

Contextualization of Entrepreneurial Education in Production Engineering Discipline

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Nigeria is a country with a population of 150 million people; 7.5% of these numbers are disabled. Surprisingly, only a few of these persons are into entrepreneurial practice, others are not employable as a result of inadequate skills and experience. Those mostly affected, are the feral youths and the disabled. The purpose of this paper is to investigate and proffer solution to the apathy involved in acquiring entrepreneurial training in Nigeria, mostly among youths who are supposed to be the leaders of tomorrow. To achieve this, a survey approach incorporating the use of Rensis Likerts attitudinal scale was administered to generate respondents data matrix that was analysed with principal component analysis (PCA) using statisticXL software. Our findings showed that, behavioural defeatism, anachronistic government policies, paternistic political benevolence, poor capital/ infrastructural development and unsustainable wealth creation among others are largely responsible for the circumambulation of entrepreneurial education in Nigeria. It is expected that the outcome of this research will be useful to policy makers, planners, designers, institution of higher learning, political think tanks, and small and medium scale enterprises largely responsible for contiguous training of manpower in Nigeria.

Keywords: entrepreneur, paternistic, education, skill, likerts

INTRODUCTION

The ability to do something well, which is usually gained through training or experience is regarded as skill. Skill can adequately be regarded as an art or trade which an entrepreneur explores for livelihood. A person who uses this skill to bear the risk of initiating and financing a trade with the intent of making profit for livelihood is referred to as an entrepreneur. However, it takes patience, time, endurance and money among others to acquire such training and experience needed to become a good entrepreneur. It is generally believed that this training can be obtained from the Universities, Polytechniques and other allied institutions of higher leanings in addition to skill acquisition centres, private enterprises, business centres and other places of interest.

However, in spite of the national and state benefit derived from entrepreneurship elsewhere, many Nigerians are apathetic about the trade. Several factors such as behavioural defeatism, anachronistic government policies, paternistic political benevolence, and poor capital/infrastructural developments among others were identified as factors militating against the smooth operation of entrepreneurial training in Nigeria. Evidently, some of the problems identified had attracted some researchers in the academia and the industry because; efficient and effective entrepreneurial practice is a pre requisite to good nation building and bedrock for economic and social sustainability.

A review of literatures revealed that studies on entrepreneurial education were spurred in the mid 1980's by the need to bridge the gap between educational training and building capacity to become entrepreneurs. Notably, Arogundade (2011), Olaniyan and Okemakinde (2008), Olufokunbi (1995), Fabiyi (1995), Chibundu (1987) and Federal Government of Nigeria (1981) reported on the need to link educational training to skill acquisition. Similarly, Akpomi, (2009) pointed out that the current educational policy on entrepreneurship is deficient in building human capacity noting that, such elements as value orientation, poverty eradication, critical thinking and entrepreneurial life skills are being considered for inclusion in the new curriculum. Aladekomo, (2004) argued that the combination of lack of enthusiasm to education for self-employment and the long term apathy to the development of entrepreneurial skill through small scale industries in the industrial policy has contributed significantly to the unemployment problem now facing the nation. In a related study, Oviawe, (2010) stressed that, youthful period which is highly critical and essential for entrepreneurial training is often devoted to social vices such as prostitution, kidnapping and electoral violence which provides instant wealth that is rather unsustainable. The position of Oni and Adekola (2000) remained that the critical gap in knowledge that exist between higher education training and specific labour market requirements inhibits the development of youths and the entire nation. Other

notable research works that corroborates this finding includes, Eno – Obong (2006), Onu (2006) and Sheyin (2009). The relationship between creativity and entrepreneurial intent among graduates was investigated; the authors observed that entrepreneurial intentions are positively correlated with entrepreneurial experience and observed that there exist a sharp contrast between what is learned in schools and the specific needs of the industries; these are the findings of Hamidi, et al (2008), Nnazor (2005), Scott and Twomey (1988), Young and Sexton, (1997) and Falkang and Alberti (2000). It is therefore imperative to equip the younger generation who are still in their formative years with entrepreneurial skills so that they can have steady and reliable source of income in the years to come. When this is done properly, the future will be safe and guaranteed.

The aim of this study therefore is to identify and establish the relevant factors from the gamut of variables, responsible for low level of entrepreneurial training among Nigerians from the divergent ideas and deficient views of previous works and to proffer possible solution to the problems. This will assist policy makers in developing policies that offers

enlightenment, insight and awareness about the harm involved, thus creating elixir for employability and self reliance among the youths. This will save Nigeria and Nigerians from imminent unemployment and underdevelopments crisis looming ahead.

Research Methods

The survey approach used incorporates the administration of questionnaires with 5 points Rensis Likerts attitudinal scale. The respondent response options were transformed into metric variables to aid statistical tractability. The metric variables were collated as data matrices which serve as input into the principal component analysis. More so, correlation matrix, factor matrix and parameter estimates were generated using statisticXL software. From the factor matrix, surrogate variables were extracted. Factor loadings in the factor matrix of less than 0.50 were not considered for interpretation. The applicability of principal component analysis arose from the fact that substantial numbers of correlation matrix were greater than 0.30. The scale items (variables) are depicted in table 1.0 below.

Table 1.0: Twenty scale items (variables) for Entrepreneurial Education in Nigeria

Item No	Scale Item	Item No	Scale Item	Item No	Scale Item
1	Inoperative equipment	8	Low patronage	15	Educational training
2	Power supply inadequacies	9	Ineffective government policies	16	Awareness level
3	Quality of trainers	10	Urban migration	17	Time dependent factor
4	Unavailability of fund	11	High emphasis on certificates	18	Political patronage
5	Cost of alternative power supply	12	Inadequate Initial capital	19	Instant wealth creation
6	Defective learning curriculum	13	University induced skill	20	Effective entrepreneurial training
7	Imposed penalties	14	Risk factors		

The following assumptions about factors analysis were made:

- a. Columns of data matrix are seen as column vectors with linear characteristics. (Linearity)
- b. Equal dispersion of variance across variables was assumed. (homoscedasticity)
- c. Shape of data distribution for individual metric variable. (normality)

Factorability of correlation matrix revealed that principal component analysis (PCA) was applicable because substantial number of correlations matrix were greater than 0.30. Also, factor loading less than 0.5 were disregarded for interpretations.

RESULTS AND DISCUSSION

Table 2.0 shows the unrotated factor matrix, table 3.0 depict the varimax rotated factor loading while table 4.0 shows the explained variance (Eigen Value) (See Appendix). The scree plot showing the relationship between the Eigenvalues and the variables is depicted in figure 1 as shown below. The Eigenvalue of one sets the starting point for determining the candidacy

of variables to be considered for the factor space; accordingly, eight variables were significant among the gamut of variables. Similarly, figure depicts the factor plot as shown below.

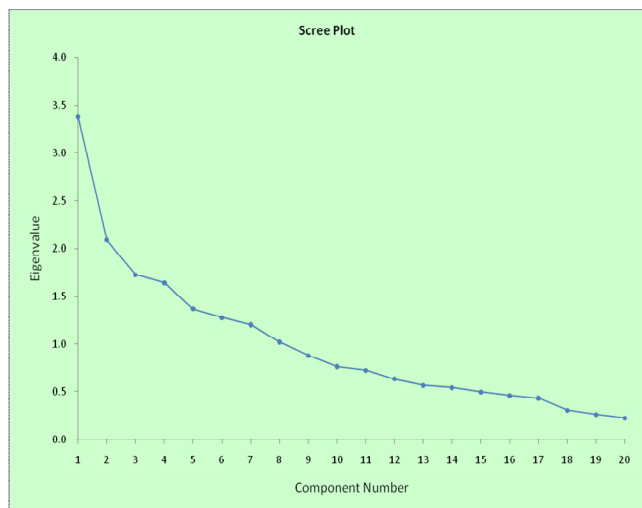


Fig. 1 : Scree Plot

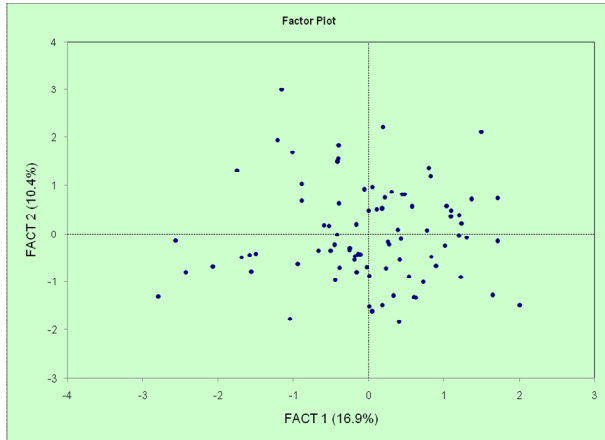


Fig. 2: Factor Plot

Table 4: Factor Platoons and their creative labeling

A) Cluster I (F1): Behavioural Defeatism

Variable Number	Factor Loadings	Variables
10	0.790	Rural urban migration
11	0.759	High value on certificates

The level of significance of each variable is a direct function of the magnitude of the factor loading of the variables. The higher the magnitude of the loadings, the more influential the variable is on the factor. Accordingly, rural urban migration with a factor loading of 0.790 is critical in addressing the problem of entrepreneurial training in Nigeria. Followed closely is certification with a loading of 0.759. This explains the high value placed on certificates and class of degrees by government and employers of labour without a corresponding level of acquired training and skills.

B. Cluster II (F2): Entrepreneurship Enhancers

Variable Number	Factor Loadings	Variables
2	- 0.809	Power failure induced inoperability
3	- 0.578	Incompetent personnel
4	- 0.654	Lack of starting capital

In this regime, all the factors weild negative loadings suggestive of the fact that they are not in existence or unnoticed. Hence appropriate entrepreneurial training may not be realised unless these variables are addressed.

C.) Cluster III (F3): Appropriate Entrepreneurial Training

Variable Number	Factor Loadings	Variables
15	0.816	University training inadequacies
16	0.715	Low level of awareness

A meritorious factor loading of 0.816 suggestive of the fact that adequate entrepreneurial training and

skills to match employer’s requirement is fundamental to developing entrepreneurship in Nigeria. However, it is evidently clear that most of our workshops and laboratories in higher schools are endowed with obsolete equipment and expired reagents for training. Similarly, awareness programmes should be encouraged.

C.) Cluster IV (F4): Anachronistic Government Policies

Variable Number	Factor Loadings	Variables
5	0.615	High cost of alternative power supply
9	- 0.778	Ineffective government policies
13	- 0.686	Skills acquired from the university

This is a bi – polar factor, the magnitude of the factor loadings of the variables shows the level of relevance of each variable. The ineffective government policies with factor loading of – 0.778 evidently portray the ill timed, outdated, inappropriate and most times, wrong policies of government. The skills acquired from our universities clearly are inadequate to entrepreneurial challenges thus the negative sign in the loading. The high cost of alternative power is a middling, though critical to addressing effective entrepreneurship training.

C.) Cluster V (F5): Paternistic Political Benevolence

Variable Number	Factor Loadings	Variables
14	0.623	Risk factor
18	0.827	Political patronage

Political patronage with a factor loading of 0.827, the highest among all the factors, underscores the need to minimize political benevolence to youth and adults. This patronage serves as a quick and cheap money making venture which discourages youths from undertaken entrepreneurial training. Variable No. 14 is moderately loaded; it suggests that there is need for successive government to relax most of its policies and be consistent over time to aid entrepreneurial training

Cluster VI (F6): Poor Infrastructural Development

Variable Number	Factor Loadings	Variables
1	0.704	Obsolete training equipment
6	- 0.647	Learning curriculum
17	- 0.646	Time factor

This is another bi polar platoon that underscores the use of outdated equipment and in appropriate learning curriculum to addressing the fundamental training needs and requirements of students in our higher institutions. The variable No. 17 with factor loading of -0.646 suggest that training is time

dependent. The negative sign indicates that trainees are no longer patient enough to undergo the training within the stipulated time.

G.) Cluster VII (F7): Unsustainable Wealth Creation

Variable Number	Factor Loadings	Variables
19	0.604	Instant money syndrome
20	0.802	Necessity of entrepreneurial education

Variable No. 20 with a factor loading of 0.802 highlights the need for proper entrepreneurial education to address the specific needs of our nation as against the current practice of generalizing educational training. Variable No.19 with factor loading of 0.604 suggests that unsustainable quick money making ventures should be discouraged among trainees.

H.) Cluster VIII (F8): Inadequate Capital

Variable Number	Factor Loadings	Variables
7	0.711	Imposed penalties
8	0.592	Lack of fund
12	- 0.678	Low patronage of local entrepreneur

This is a sturdy factor, though bi polar, underpinning the need for government to relax most of its stringent policies on infant industries and create a favourable condition for entrepreneur to access credit facilities at the same time help local entrepreneurs get the attention of the general public for improved patronage.

DISCUSSIONS AND CONCLUSIONS

Our result have shown that clusters V, III, II, and IV namely, paternistic political benevolence, appropriate entrepreneurial training, entrepreneurial enhancers and unsustainable wealth creation are of top priority and are crucial in addressing the problems of entrepreneurial education in Nigeria. The variables loading are all positive with high magnitude suggesting their significance and relevance in the decision and implementation of national policy on entrepreneurial training and education in Nigeria.

Cluster II accommodates three variables with negative loadings. Creatively labelled entrepreneurial enhancers, made up of power failure induced inoperability, lack of fund and incompetent personnel as trainers. The negative signs indicate that the variables are not in agreement with the specific requirement for appropriate entrepreneurial training in production engineering discipline in Nigeria. If these variables are not addressed critically, our quest and yearnings for sustainability and the hope of becoming a developed nation come 2020 will be dashed. Cluster 5, creatively labelled paternistic political benevolence which accommodates political patronage and the risk associated with entrepreneurial

training with the former having the highest magnitude of 0.816. This variable discourages the huge sums of money spent by politicians on youths to either retain political power or win elections. This benevolence therefore discourages youths from embarking on any form of trade to acquire skills thereby making them to grow into unemployable adults in life.

It is the view of the authors that when these variables with meritorious factor loadings are critically examined and positioned, entrepreneurial training through education will take its desired place in the developmental strides of our nation. Unemployment will greatly reduce thus leading to a decline in youth unrest and social vices in our society.

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APPENDIX

Table 2.0 Unrotated Factor Matrix

Unrotated Factor Loadings								
Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Inoperative equipment	0.373	0.042	-0.040	0.209	-0.058	-0.565	-0.185	-0.174
Power supply inadequacies	0.001	-0.576	-0.028	-0.035	0.334	0.077	0.024	-0.491
Quality of trainers	0.290	-0.278	-0.429	-0.219	0.412	-0.072	0.009	-0.228
Unavailability of fund	0.352	0.654	0.186	0.167	-0.120	-0.139	0.036	0.125
Cost of alternative power supply	0.036	-0.089	0.320	0.591	0.103	0.118	-0.334	0.010
Defective learning curriculum	0.308	-0.465	-0.093	0.441	-0.140	-0.328	0.130	0.025
Imposed penalties	0.544	-0.341	0.082	0.051	0.148	0.191	-0.191	0.555
Low patronage	0.468	-0.468	0.045	0.008	-0.178	0.114	0.356	0.183
Ineffective government policies	0.564	-0.016	-0.167	-0.508	-0.188	-0.218	0.072	0.041
Urban migration	0.416	-0.020	0.275	-0.111	-0.289	0.577	-0.012	-0.125
High emphasis on certificates	0.591	-0.161	-0.022	-0.065	-0.354	0.298	-0.245	-0.200
Inadequate Initial capital	0.183	0.556	-0.337	0.088	-0.226	0.159	-0.213	-0.376
University induced skill	0.633	-0.041	-0.078	-0.441	-0.078	-0.181	-0.227	0.048
Risk factors	0.365	0.458	0.186	-0.337	0.513	-0.041	-0.097	0.134
Educational training	0.018	-0.020	0.745	-0.175	0.293	-0.128	0.121	-0.138
Awareness level	0.440	0.102	0.563	0.031	0.039	0.054	0.314	-0.314
Time dependent factor	0.622	0.048	0.126	0.253	-0.028	-0.295	0.052	-0.065
Political patronage	0.445	0.117	-0.265	0.240	0.551	0.287	-0.241	0.022
Instant wealth creation	0.458	0.206	-0.258	0.484	0.129	0.081	0.302	-0.016
Effective entrepreneurial training	0.131	0.273	-0.319	-0.003	0.121	0.181	0.663	0.056

Table 3.0: Varimax Rotated Factor Loading

Varimax Rotated Factor Loadings								
Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8
Inoperative equipment	-0.076	0.038	0.020	-0.161	0.063	-0.704	-0.144	-0.134
Power supply inadequacies	0.065	-0.809	0.148	0.080	0.019	-0.043	-0.050	0.033
Quality of trainers	-0.067	-0.578	-0.099	-0.361	0.330	-0.117	0.137	0.000
Unavailability of fund	0.073	0.654	0.210	-0.062	0.185	-0.278	0.177	-0.202
Cost of alternative power supply	0.144	0.060	0.071	0.615	0.228	-0.253	-0.250	0.106
Defective learning curriculum	0.022	-0.190	-0.149	0.096	-0.157	-0.647	0.086	0.373
Imposed penalties	0.267	0.075	-0.073	-0.091	0.454	-0.105	-0.106	0.711
Low patronage	0.351	-0.135	0.036	-0.168	-0.136	-0.189	0.263	0.592
Ineffective government policies	0.200	0.033	0.013	-0.778	0.012	-0.187	0.056	0.094
Urban migration	0.790	0.067	0.189	-0.027	0.032	0.142	0.054	0.074
High emphasis on certificates	0.759	-0.071	-0.093	-0.210	0.089	-0.207	-0.095	0.023
Inadequate Initial capital	0.322	0.193	-0.242	-0.060	0.170	-0.118	0.148	-0.678
University induced skill	0.266	0.024	0.024	-0.686	0.233	-0.236	-0.182	0.098
Risk factors	-0.116	0.232	0.431	-0.356	0.623	0.096	0.013	-0.081
Educational training	-0.081	-0.033	0.816	0.042	-0.019	0.044	-0.187	0.097
Awareness level	0.345	0.029	0.715	0.006	-0.012	-0.224	0.206	-0.004
Time dependent factor	0.167	0.122	0.211	-0.120	0.155	-0.646	0.115	0.089
Political patronage	0.130	-0.135	-0.104	0.093	0.827	-0.117	0.177	-0.007
Instant wealth creation	0.124	0.080	-0.078	0.138	0.306	-0.401	0.604	0.001
Effective entrepreneurial training	-0.063	0.054	-0.008	-0.132	0.041	0.123	0.802	-0.017