. In other words; was marginal effect of the change in the independent variable in question. For example, if $\boldsymbol{x_i}$ changes by a unit, what was the probability likely to have influenced y_i^*.
- $\boldsymbol{\beta_0}$ was a constant term which shows on average the probability of y^*_i if all nth student's explanatory variables are neglected/not applied.
- $\boldsymbol{\mu}_i \sim N(0, 1)$ was a random shock and sub script i denote nth individual in the sample.

By the use of computer software SSPS version 13 for data management and STATA version 11 for data analysis, all collected data were entered and managed accordingly to avoid spurious regression. Later these data were analysed and the results were presented with good interpretation of the estimated parameters and both their significance and validity tested.

3.0 Results and Discussion

Data entry was done using SPSS. All dummy variables were transformed and recorded into different variables by entering m-1 category to avoid perfect malti-collinearity commonly known as dummy variable trap and the variable were added 1 to differentiate it with non-transformed one. The study regressed natural log of student's age (lnAge) to remove the heteroscedasticity effect of this variable as it is ratio scale with large value compared to other variable which are

dummy with value 0 and 1 as coded. Fortunately with MLE when dealing with probit model does solve the problem of linear relationship between variables and therefore BET-1 was dropped as it was found to have malti-collinearity relation with DETRA-1

The likelihood ratio chi-square of 179.29 with 5 degree of freedom and a p-value of 0.00001 tell us that our model as a whole fits significantly better than an empty model (model with no predicators). Also in Table 3.1 we see the estimated coefficients, standard errors, z-value and its associated p-values and the 95% confidence intervals each.

Table 3.1: Probit regression results

SEMINT	Coef.	Std. Err.	z	P> [z]	95% Conf. Interval	
SEX1	-0.4113016	0.2155738	-1.91	0.056	-	0.0112153
InAge	-2.01501575	0.955417	-2.11	0.035	-3.888342	-
DETRA1	0.0426355	0.2276171	0.19	0.851	-	0.4887568
PAMO1	1.180264	0.278939	4.24	0.000	0.6352097	1.725318
RITO1	2.168818	0.2563278	8.46	0.000	1.666424	2.671211
_cons	6.048252	3.0723	1.79	0.049	0.266541	12.06985
Number of Obs. 302; Chi^2 (5) 179.29; Prob > Chi^2 0.0000, Pseudo R^2 0.0471						

Source: Processed research data, 2012

From Table 3.1, when regressing lnAge, DETRA-1, SEX-1, PAMO-1 and RITO-1 on SEMINT, all predetermined variables are statistically significant but DETRA-1 and SEX-1 which is not significant at 5 percent. PAMO-1 and RITO-1 are significant even at 1 percent. It is further showing a constant coefficient of 6.048252 which is also statistically significant at 5 percent. All 302 observations were used with coefficient of determination resting at 47 percent. The explained variation in the dependant variable is minimal because of the values of dummies which are 1 or otherwise zero in the explanatory variables.

In this research the output from the probit command obtained three predictors which were statistically significant, and in the link-test that followed given by Table 3.2, the variable hat-sq is significant (with p-value = 0.040). This confirms, on one hand, that among five predictors chosen,

three were meaningful predictors. On the other hand, it tells that we have a specification error since the link-test is significant.

Table 3.2: Probit model specification results

SEMINT	Coef.	Std. Err.	z	P> [z]	95% Conf. Interval	
_hat	1.248808	0.1703785	7.33	0.000	0.9148724	1.582744
_hatsq	-0.1804809	0.0879781	-2.05	0.040	-0.3529147	-0.008047
_cons	0.1623747	0.1315561	1.23	0.217	-0.0954704	0.4202199
Number of Obs. 302; Chi^2 (2) 183.01; Prob > Chi^2 0.0000, Pseudo R^2 0.4808						

Source: Processed research data, 2012

Therefore the study went further to remedy the situation and to see if the research used correctly specified model. More often than not, the study thought had included all of the variables, yet overlooked the possible interactions among some of the predictor variables. This was the case with this model so, the study tried to add an interaction term on the model. The study created an interaction variable DESE of DETRA-1 and SEX-1 and adds it to the model and regressed again.

It was found and by Table 3.3 indicating that, when regressing lnAge, DETRA-1, SEX-1, PAMO-1, RITO-1 and DESE on SEMINT, DESE being the interaction term of DETRA-1 and SEX-1 you obtain a correct specified probit model. The likelihood ratio chi-square has a slight increase from 179.29 to 181.67 given 6 degree of freedom and a p-value of 0.00001 which keep telling us that our model as a whole fits significantly better than an empty model.

Table 3.3: Specified Regression results

SEMINT	Coef.	Std. Err.	z	P> [z]	95% Conf. Interval	
SEX1	-0.60765	0.2526082	-2.41	0.016	-1.102753	-
InAge	-2.115965	0.9733006	-2.17	0.030	-4.0236	-
DETRA1	-0.1824852	0.2707733	-0.67	0.500	0.7131911	0.3482207
PAMO1	1.194852	0.2811398	4.25	0.000	0.6438284	1.745876
RITO1	2.180682	0.2592027	8.41	0.000	1.672654	2.68871
DESE	0.7619259	0.4975224	1.53	0.126	-	1.737052
_cons	6.439913	3.132966	2.06	0.040	0.2994118	12.58041

Number of Obs. 302; LR Chi^2 (2) 184.04; Prob > Chi^2 0.0000, Pseudo R^2 0.4835

Source: Processed research data, 2012

The above regression results were obtained from a correct probit secified model. Table 3.4 shows the variable hat being significant at 0.00001 with variable hat-sq insignificant even at 10 percent. Therefore the link-test was no longer significant and this time the predictor SEX-1 in addition to AGE, PAMO-1 and RITO-1 were significant. The constant term was also significant at 5 percent.

Table 3.4: Correctly probit specified model

SEMINT	Coef.	Std. Err.	z	P> [z]	95% Conf. Interval	
_hat	1.181019	0.611545	7.33	0.000	0.8651622	1.496876
_hatsq	-0.1405524	0.859514	-1.64	0.102	-0.3090138	0.0279091
_cons	0.1267259	0.1301298	0.97	0.330	-0.1283238	0.3817756

Number of Obs. 302; Chi^2 (2) 184.04; Prob > Chi^2 0.0000, Pseudo R^2 0.4835

Source: Processed research data, 2012

In this study the environment which our young are subjected to, and influence them was studied. It was found in Table 3.3 that parental role model is a factor which influences student's self-employment intention. Furthermore this factor is statistically significant meaning that student whose family member(s) are engaging in any form of self-employment (business) on average increase student's self-employment intention by 1.194852 when compared to a student whose family member(s) do not engage in self-employment activities. This study has confirmed that role models from the family are important for cultivating self-employment. It join Davidson and Honig (2003) contention that, "bonding social capital" based upon strong ties, such as having parents who own their own businesses and support from friends is a good predictor for self-employment intention. Indeed, a self-employed parent has strong influence to their off springs to start their own business.

It was found that, there is a strong linear relationship between student's self-employment experience and student's training which makes difficult to isolate the individual effect on

student's self-employment intention in regression (malti-collinearity). This was because, out of 43 percent of students who had business experience, 58 percent of it had some business training and therefore the research had to BET variable since it correlated with parental role model too. Table 3.5 indicates that out of 59 male students who said they intend to employ themselves after their studies, 68 percent had business experience and so 82 percent were female. It was found that out of 98 who intended to employ themselves, 73 percent reported having self-employment experience. That is to say, self-employment experience is important factor in determining self-employment intention.

Table 3.5: Business experience and Risk tolerance

Student's sex		Get employed	Self-
Male business experience	Yes	24%	68%
	No	76%	32%
Female business experience	Yes	40%	82%
	No	60%	18%
Male Risks tolerance	Strong	24%	98%
	Weak	76%	2%
Female Risks tolerance	Strong	33%	92%
	Weak	67%	8%

Source: Processed research data, 2011

Findings show that most of students have demonstrated weak risk tolerance. 51 percent given their level of education, confirmed that business is associated with risks and uncertainty and that they cannot face these risks and uncertainties in it. RITO-1 when regressed together with other predictors on SEMINT, it was found that student with weak risk tolerance on average reduces by 2.168818 the intention of student towards self-employment when compared to student with strong risks tolerance. This study agree that the probability of becoming self-employed increase with risk tolerance. Risk taking behaviour suggested by Brockhaus (1982) which was concluded by Minniti et al., (2005) that fear or failure is negatively related to people's intention to do something is correct and proved in this research with the sureness that given the population the true population estimate lies between 1.672654 and 2.68871 with 95 confidence level.

It was found that on average a student with strong risks tolerance influence his or her intention towards self-employment more than a student with weak risks tolerance. It was further found that when SEX-1 regressed on SEMINT a female student's intention to self-employment is higher when benchmarked to male by 0.60765. This is true and clearly can be seen in Table 3.5 where male with strong risks tolerance is only 24 percent while for female is 33 percent and with weak risks tolerance is 76 percent and 67 percent respectively. However it was noted in Table 3.5 that, 2 percent is likely to engage into self-employment activities if he has weak risks tolerance while for female irrespective of their weak risks tolerance at least 8 percent are intending to join self-employment option.

This can be concluded that, female demonstrate a higher self-employment intention when have strong risks tolerance than male and it is even more when both has weak risks tolerance. This conforms Minniti et al (2005); Schetkatt and Yocarini (2001); and Bites (1995) who asserted that Female entrepreneurs may have different age profile than male entrepreneurs and that women and men with same level of education may differ with respect to the decision to be self-employed. Studies went further accepting the fact that women with post-secondary education have more self-employment intention than their fellow women with lower education. Therefore, since these are people to graduate (post-secondary) and are intellectuals, definitely have to be prepared to be good in self-business sphere.

In regressing AGE together with other model predictors on SEMINT the researcher used Natural Logarithms to address heteroscedasticity since age was a ratio scale with varying large numbers compared to other variables. In Table 3.3 it was found that the older a student is, the lesser was his or her intention to self-employment is; and that a year increase to a student reduces his or her self-employment intention by 2.015759. Because on average students are at his or her third year at the age of 25; then it is in line with what Reynolds et al., (1999) asserted that many business owners are within the age category of 25 to 45 years and it peaks as people approach the age of 40 and levels out (Bates, 1995). It is also in conformity with Van Gelderen (1999) and Delmar and Davidson (2000) that blossoming entrepreneurship rates tend to be relatively high for people within age category of 25 to 34 years old.

Therefore, if students are prepared to opt for self-employment once they finish their studies they are going to be in the age bracket reasonably for self-business. If Tanzania wants to develop entrepreneurship skills and so to speak its economy's and dynamism depend upon the competitiveness of its own entrepreneurs; its education system must incorporate courses which develop the capabilities of these students to be an entrepreneurs once schooling for them to nurture self-employment intention. If we delay the older they become without this skills the lesser they are likely to opt for self-employment.

4.0 Conclusion and recommendation

A student whose family member(s) is/are self-employed (as s/he stands as a role model) is definitely having self-employment at hand, and even if he/she misses an opportunity in the wage labour market, still s/he can easily switch to self-business. In addition to that, this study has found that, a female student is having a higher self-employment intention than does a male student if they were both coming from the same subjective norms. For that case, students especially those who directly pass through education channels must be the most target youth group such that, at their 20's – when graduating their first degree – they should be cherished ready with self-business skills.

Moreover, student with weak risk tolerance on average reduces the intention of student towards self-employment when compared to student with strong risks tolerance. It is alleged that entrepreneurs – entrepreneurship skills - are congenital, yet there is a datum popular among men that they are made and with that innate skills if we subject it to experience which is said, "a good teacher" we can refine the confidence of our young towards self-employment. Confidence is a plant of slow growth; if and only if our education cultivates this trait in our students and through experience acquired either from schooling self-reliance programs or from family's undertaking if at all any, we are quite certain of minimizing the risks negating attitudes cohort which leads to self-employment intention. We can change the perception of these young who contemplate self-

business is not paying and grow their assurance in facing risks with daring heart to break-through in business.

The study recommends the following:

- In order to have people who engage in a sound self-business activities the government should come-up with a comprehensive education policy that emphasize in additional self-employment programs. This can be through youth enterprise programs and self-reliance activities at lower education levels.

- Field attachments in Higher education levels should not limit students into producing a report about what is done by firms where they are attached to but should include student's involvement in self-business initiatives and creativity that groom students towards self-employment once they finish their studies. In this case a student can be evaluated on the report he or she submit giving identification and appraise of his or her own project plan and scheduling of his or her implementation plan.

- Women just like men must be encouraged and that the environment should be levelled to allow both sex take initiatives. It was found that female students are far more than male if they are subjected on the same norms. This portrait the fact that if we empower women, it's true that they can stand taller.

- Every student must be developed to inculcate the behaviour of facing life complexities including risks in business. This can be done through education which inspire people and create values in society by incorporating life undertakings and entrepreneurship skills right from elementary schooling.

- Lastly, young students can lean faster and their self-employment intention is higher. Let create more awareness among societies that unless we train our children while young, they will never depart from the way of our desire as a nation.

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