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FACTORS INFLUENCING SELF-EMPLOYMENT AMONG VOCATIONAL AND NON-VOCATIONAL GRADUATES IN ARUSHA AND DAR ES SALAAM CITIES, TANZANIA

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ABSTRACT

Self-employment provides an important alternative source of jobs in Tanzania, like in other countries with relatively high unemployment. This problem of unemployment is a major challenge among both vocational and non-vocational graduates. This paper sought to determine factors influencing on self-employment among vocational and non-vocational graduates. The study adapted a cross-sectional survey design with a sample of 384 respondents. Quantitative data were analysed using factor analysis and binary logistic regression while qualitative data were analysed through content analysis. Results indicated that 11 out of 30 factors influenced on self-employment among both graduates' categories. Further analysis on factors indicated that age, experience in business, entrepreneurship training and access to capital significantly influenced on self-employment ($p < 0.05$) for both categories of graduates. Moreover, marital status, easy business start-up procedures and availability of facilities significantly influenced self-employment ($p < 0.05$) among non-vocational graduates. It is concluded that age, experience in business, entrepreneurship training and access to capital are the main factors influencing self-employment among Vocational and Non-Vocational Graduates in Tanzania, particularly in Arusha and Dar es Salaam cities, while marital status, easy business start-up procedures, and availability of facilities are additional factors that influence self-employment among non-vocational graduates alone. As some of the self-employment determining factors cannot be altered, policy interventions should be directed at strengthening factors which can be improved such as entrepreneurship training and access to capital for both vocational and non-vocational graduates while start-up procedures and availability of facilities should be given importance by non-vocational graduates, local authorities and regional authorities in areas, where the businesses operate.

Key words: Self-employment, business, vocational, non-vocational, graduates

1.0 INTRODUCTION

Self-employment refers to a situation whereby individuals own and work in their own businesses, including unincorporated businesses as well as own-account workers (OECD, 2016). Self-employment is considered an essential factor in economic development and a critical source of new jobs, which provide alternative employment opportunities for the majority of the labour force in countries where massive and increasing unemployment has become a significant economic problem (Wakesa *et al.*, 2016). Moreover, self-employment rates are 16.6% for European Union (EU) countries, while 16.1% has been reported for countries in Organisation for Economic Co-operation and Development (OECD) countries (Simoes *et al.*, 2016). In emerging economies, self-employment accounts for 53% of the workforce in low-income countries and 36% in lower-middle-income countries, mainly in agriculture in both cases (Fields, 2013). In Sub-Saharan Africa (SSA), self-employment accounts for 66% of total employment (Fields, 2013). East Africa shows a similar trend as SSA whereby more than 60% of the population is self-employed mainly in the informal sector (AUC and OECD, 2018). In Tanzania, self-employment has a reasonable contribution to the Gross Domestic Product (GDP) growth from 27% in 2010 to 35% in 2016 (Tanzania Invest, 2019). With the increasing unemployment rate in the formal sector, self-employment has been crucial in the emerging economies as a strategy to achieving sustainable economic development and poverty reduction (Ihua, 2009; URT, 2012).

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Despite the declining contribution of the informal sector as a percent of GDP from 62.5% in 1991 to 39.7% in 2010, the segment employs 62.5% of the yearly urban labour force, which is higher than the estimated 8.5% by the formal sector (ESRF, 2016). There are more than 3 million businesses owned by self-employed individuals in the informal sector in Tanzania, employing more than 5 million individuals (ESRF, 2016). Notwithstanding the contribution of informal sector to the country's GDP and self-employment to majority of the labour force (ESRF, 2016; URT, 2012), the factors for entry into self-employment activities need to be well-explored particularly for Vocational Education and Training (VET) and non-VET graduates. In this paper, self-employment includes nine businesses which according to VETA (2010) were mostly preferred in the market. The businesses include carpentry, textile and clothing, motor vehicle mechanics, motor vehicle electrical wiring, electrical installation, secretarial services and computer application, construction, food preparation, and welding and fabrication. Therefore, graduates in areas that were considered to have low preference for self-employment were excluded.

Previous studies (Dvoulety, 2018; Simoes *et al.,* 2016; ILO, 2015) indicate that factors related to occupations, demographics and individual characteristics have been found to provide insights into self-employment activities among VET and non-VET graduates. For instance, Dvoulety, (2018) established that necessary individual characteristic variable, including age, gender, marital status, number of children and experience in business were found to influence self-employment among men and women. However, women had a lower tendency to enter into self-employment than men due to their avoidance of various business-related perils among women. Accordingly, Simoes *et al.,* (2016)found that the tendency of becoming self-employed is higher for married individuals and those having children. This is mainly because a spouse may provide as a source of monetary, material and emotional support and having children relates to higher family expenditures, necessitating higher income.

Moreover, studies have revealed that parents' entrepreneurial backgrounds can initiate self-employment intentions in their children (Lindquist *et al.,* 2017; Laspita *et al.,* 2012; Altinay *et al.,* 2012). Lindquist *et al.,* (2017) found that family business exposes the young generation and affects their intentions to self-employment perception as a desirable career choice in their lifetime. If a parent is self-employed, this increases the chances that the person will become self-employed by a factor of 1.3 to 3.0 (Andersson and Hammarstedt, 2011). Access to financial resources is said to positively influence self-employment, among other factors and that wealthier individuals with lower financial constraints get into self-employment than others (Simoes *et al.,* 2016; Beck and Demirguc-Kunt, 2006). Other factors which have been found to influence self-employment include human capital variables representing education and business experiences (Simoes *et al.,* 2016). It is argued that formal education increases skills needed for self-employment activities while business experience is positively linked with self-employment (Lange *et al.,* 2011;Packham *et al.,* 2010; Levie *et al.,* 2009; Block and Sandner, 2009).

The role of integrating entrepreneurship education in vocational education as a motivating factor to self-employment has been confirmed by many empirical studies. Van der Zwan *et al.* (2013); Sanchez, (2011) and Matlay, (2008), have shown that majority of the individuals with entrepreneurship education attain self-employment status in comparison to those without entrepreneurship education. Gibcus *et al*. (2012) found more self-employed individuals among the entrepreneurship alumni as compared to the alumni without entrepreneurship background. Similarly, Mangasini, (2015) found entrepreneurship education had increased graduates' need for achievement for those who had studied entrepreneurship courses than those without. A study by VETA (2013) indicates that entrepreneurship education and training is necessary tool for self-employment but not sufficient if not supported or linked to other factors such as support of capital and linkage with, employers, industries and other business development services.

Based on the previous studies, it is imperative to note that, the Tanzania environment through the "*Ujamaa policy*" (socialist policy) did not support individual ownership of means of production, a situation which impacted negatively individuals to enter into entrepreneurship and self-employment activities (Mangasini, 2015). Moreover, existing literature indicate no study which has been done so far relating to specific factors influencing self-employment among VET and non-VET graduates in the country. Thus, the study fills the literature gap and provides insight into the specific factors which induce VET and non-VET graduates enter into self-employment in the Tanzanian environment after the country adopted economic liberalisation policies allowing individuals to own means of production and thus enter, into self-employment activities.

Regardless of the current Tanzania environment supporting entrepreneurship and self-employment activities, unemployment situation among VET and non-VET graduates is still high. For instance, it is estimated that more than 850,000 all graduates in the country who enters the labour market annually, only 50,000 to 60,000 of the graduates are absorbed in the formal sector (LO/FTF, 2018). Moreover, studies indicate that self-employment status for VET and non-VET graduates stand at 38% and 22.7% respectively (VETA, 2019 and Mangasini, 2015). In comparison to the number of graduates entering the labour market, the number of graduates entering into self-employment is still low, which imply that majority of the VET graduates are unemployed. The unemployment situation is said to be slightly higher in the urban areas at 13.4% compared to national average of 10.3%, Dar es Salaam region having the highest unemployment rate at 21.5% (URT, 2015).As a result, the Tanzanian National Employment Policy (URT, 2008) was established and one among other issues focuses on quality employment and promotion of self-employment opportunities among VET and non-VET graduates. Likewise, one among the reasons for establishment of Vocational Education and Training Authority (VETA) in Tanzania was to impart technical skills among graduates to enable them get into sustainable self-employment and reduce poverty among the disadvantaged groups (URT, 1994).However, some VET graduates fail to get into self-employment after graduation despite their positive intentions before their graduation (VETA, 2019; VETA, 2010).The situation is worse for female graduates,81.2% of whom are reported to stay unemployed for more than one year compared to 78.7% of the unemployed male graduates (VETA, 2010). The high rate of unemployment situation poses a challenge as to the specific factors that contribute to self-employment among VET and non-VET graduates. Thus, the study objectives were to identify and analyse factors of self-employment among VET and non-VET graduates in the study areas.

2.0 THEORETICAL REVIEW

This paper is guided by Douglas and Shepherd (2000) economic theory of entrepreneurship. The economic theory of entrepreneurship is based on economics' viewpoint which explain individuals' choice for self-employment (Szaban and Skrzek-Lubasinska, 2018; Douglas and Shepherd, 2002; Douglas and Shepherd, 2000). The theory states that the decision to be an entrepreneur may be modelled as a utility-maximising career choice made by an individual. The theory distinguishes between entrepreneurial attitudes and entrepreneurial abilities and link an individual's income potential to these abilities and attitudes. They investigate more fully the "working conditions" in terms of the individual's attitudes to specific work conditions such as effort required, risk exposure and decision-making autonomy as factors to one having high or less attitude towards entrepreneurial activity. Thus, the economic theory of entrepreneurship explains, in part, an individual's choice to be self-employed or to be an employee of an existing organisation, by utilising a utility-maximisation model of human behaviour – an individual will choose the career option that promises the greatest expected utility. Thus, based form the objective of this paper which was to determine the factors contributing to self-employment between VET and non-VET graduates, the Economic Theory of Entrepreneurship is much more appropriate in predicting and understanding graduate's engagement in various self-employment activities. It is argued that graduates 'attitudes affect their career choice as to whether individual choose self-employment or not based on their attitude towards work, business risk and decision-making autonomy that they possess in their business ventures. Thus, it is expected that self-employed VET and non-VET graduates with positive attitude towards their business are self-employed while those with negative or low attitude are likely to opt for other form of employment activities, such as wage employment.

3.0 METHODOLOGY

The research on which this paper is based was conducted in Dar es Salaam and Arusha cities. The two cities were chosen for they differ in many aspects, such as population size, individuals' income levels, economic activities as well as human development between regions among others (UNDP *et al.*, 2018). Moreover, Dar es Salaam city is the largest city in Tanzania followed by Arusha city, in terms of social services and public infrastructure investments including vocational institutions (VETA, 2010; Wenban-Smith, 2015 in Andreasen *et al.*, 2017). Specifically, Dar es Salaam city was chosen because it is the largest city with the oldest and highest record of VET centres which stood at 75 VET centres by 2015, followed by Arusha, which is among the major cities, which had 52 VET centres by 2015, more than other major cities in Tanzania (URT, 2016). The

assumption here is that the larger the number of VET institutes, the more self-employed graduates in the two cities than other cities in Tanzania.

The study adopted a cross-sectional research design since it facilitates the collection of data more or less simultaneously, and enables examination of variables once at a single point in time. Moreover, it enabled to determine relations of various self-employment factors between self-employed VET and non-VET graduates (Bryman and Bell, 2011).The study population was VET graduates and non-VET graduates with different skills who were self-employed in Arusha and Dar es Salaam Cities, and the unit of analysis was an individual owner of a business under self-employment. VET graduates were vocational education alumni, and non-VET graduates were those who did not graduate from vocational education training. A total of 384 respondents were involved in equal proportions for VET and non-VET graduates. The sample size was determined using Cochran's (1977) formula. The formula was used since it is appropriate in determining sample size when study population is large and not known (Cochran, 1977). The sample size was justified on the ground that too large a sample implies a waste of resources and a too small sample diminishes the utility of the results (Bartlett *et al*., 2001).The formula is presented by:

$$n = \frac{z^2 pq}{\ell^2} \quad \text{.....1}$$

Where:
n = required sample size
z = the abscissa of the normal curve at 5% ($p < 0.05$) error or 95% confidence interval is 1.96
p = portion of vocational and non-vocational graduates who are self-employed in business
q = portion of vocational and non-vocational graduates who are not self-employed in business (1-p)
ℓ = the acceptable sampling error.

Therefore, using p = 0.5 (maximum variability), q = 1-0.5 = 0.5, z = 1.96, at the 95% confidence level and ±5% precision, the resulting sample was as follows:

$$n = \frac{(1.96)^2 (0.5)(1-0.5)}{(0.05)^2} = 384$$

Snowball sampling was employed to collect data from individual graduates in Arusha and Dar es Salaam Cities for interview. The snowball sampling technique was used in finding and recruiting "hidden populations." That is VET and non-VET graduates were not easily accessible except through other sampling strategies (Babbie and Mouton, 2007). Quantitative data were collected by using a survey approach with a structured questionnaire for each respondent business. From the overall sample of 384 respondents, the population of Arusha (1 694 310) and the population of Dar es Salaam (4 364 541), as per Tanzania national census of 2012 (URT, 2013), were used to find proportions of Arusha respondents which yielded approximately 28% equivalent to 106 respondents from Arusha and 72% equivalent to 278 respondents from Dar es Salaam.

Qualitative data were collected using Key Informant Interviews (KIIs) whereby a total of seven (7) KIIs were conducted with key informants (technical and administrative personnel) who were selected based on those who had knowledge on vocational education and employment status of VET and non-VET graduates. For the VET institutions that were involved, the retired VETA Director General, College Principals, academic Heads of Department, representatives of the Directorate of Labour Market Planning and Development (DLMPD) at VETA Head Office Dar es Salaam were interviewed. Qualitative and quantitative methods of data collection complemented each other and thus increased the overall validity of the study. The qualitative approach allowed for an in-depth probing and yielded detailed information (Saunders *et al.,* 2009). Qualitative data recorded in notebooks were transcribed, categorised, coded and thereafter grouped into themes in relation to the objective of the study. The data were analysed using a constant comparison technique by comparing occurrences applicable to each category and restricting data to the theory as proposed by Kolb (2012).

Quantitative data was analysed using descriptive statistics, factor analysis and binary logistic regression. Factor analysis was used to analyse data in order to identify common factors which influenced self-employment among VET and non-VET graduates. A pre-testing of the questionnaire which was conducted by interviewing thirty self-employed VET and non-VET graduates in Arusha provided the main factors that influenced self-employment among the graduates in the study areas. In addition, reviewed literature provided insight into more factors influencing self-employment elsewhere in different economic jurisdictions. Then, the identified factors

combined with other social demographic variables (age, business experience, sex and marital status) were quantitatively analysed using a binary logistic regression to obtain factors significantly influencing self-employment to each category of graduates. The analysis was appropriate since the dependent variable was a dichotomous variable with options 0 and 1 (measured as 1 = High if the graduate had high scores on self-employment attribute; or 0 = Low if the graduate had low scores on self-employment attribute.

Accordingly, the binary logistic regression model was adopted because the variables used met the underlying assumptions that all predictor variables were nominal, ordinal, interval, or ratio variables (Field, 2018). The underlying assumptions of the model, amongst others, included sample size adequacy, linearity, and multicollinearity (Pallant, 2011). The sampling adequacy assumption was tested using the method by Peduzzi *et al.* (1996). The formula for a minimum number of cases to include in a study was given by n = 10(k)/p where “k” is the number of covariates included in the model and “p” is the proportion of positive cases in the sample. Thus, with 15 covariates included in the model, the minimum sample size (10 (15) /0.828), equal to182 cases, was needed. For this analysis, the study used a sample of 192 for each category of graduates, which was over and above the minimum recommended number. The linearity assumption was tested to check continuous variables in the model had any relationship with the log of outcome variables. The interaction between each predictor and the log of itself in the model had significances higher than 0.05 indicating that the assumption of linearity of the logit was met for all the predictor variables as indicated in (Table 1).

Table 1: Linearity assumption test for continuous variables

Variable	Significance (p-value)
Age	0.413
Experience in the business	0.369
Age by Ln(Age)	0.409
Experience by Ln(Experience)	0.957

Moreover, multicollinearity was tested to determine whether there was a strong correlation among independent variables that would have caused problems when assessing the individual importance of each independent variable in the model. Field (2018) asserts that an inter-correlation of variables ranging from 0.8 and above signals multicollinearity. Inter-correlation among all the independent variables (Table 2) confirmed the absence of multicollinearity. The interpretation of the binary logistic regression was based on group statistics,Omnibus tests of model coefficients, Hosmer and Leme show test, Cox and Snell and Nagelkerke R^2, Wald statistic, B-values, Exp (B) and significance (p-values).

Table 2: Variable’s correlation matrix (r-value)

	X_1	X_2	X_3	X_4	X_5	X_6	X_7	X_8	X_9	X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}
X_1	1	0.026	0.040	0.330	0.029	-0.16	-0.11	-0.18	-0.01	0.08	0.13	0.11	0.10	0.08	0.04
X_2		1	-0.01	0.11	-0.15	-0.29	-0.22	-0.15	0.08	0.13	-018	0.12	-0.04	-0.10	0.11
X_3			1	-0.02	-0.03	-0.02	0.05	-0.11	-0.08	-0.07	0.08	-0.00	-0.04	-0.01	-0.07
X_4				1	-0.11	-0.11	0.01	-0.05	-0.11	0.17	-0.13	-0.01	-0.06	0.04	0.11
X_5					1	0.11	0.01	0.06	0.03	-0.04	0.11	-0.01	0.04	-0.06	-0.01
X_6						1	-0.06	0.28	-0.10	-0.15	0.27	-0.10	0.02	-0.10	-0.09
X_7							1	-0.04	-0.11	0.12	0.06	-0.01	-0.11	0.16	-0.03
X_8								1	-0.26	-0.12	0.13	-0.07	-0.00	-0.01	-0.07
X_9									1	-0.12	0.02	-0.12	-0.04	-0.13	0.12
X_{10}										1	-0.06	0.13	-0.02	0.03	-0.03
X_{11}											1	-0.45	-0.07	-0.24	-0.03
X_{12}												1	-0.11	-0.04	-0.10
X_{13}													1	-0.09	-0.13
X_{14}														1	-0.07
X_{15}															1

The binary logistic regression formula and variable description (Table: 3) were given by:

$$P(Y) = \frac{1}{1 + e^{-(b_o + b_1 x_1 + b_2 x_2 + \ldots b_{15} x_{15})}} \quad \ldots\ldots 2$$

P = probability (y) that an attribute has a high or low contribution towards self-employment, coded as 1/0 respectively;
e = natural logarithm base (= 2.7182818284…);
b_0 = intercept at (y-axis) when all of the independent variables (X_1 through X_{15}) are equal to zero;and x_1 to x_{15} = predictor/independent variables entered into the model.

Table 3: Description of the model variables and measurement levels

Variables	Variable definition	Level of measurement
P	Probability of Yoccurring, given known values of Xs	Binary
X_1	Age of respondent (years)	Continuous variable
X_2	Experience in business (years)	Continuous variable
X_3	Sex of respondent (1 = male; 0 = female)	Binary
X_4	Marital status of business owner (1 = male; 0 = otherwise)	Binary
X_5	Easy administrative procedure to start a business(1 = Yes; 0 = No)	Binary
X_6	Entrepreneurship training (1 = Yes; 0 = No)	Binary
X_7	Formal education other than VET(1 = Yes; 0 = No)	Binary
X_8	Elaborate teaching method (1 = Yes; 0 = No)	Binary
X_9	Low start-up capital (1 = Yes; 0 = No)	Binary
X_{10}	Wanted more money (1 = Yes; 0 = No)	Binary
X_{11}	Accessed financial support (1 = Yes; 0 = No)	Binary
X_{12}	Availability of markets/demand (1 = Yes; 0 = No)	Binary
X_{13}	Availability of physical facilities (1 = Yes; 0 = No)	Binary
X_{14}	Family business background (1 = Yes; 0 = No)	Binary
X_{15}	Wanted better work condition (1 = Yes; 0 = No)	Binary

4.0 FINDINGS AND DISCUSSION

This section of the paper presents results on the factors which were identified to influence self-employment among VET and non-VET and the binary logistical regression results regarding factors which were significantly influencing self-employment for each category of graduates.

4.1Factors influencing self-employment among VET and Non-VET graduates

In order to identify factors which, influence self-employment among graduates, 30 factors in the study were reported by respondents during field survey to influence self-employment. The factors were subjected to factor analysis to obtain the most pertinent self-employment factors influencing self-employment among VET and non-VET graduates. The suitability of the data for factor analysis was determined using Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy as well as Bartlett's test of sphericity as shown in Table 4.

Table 4: KMO and Bartlett's Test[a]

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.676
Bartlett's Test of Sphericity	Approx. Chi-Square	2070.485
	df	435
	Sig.	0.000

a. Type of respondents = Self-employed VET and Non-VET graduates (n = 384)

The findings indicate a KMO of 0.676, implying a considerable value of sampling adequacy for factor analysis which is beyond the cut-off point of 0.5 (Kaiser, 1974). The Bartlett test of sphericity had a significant value (chi-square 2070.485, df = 435, $p < 0.001$). Based on the Bartlett's test, using factor analysis was appropriate because the p-value was significant, which supports the factorability of the correlation matrix (Pallant, 2011).Thereafter, factor extraction was done to identify important factors influencing self-employment among VET and non-VET graduates. Factors were extracted based on the Eigenvalues of 1.0 and above as recommended by Field (2018) and Pallant (2011).The Eigen values associated with each factor showed the variance explained by that particular linear component. Table 5presents the Eigen values related to each factor after extraction.

Table 5: Total variance explained (only components 1 - 11 with eigenvalues ≥ 1 presented)

	Initial Eigenvalues			Rotation Sums of Squared Loadings		
Component	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.480	11.600	11.600	2.876	9.588	9.588
2	2.607	8.689	20.288	2.206	7.352	16.940
3	2.056	6.852	27.140	1.781	5.938	22.878
4	1.756	5.852	32.992	1.744	5.813	28.690
5	1.470	4.900	37.891	1.625	5.416	34.106
6	1.356	4.521	42.413	1.468	4.892	38.998
7	1.296	4.320	46.733	1.411	4.702	43.700
8	1.197	3.988	50.721	1.383	4.610	48.310
9	1.159	3.863	54.584	1.366	4.552	52.862
10	1.052	3.506	58.090	1.326	4.420	57.282
11	1.002	3.341	61.431	1.245	4.149	61.431

Extraction Method: Principal Component Analysis. Type of respondents = self-employed VET and Non-VET graduates (n = 384)

After extraction, only 11 factors with Eigenvalues of 1 and above were retained, out of the 30 factors which were subjected to factor analysis as recommended by Field (2018), explaining a total of 61.431% of the

variance. Subsequently, the identified factors were used to determine patterns of factor loadings for easy interpretation. The oblique rotation was chosen and factor loadings of 0.3 and above were retained as advised by Pallant (2011) that factor loadings should be higher for constructs they are meant to support in comparison with other factors. Therefore, from the analysis, a total of 11 factors, namely; easy start-up procedures, wanted more money, elaborate teaching method, availability of markets, and family business experience were found to influence self-employment among VET and non-VET graduates. Other factors were better work conditions, availability of the physical facility, entrepreneurship training, formal education, low start-up capital and access to capital. All other factors from the 12^{th} to the 30^{th} component with Eigenvalues less than 1 were dropped and excluded (not included in Table 5) as they were found to have less contribution to self-employment as recommended by Field (2018).

The results presented in Table5 indicate that, out of the eleven extracted factors, one factor was related to legal aspects or enabling environment for self-employment (easy start-up procedures) and three components were related to education (elaborate teaching method, entrepreneurship training and formal education other than VET). The other three components were related to financial factors (wanted more money, low start-up capital and access to finance), two components were related to infrastructure (availability of markets/demand and physical facilities) and the last two components were related to social issues (good family business background and better working condition). The findings show that education and financial factors were more pertinent factors to self-employment, followed by infrastructural factors and social factors, while the legal factor was the least factor to influence self-employment among VET and non-VET graduates.

It was also found that five factors (easy administrative procedures, elaborate teaching methods, low start-up capital, availability of markets and physical facilities) were not observed in the reviewed literature, and thus these factors were specific factors contributing to self-employment among graduates in the study areas and probably in the Tanzanian environment at large. Thus, the factors provide insights in explaining self-employment among Tanzanian graduates. The findings of this paper provide evidence to the Tanzanian government through relevant authorities together with other stakeholders concerned with graduate's self-employability on factors that need to be strengthened with the aim of increasing self-employability among graduates in the country. The remaining six factors (formal education other than VET; entrepreneurship training, wanted more money, access to finance, family business background and better working conditions) have been reported to influence self-employment elsewhere in the reviewed literature (Simoes *et al.*, 2016; Lange *et al*., 2011;Packham *et al*., 2010).

Generally, this study establishes that all the eleven identified factors are necessary for self-employability among graduates, if considered in totality by the relevant authorities. However, there seem to be little or no existing political will to support graduates 'self-employability in Tanzania irrespective of many policies and legal framework in place to support them. This is because the process of entry into self-employment among graduates is not well coordinated by the responsible government machineries. For instance, access to capital among graduates has been a long-standing problem (VETA *et al.,* 2013). Moreover, the government has not controlled the lending policies of the financial institutions so that their loans are easily accessed by poor people including newly graduated individuals (Mangasini, 2016). It is evident that the government has an important role to play in facilitating and encouraging self-employability among graduates, not only setting up policies and legal framework which seem to support self-employment but also having the appropriate enforcement mechanism that make self-employment a reality among graduates in the labour market.

4.2 Binary Logistic Regression Results for Self-employment Factors

The factors identified in the preceding section were subjected to further analysis using a binary logistic regression to determine their chances of influence on self-employment among Vocational and non-vocational graduates. The results in Table 6 present the binary logistic regression output for VET and non-VET graduates.

Table 6: Self-employment Factors for VET and non-VET graduates (n = 192)

		VET Graduates					Non-VET Graduates				
Independent variables	**Df**	**B**	**S.E.**	**Wald**	**Sig**	**Exp(B)**	**B**	**S.E.**	**Wald**	**Sig**	**Exp(B)**
Age of business owner	1	0.38	0.10	14.83	0.000	1.468	0.20	0.06	11.30	0.001	1.226
Experience in business	1	1.30	0.31	18.14	0.000	3.681	1.57	0.35	19.87	0.000	4.798
Sex of business owner	1	0.91	0.70	1.67	0.196	2.482	-0.49	0.82	0.35	0.552	0.615
Marital status	1	0.72	0.73	0.96	0.327	2.045	2.23	0.84	7.10	0.008	9.310
Easy start-up procedures	1	-0.38	0.66	0.33	0.568	0.688	-1.55	0.70	4.92	0.027	0.212
Entrepreneurship training	1	-3.04	0.91	11.10	0.001	0.048	-2.60	0.98	7.05	0.008	0.075
Formal education than VET	1	-0.02	1.16	0.00	0.988	0.983	-0.94	0.83	1.31	0.253	0.389
Elaborate teaching method	1	-0.69	0.79	0.78	0.377	0.499	-0.74	0.76	0.94	0.332	0.477
Low start-up capital	1	1.28	0.88	2.12	0.146	3.610	-0.39	0.77	0.27	0.613	0.677
Wanted more money	1	-0.14	0.89	0.03	0.873	0.867	1.03	0.90	1.30	0.254	2.793
Accessed financial support	1	-1.64	0.78	4.43	0.035	0.680	-3.18	0.91	12.26	0.000	7.099
Availability of facilities	1	-0.39	0.77	0.26	0.614	0.194	1.96	0.87	5.11	0.024	0.042
Availability of markets	1	-0.15	0.70	0.05	0.828	0.860	0.54	0.80	0.45	0.502	1.710
Family business experience	1	0.37	0.71	0.28	0.598	1.454	0.37	0.73	0.25	0.617	1.443
Better working conditions	1	-0.12	0.89	0.02	0.890	0.884	0.63	0.92	0.47	0.493	1.884
Constant	1	-12.11	3.08	15.42	0.000	0.000	-8.12	2.39	11.57	0.001	0.000

VET graduates: Overall Wald statistic = 27.001 (p = 0.000); Omnibus Test of Model Coefficients Chi-square = 166.307 (p = 0.000); Hosmer and Lemeshow Test Chi-square = 55.210 (p = 0.001); Cox & Snell R^2 = 0.579; Nagelkerke R^2 = 0.817. Non-VET graduates: Overall Wald statistic = 19.289 (p = 0.000); Omnibus Test of Model Coefficients Chi-square = 179.600 (p = 0.000); Hosmer and Lemeshow Test Chi-square = 12.510 (p = 0.130); Cox & Snell R^2 = 0.608; Nagelkerke R^2 = 0.842.

Findings indicate that the overall Wald statistic for VET graduates was significant at ($p < 0.05$); meaning that self-employment factors in the overall model highly contributed to VET graduates being self-employed. The chi-square for the Omnibus Tests of the model coefficient was significant at ($p < 0.05$) which indicate that self-employment attributes in the overall model influenced VET graduates being in self-employment. The chi-square for the Hosmer and Lemeshow Test of the goodness of fit suggests the model was not well fitting the data as p = 0.001 ($p < 0.001$). The Cox & Snell R^2 and the Nagelkerke R^2 were 0.579 and 0.817 respectively, indicating that age, experience in business, entrepreneurship training and access to finance altogether accounted between 57.9% to 81.7% of the observed variance on the factors that contributed to VET graduates being self-employed. Other predictor variables as indicated in Table6 were not significant, given $p > 0.05$. This implies the only four factors out of eleven identified in the preceding section had a higher chance for VET graduates being self-employed and the remaining factors were considered to have low chances for them being in self-employment.

Among the predictor variables which were found to have a significant influence on self-employment include age, experience in business, entrepreneurship training and access to financial support. Experience in business having the highest Wald statistic test of 18.14 imply that experience in business significantly contributed in predicting self-employment among VET graduates. With an Exp (B) coefficient of 3.682, the finding implies that for every unit increase in business experience, the odds of being in self-employment among VET graduates with more experienced in business was 3.682 times than that of VET graduates with lesser business experience.

Age of business owner with a Wald statistic test 14.83 exhibit that age, was one among the variables which contributed significantly to predicting self-employment among VET graduates in the study areas. Further findings show that age was a strong predictor of VET graduates towards self-employment at p = 0.000 and an Exp (B) value of 1.648which show that older VET graduates are1.468 times more likely to be self-employed than younger ones. The implication of the findings to the VET graduates age is that when a graduates' age increases by 1 unit (1 year), it indicates that there is1.648 likelihood for the graduates to be self-employed in business in the labour market.

Similarly, entrepreneurship training with a Wald statistic test of 11.10, indicate that entrepreneurship training significantly contributes to self-employment among VET graduates in the study areas. The model produced a statistically significant results at p = 0.001, B coefficient of -3.04 and Exp (B) value of 0.048, indicating that the odds of entrepreneurship training contribution to towards self-employment was 0.048 times less likely when entrepreneurship training was low among VET graduates as the odds of when entrepreneurship training was high among them. The findings imply that when entrepreneurship training increases by 0.048 courses the odds ratio is -3.04, meaning that VET graduates who opted for fewer entrepreneurship training during their enrolment into the VET studies are 3.04 less likely to enter into self-employment than VET graduates with higher number of entrepreneurship training.

Another variable which was found to be an important determinant of VET graduates towards self-employment was access to financial support. The results showed a Wald statistic test of 4.43 indicating that access to

financial support significantly contribute to self-employment among VET graduates. The findings indicate that financial support was statistically significant at p = 0.035,and Exp (B) = 0.680, which imply that for every unit increase in access to financial support, the odds of being in self-employment among VET graduates was 0.680 less likely.

Results for non-VET graduates presented in Table 6 indicate a significant overall Wald statistic = 19.289, $p < 0.05$; thus, attributes in the overall model significantly contributed to self-employment among non-VET graduates. The chi-square for the Omnibus Tests of the model coefficient was significant ($p < 0.05$) which indicates that independent variables in the overall model again contributed to non-VET graduates being self-employed. Unlike the VET graduates, the chi-square for the Hosmer and Lemeshow Test of the goodness of fit for non-VET graduates suggests the model was well fitting the data as p = 0.130 ($p > 0.05$). The Cox & Snell R^2 and the Nagelkerke R^2 were 0.608 and 0.842 respectively, indicating that age, experience in business, marital status, easy administrative procedures, entrepreneurship training, access to finance and physical facilities altogether contributed from 60.8% to 84.2% of the observed variance for non-VET graduates being in self-employment. Other predictor variables (Table 6) were not significant, given $p > 0.05$.

The findings on factors contributing to self-employment among non-VET graduates indicate that experience in business having the highest Wald statistic test of 19.87 which imply that experience in business had the highest significant contribution to self-employment among non-VET graduates. The predicted self-employment indicates at p = 0.000 and an Exp (B) coefficient of 4.798, indicating that experience in business was significant contributor to self-employment and that an Exp (B) value of 4.798 indicate that for every unit increase in business experience (1 year), the odds of being in self-employment among non-VET graduates increased by 4.798 times. The finding corresponds to those of VET graduates and other previous studies by (Dvoulety, 2018; Lange *et al.*, 2011; Packham *et al*., 2010; Levie *et al*., 2009; Block and Sandner, 2009) who established that experience in business was a necessary individual characteristics variable which influenced self-employment among men and women. Therefore, experience in business is an important attribute for both VET and non-VET graduates being in self-employment. Based on these results it is argued that VET and non-VET graduates with prior business experiences from family business or elsewhere are more likely to enter into self-employment activities than those without prior experience. Moreover, there are high chances of being self-employed for VET and non-VET graduates with appropriates attachment through apprenticeship system in various sectors of the economy prior for them getting into self-employment activities in the labour market.

Likewise, age of business owner for non-VET graduates was another significant factor with a very strong contribution to predicting non-VET graduates' self-employment. The results were statistically significant at p = 0.001, Wald statistic test = 11.30 and Exp (B) value = 1.226. Furthermore, a Wald statistic of 11.30 shows that age contributed highly to predicting non-VET graduates' self-employment. Moreover, the results indicate that, when a non-VET age increase by 1 unit (1 year), the odds of being self-employed among non-VET graduates increase by 1.226, implying that non-VET graduates are 1.226 more likely to be self-employed in business for every unit increase in age. Findings on age, for both VET and non-VET agree with the current evidence for the inverted U-shaped association between age and self-employment, with the starting point depending on the country to country and year of analysis with a turning point at the age of 40 years as pointed out by Dvoulety, (2018). The decreasing association for age with self-employment above 40 years can be explained by the lower physical and mental capabilities associated with aging.

Access to financial support was also found to contribute significantly to the chances of non-VET graduates being self-employed. The results indicated a Wald statistic test of 12.26, at p = 0.000 and Exp (B) = 7.099. The findings show that access to financial support was statistically significant contributor to self-employment and the value of imply that the odds of access to financial support contribution to self-employment among non-VET graduates is 7.099 more likely if access to financial support is high in the financial market. Thus, the findings imply that for every 1 unit (1 Tanzania shilling) of financial support accessed in the financial market increases the odds of being in self-employment by 7.099 times among non-VET graduates in the labour market. However, findings indicated that majority of the respondents (74.3% VET and 72.4% non-VET respectively) reported to have accessed start-up capital from personal savings while family members support accounted by 16.7% for VET and 16.3% for non-VET graduates respectively. The remaining 9% VET and 11.3% non-VET got their start-up capital from formal sources such as banks and microfinance institutions. Furthermore, one of the KIin Arusha reported that: *"... majority of the graduates fail to access financial support from formal financial institutions due to the fact that they lack collateral for loan, high-interest rate on loans and fear for failure to repay back the loan and interest...*"The findings partly explain the reasons why majority of both VET and non-VET graduates financed their business from own and family support instead of using the available formal sources such as microfinance institutions and banks.

Marital status equally had a significant influence in predicting self-employment among non-VET graduates as indicated by Wald statistic of 7.10. Moreover, the results on marital status indicate a statistically significant results at p = 0.008 and an Exp (B) of 9.310 implying that if a non-VET graduate was in the married category, the odds of being in self-employment was 9.310 times as the odds of non-VET graduates who were single, widowed or divorced. This is because partly, a spouse may provide support necessary for the success of the business and having children relates to higher family expenditures, necessitating higher income as pointed out by Simoes *et al.,* (2016) that the tendency of becoming self-employed is higher for married individuals and those having children because of the requirements to meet various financial needs for the family.

Entrepreneurship training for non-VET graduate with Wald statistic of 7.05, indicate that entrepreneurship training was among self-employment factors which highly contribute to self-employment among non-VET graduates in the study areas. The model produced a statistically significant results at p = 0.008, and Exp (B) value of 0.075, indicating that the odds of entrepreneurship training contribution to towards self-employment was 0.075 times less likely when entrepreneurship training courses were lower among non-VET graduates as the odds when entrepreneurship training were high among them. The findings imply that non-VET graduates who opted for fewer entrepreneurship training during their enrolment into the non-VET studies are 0.075 less likely to enter into self-employment than VET graduates with higher number of entrepreneurship training. Similar findings by (Mangasin, 2015; VETA *et al.*,2013 and Gibcus *et al*., 2012) finds that graduates who studies entrepreneurship courses majority enter into self-employment than others. VETA *et al*. (2013) for instance, argue that entrepreneurship education and training is necessary tool for self-employment but not sufficient if not supported or linked to other factors such as support of capital and linkage with, employers, industries and other business development services. Thus, the findings imply that entrepreneurship alone is not a sufficient factor to ensure self-employment among both VET and non-VET graduates. Therefore, there is a need for a combination of more than one factor as well as co-operation among different actors to ensure successful self-employment in the labour market among graduates.

Other factors with significant contribution to self-employment among non-VET graduates but with lesser effect included availability of facilities and easy start-up procedures with Wald statistic of 5.106 and 4.921 respectively. The results were statistically significant with p = 0.024 and Exp (B) = 0.042 for availability of facilities and at p = 0.027 and Exp (B) = 0.212 for easy start-up procedures. Regarding findings for easy availability of facilities with an Exp (B) value of 0.042 indicate that the odds of contribution to towards self-employment was 0.042 times less likely when facilities such as various tools and infrastructures necessary for doing a particular business were less available than when the same were readily available among non-VET graduates. Moreover, the findings for easy start-up procedures with an Exp (B) value of 0.212 imply that the odds of self-employment were 0.212 less likely if procedures for start-up were highly strict than when the same procedures were less strict. The findings imply availability of facilities and the easy with which that both VET and non-VET graduates can start a business are necessary variables that induce graduates to enter into self-employment activities in the labour market.

Based on self-employment factors findings, there were seven factors which significantly contributed to self-employment among VET and non-VET graduates in totality. Among the factors only four factors were found to significantly influence self-employment among VET graduates which were: Experience in business, age of business owner, entrepreneurship training and access to start-up capital. In contrast to VET graduates, non-VET graduates' seven factors (three factors in additions to factors identified for VET graduates) were found to be significant determinants of self-employment. The three additional factors were: marital status, easy start-up procedures and availability of facilities. The respective Cox and Snell R^2 and the Nagelkerke R^2 were 0.608 and 0.842 for non-VET graduates and 0.579 and 0.817 for VET indicate that both VET and non-VET graduates accounted by 57.9% to 84.2% of the observed variation of self-employment determinants. This imply that majority of the VET and non-VET appreciate being self-employed in the current businesses and thus their attitude towards work, business risk and decision-making autonomy in their business is favourable in line with Douglas and Shepherd (2000) economic model theory of entrepreneurship.

5.0 CONCLUSION AND RECOMMENDATIONS

From the results, the study concludes that eleven factors including start-up procedures, wanted more money, elaborate teaching method, availability of markets, family business experience, better work conditions, availability of the physical facility, entrepreneurship training, formal education, low start-up capital and access to capital were the major determinants of self-employment among VET and non-VET graduates in the study areas. Likewise binary logistic regression analysis on the self-employment determinant and the selected social demographic factors establishes that age, experience in business, entrepreneurship training and access to capital significantly influence both categories of graduates entering into self-employment. In addition, marital status,

easy start-up procedures and availability of physical facilities contribute significantly to predicting self-employment among non-VET graduates.

Based on the conclusions in the preceding paragraph, the paper put forward the following recommendations:

i. Intervention targeting at improving graduates' self-employability in Arusha and Dar es Salaam should focus on promoting the identified factors for every graduate embarking into self-employment. Since some of the self-employment determining factors such as age and marital status cannot be altered, thus nothing or little can be done on them in order to improve.
ii. Since experience in business has potential for improving self-employment among both VET and non-VET graduates, employers in both public and private sectors to ensure apprenticeship programmes are availed to the graduates in order to provide the needed experience for self-employment activities among the graduates. This will help graduates' raise the motivation and attitude to self-employment as career alternative to paid employment.
iii. Improvement should also be made to the existing financial system which will provide room to VET and non-VET graduates' access financial services necessary for financing self-employment activities. This can be done by regulating the existing lending policies of the financial institutions so that their loans are easily accessed by all categories of graduates.
iv. Strategies should also be directed at improving enabling environment and the necessary infrastructural facilities that promote self-employment in the labour market for general education graduates. Given a continuous increase in unemployment among general education graduate, improvement on the factors will promote more graduate to choose self-employment as a career choice in their life time rather than considering wage employment alone.
v. Policy interventions should also focus more on emphasising entrepreneurship education training at all levels of the education system to enhance self-employability among graduates in different levels of schooling for both vocational education and general education system.

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