

RELATIONSHIP BETWEEN PSYCHOLOGICAL FACTORS AND ENTREPRENEURIAL INTENTIONS OF UNIVERSITY UNDERGRADUATES IN NORTH EAST, NIGERIA

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ABSTRACT

The purpose of the study was to determine the psychological factors predicting entrepreneurial intentions of University undergraduate students. The design for the study was a correlation survey design. The area for the study covered all Federal Universities of Technology in North East Nigeria, with a population of 3700, when split, 2000 and 1700 are from ATBU, Bauchi and MAUTECH, Yola respectively. Stratified proportionate sampling technique was employed to arrive at 348 students, using Krejcie and Morgan table for determining sample. When split, 188 and 160 students are from ATBU and MAUTECH respectively. Two structured questionnaires, namely, PFQ and EIQ used for data collection were adapted from four different authors. The PFQ comprises of 41, while the EIQ contains 12 items. Results obtained in the pilot tested questionnaires revealed Cronbach's alpha of PFQ and EIQ to be 0.784 and 0.730 respectively. Data collected were analyzed using SPSS (Version 20). Findings of the study revealed that all the three independent variables were found to be significant with the dependent variable, as well as all variables combined were found to have been positive in predicting the dependent variable. Finally, conclusions were reached and recommendations made.

Keywords: *psychological factors, entrepreneurial intentions, university undergraduate students*

1. INTRODUCTION

In recognition of the importance of entrepreneur and entrepreneurship, various psychological factors of entrepreneurs have been identified and understandings of these psychological factors that are unique are logical first step in studying entrepreneurship (Koh, 1996). Therefore, “individual” component of Gartner (1985) serves as a springboard to achieving the target set out in this research. He is of the view that the individual(s) expertise is the key elements upon which the rest relied upon for the creation of a new venture. Hence, the study solely uses the psychological factors domiciled in individual features of Gartner as a catalyst. Grundsten (2004) is of the view that Gartner’s framework appears to have captured every imaginable variable affecting new business creation. What it does not explain is the significant strength of the features or relationships between the features and the sub-components of the features.

The three most cited psychological factors towards instilling a behavior of becoming an entrepreneur in the literature are the need for achievement, locus of control and risk taking propensity. Thus Ertuna and Gurel (2008), Uddin and Bose (2012) referred to them as basics and primary root causes behind people’s motivation of becoming entrepreneurs. As such this research was limited to only these three psychological factors commonly associated with entrepreneurial activity.

The study adopted Theory of Planned Behaviour (TPB) developed by Ajzen (1991). The three constructs in the TPB are deemed antecedents to intention (Von Graevenitz, Harhoff & Weber, 2010). Two of the constructs (i.e. PA and SN) are more of individualistic and social pressure factors (Krueger Jr., Reilly, & Carsrud, 2000; Linan & Chen, 2009; Marques, Ferreira, Gomes & Rodrigues, 2012). PBC was consistently found to have predicted behaviour, entrepreneurship behaviour inclusive (Linan, 2004, Linan & Chen, 2009). From Model 1, PBC has a direct relationship with the behavior, so its possession means owning the attitudes, values and attributes that predicts a particular behavior (Koh, 1996) referred to as psychological factors.

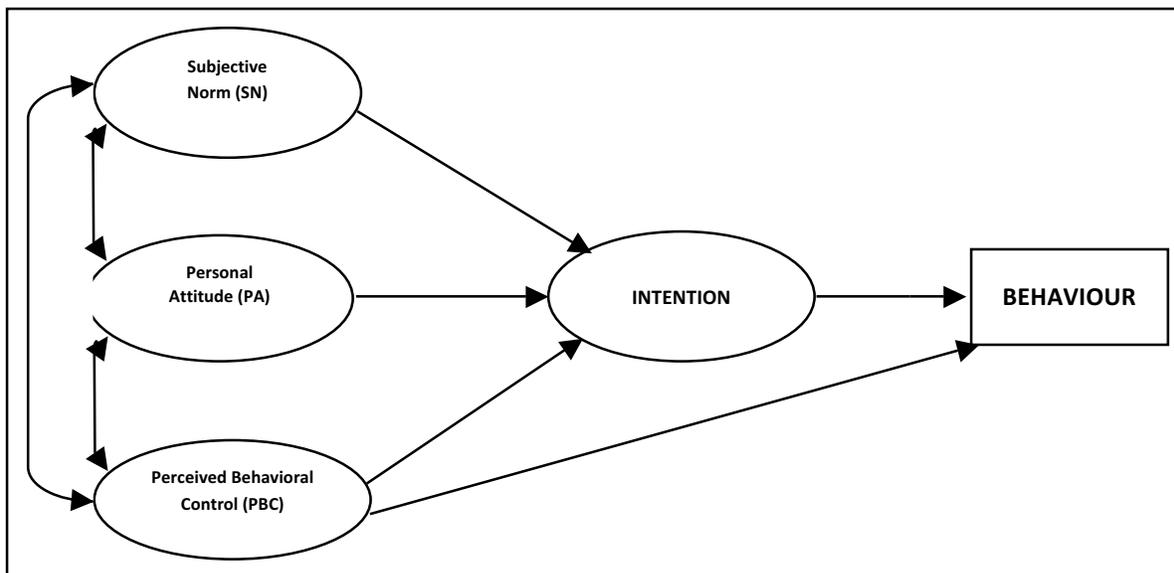


Figure 1: Model of Theory of Planned Behaviour (Ajzen (1991))

Literature identified the application of TPB as the best means to predicting intentions in many spheres of life, entrepreneurial tendencies inclusive (Krueger & Carsrud, 1993; Linan, 2004). Ajzen (1991) described intention as an indicator of the will to try something or the effort one is prepared to apply to behave in a particular manner. Therefore, intention is perceived to be the immediate antecedent of real behaviour, thus the cognitive representation of a person's willingness to display certain behaviour is attached to his intention (Fayolle, Gailly & Lassa-Clerc, 2006). According to Von Graevenitz *et. al.* (2010), just as intention foreruns behaviour, certain specific attitudes predict intention. Based on these considerations and given the research objectives set out to achieve, the research framework in Figure 2 was adopted.

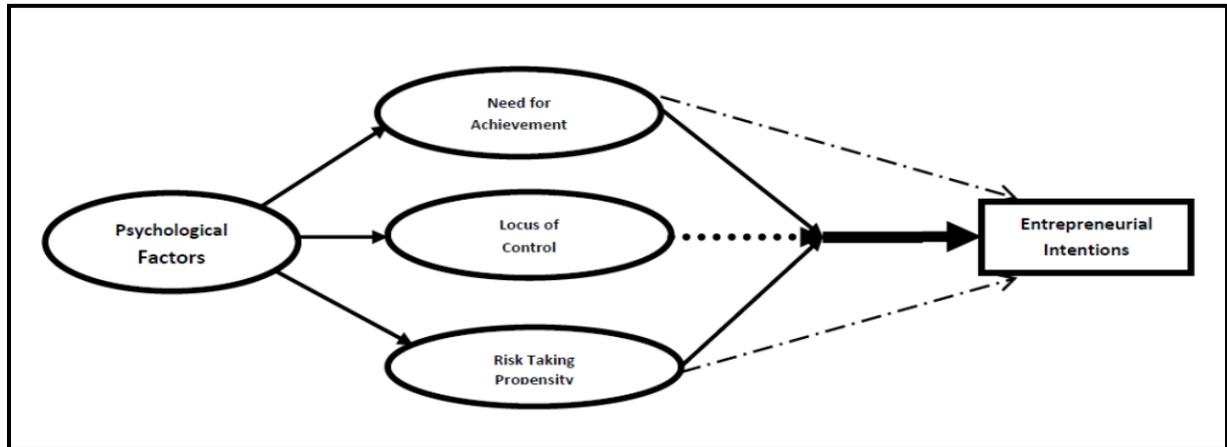


Figure 2: Research conceptual framework

In an effort to instill entrepreneurial intentions in the youth, Nigerian government makes it mandatory for all Universities to incorporate the entrepreneurial development courses in their curricula at the undergraduate level (Inyang and Enuoh, 2009). Despite this, unemployment is still rising significantly among graduates in Nigeria (Ifedili and Ofoegbu, 2011; Akpan, 2013), one wonders why this problem of unemployment persists among graduates in Nigeria. This may be connected to the observation made by Kirby (2005) in (Ertuna and Gurel, 2008) that, a number of entrepreneurial programmes around the world put more emphasis on educating individuals “about” entrepreneurship rather than “for” entrepreneurship. Nevertheless, one cannot study one without mentioning the other (Ifedili and Ofoegbu, 2011).

In line with this observation, National Universities Commission in 2011 reviewed its entrepreneurial curriculum by splitting the course into two semesters rather than combining both the “about” and “for” in a single semester. Furthermore, Bello and Aliyu (2016) revealed that the University Undergraduate students in the North East Nigeria are in possession of these “for” component of the curricula. What it does not revealed was the significant strength of the features or relationships between the features and the sub-components of the features. For that reason, this paper is intended to specifically, find out the relationship between each of the psychological factor and University undergraduate students’ entrepreneurial intentions, as well as determine the extent to which these psychological factors combined and taken together could predict the University undergraduate students’ entrepreneurial intentions. In line with the set objectives, the following hypotheses were also formulated to guide the study:

- (i) There is no significant relationship between need for achievement and University undergraduate students' entrepreneurial intentions.
- (ii) There is no significant relationship between locus of control and University undergraduate students' entrepreneurial intentions.
- (iii) There is no significant relationship between risk taking propensity and University undergraduate students' entrepreneurial intentions.
- (iv) University undergraduate students' psychological factors combined and taken together are not significant in predicting University undergraduate students' entrepreneurial intentions.

1.1 Empirical studies on psychological factors predicting entrepreneurial intentions

Yusof, Sandhu and Jain (2007) conducted a research on the relationship between psychological characteristics and entrepreneurial inclination of students in the University using 361 students. The result indicates that all four independent variables; i.e. needs for achievement, risk taking propensity, tolerance for ambiguity locus of control had been found to have a positive moderate correlation with the dependent variable. It further showed that all the four independent variables explain 21.1% of the variance in the perception towards entrepreneurial inclination. It also indicates, with the exception of locus of control, the rest of the independent variables have a positive and significant influence on the dependent variable. The beta values for the four independent variables was 0.271, 0.289, 0.150 and -0.73. Thus researchers are of the view that the low beta weight observed for the locus of control could be due to the small number of items and its low reliability. The study concludes that students', who had a very high need for achievement, had a high propensity to take risk, willing to innovate and had a high locus of control.

In another study, Uddin and Bose (2012) also investigated the determinants of entrepreneurial intention of business students in Bangladesh using 520 university students. Of the eight independent variables, the model of the study indicates that student tendency for taking risk, need for achievement, job security, and entrepreneurship education offered by university are the strongest determinants for starting a business. The findings of the study concluded that combination of moderate risk taking and high degree of innovativeness is always the lethal weapon for starting as well as sustaining a new business venture. So, people who are risk takers are bound to have more entrepreneurial intention.

Amir, Mohamad and Abdullahi (2013) in a research on "Factors that Influence UiTMs Undergraduates towards Entrepreneurial Intentions" using a sample of 150 students. The aim of the study was to determine which entrepreneurial characteristics of respondents do influences students entrepreneurial intentions. Of this, need for achievement and risk taking propensity were found to have been significant with the dependent variable. The coefficients weights for the two independent variables were found to be 0.510 and 0.176 respectively. The regression model of the research also showed that the independent variables of the research accounts for 34.4% of the variance in the dependent variable. The findings was similar to the work of Hisrich and Peters (1995) that need for achievement and risk-taking propensity are crucial factors towards people aspiration to start their own business.

In another study, Owoseni (2014) investigated the influence of some personality factors on entrepreneurial intentions. The objective was to examine whether there was any significant relationships between achievement motivation, self-efficacy and entrepreneurial intentions. Pearson Product Moment Correlation Coefficient (PPMCC) was employed to find the relationship between each of achievement motivation and self-efficacy with entrepreneurial intention. The results indicated that there was a significant relationship between achievement motivation and entrepreneurial intention. They recommended that people who have a high achievement motivation and also believe in themselves should be encouraged to start their own business and as well as recommended that entrepreneurship researches should be encouraged so as to increase the level of awareness among people.

Another study by Phuong and Hieu (2015) titled “Predictors of Entrepreneurial Intentions of University Undergraduate Students in Vietnam” using 180 students from several universities. The results revealed that all the independent variables of the research, comprising of risk taking propensity, locus of control, need for achievement, perceived support and creativity had a strong impact on the intention to start business. The research indicated that all the independent variables had positive effect and as well as statistically significant at $p < 0.0001$ on the entrepreneurial intentions. The results further showed the beta weighting of the independent variables on the dependent variable to be 0.295, 0.207, 0.232, 0.056 and 0.242 respectively. Also, the research indicates that all 5 independent variables of the research accounted for 64% of the variance in the dependent variable. Conclusively, the researchers are of the view that the independent variables strongly influenced the intention to start up a business among undergraduate students in Vietnam.

Another study by Bux and Honglin (2015) focuses on assessing the impact of psychological factors on entrepreneurial intentions, using 394 students from two universities. The independent variables of their study comprises of innovativeness, locus of control, propensity to take risk, need for achievement, self-confidence and tolerance for ambiguity. The results revealed that all the independent variables were found to have been positive in relation to the dependent variable of the study. Also revealed was that all the independent variables were found to have been significant towards predicting the dependent variable, with the exception of need for achievement. The result also revealed that independent variables combined were able to account for 45.5% variance to make prediction about the university students’ entrepreneurial intentions and 20.7% of the variance to make correct prediction.

2. METHODOLOGY

This research adopted the correlational survey design method to establish relationships between the investigated variables. The location of the study covered all Federal Universities of Technology in the North East Nigeria. The population of the study comprises of all 3700 final year, when disaggregated, 2000 and 1700 are from Abubakar Tafawa Balewa University (ATBU), Bauchi and Modibbo Adama University of Technology (MAUTECH), Yola respectively. Using Krejcie and Morgan table for determining sample, 348 was drawn from the population, which when split, 188 and 160 are from ATBU and MAUTECH respectively. To achieve such, proportionate percentage on the sub-total of population in each of the University

reflect the percentage of the sample size deduced from each of the universities. Likewise, each Faculty from the two Universities was represented in its sub-total sample in exact proportion to its frequency in each of its sub-total population.

Two instruments were used for data collection, namely Psychological Factors Questionnaire (PFQ) and Entrepreneurial Intentions Questionnaire (EIQ). The two instruments contains 53 items, when disaggregated, PFQ and EIQ contains 41 and 12 items respectively. The PFQ was adapted from Lang and Fries (2006), Pettijohn (2003) and Salleh and Ibrahim (2011), while the EIQ was adapted from Linan and Chen (2009). Of the 41 items in the PFQ, 10, 13 and 18 items covered need for achievement, locus of control and risk taking propensity respectively. As for the PFQ, four rating scale was used ranging from Highly Possessed to Not Possessed. In the case of EIQ, five point Likert scale was employed ranging from Strongly Agree to Disagree.

The instrument was validated by three experts in order to establish content and face validity. All modifications advocated by the experts were effected and adjusted accordingly. To establish reliability, a pilot study was carried out in one of the Federal Universities of Technology outside the area of the study, but one with the same characteristics used for the main study. Test-retest method was employed and the result obtained showed PFQ and EIQ instruments to have a Cronbach's Alpha of 0.784 and 0.730 respectively. The final instrument was administered by the researcher with the help of trained research assistants from the two Universities. Subsequently, manual data cleaning was carried out on the data generated in order to determine inaccurate, incomplete or unreasonable data before further analysis. Hence, 278 administered instruments were found to be eligible for analysis.

Parametric statistics were employed in analyzing the data collected for the study. Specifically, PPMCC and Multiple Regression statistics were used. All research questions and hypotheses formulated were tested at the 0.05 level of significance.

3. DATA ANALYSIS RESULTS AND DISCUSSION

PPMCC was used to calculate the extent of relationship between each of the psychological factor and University undergraduate students' entrepreneurial intentions. Table 1 reveals the relationship between each of psychological factor and the University undergraduate students' entrepreneurial intentions to be r-values of 0.423, 0.429 and 0.416 respectively. This implies that all the three psychological factors have a moderate positive correlation with the dependent variable.

Borg (1963) in Cohen, Manion and Morrison (2007) is of the view that correlations within this range combined yield individual predictions that are correct within an acceptable margin of error. Hence, further analysis was carried out to determine the significant level between each of the psychological factor and the University undergraduate students' entrepreneurial intentions, and as well as psychological factors combined in predicting University undergraduate students' entrepreneurial intentions.

Table 1: Extent of relationship between each of the psychological factor and the University undergraduate students' entrepreneurial intentions

Psychological Factors	University Undergraduate Students' Entrepreneurial Intentions		
	r-value	r-value	r-value
Need for Achievement	0.423		
Locus of Control		0.429	
Risk Taking Propensity			0.416

Hypothesis null 1: There is no statistically significant relationship between need for achievement and undergraduate students' entrepreneurial intentions.

Table 2 indicates a moderate positive relationship between need for achievement and University undergraduate students' entrepreneurial intentions, $r = 0.432$, $N = 278$, $\rho = 0.000$. To test its significance, the probability value obtained was compared with the 0.05, and was found to be significant, so hypothesis null was rejected.

Table 2: Mean, standard deviations and correlation coefficient between Need for Achievement and undergraduate students' Entrepreneurial Intentions

Variable	N	\bar{X}	SD	r-value	p-value	Decision
Need for Achievement	278	3.19	0.32	0.423	.000	H_0 1 rejected
Entrepreneurial Intentions	278	3.59	0.40			

Hypothesis null 2: There is no statistically significant relationship between locus of control and undergraduate students' entrepreneurial intentions.

Table 3 shows a moderate positive relationship between locus of control and University undergraduate students' entrepreneurial intentions, $r = 0.429$, $N = 278$, $\rho = 0.000$. To test its significance, the probability value obtained was compared with the 0.05, and was found to be significant, so hypothesis null was rejected.

Table 3: Mean, standard deviations and correlation coefficient between Locus of Control and undergraduate students' Entrepreneurial Intentions

Variable	N	\bar{X}	SD	r-value	p-value	Decision
Locus of Control	278	2.84	0.29	0.429	.000	H_0 2 rejected
Entrepreneurial Intentions	278	3.59	0.40			

Hypothesis null 3: There is no statistically significant relationship between risk taking propensity and University undergraduate students' entrepreneurial intentions.

Table 4 indicates a moderate positive relationship between risk taking propensity and University undergraduate students' entrepreneurial intentions, $r = 0.416$, $N = 278$, $\rho = 0.000$. To test its significance, the probability value obtained was compared with the 0.05, and was found to be significant, so hypothesis null was rejected.

Table 4: Mean, standard deviations and correlation coefficient between Risk Taking Propensity and undergraduate students' Entrepreneurial Intentions

Variable	N	\bar{X}	SD	r-value	ρ -sig	Decision
Risk Taking Propensity	278	2.97	0.34	0.416	.000	H ₀ 3 rejected
Entrepreneurial Intentions	278	3.59	0.40			

To what extent do undergraduate students' psychological factors when taken together could predict their entrepreneurial intentions?

Multiple Regression was used to calculate the extent of taking together, as well as combining the three psychological factors in predicting University undergraduate students' entrepreneurial intentions. The results as revealed in Table 5 and Figure 3 indicate the values of taking together, as well as combining the three independent variables in predicting the dependent variable. The coefficient of multiple R, R² and adjusted R to be 0.577, 0.333 and 0.325 respectively. This is an indication that 33.3% of the variance in the dependent variable was explained by the independent variables, with 32.5% of the variance to make correct decision.

Table 5: Psychological factors combined on the prediction of undergraduate students' Entrepreneurial Intentions

R	R square	Adjusted R Square
0.577	0.333	0.325

Hypothesis null 4: University undergraduate students' psychological factors combined and taken together are not statistically significant in predicting undergraduate students' entrepreneurial intentions.

Figure 3 shows the standardized β coefficient of each psychological factor; i.e. need for achievement, locus of control and risk taking propensity to be ($\beta = 0.324, \rho < 0.001$), ($\beta = 0.289, \rho < 0.001$) and ($\beta = 0.172, \rho < 0.01$) respectively. Therefore, relative to each other, the need for achievement has a strong positive effect on the entrepreneurial intentions of the university undergraduate students, followed by locus of control and lastly, risk taking propensity. The model further revealed coefficient of multiple R to be 0.577, R² to be 0.333, and adjusted R square to be 0.325, indicating that 33.3% of the variance in the University undergraduate students' entrepreneurial intentions is explained by the psychological factors with 32.5% variance to make correct prediction. Also, the model further indicates an F-value of 45.545 with associated probability of 0.000 ($\rho < 0.001$). Therefore, this implies that the null hypothesis was rejected. This led to conclusion that university undergraduate students' psychological factors combined and taken together are significant in predicting University undergraduate students' entrepreneurial intentions.

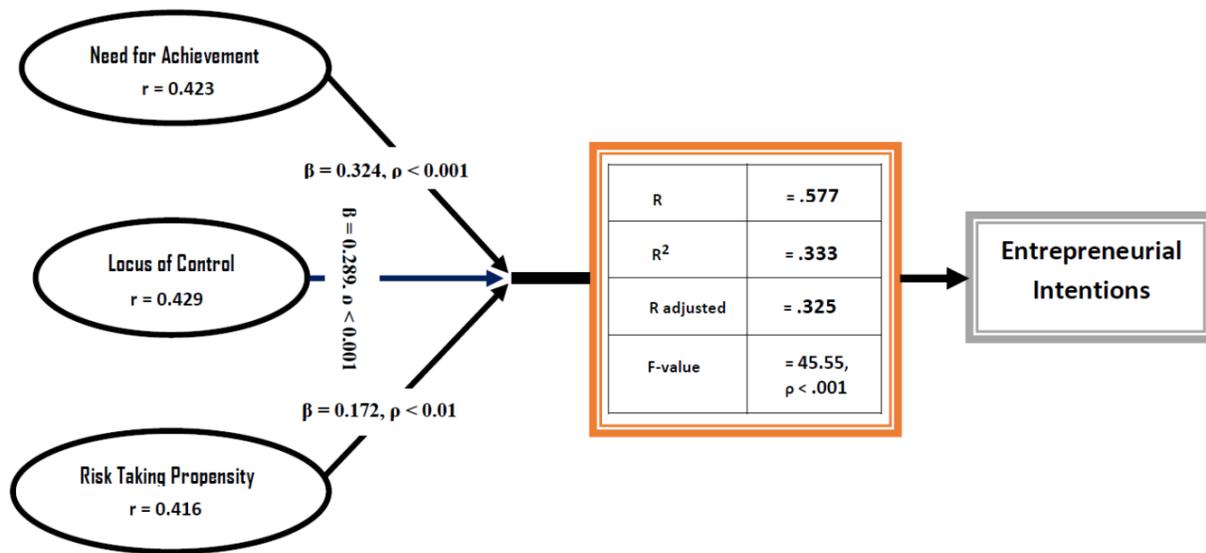


Figure 3: Predictive model for entrepreneurial intentions

Based on the data analysis, the result of the study agreed with the findings of earlier researchers who showed that there exists a positive moderate correlation between the psychological factors and the University undergraduate students' entrepreneurial intentions (Yusof *et. al.*, 2007; Ngwoke, Oyeoku & Obikwelu, 2013). This assertion led to the testing of hypotheses one, two and three.

The findings also agreed with (Owoseni, 2014; Phuong, & Hieu, 2015) who reported a significant relationship between need for achievement and entrepreneurial intentions. Owoseni (2014) therefore recommended among others that those who believe so much in themselves should be encouraged to start their own business so as to help reduce the rate of unemployment, as territories with higher entrepreneurial competencies tends to show a decline in there unemployment level (Audretsch, 2002). Similarly, Phuong and Hieu (2015) also concluded that in order to encourage entrepreneurial activities among young people and students, other forces, which drive entrepreneurial activities, such as environment, organization and processes factors (Gartner, 1985) should be made accessible to people with higher need for achievement, internal locus of control and those with higher risk-taking propensity.

The findings of this study also revealed a significant relationship between locus of control and entrepreneurial intentions. This agreed with the findings of (Ngwoke *et. al.*, 2013; Abbas, Arfeen, Mothi and Aslam, 2015) who all reported a positive significant relationship between locus of control and entrepreneurial intentions in their studies. Ngwoke *et. al.*, (2013) therefore concluded that as perceived locus of control of students increases, the more their entrepreneurial development increases. In another study conducted by Arfeen, Mothi and Aslam (2015), it was concluded that there is a positive moderate relationship between locus of control and entrepreneurial satisfaction.

The findings also revealed a significant relationship between risk taking propensity and entrepreneurial intentions. This agreed with (Bux & Honglin, 2015; Arfeen *et. al.*, 2015) studies. Bux and Honglin (2015) in analyzing the impact of the psychological characteristics on entrepreneurial intentions among university students were able to found a significant relationship between entrepreneurial intentions with the propensity to take risk. Among the variables of their study, risk taking propensity was found to have been the strongest among the factors, as well as the coefficient that contributes more in predicting the entrepreneurial intentions of the university undergraduate students. In contrast, Arfeen *et. al.*, (2015) in their study reported a relationship between risk taking propensity and entrepreneurial satisfaction was near to zero with a value of 0.084 but not significant at confidence level of 95%.

The result in Figure 3 indicates the three coefficient values of the regression weight (β), together with the p -values of the three psychological factors. The extent of the regression weight for each of the three psychological factors was 32.4, 28.9, and 17.2 for need for achievement, locus of control and risk taking propensity respectively. Judging from results in the figure led to the rejection of the null hypothesis 4, which led to establishing, that the psychological factors when taken together could predict University undergraduate students' entrepreneurial intentions.

Having come this far, the findings of this research also aligned with earlier researchers (Yusof *et. al.*, 2007; Tong *et. al.*, 2011; Amir, Mohamad & Abdullahi, 2013; Phuong & Hieu, 2015) who reported a similar results on the prediction of entrepreneurial intentions of the university students from need for achievement, locus of control and risk taking propensity. Yusof *et. al.*, (2007) in their study "relationship between psychological characteristics and entrepreneurial inclination of students in the University". They found out that all the four independent variables explain 21.1% of the variance in the perception towards entrepreneurial inclination among university students. The result also indicates that all the four independent variables, with the exception of locus of control have a positive and significant influence on the entrepreneurial inclination. The beta values for the four independent variables (need for achievement, risk taking propensity, tolerance for ambiguity and locus of control) was 0.271, 0.289, 0.150 and -0.73 respectively. Reason advanced by the researcher on the low beta weight observed for the locus of control could be attributed to the small number of items used in the locus of control construct or due to the low reliability of the construct as indicated in their research.

Similarly, Tong *et. al.* (2011) in their research titled "perception of undergraduate students on factors that influence them towards entrepreneurial intention" were able to found 34% to be the variance to make prediction about the university students entrepreneurial intentions and 32% of the variance to make correct prediction from the independent variables of the research, which includes need for achievement, desire for achievement, family business background and subjective norms. Out of this four independent variables, the strongest predictor was found to be need for achievement with (beta = 0.324).

Furthermore, another study by Amir, Mohamad and Abdullahi (2013), on the "Factors that Influence UiTMs Undergraduates towards Entrepreneurial Intentions" were also in line with the finding of this study. The independent variables in their research include locus of

control, need for achievement, risk-taking propensity and self-efficacy, while the dependent variable was entrepreneurial intentions of the university undergraduate students. The finding of their study revealed that they got 34.4% of the variance to make correct prediction of the dependent variable, when the independent variables were taken together. Similarly, Phuong and Hieu (2015) in a study titled "Predictors of Entrepreneurial Intentions of University Undergraduate Students in Vietnam" out that combined; risk taking propensity, locus of control, need for achievement, perceived support and creativity do predict the intention to start business among the university undergraduate students in Vietnam. The findings of their study revealed the beta weighting (coefficients) of the independent variables (risk taking propensity, locus of control, need for achievement, perceived support and creativity) on the dependent variable (entrepreneurial intentions) to be 0.295, 0.207, 0.232, 0.056 and 0.242 respectively. Furthermore, the research also showed that the 5 independent variables of the research accounts for 64% of the variance in the dependent variable.

Though in contrast, Yusof *et. al.* (2007) and Bux and Honglin (2015) were able to find highly correlated values between the locus of control, need for achievement and the entrepreneurial intentions among students. But the influence of locus of control and need for achievement were found to be insignificant ($\beta = -0.73, \rho > 0.05$; $\beta = -0.007, \rho > 0.05$) in predicting the entrepreneurial intentions of the university students.

4. CONCLUSION

The following conclusions were made, that: (a) people who sees failure as an ingredient towards accomplishing their desire tend to believe in their own ability to control their own destiny, be it psychological or financial uncertainties. (b) need for achievement, locus of control and risk taking propensity combined together were effective in predicting the entrepreneurial intentions of the university undergraduate students.

Therefore, it was recommended that a synergy should be created in the form of apprenticeship between higher institutions and private organizations, such that students from the universities may be involved to some extent in executing some businesses, with government taking all the unforeseen risk that may arise in the cause of the apprenticeship. This synergy will go a long way in improving students' attributes of intense, prolong and repeated efforts in achieving their desired objectives, owning anything they do and as well as clear the fear of uncertainty in them right while in studies. Also, Federal Universities of Technology are to put on all their research findings into practice. This will create an avenue for students to understand the rubrics of business acumen in practice through dealing with third parties that may be interested in the products or services put in place.

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