



RISK TAKING INCLINATION AND ENTREPRENEURSHIP EDUCATION ON SELF-EMPLOYMENT INTENTIONS AMONG STUDENTS' IN TERTIARY INSTITUTIONS IN KENYA

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Abstract

Risk taking inclination is an entrepreneurial characteristics involving willingness of a person to pursue decisions or actions involving uncertainty regarding success or failure outcomes. Most people do not like to be involved in situations with extreme risk or uncertainty. This behaviour may have great impact on self-employment intentions among youth in tertiary institutions in Kenya. To reduce uncertainty, entrepreneurship education program was introduced which was intended to change students' mind-set towards self-employment after graduation. Subsequently, the study attempted to assess effect of entrepreneurship education on the relationship between risk taking inclination and students' self-employment intentions. A cross-sectional survey design was adopted. Questionnaire was administered to 383 diploma engineering finalist sampled from 41 public Institutions in Kenya. The data were analysed using descriptive and inferential statistics using SPSS 20. Pearson's Correlation was used to examine reliability of data. Factor analysis investigated the internal structure among the set of variables. Regression analysis was used to examine the effect of independent variables on the dependent variable. The results revealed that there was a positive and significant relationship between risk taking inclination and entrepreneurship education on students' self-employment intention and subsequent self-employment after graduation.

Keywords: *Risk Taking Inclination, Self-Employment Intentions, Technical, Vocational Education, Training*

INTRODUCTION

While entrepreneurship is increasingly being acknowledged as a key driver of economic growth and job creation globally, there is a flood of qualified manpower from universities and tertiary institutions who are unemployed. The youth unemployment rate worldwide stands at 71.5 million which represents 13.1 percent of the global population and is expected to rise in the years to come. In Kenya, according to economic survey (2017), over 3 million youth are unemployed which represents 6.7 percent of the population. Lack of positive reaction to find a lasting solution to unemployment problem for the youth have created an important ground for paying more attention to entrepreneurship.

A recent report by the Global Entrepreneurship Monitor (2017), indicates that Entrepreneurship activities account for one-third of economic growth in over forty member countries. Undoubtedly, entrepreneurship contributes a great amount of output throughout the world. Globally, nations concur that entrepreneurship is the engine that propels economic growth, job creation and social adjustments especially to the youth (Khan *et al.*, 2011; Ekore & Okekeocha, 2012). Given the contributions of entrepreneurship in steering economic development, it is the desire of every nation to increase entrepreneurial activities. One way achieving this is inculcation of entrepreneurial culture through entrepreneurship education (Bwisa, 2011). Mitra, Dangwal, and Thadani (2008) assert that promotion of entrepreneurship is imperative in stimulating economic development and employment generation through entrepreneurship education programmes. In this regard, it's important therefore to understand the genesis of entrepreneurship education.

Entrepreneurship Education and Self- Employment in Kenya

Entrepreneurship Education (EE) is seen as a means of producing manpower for economic growth and development. The main objective of entrepreneurship education about enterprise is to increase the number of people with theoretical knowledge about starting and running an enterprise. This study, defines entrepreneurship education as the process of education for entrepreneurial attitudes and skills, which involves developing certain personal qualities. Bwisa (2011) recommend that to succeed in this entrepreneurship education, it must be concerned with learning and facilitating for entrepreneurship, not about it. According to Martin *et al.* (2013). individuals who have gone through formal entrepreneurship education courses are more proficient in discovering and exploiting entrepreneurial opportunities.

In Kenya, after self-government, institutions of higher learning produced graduates for employment in the formal sector. There was less emphasis on the need to develop entrepreneurs. In this regard, higher education institutions such as universities and tertiary

Institutions through the Ministry of Education, Science and Technology (MoEST) have developed and included entrepreneurship education subjects to enable students gain entrepreneurial skills for self-employment. For the purpose of this study, tertiary institutions were referred to as Technical and Vocational Education and Training (TVET) institutions. TVET Institutions are part of the education and training system placed under Directorate of Technical Vocational and Training (DTVET) within MoEST.

The study focused on students' self-employment intentions who are admitted to vocational institutions straight after secondary education (age between 18 and 21 years) at a time when they face critical decisions about programs to study for an intended career. With the introduction to entrepreneurship education course, the students are expected to change their mind-set towards self-employment instead of seeking for employment. Studies by Davidsson (2006); Turker and Selcut (2009); Moriano *et al.* (2012); Tong *et al.* (2011), established that students who study entrepreneurship education between 24 and 34 years, are able to understand the factors that affect the intentions of a country's future entrepreneurs and are then most likely to start a business.

Previous studies indicate a link between technical skills and entrepreneurship (Henderson & Robertson 1999; Galloway & Brown 2002). According to (Linan, 2008). there was clearly a major role and need for entrepreneurship education and training, where the universities and tertiary institutions are seen as a potential source to develop entrepreneurial behaviour among students However, very little emphasis has been put on tertiary institutions. Hence the study on TVET Institutions in Kenya.

Technical and Vocational Education and Training

United nations educational, scientific and cultural organization (UNESCO) report (2013) defined TVET as all forms and levels of the educational process involving in addition to general knowledge, the acquisition of practical skills, know-how, attitudes and understanding relating to occupations in various sectors of economic and social life. According to King and Palmer (2010), TVET remains a key development strategy for international development agencies and governments. However, Fayolle *et al.* (20014), observe that very few studies have documented evidence of what specific factors within entrepreneurship education course are effective in raising students' entrepreneurial intentions. In this regard, Souitaris *et al.* (2007) propose further investigations specifically on the effect of entrepreneurship education on attitudes, social norms, perceptions of controllability and intention. It is against this background that the study assessed the moderating effect of entrepreneurship education on the relationship between risk taking inclination and students' self-employment intentions in TVET institution in Kenya.

Risk Taking Inclination and Self-Employment Intentions

Risk taking inclination, can be defined as a personality trait involving the willingness to pursue decisions or courses of action involving uncertainty regarding success or failure outcomes (Baron, 2007; Markman & Baron, 2003). Stewart and Roth (2001); Brice (2002) view the inclination to take risk as an important trait associated with entrepreneurs. Hence risk taking propensity is thus a trait of the entrepreneurial personality.

For the purpose of this study, risk taking propensity is defined as a personality inclination towards the intention of becoming self-employed or not. Although, this study was not inclined to any specific gender, in the study of Artz (2017), female and male entrepreneurial success are statistically equal in risk inclination preferences. Similarly, the level of risk taking inclination was presumed equivalent to both the male and female. Further, Thomas and Mueller, (2000) study results indicate that entrepreneurs are not gamblers; they prefer taking moderate risks in their business decisions. Entrepreneurs do not like to be involved in situations where there is extreme risk or uncertainty. Simon *et al.* (2000) suggest that factors affecting individuals' perceived risk assessments include cognitive biases such as overconfidence and the illusion of control.

Study findings of Gurol & Atsan, (2006) show that entrepreneurially inclined students have significantly higher scores in risk-taking than non- entrepreneurially inclined students. It can therefore be argued that the higher risk-taking inclination, the stronger an individual prefers decision-making autonomy and the higher the intention to be self-employed. Davidsson (1989) asserts that where the aspirations are sufficiently accomplished, the entrepreneurs may simply stop taking higher risks. However, Carayannis *et al.* (2003) assert that risk taking and the acceptance of uncertainty is something that can slowly be modified when desired.

Empirically it is still not clear whether there actually is a relationship between risk-taking propensity and self-employment intention. Most studies involving the relationship between personality traits on entrepreneurial intention and entrepreneurship have yielded inconclusive findings (Abu Elanain, (2008); Ong and Ismail, (2008) found out that personality factors influence the self-employment intentions. In the contrary, Solesvik *et al.* (2013); Altinay *et al.* (2012) assert that factors such as risk taking propensity, locus of control and tolerance for ambiguity sometimes lower the business start-up intention and have no significant effect on start-up intention. De Pillis Redon (2007) likewise states that other studies observe that personality trait does not yield satisfactory results in explaining Entrepreneurship.

Regrettably, studies in D'Intino *et al.* (2007); Ong and Ismail (2008) indicate that entrepreneurial model have not been thoroughly examined. Similarly, Kiiru *et al.* (2015) in their study noticed that personality trait and entrepreneurial model have not been thoroughly

surveyed in a Kenyan context. Hence the need to focus on the relationship between risk taking inclination and EE and its effect on self-employment intentions among tertiary students in Kenya.

Statement of the Problem

In 2018, United Nations Development Programme statistical report placed Kenya's youth unemployment rate at 26.2 percent who are aged 15 to 24 years. The report further indicates that less than 30 percent benefit from formal employment while the rest are left out to look for opportunities in the informal sector or simply become emaciated in unemployment. This study is a response towards seeking a lasting solution towards resolving unemployment problem among the youth through self-employment. Kenya government has in the past put in several efforts and initiatives to address the youth unemployment by setting various committees and commissions to reform the education system to make it more responsive to the need of independent Kenya. The sole purpose of these initiatives by the government is to reduce the escalating unemployment among the youth, as well as encouraging them to embrace entrepreneurship. However, despite the government's effort to address the youth unemployment problems through job creation and initiatives to encourage them to venture into entrepreneurship activities, more of those who graduate continue to prefer formal career options as opposed to self-employment (Mungai & K'Obonyo, 2014).

Past studies have investigated the direct effect of entrepreneurship education on entrepreneurial intentions. Most of these studies provide evidence that entrepreneurship education has a positive impact on university graduates' entrepreneurial intention. However, very few focused on tertiary institutions graduates, more specifically on the relationship between risk taking inclination and entrepreneurship education and its effect on self-employment intentions. Once the resultant effect is determined, then it would be possible to measure the incremental effect of entrepreneurship education as a moderating factor on self-employment intentions for policy action towards solving the problem. It is against this background, this study addressed this research gap.

The Specific Objectives of the Study

The specific objectives of the study were to:

- 1) Assess the effect of risk taking inclination on students' self-employment intentions
- 2) Assess the moderating effect of entrepreneurship education on the relationship between risk taking inclination and students' self-employment intentions.

Research Hypotheses

The research tested the following hypotheses:

H₀1. There was no significant relationship between risk taking inclination and students' self-employment intentions.

H₀2. Entrepreneurship education has no significant moderating effect on the relationship between risk taking inclination and students' self-employment intentions.

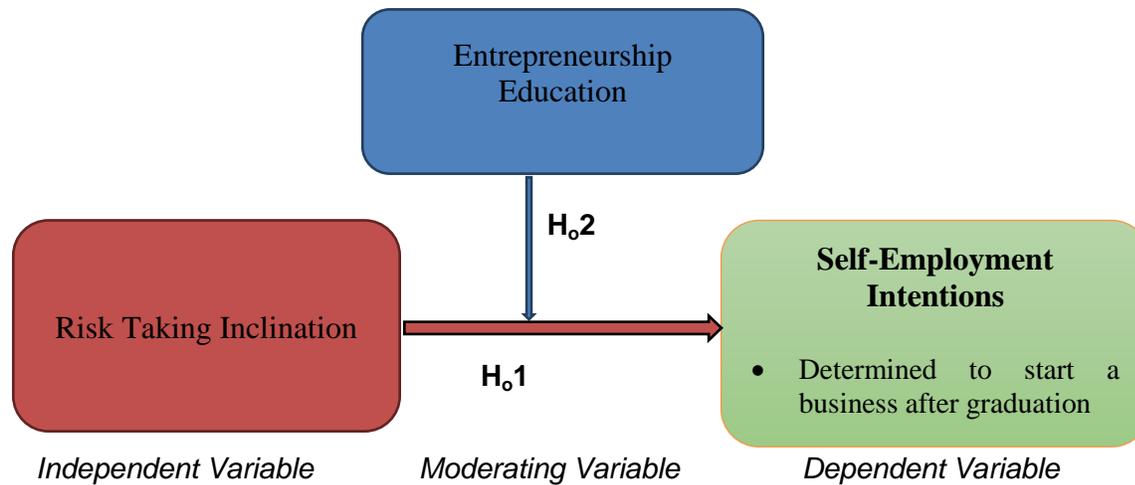


Figure 1: Conceptual Framework

METHODOLOGY

The philosophical paradigms of positivism that guides social science research are provided for the study. The positivist paradigm is a research alignment which assumes that a useful research is based on theory, hypotheses and quantitative data (Veal, 2005; Newman 2008). As such, since the current research is based on theory, hypotheses and quantitative data, the study adopted philosophical paradigms of positivism or quantitative approach which involved data collection and the analysis of numerical data (Veal, 2005). The study used cross-sectional survey design. In a cross-sectional survey, data is collected at one point in time from a sample to depict the population (Creswell, 2009). Cross-sectional survey design allows differentiating responses in a systematic and standardized way.

The study population consisted of 50,864 students' final year diploma students registered during the academic year 2014-2016 (Economic Survey, 2015). Owing to the large spectrum of courses offered in TVET institutions, the study focused on diploma finalist students in the field of engineering who were in their final term between the month of October and

December, 2016. In the context of this study, engineering courses comprise building construction, civil, electrical and electronic, mechanical and automobile.

The probability sampling which is commonly associated with survey-based research was used to identify a suitable sampling frame, sample size. The sampling unit for the study was the finalist engineering students. The researcher applied the Slovin's formula $n = \frac{N}{1 + Ne^2}$ was used to calculate an appropriate sample size from a population. Consequently, a sampling frame of 400 participants. The study employed self-structured questionnaire instruments to collect primary data from the respondents. The secondary data was accessed from the findings stated in published documents and literatures related to research.

The reliability of the instrument was tested using Cronbach's Alpha coefficient which is used to assess the internal consistency or homogeneity among the research instrument items. Reliability analysis on all the items of risk taking inclinations and students 'self-employment intentions showed high internal consistency with Cronbach's Coefficient Alpha Test of $\alpha = 0.854$. The Cronbach's Alpha values obtained were retained since they were above the critical value of 0.7. Bryman (2012) opines that the Cronbach's Alpha values should not be lower than 0.7 for social science research. To ensure the validity of the research questionnaires, the researcher used content validity where a panel of experts who gave their inputs and confirmed the instrument met the criterion.

The statistical processes which were employed in the analyses of the data comprised the Descriptive and inferential statistics. The descriptive data was analysed with the help of SPSS 20 software which offers extensive data handling capabilities and numerous statistical details. In addition, regression analysis was conducted to examine the relationships between independent variable and the dependent variable in determining the individual contribution of each of the individual variable to the dependent variable, both in direction and magnitude using multiple regression model.

FINDINGS

Among the 400 sampled respondents, 383 were served with the questionnaire. Only 377 managed to fill and returned, yielding to a response rate of 98.4 %. Besides, 84 were female constituting 22.3 percent and 293 were male constituting 77.7 percent. The majority of the respondents, 89.7 percent age ranged between 19 and 24 years. While the rest 10.3 percent of the respondents aged above 25 years. The results suggested that the optimal age to participate in entrepreneurship education are in age group below 25 years.

The first objective was to assess the effect of risk taking inclination on students' self-employment intentions in TVET institutions in Kenya. Respondents were presented with 5 point likert scale statements (Strongly Disagree; Disagree; Neutral; Agree and Strongly Agree) that required them to indicate the extent to which they agreed or disagreed with them; (Table 1).

Table 1: Respondents Opinions on Risk Taking Inclination

Responses	SD	D	N	A	SA	Total	Mean	STD
	%	%	%	%	%	%		
I would always avoid taking unnecessary risks rather take calculated risks in my business	6.6	2.6	4.0	38.2	48.7	100	4.278	.94199
I would enjoy trying every means to make way into exclusive business	5.8	5.7	5.6	40.7	42.2	100	4.230	1.03481
If the possible reward will be very high , I would not hesitate putting my money into a new business that will fail	4.5	2.7	4.0	38.2	50.8	100	4.255	.99166
People have told me that I seem to enjoy taking chances	8.5	5.0	5.6	42.7	38.2	100	4.143	1.1340
I will take a serious risk starting a new business after graduation	4.9	2.7	4.0	37.2	47.7	100	4.178	.99176
The thought of investing into a business excites me	4.3	5.2	5.6	42.7	42.2	100	4.130	1.03465
Taking risks does not bother me if the gains involved are high	4.5	2.7	4.0	38.2	51.9	100	4.273	.99166
I would enjoy the challenges of a project that could mean either a promotion or loss of a job	5.5	5.0	6.6	41.7	42.5	100	4.133	1.23481
I would do everything possible to get the odds in my favour	7.4	10.0	10.6	26.8	45.6	100	3.936	1.27002
The entrepreneurship education course has greatly improved my risk taking propensity towards self-employment	3.5	2.7	5.0	38.2	50.7	100	4.298	.94174

The findings show that most of the respondents were in agreement with the statements displayed in Table 1. At least 48.7 percent of the respondents strongly agreed to take risks, while 38.2 percent agreed that they would only take calculated risks. Most of the respondents admitted that they would rather take calculated risks (M=4.3) that had prospect to provide more opportunities than threats. Basically, the findings indicated that TVET students were ready to take risk in business ventures that they deem rewarding even if such ventures present high risks

of failure. Respondents further admitted that the entrepreneurship education course undertaking had greatly improved their risk-taking inclination towards self-employment (M=50.7 percent). According to Gurol and Atsan (2006), students who take entrepreneurial courses have a higher propensity for taking risk in self-employment ventures compared to those who have never taken such a course. However, the findings of this study contradict Stewart & Roth (2007) findings, that almost half of respondents are not ready to take risk.

The first objective related to the testing the first null hypothesis that stated: *There is no significant relationship between risk taking inclination and students' self-employment intentions.* Ten items in the structured questionnaire were used to measure risk taking inclination in the current study (table 1). Reliability analysis on all the items showed high internal consistency with Cronbach's Coefficient Alpha Test of risk taking inclination above the minimum of 0.7 ($\alpha=0.854$). Factor analysis produced two components with Eigenvalues greater than unity extracted accounting for 90.17 percent of the total variance of the nine items of risk taking inclination (see Table 2). This is above the minimum requirement of 50.0 percent indicating that the two factor model is ideal for the collected data.

Table 2: Risk Taking Inclination Total Variance Explained by extracted factors

Component	Initial Eigenvalues			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.230	52.300	52.300	4.991	49.912	49.912
2	3.787	37.870	90.170	4.026	40.258	90.170
3	.983	9.830	100.000			

The first component factor loadings corresponded to 'Within Individual Risk' variable. Five items that loaded to this variable included statements that measured the extent to which entrepreneurship education has increased individual risk taking inclination towards self-employment; whether reward motivate an individual in investing in new business that may fail, whether one will take a serious risk in investing to a new business after graduation and whether an individual would prefer calculated risk to unnecessary risk in starting a new business. Majority of the respondents indicated that investing in a new business involves taking calculated great risk.

The second component factor loadings corresponded to 'Without Individual Risk' variables. Four items that loaded on this variable included statements that measured the degree to which an individual would enjoy trying every means to make way into exclusive business, whether the thoughts of investing into a new business excites the investor, the views by others

on one enjoying taking risks and whether one would enjoy the challenges of investing in a project that would result in success or failure.

To test hypothesis in this section, multiple regression model was conducted. The multiple regression models for the two components assumed the form:

$$Y = \beta_0 + \beta_1 X_{W1} + \beta_2 X_{W2} + \varepsilon_0$$

where;

- Y = Self-Employment Intention
 X_{W1} = Within Individual Risk Component
 X_{W2} = Without Individual Risk Component

Self-Employment Intention = 11.14 + .478 (Within Individual Component) + .397 (Without Individual Component).

Table 2: Regression analysis of the Effect of Risk-Taking Inclination on Self-Employment Intention

	Un standardized		Standardized	T	Sig.
	Coefficients		Coefficients		
	B	Std. Error	Beta		
(Constant)	11.14	.528		23.2	.000
Within Individual	.478	.028	.580	27.7	.000
Without Individual	.397	.035	.474	22.7	.000

Significant at P=0.05 levels; R²=55.6%; F=21.212, p=0.000

From the analysis of variance, the results are significant at .05 levels (F=21.212, p=0.000). This implies that there is a significant relationship between risk-taking inclination and self-employment intention. The study thus concluded that the two components namely; 'Within Individual' and 'Without Individual' have a positive effect on self-employment intention. The unstandardized coefficient, B₁, Within Individual Component is equal to 0.478, implying that a unit increase values of Within Individual variables, there is an enhancement of self-employment intention by a factor of 0.478. In addition, for a unit increase of Without Individual variables by 0.397, there is a proportionate enhancement of self-employment intention values by a factor of 0.397. The results show that there is significant relationship between risk-taking inclination and self-employment intention among students in TVET institutions in Kenya. The null hypothesis that *there is no significant relationship between risk-taking inclination and students' self-employment intentions among students in TVET institutions in Kenya was rejected.*

The second objective was used to assess the moderating effect of entrepreneurship education (EE) on the relationship between risk taking inclination and self-employment intentions (SEI). The data collected was used to test the corresponding hypotheses. In order to confirm a third variable (entrepreneurship education) making a moderation effect on the relationship between the two variables, risk taking inclination and self-employment intention, the study showed that the nature of this relationship changes as the values of the moderating variable changes.

The null hypothesis that tested the effect of entrepreneurship education on the relationship between risk taking inclination and self-employment intention stated that: *Entrepreneurship education has no significant moderating effect on the relationship between risk taking inclination and students' self-employment intention.* The results of the multiple regression analysis undertaken are presented in Table 3.

Table 3: Results for the Moderating Effect of Entrepreneurship Education on the Relationship between Risk Taking Inclination and Self-Employment Intentions

Model	R	Change Statistics							
		R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.537	.578	.567	1.983	.537	1121.513	2	374	.000
2	.608	.678	.662	1.833	.211	1346.742	1	373	.004

Table 3 shows that Model 2 with the interaction between entrepreneurship education and risk taking inclination accounted for significantly more variance than just entrepreneurship education and by themselves, R^2 change = 0.211, $p = 0.004$, indicating that there is potentially significant moderation between entrepreneurship education and risk taking inclination on students' self-employment intentions in TVET institutions in Kenya. In the first step, two variables were included: risk taking inclination and entrepreneurship education. These variables accounted for a significant amount of variance in students' self-employment intentions, $R^2 = 0.537$, $F(2, 374) = 1121.513$, $p < .05$. In the second step, the interaction term between risk taking inclination and entrepreneurship education was added to the regression model, which accounted for a significant proportion of the variance in students' self-employment, $\Delta R^2 = 0.211$, $\Delta F(1, 373) = 1346.742$, $p < .05$.

Examination of the interaction process showed an enhancing effect that as entrepreneurship education is continuously offered to students enrolled in engineering courses in TVET institutions, majority of the student cohort felt that they would rather be entrepreneurs

than be employed. Based on these findings, *the hypothesis that entrepreneurship education has no significant moderating effect on the relationship between risk taking inclination and students' self-employment intention was rejected.*

An analysis of the contribution of the individual variable to the effect on the dependent variable was undertaken. This study adopted the following general statistical regression model for the relationship between the independent variables and dependent variable:

$$Y = \beta_0 + \beta_1 X_{W1} + \beta_2 X_{W2} + \beta_3 X_{W1} * EE + \beta_4 X_{W2} * EE + \varepsilon_0$$

Where: Where β_0 is the constant coefficient β_1 , β_2 , β_3 and β_4 are the model regression coefficients that approximate the change in Y (dependent variable) for a unit change in X (independent variable).

To find the overall influence of the independent variables on the dependent variable, one general hypothesis was tested and it stated: There was no significant effect on the moderated relationship between risk taking inclination and on students' self-employment intentions. The multiple regression models were summarized as:

$$SEI = 2.345 + .325\beta_1 X_{W1} + .112X_{W2} + .433 X_{W1} * EE + .210 X_{W2} * EE$$

The *F*-ratio in the ANOVA analysis tests whether the overall regression model is a good fit for the data. The result shows that the independent variables significantly predict the dependent variable, $F(4, 373) = 871.580, p=0.000$.

Table 4: Summary of Regression Results showing the Effect of Predictor Variables on Self-employment Intentions

	Un standardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.345	2.145		2.476	.014
X_{W1}	.325	.012	.616	.521	.000
X_{W2}	.112	.201	.420	.426	.000
$X_{W1} * EE$	.433	.066	.806	.476	.000
$X_{W2} * EE$	.210	.002	-.730	.772	.000

Significant at $p=0.05$ levels; $R^2=66.43\%$; $871.580, p=0.000$

The results shown in Table 4 on regression coefficients indicate that the effect of the risk taking inclination variables and entrepreneurship education, $X_{W1} * EE$ ($\beta = .433$) and $X_{W2} * EE$ ($\beta = .210$); is much greater than the effects of the individual predictors, ($\beta=.325$) and ($\beta=.112$) on self-employment intention respectively.

SUMMARY

Factor analysis produced two components with Eigenvalues greater than unity that accounting for 90.17 percent of the total variance of the nine items of risk taking propensity. The rotated component matrix for the two risk taking inclination factors are '*Within Individual Risk*' component and '*Without Individual component*'. These two factors were included in the multiple regression analysis of risk-taking inclination and self-employment intention. From the analysis of variance, the results were significant at .05 levels implying that there was a significant relationship between risk-taking propensity and self-employment intention. The null hypothesis that there is no significant relationship between risk-taking inclination and students' self-employment intentions among students in TVET institutions in Kenya was rejected.

To test the influence of the moderator variable, an interaction term was made by creating a product term for the predictor and moderator variable. The interaction term was added to the previous model, to check for a significant R^2 change as well as a significant effect by the new interaction term. The results of finding showed that with the interaction between entrepreneurship education and risk taking inclination, the model accounted for significantly more variance than just entrepreneurship education and risk taking inclination by themselves indicating that there is potentially significant moderation between entrepreneurship education and risk taking inclination on students' self-employment intentions in TVET institutions in Kenya. Based on these findings, the hypothesis that the entrepreneurship education has no significant moderating effect on the relationship between risk taking inclination and students' self-employment intention was rejected.

DISCUSSION

Pearson correlation coefficient between risk-taking inclination and self-employment intention variables ($r=.537$, $p=.000$) shows positive and significant results at .05 levels. This shows that self-employment intentions among student is dependent on one's risk taking inclination. These findings are congruent with the assertion that risk-taking inclination have been found to be a significant predictor self-employment intention especially of entrepreneurial start-up intentions, but the influence reduces in time as the venture matures (Frank *et al.*, 2007). Entrepreneurship historically is associated with risk taking, (Gurol and Atsan 2006). According to Cunningham and Lischeron, (1991), the term "entrepreneurship" to economics, risk-bearing is the key in distinguishing entrepreneurs from managers.

In addition, the results indicated that decision to invest in a new business according to a majority of students in TVET institutions largely depends on the risk-taking involved and more specifically within the individual. This assertion is supported by Brice, (2002) who see risk-taking

propensity as an individual's inclination to accept risk comfortably. However, in the current study, not all students like taking risks. This concurs with Koh, (1996); Thomas and Mueller, (2000) whose study results indicate that entrepreneurs prefer to take moderate risks in their business decisions. They do not like to be involved in situations where there is extreme risk or uncertainty. This result is evidence that students' decision in TVET institutions either to be self-employed or not largely depends on risk factors outside an individual. These would be significant others i.e. family members, friends and colleagues. This view has been supported by Stewart & Roth, (2001) who view the inclination to take risk as an important trait associated with significant others. It can therefore be concluded that there is a significant relationship between risk taking inclination and students' self-employment intentions among students in TVET institutions in Kenya.

The study findings are also consistent with findings by Tang *et al.* (2008), that risk-taking inclination was an important factor in explaining the entrepreneurial intentions. In addition, Gurel *et al.* (2010) findings indicated that there is a statistically significant relationship between risk and students' entrepreneurial intentions. It can therefore be concluded that entrepreneurship education has a significant moderating effect on the relationship between risk taking inclination and self-employment intention among TVET students in Kenya. These findings are congruent with other study's findings of Gurol and Atsan (2006) on personality traits that entrepreneurially inclined students have significantly higher scores in risk-taking than non-entrepreneurially inclined students.

CONCLUSION

Based on the findings, risk taking inclination factors were found to be associated with self-employment intention among engineering students in TVET institutions in Kenya. However, the introduction of entrepreneurship education among engineering students in TVET institutions in Kenya, enhanced this further association. This study concludes that the inclusion of entrepreneurship education enhanced risk taking inclination factors and this moderated variable strongly influenced self-employment intention among students in TVET institutions in Kenya.

Theoretical implications

A review of the existing literature reveals that there are several models explaining the nature, antecedents, and effects of Self-employment intention (Gelderen *et al.*, 2008; Gurbuz & Aykol 2008). However, the researcher was not able to come across studies that focused on the moderating effect of entrepreneurship education on the relationship between risk-taking

inclination and self-employment intention. Consequently, the study makes an important and distinct contribution to literature given lack of studies with similar focus in Kenya.

Recommendations

First, so as to fast-track entrepreneurship development through learning, improved approach of teaching entrepreneurship can be established to increase confidence and self-esteem to TVET graduates. second, entrepreneurship education should be made compulsory at all levels in order to expose youth to entrepreneurship with the aim of creating more positive insights about entrepreneurship and ensuing benefits of increased enterprise creations upon graduation at all levels.

Future Research

To confirm and further validate these associations, future research in this field must endeavour to collect data from other courses in TVET Institutions that have not been covered in this study and in university students in Kenya to increase the precision of the analysis and to enable firmer conclusions to be drawn from the model.

REFERENCES

- Artz, B. (2017). Gender and entrepreneurial success: evidence from survey data. *Applied Economics Letters*, 24(3), 163-166.
- Baron, R. (2007). The cognitive perspective: a valuable tool for answering entrepreneurship's basic "why" questions. *Journal of business venturing*, 19(2), 221-239.
- Brice, C.F., & Smith, A.P. (2002). *Psychopharmacology* 164: 188. <https://doi.org/10.1007/s00213-002-1175-2>
- Bryman, A. & Bell, E. (2012). *Business Research Methods*. s.l.: OUP Oxford.
- Bwisa, H. (2011). *Entrepreneurship education in Kenya: a reality of plodding on*. USIU, Nairobi, s.n.
- Carayannis, E. G., Evans, D. & Hanson, M. (2003). A cross-cultural learning strategy for entrepreneurship education: outline of key concepts and lessons learned from a comparative study of entrepreneurship students in France and the US. *Technovation*, pp. 757-771.
- Creswell, J. W. & Zhang, W. (2009). The application of mixed methods designs to trauma research. *Journal of traumatic stress*, pp. 612-621.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests, s.l.: *Psychometrika*.
- Cunningham, J., & Lischeron, J. (1991). Defining entrepreneurship. *Journal of small business management*, 29(1), 45-61.
- Davidsson, P. (1989). Continued entrepreneurship and small firm growth. *Stockholm School of Economics*, pp. 255-272.
- Davidsson, P. (2006). The domain of entrepreneurship research: some suggestions in Katz, J, Shepherd, S (Eds). *Oxford: Advances in Entrepreneurship, Firm Emergence and Growth*.
- D'Intino, R. S., Goldsby, M. G., Houghton, J. D. & Neck, C. P. (2007). Self-leadership: A process for entrepreneurial success. *Journal of Leadership & Organizational Studies*, 13(4), pp. 105-120.
- Fayolle, A., Liñán, F. & Moriano, J. (2014) Beyond entrepreneurial intentions: values and motivations in entrepreneurship. *International Entrepreneurship and Management Journal*, 10 (4), 679-689

- Frank, H., Lueger, M. & Korunka, C. (2007). The significance of personality in business start-up intentions, start-up realization and business success.. *Entrepreneurship & Regional Development*, 19(3), pp. 227-251.
- Galloway, L., & Brown, W. (2002). Entrepreneurship education at university: a driver in the creation of high growth firms?. *Education+ Training*, 398-405.
- Gelderen Van, M. et al., 2008. Explaining entrepreneurial intentions by means of the theory of planned behaviour.. *Career Development International*, pp. 538-559.
- Government of Kenya. (2015). *Economic Survey*, Government Press.
- Government of Kenya. (2016). *Economic Survey*, Government Press.
- Government of Kenya. (2017). *Economic Survey*, Government Press.
- Gurbuz, G. & Aykol, S., 2008. Entrepreneurial intentions of young educated public in Turkey. *Journal of Global Strategic Management*, pp. 47-56.
- Gurel, E., Altinay, L., & Daniele, R. (2010). Tourism students' entrepreneurial intentions. *Annals of Tourism Research* 37 (3), 646–669.
- Gürol, Y., & Atsan, N. (2006). Entrepreneurial characteristics amongst university students: Some insights for entrepreneurship education and training in Turkey. *Education+ Training*, 48(1), 25-38.
- Henderson, R., & Robertson, M. (1999). Who wants to be an entrepreneur? Young adult attitudes to entrepreneurship as a career. *Education+ Training*, 236-245.
- ILO. (2016). *World Employment and Social Outlook: Transforming jobs to end poverty* (Geneva).
- Ismail, M. & Z. (2010). *Developing entrepreneurship education: Empirical findings from Malaysian polytechnics.*, s.l. : PhD. Thesis, University of Hull, UK..
- Kiiru, D., Iravo, M. & Kamau, J. (2015). Determinants of entrepreneurial intention among vocational technical training institute students in Kenya: a survey of cap youth empowerment institute. *Strategic Journals of Business & Change Management*, 2(19), pp. 369-375.
- King K., & Palmer R. (2010), *Planning for technical and vocational skills development*. Paris: UNESCO International Institute for Educational Planning.
- Koh, H. C. (1996). Testing hypotheses of entrepreneurial characteristics: A study of Hong Kong MBA students. *Journal of managerial Psychology*, 11(3), pp. 12- 25..
- Liñán, F. (2008). Skill and value perceptions: how do they affect entrepreneurial intentions? *International Entrepreneurship & Management Journal*, 257-272.
- Liñán, F., & Fayolle, A. (2015) A systematic literature review on entrepreneurial intentions: citation, thematic analyses, and research agenda. *International Entrepreneurship and Management Journal*, 11 (4), 907-933.
- Moriano, J., Gorgievski M., & M. Laguma (2012). A cross cultural approach to understanding entrepreneurial intention. *Journal of Career Development*, 39(2), pp. 162-185.
- Mungai, E. N., & K'Obonyo, P. P. (2014). The moderating effect of entrepreneurship education on the relationship between entrepreneurial perceptions and entrepreneurial intentions. *Prime Journal*.
- Newman, K. L. (2000). Organizational Transformation during Institutional Upheaval. *Academy of Management*, pp. 602-619.
- Ong, J. W., & Ismail, H. B. (2008). Human Capitals make Entrepreneur more Entrepreneurial? An Empirical Data from Small and Medium Enterprises in Malaysia. *Human Capitals make Entrepreneur more Entrepreneurial? An Empirical Data from Small and Medium Enterprises in Malaysia. Journal of Asia Entrepreneurship and Sustainability*, 4(1), p. 83.
- Simon, M., Houghton, S. M., & Aquino, K. (2000). Cognitive biases, risk perception, and venture formation: How individuals decide to start companies. *Journal of Business Venturing*, 15(2): 113-134
- Souitaris, V., Zerbinati, S. & Al-Laham, A., (2007). Do Entrepreneurship Programmes Raise Entrepreneurial Intention of Science and Engineering Students? The Effect of Learning, Inspiration and Resources. *Journal of Business Venturing*, 22(4), pp. 566-591.
- Stewart, W. H., Jr., & Roth, P. L. (2007). A meta-analysis of achievement motivation. Differences between entrepreneurs and managers. *Journal of Small Business Management*, 45, 401–421

Tang, J., Tang, Z. (2007). The relationship of achievement motivation and risk-taking propensity to new venture performance: a test of the moderating effect of entrepreneurial munificence. *International Journal of Entrepreneurship and Small Business* 4 (4), 450–472.

Thomas, A.S., Mueller, S.L. (2000). A case for comparative entrepreneurship: assessing the relevance of culture. *Journal of International Business Studies* 31, 287–301.

Turker, D. & Selçuk, S. (2009). Which factors affect entrepreneurial intention of university students? *Journal of European Industrial Training*, pp. 142-159.

Veal, B. (2005). Using self-clocking for passive estimation of TCP round-trip times, Doctoral dissertation.