

THE IMPACT OF TECHNOPRENEURSHIP EDUCATION ON HUMAN CAPACITY BUILDING IN BIDA METROPOLITAN

¹Ndace Silas; ²Winifred Tsado

¹Department of Business Administration and Management, Niger State Polytechnic,
Zungeru, Niger State, Nigeria.

²Department of Business Education, College of Education, Minna, Niger State
E-mail: silwanciko@gmail.com

ABSTRACT

Education, blend of technology prowess and entrepreneurial skills are known to be the important drivers of Human capital Development and enterprise growth in many nations. Economic and social development of Nigeria is imbalance and this requires the contributions of individuals who have the rightful skills in both the public and the private sector to set up businesses, employ others and produce quality goods and services to remedy this challenge. The objective of this paper is to determine the extent to which technopreneurship education affect human capacity building with a specific focus on the areas of job creation and poverty reduction. The study adopted a descriptive cross-sectional survey research design, which allowed the collection of primary quantitative data through pretested semi-structured questionnaire. Stratified random sampling and simple random sampling techniques were used to select 60 Micro Small and Medium Enterprises (MSMEs). The findings indicate that effective technopreneurship education programme has a significant effect on poverty reduction and job creation. Based on the findings, it was therefore recommended that the Nigerian directorate of employment and industrial training fund should partner with the Central Bank of Nigeria for easy access to soft loans for a startup capital by the potential and prospective technopreneurs. The Government should establish more Business incubation and Entrepreneurship centers to equipped both potential technopreneurs and students to exposed them to the art of starting and nurturing a business, this will further create more jobs and reduce poverty

Keywords: *Technopreneurship, Entrepreneurship, Job creation, Poverty Reduction*

INTRODUCTION

Technopreneurship is basically the merging of two words from two disciplines: technology from the innovation discipline and entrepreneurship from the business discipline. Sivave, (2016). It lays emphasis on integrating technology with entrepreneurship. The link between technology, entrepreneurship and the ensuing growth of Micro, Small and Medium Enterprises (MSMEs) in a given economy has long been accorded a prime place in business, management and economics sciences literature Abdullahi, (2013). Reflecting on globalization and how it has raised the importance of creative high-tech and entrepreneurial skills; technopreneurship has come as an answer to unlock creativity and sustain long-run competitive advantage in the present world where economic issues are always combined with increased competitiveness. Subsequently, this need to combine the quest and requirement for technology with all elements of entrepreneurship has led to the development of the term "technopreneurship" which refers to new or prospective enterprises that is anchored on technology. Entrepreneurship, like technology has added another dimension to the human life. It is impossible not to notice that all forms of employment today have arisen from some or other form of entrepreneurial venture. Entrepreneurship and technology both are products of the human genius and equally marvelous is the compound that is formed by merging the two together for benefit of the society. There have been various forms of entrepreneurship that have developed over the ages, from entrepreneurship for profitable purposes to social entrepreneurship, the world is now welcoming *Technopreneurship*, Selladurai, (2016).

The Magical word that has transformed the world today is Technology. Not only has it made life easier, in fact much easier, it has also accelerated it. Most of the work is done simply in minutes without much ado. Technology is nothing but the usage and knowledge of tools, crafts, organizational methods and systems to solve certain problems or provide services, Selladurai, (2016). The process of organizational creativity is a process of mainstreaming innovation or continually finding important corporate problems, solving those problems, and, implementing the solutions to satisfy the global market is referred to as *Technopreneurship* (Okorie, e tal 2014). Technopreneurs are entrepreneurs who are into the core businesses involving technology based industries. They make use of technology to come up with innovative products through the process of commercialization. Potential technopreneurs must build capacity and be

equipped with both technical and business skills. Technopreneurs continually go through an organic process of constant improvement; they always try to redefine the dynamics of digital economy. Technology entrepreneurship is, thus, understood in this study as the integration of technological and entrepreneurial realms, Sivave, (2016). The study does not attempt to cover all the components of the field of technopreneurship education. Its goal is to describe and discuss the core elements of current knowledge on technopreneurship and its effects on human capacity building and to presents a summary of a more detailed text on the subject.

Education and experience are characteristics that are central to the concept of human capacity building (Becker, 1964). Experience encompasses work experience and other practical learning that takes place on the job, as well as non-formal education such as training (Matthew et al.; 2006, Becker, 1964). Human resources in terms of capabilities, managerial skills among others increase the performance of entrepreneurs (Morgan et al.; 2004, Rose & Kumar, 2007). It is necessary to build the capacities of entrepreneurs to make an essential contribution to the economy of a nation (Bamfo, Asiedu- Appiah, Oppng-Boakye. 2015). Olawale & Garwe (2010) noted that management capacities are sets of skills, competencies, and knowledge that can make entrepreneurs more effective. Many researchers argue in support of the role human capital play in the entrepreneurial performance (Bosma et al. 2002; Cooper, Gimeno-Gason and Woo 1994, Kurosaki & Khan, 2004; Gimeno et al.; 1997; Honig 1998).

PROBLEM STATEMENT

Technopreneurship education is identified as a process of raising the skilled human capital development mechanism that can spur the economy of a country (Bieh 2012; Bon 2010; Jusoh 2006). However, the development of technopreneurs requires a longer process involving the commitment of many parties (Suradi,S, et al 2017). Government intervention involved in the development of policies is vital to boost the kind of technopreneurship that is capable of producing technopreneurs that can meet global requirements (Abdul Hamid et al. 2003; Yusoff 2010; Yen & Chong 2007). Educational policies in Nigeria are designed and coordinated by the human capital needs of this country (Idris et al. 2014;Ahmad 2012). The economic development policy is formulated to enhance the potential to generate higher income economy, to create more productive job opportunities with greater added value and to increase the

number of new companies that are supported by advanced technologies (Ibrahim et al. 2015). In line with such aspirations, educational sector (University, polytechnics and colleges) has been identified as a career path that is right for nurturing technopreneurs (Majumdar 2013; Adegbe & Aji 2012).

Graduates from these institutions are expected to have the capability and know-how to create new startups and generate their income through job creation rather than employment seeking. Thus, technopreneurs - the expected output of the institutions are the ones who will support the economy through their contributions to human capacity building and the development of the small and medium industry growth (Depositario et al. 2011; Rosly et al. 2015; Jusoh 2006). The task of developing technopreneurship is in need of a transformational leadership who can draw talents and establish working relationships between scientists, academics, engineers, entrepreneurs and others in the business sectors (Okorie et al. 2014; Paulsen et al. 2012). Every year Nigerian institutions of higher learning produce large number of graduates who cannot be holistically employed in both the public and organized private sectors (Adawo, 2013). Each year, approximately 1.8 million students graduate from higher learning institutions in Nigeria. Statistics have revealed that more than 80% of these graduates remain unemployed (Chinyere & Faith, 2012). Furthermore, statistics from NBS (2014) shows that of the total level of employment across economic activities in Nigeria, only 11.9 graduate are employed. As a result, the need for a study to examine the effect of technopreneurial knowledge, skills and behaviour on human capacity building is sacrosanct.

Research Questions

- i. What is the effect of technopreneurship education on human capacity building in Bida metropolitan?
- ii. What is the level of knowledge of technopreneurship education in Bida metropolitan
- iii. Does technopreneurial knowledge and skill have any effect on job creation?
- iv. Examine the impact of technopreneurial behaviour on poverty reduction in Bida metropolitan?

Objectives of the Study

This study examines the impact of technopreneurship education on Human Capacity Building in Bida metropolitan council with a view to achieving the following objectives.

- i. To examine the effect of technopreneurship education on Human capacity building in Bida metropolitan.
- ii. To investigate the level of knowledge of technopreneurship in Bida metropolitan
- iii. To investigate the effect of technopreneurial knowledge and skill on job creation in Bida metropolitan.
- iv. To examine the impact of technopreneurial behaviour on poverty reduction in Bida metropolitan.

HYPOTHESES

Null Hypotheses (Ho)

HO₁: Technopreneurial education has no significant effect on poverty reduction in Bida metropolitan.

HO₂: Technopreneurship education has no significant effect on job creation in Bida metropolitan.

REVIEW LITERATURE

Technopreneurship, it's simply the entrepreneurship in a technology intensive context. It is a process of merging technology prowess and entrepreneurial talent and skills M. Selladurai, (2016). Technopreneurship is innovative application of technical science and knowledge individually or by a group of persons, who create and manage a business and take it financial risk in order to achieve their goals and perspectives (Suradi, S., M. Yasiu et al2010). According to Malladurai (2007). Entrepreneurship is a way of thinking and acting that is opportunity obsessed, holistic approach and leadership balanced for the purpose of wealth creation. The engineers possess high technical skills in this regard but they often enjoy few skills in business and in terms of entrepreneurial thinking (Prodan,2007). Technopreneurship is one of the important subjects in entrepreneurship topic that may play important role in creation of competitive advantage in various enterprises and organizations. Its main role which it plays in reconstruction and economic growth is one of the reasons for this purpose. Technology based entrepreneurship is necessary for which technology base industries are being developed promptly and they are substituted by traditional industries and this change and knowledge base activities may be

occasionally interpreted as great as industrial revolution. Today, it is completely clear that according to a report from OECD, development of technology play an essential role in economic growth and development and technology- oriented industries may play ever- increasing and major role in international trade. While emerging technopreneurship may cause ever- growing appearance of knowledge based SMEs (Dahlstrand,2007). Dorf, R.C., & Byers (2005) define technopreneurship as a leadership style of business including identifying extremely technological economic opportunities with high capacity for growth, collection of resources like expert manpower and capital, rapid growth and remarkable risk management by means of decision making skills. Technology base businesses exploit from major advancements in science and engineering to provide better products and services for customers.

Technology entrepreneurship is concerned with transformation of theoretically feasible technological ideas and knowledge into prosperous ventures. While evidence of statistical decline in the performance of technology-intensive compared with non-technology intensive industry have been reported, Vaaler & McNamara (2010) did not find any difference on the mortality rates between these industries. Despite the significant relationship between technological innovation and firm performance, success depends largely on the capabilities of the entrepreneurs (Tremblay, Daou, & Brie, 2014; Duening, Hisrich, & Lechter 2011). In Nigeria, it is compulsory for undergraduates to take courses in entrepreneurship and information technology. This clearly shows that Nigerian nascent graduates have theoretical romance with technology entrepreneurship. Thus, the need to nurture their theoretical knowledge into intention is critical for technopreneurial development.

Definitions of Technopreneurship

The concept of technopreneurship is still new and is considered as a real source of economic power in today's knowledge-based as well as developing economies (A Y Dutse al tel 2013). A large body of the literature exists on the concept of entrepreneurship explaining variety of views of different scholars on the subject. The general consensus on the concept is that it reflects an entrepreneur who combines resources such as land, labour and capital to produce a product, make non-routine decisions, be aggressively competitive, technologically innovative and bear risks. Technopreneurship is a latent concept that is placed in the core of many important subjects and it includes some topics about setup and

growth in enterprises, development of regional economy, election of appropriate shareholders to acquire ideas for market and training of managers, engineers, and scientists. Selvarani A. and Kanagaraj Venusamy (2015) stated that, technopreneurship it is a simple entrepreneurship in a technology intensive context. It is a process of merging technology prowess and entrepreneurial talent and skills. (Technology + Entrepreneurship = Technopreneurship). A person who undertakes some risk that has the chance of profit. Technopreneur distinguishes themselves through their ability to accumulate and manage knowledge, as well as their ability to mobilized resources to achieve a specified business or social goal.

Technopreneurship comprises of identifying modern technologies and even creation of technological opportunities by presentation of commercial products and services (Blanco,2007). Technopreneurship is to invest in a project that gathers and mobilizes expert members with heterogeneous assets, which are related to advancement in scientific and technological knowledge, in order to create and acquire value for an enterprise. Technopreneurship is used equally in the newly formed and established enterprises and at the same time to the any extent technopreneurship is necessary for growth, discrimination and competitive advantage in enterprises and at national level (Bailetti,2012). Concept of "technopreneurship" as a strategy for maintenance and excellence of sustainable parameters of competitive advantages in organizations and businesses has drawn researchers' attention. Technopreneurs are skilled in applied creativity, thrive in response to challenge, and look for unconventional solutions. They experience challenges, create visions for solutions, build stories that explain their visions, and then act to be part of the solution. Therefore there is a vast growth opportunities for the technopreneurship in the world particularly in the developing country. Technology based startup should be the alternative solution to the sustainable and inclusive enlargement; hence Technopreneurship is needed in an hour for the consistent growth of the economy of the country.

Who is Technopreneur?

Definition of the Technopreneurs have been given by various experts in different situations, the following are the major definition cited by the experts A person who destroys the existing economic order (creative destruction) by introducing new products and services by creating new

forms of organizations and by exploiting new raw materials. (Schumpeter, 1934) A person who undertakes risks (by creating an enterprise or business) that has the chance of profit (or success).

Technopreneurs distinguish themselves through their ability to accumulate and manage knowledge, as well as their ability to mobilize resources to achieve a specified business or social goal. (Kuemmerle,2002). The technopreneur is a bold, imaginative deviator from established business methods and practices who constantly seeks the opportunity to commercialize new products, technologies, processes, and arrangements. (Baumol, 2002)

The technopreneur distinguishes logic from tradition, tradition from prejudice, prejudice from common sense and common sense from nonsense while integrating a variety of ideas from diverse groups and disciplines. (Manuel Cereijo, 2002). A technopreneur means an entrepreneur who involves and deal with technology in their business. A technopreneur believes that technology would increase efficiency, productivity, product quality, broaden the market and helps to market the developed product widely (Mohammad, at al 2015)

Technopreneur is an entrepreneur who is technology savvy, creative, innovative, dynamic, dares to be different, takes the unexplored path and is very passionate about his/her work (Nasution et al. 2007). Individuals who possess technopreneurial traits take challenges and strive to lead their life with greater success. The personality traits of technopreneurs include not having fear to fail, taking failure as a learning experience, and adept at looking at things differently, and always looking for the next challenges (Cereijo 2002; Depositario et al. 2011). Technopreneurs operate business differently from those in the existing economic order by optimising the use of technology to innovate new products and services. The implication of this is a creation of new forms of organizations and the exploitation of new raw materials. Technology is not only about hi-tech or of technical matters, but it can also refer to human applications of useful knowledge that can benefit the community (Drucker 1985; Ibrahim et al. 2015). The combination of technology and entrepreneurial skills will produce a technopreneur.

Technopreneurs simply means that a person who uses technology as part of their business model. Technopreneurs involve people who make or found their own technology-based business by recognizing the

opportunities and organizing the resources (Ibrahim et al. 2015; Yudha 2010). Meanwhile, technopreneurship is a result of the synthesis and re-engineering process in the future by combining the know-how in technology and entrepreneurial skills to create a new and versatile business model. According to Cereijo (2002), technopreneurship which merges technology prowess and entrepreneurial skills becomes the real source of power in knowledge-based economy. Thus, Nasution et al. (2007) argued that developing technopreneurs is highly demanded in the present economic order.

Human Capacity Building

The human capacity building is the "practice of providing people with the knowledge, expertise, and opportunity to access information, knowledge, and training that enables them to perform effectively" (UNDP 1992). Azikwe (2006) defined capacity building as "the process by which an individual, irrespective of sex, are provided with the expertise and understanding they need to perform effectively and efficiently in their different callings." Capacity Building refers to activity to generate knowledge, skills, and expertise to improve the thinking ability that may assist in increasing productivity and sustenance. (Nell and Napier, 2006). Capacity building is also defined as the "process of developing and strengthening the skills, instincts, abilities, processes and resources that organizations and communities need to survive, adapt, and thrive in the fast-changing world." (Ann Philbin, Capacity Building in Social Justice Organizations Ford Foundation, 1996). Human capacity building has been defined by scholars as the processes or channels of improving individuals' human capital. Chapagain (2004) defined capacity building as approach to develop individuals' potentiality in order to enhance their performance or organization performance. Brews (1994) further noted that capacity building is the content of empowerment, and empowerment is the value accrued to individual exposure. In addition, human capacity building process can be attributed to three basic forms; first through Science Technology and Innovation (STI) learning process which entails formal education such as pre-secondary school and post-secondary school. Second, through doing, using and interacting (DUI) which entails informal forms of learning process such as experience, apprenticeship, mentorship, observation and continuous usage. Thirdly, through the combinations of STI and DUI modes of innovation. This third aspect of human capacity building process wholly entails both the theory and application of the learning mode.

Capacity is the ability of an organization to excel while capacity building is how to develop and strengthen this ability (which is capacity) (Nwankwo & Olabisi, 2017). Capacity building means enhancing or strengthening a person's or organization's capacity to attain their objectives (Lusthaus, Adrien & Perstinger, 1999). Miten (2006) states that capacity is a person's ability to do something to achieve the goals, resources, behavior, motivation, relationships, and conditions that allow individuals, firms, sectors and the broader system to carry out their functions and attain development objectives set forth from time to time. UNDP (2006) defines capacity as the ability (ability to solve problems) that person has, organizations, institutions, and communities to individually or collectively carry out functions, solve problems and set achievable goals. Brown, Lafond, and Macintyre (2001) opined that capacity building is a multifaceted and dynamic process that improves the capability of a firm to attain its goals and do better in a competitive arena. The position of Brown et al. (2001) was corroborated by Light, et al. (2004).

For organizations, capacity building may relate to almost any aspect of its work: improved governance, leadership, mission and strategy, administration (including human resources, financial management, and legal matters), program development and implementation, fundraising and income generation, diversity, partnerships and collaboration, evaluation, advocacy and policy change, marketing, positioning, planning, etc. For individuals, capacity building may relate to leadership development, advocacy skills, training/speaking abilities, technical skills, organizing skills, and other areas of personal and professional development. (Evaluation of Capacity Building: Lessons from the Field by Deborah Linnell, published by the Alliance for Nonprofit Management) Furthermore, it encompasses all aspects of awareness-raising, education and training, attitude change, confidence building, participation in decision-making and action. A critical goal of human capacity development is that of maximizing people's potential to contribute to development by participating fully in all its activities. Through capacity building, individuals and groups are empowered to expand their abilities to more fully participate in the development process. As people increasingly direct and control the process of change that they themselves are bringing about, then the knowledge, skills, attitudes and behaviors they require also change. As mentioned in the opening chapter, Capacity Building transcends training and development, and in its broad sense, includes the following:

1. Human Resource Development; which is the process of equipping individuals with the understanding, skills and access to information, knowledge and training that enables them to perform effectively;
2. Organizational Development; the elaboration of management structures, process and procedures, not only within organizations but also the management of relationships between the different organizations and sectors (public, private and community); and
3. Institutional and legal framework development; making legal and regulatory changes to enable organizations, institutions and agencies at all levels and in all sectors to enhance their capacities. (Citation: Urban Capacity Building. L. Van Crowder, April 20th, 2009).

Human Capital Theory

The term human capital can trace its roots to the early 1960s, when Schultz (1961, p140) proposed that HC consisted of the 'knowledge, skills and abilities of the people employed in an organisation'. While concise, Shultz's initial definition of Human Capital is somewhat limited in that it does not take into consideration the concept of 'value' and the importance of 'investment' in HC. In 1981, Schultz revamped this definition and defined Human Capital as: '...all human abilities to be either innate or acquired. Attributes ... which are valuable and can be augmented by appropriate investment will be human capital' (Schultz 1981, p21). More recent definitions of HC include that of Thomas et al (2013, p3), who define Human Capital as the 'people, their performance and their potential in the organisation'. The inclusion of the term 'potential' is important as it indicates that employees can develop their skill and abilities over time. This definition is in line with the definition of Dess and Picken (1999, p8), who suggest that Human Capital consists of 'the individual's capabilities, knowledge, skills and experience of the company's employees and managers, as they are relevant to the task at hand, as well as the capacity to add to this reservoir of knowledge, skills, and experience through individual learning'. Dess and Picken's definition of Human Capital is much more expansive than others and crucially highlights that individuals can 'add' to their knowledge base through learning. Human Capital theory suggests that individuals who invest in education and training will increase their skill level and be more productive than those less skilled, and so can justify higher earnings as a result of their investment in Human Capital. As Becker (1993, p19) suggests, 'schooling raises earnings and productivity mainly by providing

knowledge, skills and a way of analysing problems'. Moreover, Becker's ideas play an important role in contemporary employee development and learning literature, as Human Capital theory fuels the idea that employees' knowledge and skills can be developed through investment in education or training, that is, learning (Grant 1996a, Hatch and Dyer 2004). Human Capital theories believe that an educated population is a productive population (Olaniyan & Okemakinde, 2008). Schultz (1971); Sakamota and Powers (1995) and Psacharopolous and Woodhall (1997) all argued that human capital theory is centered on the assumption that formal education can lead to and vital to improving the production capacity of a population. Human Capital theorists postulate that there is a direct positive relationship between formal education and productivity. According to Psacharopolous and Woodhall (1997), human resources constitute the Ultimate basis of the wealth of nations. Human beings bring together and manage other factors of production. It is worth mentioning the assertion of Ayara (2002) that education has not led to the achievement of desired economic growth in Nigeria. Ayara (2002) attributed the low impact of education on economic growth to the following factors:

- ✓ Educational Capital is now privately rewarded, but the activities are not productive socially.
- ✓ The demand for educated labor has been slow
- ✓ Failure of the educational system to the extent that going to school produces little or no skills.

According to Buta (2015), the human capital theory can be examined from different perspectives, though each was raising the issues of definition; the aspects that are relevant to this study include:

- ✓ "Education and professional training (education capital) - the set of knowledge, skills, economic, socio-cultural, civic behaviors, obtained through, i.e., the integrated system of skills".
- ✓ "Workplace training through specific activities such as research and innovation or participation in various associations/professional networks".
- ✓ Nonformal education at work (on the job) in everyday life and through civic activities".

METHODOLOGY

Research Design

Since this study is meant to investigate the impact of technopreneurship education on human capacity building in Bida metropolitan council of Niger State. The study adopted descriptive cross sectional survey research design. The research design was preferred for the study because it is an effective and efficient means of accessing information from a large population. It also allowed the researcher to study the attitude, views and the knowledge of the target technopreneurs. This is in line with Tuckman's (1972) opinion of survey as a means of measuring what a person knows (knowledge or information), what a person thinks (attitudes and beliefs), what a person likes (values and preferences), and how a person feels (feeling) (quoted in Onwioduokit, 2000: 16)

Study Population

In statistics, population means the totality of all elements, subjects, or members that possess a specified set of one or more common definite attributes (Ogundipe *et al*, 2006). In this work, the population includes all Micro Small and Medium Enterprises (MSMEs) across Bida metropolitan

Sample and Sampling Technique

Population is always too much to manage due to time constraint and inadequate resources. As a result, sample representation of the population is expedient. A representative of the sample will be selected using a combination of purposive (stratified) random sampling and simple random method of sampling. Purposive sampling allows for the selection of the best people who have first-hand information on the issue being considered in the study. On the other hand, simple random sampling gives members of the population equal opportunity of been selected to participate in the study without any element of influencing the chance of selecting the others. Thus the justification for the use of these sampling methods was informed by the researcher's knowledge of some respondents who are knowledgeable in the area of the study's subject matter as well as the need to check conscious and unconscious bias of the researcher in selection.

Sampling Size

Based on the inventory that was carried out by the researcher, estimated target population of seventy-five (75) Micro, Small and Medium

Enterprises (MSMEs) in Bida metropolitan were considered as a true representative. The sample size for the research was determined by using Slovan's formula. The formula is given as:-

$$n = N/(1+Ne^2)$$

Where: - n = Sample size

N = population size, and

E = Marginal error at 0

$$93/(1+93 \times 0.05^2)$$

$$93/(1+0.2325)$$

$$93/1.2325$$

$$75.4563$$

$$= 75 \text{ Appr.}$$

Methods of Data Collection

Due to the number of respondents that was involved in this study, the researcher engaged the services of research assistants in the administration and retrieval of the questionnaire. The research assistants were taken through formal training sessions to introduce them to the rudiments of semi structured instrument and how to collect data that are relevant to the objectives of the study. The sessions were conducted such that the research assistants were able to work independently. Given the array of concepts and activities that were used in this study, the research assistants were provided with manuals that explained various terminology and highlighted different protocols in order to ensure accurate data from the respondents in the most appropriate way.

Instruments and Methods of Primary Data Collection

Primary data was collected using semi structured survey questionnaire. How this will be used to collect data is explained below.

Questionnaire

The questionnaire had close-ended questions (dichotomous questions) as well as open-ended questions. Close-ended questions provided more structured responses to facilitate tangible recommendation and fast analysis of data. The open-ended questions provided additional information that might not have been captured in the close-ended questions. This questionnaire consists of four (4) parts. The first part (PTI) is designed to elicit information on respondents' socio-demographic information. Part two (PT II) is structured to ask questions that will elicit information on the level of knowledge and awareness

(knowledge scale), the third section (PT III) question was to elicit information on the effect of technopreneurship education on human capacity building, and the last part which is part four (PT VI) focuses on gathering information on the impact of technopreneurial knowledge, skill and training on poverty alleviation and job creation. 75 copies of a semi structured questionnaire will be administered.

Reliability of Instrument

In order to test for the reliability of the instrument, Cronbach Alpha will be used. Cronbach alpha, which is expressed as a number between 0 and 1, is generally used to provide a measure of the internal consistency of a test or scale. Internal consistency refers to the uniformity of all items in a test as regards a concept and hence refers to the inter-relatedness of the items within the test. High values of alpha suggest the redundancy of some items, which may imply them testing the same question but in a different guise. A maximum alpha value is usually recommended. However, a low value of alpha could be due to a low number of questions, poor inter-relatedness between items or heterogeneous constraints. Generally, the acceptable value of alpha is in ranges of 0.70 to 0.95. The reliability of the instrument was completed by using the cronbach's Alpha coefficient test in order to evaluate the unidimensionality of the set of scale items. It helped to measure the extent to which all variables in the scale are positively related to one another. The Cronbach's Alpha value of the study was calculated to be 0.726 which was beyond the set minimum of 0.7

Method of Data Analysis

Questionnaire was collected, edited, coded and entered into computer software called statistical package for social science (SPSS) version 20. Collection, editing and sorting of the questionnaire was carried out. However, out of the total number of 75 copies of questionnaire that was administered, 60 copies of questionnaire were devoid of errors, representing 95% turnout, which is a reasonable return rate. Then descriptive statistics such as percentage, frequency distribution tables and chart were used to analyse data obtained from the socio-economic and demographic features of the respondents as regards to their age, sex, educational qualification. In order to test the hypothesis, the Chi-Square Test for independent was used to determine if there were any significant relationships between the variables.

Measurement of Knowledge of Technopreneurship Education

A number of studies on level of respondent's knowledge have been conducted, resulting in numerous knowledge "scales" (Ware and Hays, 1988, S Ndace 2018). Extensive research in this area of study has led to the development of functional measures that can be administered directly to determine the level of knowledge of respondents very efficiently and with excellent reliability. Respondents were provided with fifteen points Knowledge Scale (15 point knowledge scale) questions, this fifteen point scale constituted the rating scale. Each point of the scale carries a score. (1) Indicating the lowest, (2) indicates fair and (3) indicating the good on which to categorise their knowledge levels respectively. All responses to section C will indicate their levels of knowledge towards technopreneurship education. This model was adopted because it is an objective way of measuring respondents' knowledge. Each response is given a numerical score and the total of respondents is found out by summing up his different responses and calculating the mean. The total score indicate the position on the continuum. This has been found to have the greatest salience for respondents, a result supported in various studies (Ware, Synder & Wright, 1983; Ware & Hall, 1988; S. Ndace 2018)

Knowledge Assessment

The study adapted kibikiwa (2010) model of students' knowledge which categorises measures of students' knowledge as;

- Poor knowledge
- Fair knowledge
- Good knowledge

The scoring system takes into consideration the maximum and minimum scores used for finding the level of knowledge of the respondents. The highest total mark (maximum) score that is obtainable using Knowledge scale is 15 while the minimum score that is obtainable using knowledge scale is 5. Finding the average, the range was calculated as follows;

This scoring system was used in finding the levels of knowledge of the respondents. The highest total marks (maximum) obtainable = 15 on the knowledge scale

Minimum = 5

The range was as follows:

Categorisation of score on knowledge scale

0- 5points = Poor → (1)

>6-10points = Fair → (2)

>11points = Good → (3)

Depending on the score obtained by the respondent, respondents' knowledge level is divided into 3 levels: low, fair and high.

RESULT AND DISCUSSION

This section of the study present and discusses the result of the data collected for the study.

Distribution of Respondents by Socio-Demographic Characteristics

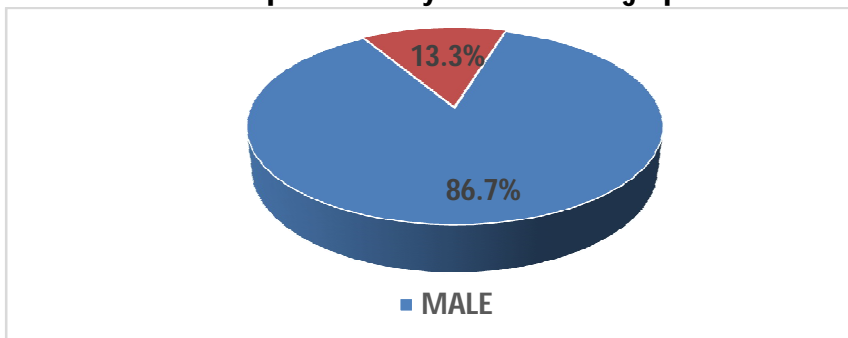
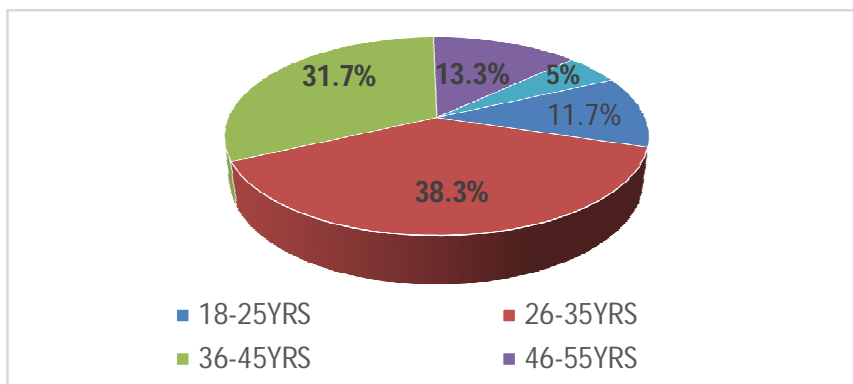


Fig 1. Gender Distribution

Figure1 shows that male respondents were 52(86.7%), while females were 8(13.3%). The result shows that there are more male technopreneurs in Bida Metropolitan than female.



Fig, 2 Age Distribution

Figure 2 response indicate that 7 respondents within 18-25 years of age make up (11.7%) of the total respondent, at this age bracket it was found that most of the respondent acquired technopreneurship education either

at the secondary schools or at the early years of their tertiary education. 23 respondents within 26-35 years of age make up (38.3%) of the total respondent, acquired technopreneurship education and skills. 19 respondents within 36-45 years make up thirty eight point three percent (31.7%), 8 respondents within 46-55 years make up thirteen point three percent (13.3%) while 3 respondents within 55 years and above make up five percent (5%). It was clearly observed that within the age bracket of 26-35 years of age has the highest percentage of the total respondent. This implies that, out of the total respondents. The working age groups between 26-35 years of age are the dominant age group in Bida metropolitan council compared to children or under age that cannot work of between 18-25 years of age or over age of between 55 and above. Therefore, the result signifies that more working age group in Bida metropolitan council are entrepreneurs.

The Level of Knowledge of Tecnopreneurship Education among the Respondents

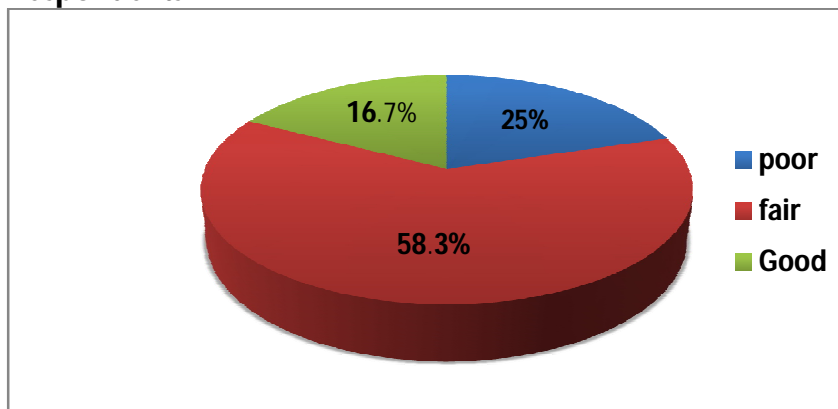


Fig 3. Level of Knowledge of Technopreneurship Education

Figure 3. Presents data on the knowledge scale of the respondents on whether or not the respondents have knowledge of the concept of technopreneurship education. Fig. 3 shows the categorisation of the scores as 15 respondents representing 25% scored low points in the range of 0-5. Indicating that 25% of the respondents in the study area have poor technopreneurial knowledge. 35 respondent representing 58.3% had average score within the range of >6-10 points, which indicates that they have a fair knowledge of technopreneurship education. While 10 respondents representing 16.7% had a good knowledge of technopreneurship education with the score ranges of 11 points and

above. From the data obtained from this study, it shows that majority of the respondents only have fair/moderate understanding of the concept of technopreneurship education as many of the respondents confused technopreneurship education with vocational skill. Fig. 3 also reveals that 10 (16.7%) of the respondents have sound knowledge of technopreneurship education simply as a result of their participation on a formal training and learning of the entrepreneurship development as a course or as a result of their personal engagement in entrepreneurial activities.

Technopreneurship Education and Its Impact on Job Creation

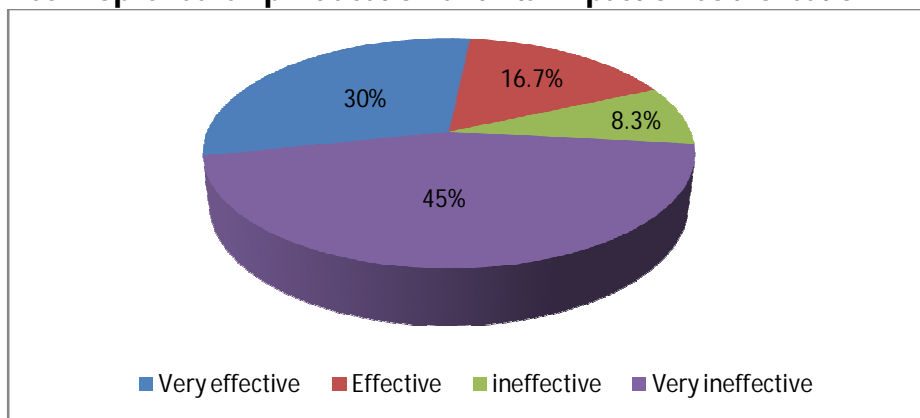


Fig. 4 Impact of Technopreneurship Education Job creation

Figure 4 shows the respondents' responses on if technopreneurship education has any impact on job creation. Eighteen respondents (18) with thirty percent (30%) agreed very effectively that technopreneurial behaviour has impact on job creation, ten respondents (10) with (16.7%) are of the opinion that it is effective in job creation, twenty seven respondents (27) representing (45%) are of the opinion that it is very ineffective in job creation, while five respondents (5) with eight point three percent (8.3%) are of the view that it is ineffective in job creation. Amongst all the result the 27 respondent representing 45% responses which have the highest percentage do not agree that technopreneurial behaviour has any impact on the job creation in Bida metropolitan council. This result is in line with the study's expectation because most of this people that acquired the technopreneurship education do not have capital to start up any form of business and this is aggregated by the acute level of poverty disturbing most of the people in Nigeria which is as a result of the current socio-economic challenges in the country.

The Effect of Technopreneurship Education on Human Capacity Building

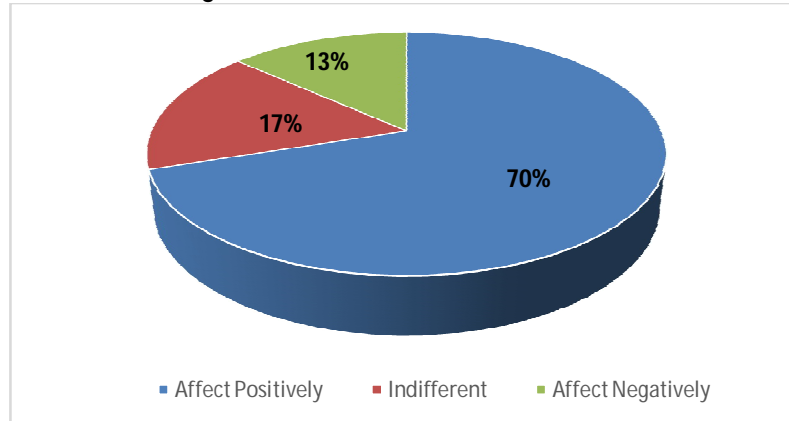


Fig. 5 Effect of Technopreneurship Education on Human capacity building

The figure above, is a description of the effect of Technopreneurship Education on Human capacity building, with 42 respondents representing 70% indicating that Technopreneurship Education affect Human capacity building positively. 10 respondents representing 17% were indifferent about Technopreneurship Education effect on Human capacity building, while 8(13%) indicated that Technopreneurship Education affects Human capacity building negatively. The result show that 42(70%) respondents agreed that technoprenership education has a direct impact on Human Capacity Building as opined by Chapagain (2004)and Becker (1964) that, on the whole, investments in education and training will improve human capacity building and develop individuals' potentiality in order to enhance their performance, this also, is in corroboration with the postulations of Human Capital theorists Psacharopolous and Woodhall (1997), who postulated that there is a direct positive relationship between formal education and productivity.

Whether Technopreneurship Education has Effect on Poverty Reduction or Not

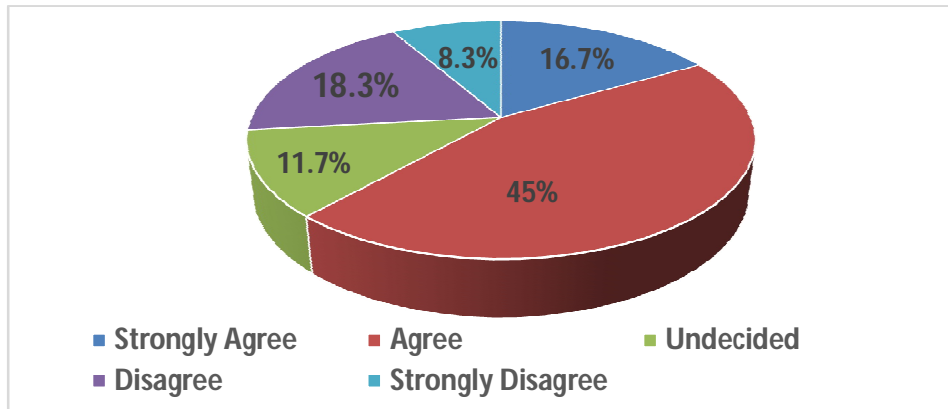


Fig. 6 Effect of Technopreneurship Education on Poverty Reduction

Figure 6 shows the responses on the effect of technopreneurship education on poverty reduction. Ten respondents (10) with (16.7%) strongly agree, twenty seven (27) representing (45%) agree, seven (7) with (11.7) are undecided; eleven respondents (11) with (18.3%) disagree while five (5) respondents representing (8.3%) of the respondent strongly disagree that technopreneurship education has effect on poverty reduction. This result shows that 27(45%) respondents agreed that technopreneurship education has positive impact on poverty reduction. This result agrees with the submission of Olaniyan & Okemakinde, (2008) they postulate that Human Capital theories believe that an educated population is a productive population, and that there is a direct positive relationship between formal education and productivity. Therefore, technopreneurial skill and training can spur productivity resulting in positive impact on poverty level of the population of Bida metropolitan.

Testing the Hypothesis

The Hypothesis formulated in section one of the study was tested using a chi-square distribution method of statistical analysis and the results discussed below.

For the benefit of hypotheses figure 7 will be used to test for hypotheses.

Ho1: Technopreneurial education has no effect on poverty reduction

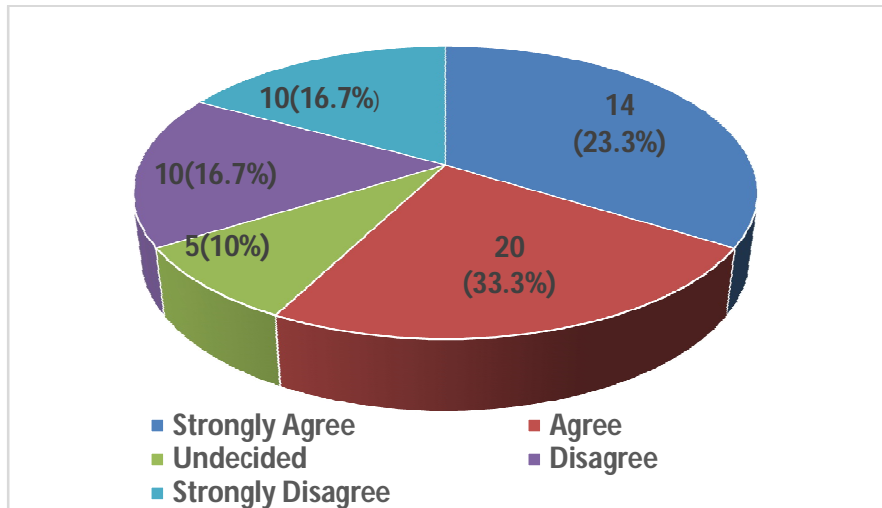


Fig. 7. Technopreneurship Education has no effect on Poverty Reduction

Figure 7 above represents the responses on the effect of technopreneurship education on job creation in Bida metropolitan. This is shown below:

$$Yes \epsilon = \frac{\sum f_0}{fn}$$

$$\epsilon = 60/10$$

$$\epsilon = 6$$

Hypotheses Ho1: Technopreneurship Education has no effect on poverty reduction.

X	\bar{x}	$x - \bar{x}$	$(x - \bar{x})^2$	$(x - \bar{x})^2/x$
20	6	14	196	32.667
14	6	8	64	10.667
5	6	-1	1	0.167
10	6	4	16	2.667
10	6	4	16	2.667
Total				48.835

$$\chi^2 = \sum [(x - \bar{x})^2/x]$$

$$\chi^2 = 48.835$$

Hence, the calculated value of $\chi^2 = 48.835$

Therefore, degree of freedom is

$$(n-1) \quad (n-1)$$

$$(1-1) \quad (5-1) =$$

The table value of χ^2 for 5 degree of freedom as 95% level of significant is 0.0039.

Comparing calculated and table value of χ^2 , we find that calculated $\chi^2 = 48.835$ is greater than table value 0.0039. ($CV > TV$). ($13.326 > 0.0039$) Therefore we can conclude that, Technopreneurship education has no effect on poverty reduction.

For the benefit of hypotheses figure 8 will be used to test for hypotheses.

Ho2: Technopreneurial education has no effect on Job creation

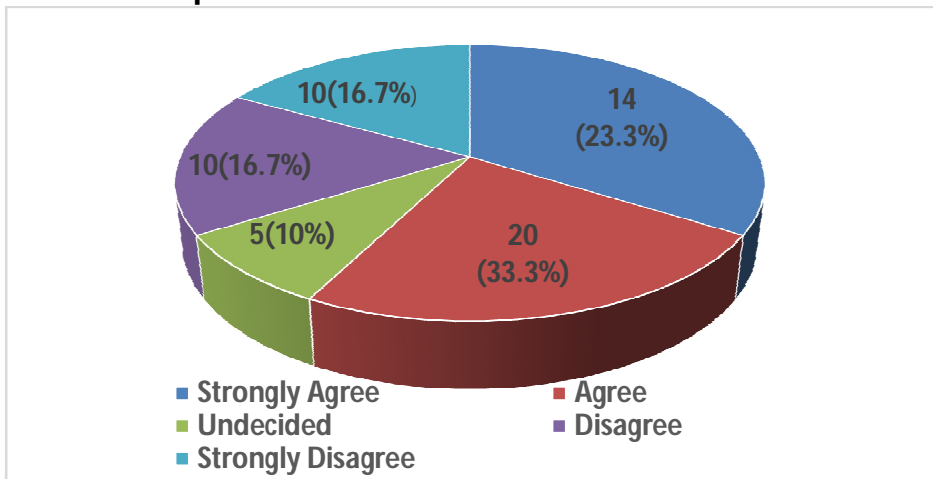


Fig. 8. Technopreneurship education has no effect on job creation

Figure 8 above represents the responses on the effect of technopreneurship education on job creation in Bida metropolitan. This is shows below:

$$\text{Yes } \epsilon = \frac{\sum f_0}{f_n}$$

$$\epsilon = 60/10$$

$$\epsilon = 6$$

Ho2: Technopreneurship education has no effect on job creation

X	\bar{x}	$x - \bar{x}$	$(x - \bar{x})^2$	$(x - \bar{x})^2/x$
20	6	14	196	32.667
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10	6	4	16	2.667
10	6	4	16	2.667
Total				48.835

$$\chi^2 = \sum [(x - \bar{x})^2/x]$$

$$\chi^2 = 48.835$$

Hence, the calculated value of $\chi^2=48.835$

Therefore, degree of freedom is

$$(n-1) \quad (n-1)$$

$$(1-1) \quad (5-1) = 0$$

The table value of χ^2 for 5 degree of freedom as 95% level of significant is 0.0039.

Comparing calculated and table value of χ^2 , we find that calculated $\chi^2 = 48.835$ is greater than table value 0.0039. ($CV > TV$). ($13.326 > 0.0039$)

Therefore we can conclude that, Technopreneurship education has no effect on job creation in Bida metropolitan

CONCLUSION AND RECOMMENDATIONS

The study identified and reasserts that technopreneurship education has a dare impact on human capacity building, and that it can foster the development of knowledge and skill in Bida metropolitan. Base on the above findings the study concludes that technopreneurial knowledge, skill and training has no direct impact on job creation, this is as a result of difficulty of accessing funds for a startup by potential technopreneurs. The study also reveals that technopreneurship education is one of the keys to unlock human capital that can translate into reduction of poverty in Bida Metropolitan council. Therefore it is recommended that the Central Bank of Nigerian should make funds available through the Commercial Banks as grants and Micro-credits for Technopreneurs to easily access the startup capital.

Industrial Training Fund (ITF) and Nigerian Directorate of Employment (NDE) should partner with the Central Bank of Nigeria (CBN) for easy access to soft loans by the potential and prospective technopreneurs so that the startup capital will not be a problem. Finally, the private sector must be involved in mainstream innovation while the Government provides enabling environment for the business to thrive in order to deal appropriately with the challenge of poverty.

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