

Empirical Study of Mediating Roles of Library and Information Science Education in the Relation between Entrepreneurial Education and Sustainable Development Goals.

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Abstract: Sustainable Development goals are currently making news globally and getting much mention among the global community. It has been recognized as the pillar upon which global sustainability, especially the less developed countries is anchored. Goals such as gender equality, literacy education, food security, digital network and connectivity among the 17 are believed to deliver the UN objectives. Many service organizations such as the libraries, educational sectors, humanitarian, governmental and non-Governmental organizations etc., are among the stakeholders in the achievement of the UN agenda 2030. Entrepreneurial education is said to be a vital factor in achieving sustainable development within the society. This study examined the relationship between Library and Information Science and Entrepreneurship Education towards Sustainable Development within the society. The correlational research design was employed, a self-designed questionnaire was used to elicit responses from lecturers in the department of library and information science schools in Northeast, Nigeria. The result revealed significant impact between Entrepreneurial education, Library and Information Science education and Sustainable Development Goals. Also, the path between Entrepreneurial education and Sustainable Development Goals was partially mediated by Library and Information Science education. Recommendation were advanced towards repositioning entrepreneurial education within the Library and Information Science education

Keywords - Entrepreneurship Education, Sustainable Development Goals, Library and Information Science Education.

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I. INTRODUCTION

Aims to reduce widespread economic recession and poverty has made the concept of sustainable development goals (SDGs) a regular agenda in the global discourse. The deteriorating economic, health and social conditions around the world has triggered interest among the United Nations (UN) assembly to transform the existing millennium development goals (MDGs) into agenda 2030 known as sustainable development goals (SDGs) (UN General Assembly, 2015). This comprised 17 building block which covered various aspects of human life such as poverty, food security, good health and well-being, quality education, gender equality etc., with the aim to bridge the economic, education, and the socio-cultural gap between the citizens of the world.

Current global recession, climate change, terrorism and the all-inclusive monetary issues and changes in innovation have affected nations' and world economy negatively. Business endeavour is acknowledged to offer ways to confront this prevailing economic related, social and monetary challenges which have brought the world, especially the third world nations into a dilemma. Thus, in this situation, entrepreneurship can be demonstrated as an ideal approach to lessen the cost, conform to innovation in view of business needs and adapt up to economic challenges (Awan & Ahmad, 2017).

Over the years, even till now, Nigeria has been confronted by various challenges, on overall, security threats, lawlessness, hunger, corruption and radicalization are the toughest ones to deal with. These have resulted in many problems which include unemployment (Adagba, Ugwu, & Eme, 2012). With a focus on poverty and employment reduction, economists and market analyst have suggested an impeccable substitute which is self-employment, which is synonymous to doing another business with the assistance of variables of tools of production known as "Entrepreneurship". Before now, entrepreneurial activities were restricted to vocational training and informal skill acquisition programme. But recent growth in research and technology has

supported the inclusion of entrepreneurship into the formal education system and curriculum thereby coining the term known as entrepreneurship education.

Entrepreneurship education began in United States of America sometime around 1947 (Kuratko, 2003) while Nigeria adopted it in 2006 (Yahya, 2011; Gabadeen & Raimi, 2012). There was a remarkable increase in the number of universities that introduced entrepreneurship education among its curricular within decades. These numbers rose to 1,050, and by early 1990s (Solomon, Weaver, & Fernald, 1994; Kuratko, 2003).

Nigeria adopted entrepreneurship education to accelerate economic growth and development as "a programme or part of the programme that prepares individuals to undertake the formation of an acquisition of small-business" (Owuala, 1999), and equips learners with skills, knowledge that can help them to develop innovative, social or business plans (Nnazor, 2005). General education has been earmarked as one of the main drivers of entrepreneurship activities, and Library and information science education are arguably one of the educational disciplines that incorporates entrepreneurship education in its curriculum. The advances in entrepreneurship education are basic in empowering economic development as a sequel to sustainable improvement. Studies demonstrate that undergraduates and graduate students are progressively keen on the vocation of self-employment (Blanka, Kailer & Wimmer-Wurm, 2013; Kumar, S. Vifenda, A. T., Brigitt, M. & Valerie, 2013).

For Nigerian educational system to achieve objectives, one of which is to raise graduates capable to translate their knowledge into entrepreneurial skills, jobs creators and self-reliant, emphasis must be in entrepreneurship education. But until this is taken into cognisance, the graduate will continue to roam the streets in search of white-collar jobs (Oghojafor, Kuye, Sulaimon, & Okonji, 2009). Library and information science is a discipline with practical orientation that is predicted to accommodate entrepreneurship into its curriculum adequately. Entrepreneurship and sustainable development goals share similar attributes, so to say that both concepts are geared towards ensuring sources of livelihood. Moreover, the definition of SD according to World Commission on Environment and Development (1978) as "paths of human progress which meet the needs and aspirations of the present generation, without compromising the ability of future generations to meet their needs" can be translated to the function of education to prepare the students to be able to achieve present aim with great focus on the future.

II. STATEMENT OF THE PROBLEM

In spite of the guarantee which business enterprise holds for cultivating feasible economic stability, there are existing doubts with respect to the type of entrepreneurship's roles in the area of sustainability and how it might manifest. While entrepreneurship has for quite some time been perceived as a vehicle for societal change, particularly as an economy advances from one technological age onto the next ((Schumpeter & Stiglitz, 2010; Schumpeter, 2011), we have a small comprehension of how entrepreneurs will find and build up those ideas that are within existing markets. While the case for a business enterprise having a focal part in a change to a more sustainable society has been proposed by many, there stay significant gaps in our knowledge into whether and how this procedure will really manifest. To date, scholarly communication on sustainable development inside the enterprise literature has been scanty. Generally, a couple of thorough studies which investigated the connection between sustainable development and entrepreneurship have been published mainly in some journals other than major journals on entrepreneurship (Hall, Daneke & Lenox, 2010). There are perceptions that fields of study, such as the library and information science could provide link between entrepreneurship and sustainable development goals. In Nigeria however, empirical studies that validated this assumption are lacking (Madu, Musa, Makinta & Damsheed, 2018). Therefore, this research aimed to address this gap by examining the role of entrepreneurship education in library and information science education for Sustainable Development Goals.

III. OBJECTIVES OF THE RESEARCH

The main objective of this research is to examine the role of entrepreneurship education in Library and information science education as relates to sustainable development goals. The specific objectives are to identify:

1. The relationship between entrepreneurship education and sustainable development goals
2. The relationship between entrepreneurship education and Library and Information Science Education
3. The relationship between Library and Information Science education and sustainable development goals.
4. If Library and Information Science Education significantly mediated the relationship between Entrepreneurship Education and Sustainable Development Goals.

IV. RESEARCH HYPOTHESIS

This study attempted to answer the following question that related to the objectives, they include the following:

1. There is a positive and significant impact of entrepreneurship education on sustainable development goals.
2. There is a positive and significant impact of Entrepreneurship Education on Library and Information Science education.
3. There is a positive and significant impact of Library and Information Science education on Sustainable Development Goals.
4. Relationship between Entrepreneurship education and Sustainable Development Goals is not significantly mediated by Library and Information Science Education.

V. LITERATURE REVIEW

Literature has established the capacities of entrepreneurship education to develop entrepreneurs for sustainable development (Akpomi, 2009; Adejimola & Olufunmilayo, 2009). It has been conceived as a key to economic development in many countries across the globe for many years (OECD, 1998, 2003; UN, 2004). The relationship between entrepreneurship and economic growth, poverty and sustainable development (SD) is crucial for future global development, policy and research (Ahmed, & McQuaid, 2005), Entrepreneurship as a critical source of development is recommended as a noteworthy commitment to environmental development, and in addition to social and economic advancements that may advance sustainable development.

Development of entrepreneurial skills can be acquired through work experiences, workshops, laboratory or apprenticeship system, which according to (Agada, & Pius 2014) increases the productive power of a person or nation, thereby turning the skilled person into wage earners who contributes usefully to the economic development of the society. Describing the concepts as the two sides of the same coin, Agada, and Pius said that Researchers perceive sustainability as a source of entrepreneurial and business opportunity. Entrepreneurship education will teach and expose the students and potential entrepreneurs to entrepreneurial values and skills, which include aspects of leadership, innovation, creativity, etc., and ability to identify and create opportunities. It further enlightens the prospective entrepreneur on the challenges of obtaining capitals for business start-up (Akpomi, 2009).

Studies have identified a connection between Library and information science and entrepreneurship education towards sustainable development (Onaade, 2012; Amidu, & Umaru, 2016). More especially, with information as the major product, library and information science educators and the librarians alike should be responsive to the wider business opportunities. Ejedafiru and Toyo (2015) in a study expressed concern over promotion of entrepreneurship in LIS for self-reliance. Which according to them will create self-employment opportunities that is capable to curb unemployment and boost the nation's economy. Writing on getting good ideas to start a business, Branson (2011) says that having the idea is good, but making it saleable or practicable is better. In information brokering, therefore, it is imperative to discover which areas of librarianship that is potent for commercialization or entrepreneurship. Having practical experience is a recipe for business success, it in line with that Anyanwu, Oduagwu, Ossai-Onah and Amaechi (2013) argued that entrepreneurship education in LISE will be appreciated only when LISE programme is practical oriented. A study by Amidu and Umaru, (2016) focused on entrepreneurship education for entrepreneurial success of LIS student at Nasarawa state polytechnic with lecturers as the study population. The result indicated non-availability of entrepreneurial teaching materials, inadequate skilled teachers, non-practical session etc. They recommended adequate procurement of entrepreneurship teaching materials. Ugwu (2012) studies the competencies of LIS students For Entrepreneurship in a Descriptive survey design and Oral interview of 190 MLS students from three Universities, the study employed a purposive sampling method with a questionnaire as an instrument for data collection. The result showed that 70% lacked "entrepreneurship and ICT competencies crucial for the entrepreneurship opportunities in LIS. This scenario according to the study stem from lack of entrepreneurship and ICT courses in the curriculum, absence of qualified and suitable educators in entrepreneurship courses, unavailability of ICT facilities" etc. In a similar study, Ugwu and Ezeani (2012) evaluated Entrepreneurship Awareness and Skills among LIS Students in Universities in South East Nigeria with a purposive sample of 110 masters students. Finding revealed that 70% of the students were not aware of entrepreneurship opportunities within LIS. As a result of above scenario, Ekoja, and Odu, (2016) warned that training for LIS students in entrepreneurship that responds to the changing needs in the field is only possible with a comprehensive and dynamic curriculum. In a related study, Inyang (2015) used a questionnaire to elicit information on inclinations, feelings, competence, intentions and desirability of 54 students towards entrepreneurship. Result revealed that 40% of students have the intention to become entrepreneurs; 58% of students possess the entrepreneurial competence and 37% of students have desirability positive feelings about entrepreneurship. The aim of a study by Madu, Musa, Makinta and Damsheed, (2017) was to see if LISE mediated the relationship ICT and SDGs

with 122 respondents purposively drawn from the lecturers in department of Library and Information Science, and the Ramat Library, University of Maiduguri. The results revealed that LISE positively and significantly impacted on SDGs but could not prove a mediator in the relationship with values $\beta=.5269$, 3.9974^{**} as against $\beta=.763$, 30.2433^{***} in the direct relationship between ICT and SDGs.

Afolabi (2009) and Ochogwo (1995), categorized activities such as indexing, abstracting; fee-based information services such as information brokerage ... documentation of indigenous knowledge as entrepreneurial activities within LISE while LIS based businesses such as information centres management; publishing and printing; courier service; and LIS consultancy have been enumerated as entrepreneurial opportunities by Issa, Uzuegbu and Nwosu (2014).

VI. METHODOLOGY

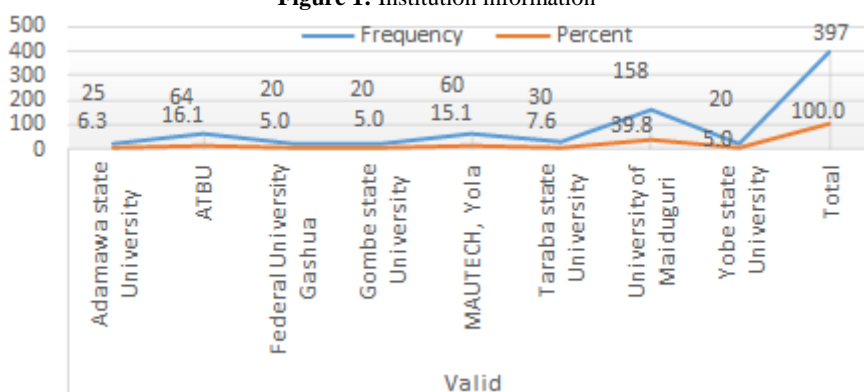
This study employed quantitative research method through a correlational analysis to examine the relationship among Entrepreneurial Education and Library and Information Science Education for Sustainable Development goals. A Self-designed (Relationship among Entrepreneurial Education and Library and Information Science Education for Sustainable Development goals) survey questionnaire in five-point Likert was used in a convenience sampling technique to elicit valid responses from 397 staff of department of Library and Information Science and Academic libraries of 8 universities in Northeast, Nigeria. These include Adamawa state university, Abubakar Tafawa Balewa University Bauchi, Federal University, Gashua, Gombe state university, Kashere, Modibbo Adama University of Technology, Yola, Taraba state university, University of Maiduguri and Yobe state university. The questionnaire was divided into 2 sections; section 1 is the number of respondents according to institution, section 2 was divided according to the variables in the study. Entrepreneurship education was measured with 4 items, LISE, 4 items while SDGs was measured with 3 items. Microsoft Excel was used for descriptive analysis while Smartpls version 2 was used in a structural equation modelling (SEM) to test the relationships in the path coefficient analysis.

VII. PATH MODELLING WITH PARTIAL LEAST SQUARE

PLS-SEM is an approved procedure utilized for evaluating relationship among variables in models (Birkinshaw et al., 1995). Also, PLS is dynamic technique for studies in management, technology other disciplines of study interest, it is a useful technique for identification and validation of previous theories (Fernandes, 2012; Rezaei et al., 2016). It is a variant statistical software that is useful for investigating the hypothetical connection between factors (Chin and Newsted, 1999; Hair et al., 2011; Goodheu et al., 2012; Hair et al., 2013). PLS path modelling is a variant based SEM statistical software that is widely accepted for studies in various disciplines (Wong, 2011).

VIII. RESULTS AND DISCUSSION

Figure 1: Institution information



The number of respondents according to institution in the study is shown in table 1 above. Among the 8 institutions that participated in the study, university of Maiduguri had the highest respondents with 158(39.8%), it was followed by Abubakar Tafawa Balewa University, Bauchi with 64 (16.1%). Next was Modibbo Adama University of Technology, Adamawa with 60(15.1%) while Taraba State University and Adamawa State University came next with 30(7.6%) and 25(6.3%) respondents respectively. Federal University Gashua, Gombe State University and Yobe State University had 20(5%) respondents each to make up the total sample of 397 respondents in the study.

IX. RELIABILITY AND VALIDITY ASSESSMENT

Validity and reliability of the instrument was assessed through the examination of Average variance extracted (AVE), Composite reliability (CR) and Cronbach alpha values. Reliability and validity measures are used to ascertain the level of psychometric properties of the constructs to be estimated, which is critical in Structural equation modelling (Kühnel, 2001). AVE measures the level of difference caught by a construct versus the level as a result of estimation blunder, values over 0.7 are viewed as good, while, the level of 0.5 is considered acceptable. CR is a better gauge of reliability than Cronbach's Alpha, the satisfactory estimation of CR is 0.7 or more (Alarcón & Sanchez, 2015). According to the report in table 1, AVE exceeded the benchmark of 0.5, while CR and Cronbach alpha fulfilled the benchmark value of 0.7 (Nunnally & Bernstein, 1994).

Table 1: Reliability and Validity Assessment

	AVE	Composite Reliability	Cronbach Alpha
ENTREPREDU	0.5994	0.8566	0.7784
LISEDU	0.5934	0.8537	0.7718
SDGs	0.6620	0.8543	0.7452

X. PATH ANALYSIS

The mediation test was conducted through the examination of direct and indirect effect of ENTREPREDU on SDGs. Results in figure 2 and 3 which revealed 0.439 and 0.269 for direct and indirect effect respectively.

A bootstrapping was applied on 200 cases with 3000 samples to generate Beta, standard error and T-statistics values. Output in table 2 showed that Entrepreneurship Education (ENTREPREDU) to Library and Information Science Education (LISEDU) showed ($B=0.4243$, $SERR=0.0633$, $T-statistics=6.707$), also, ENTREPREDU to Sustainable Development Goals (SDGs) ($B=0.269$, $SERR=0.0643$, $T-statistics=4.182$) while LISEDU to SDGs ($B=0.396$, $SERR=0.0668$, $T-statistics=5.925$). A Sobel test for mediation analysis, an online calculator (Soper, 2017) was employed to test the null hypothesis.

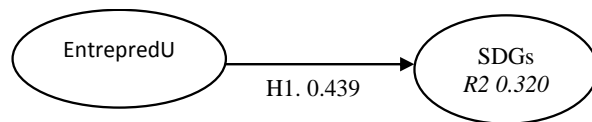


Figure 2: IV TO DV, Direct effect

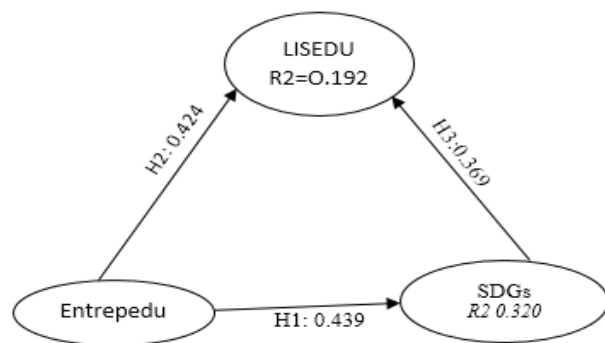


Figure 3: IV to dv with MV. Indirect effect

Table 2: Path coefficient

	Beta	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics
ENTREPREDU -> LISEDU	0.4243	0.431	0.0633	0.0633	6.7074
ENTREPREDU -> SDGs	0.269	0.2714	0.0643	0.0643	4.1824
LISEDU -> SDGs	0.396	0.3979	0.0668	0.0668	5.9251

After direct and indirect regression test, Bootstrapping was applied on the data at 200 cases at 3000 samples (figure 4). The output in table 2 revealed beta, standard error and t-statistics values for the variables in the model (Table 2).

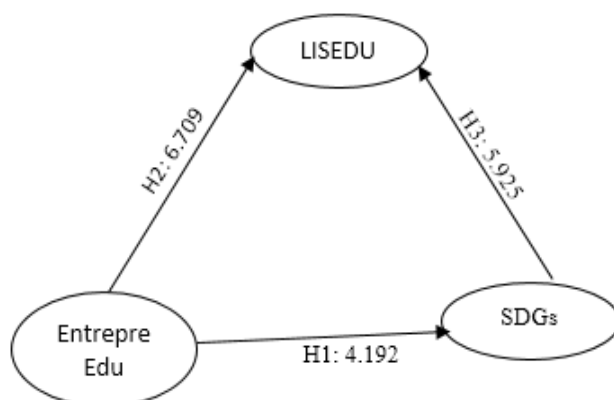


Figure 4: Research model

Mediation analysis revealed t-statistics of 4.4406 greater than absolute value 1.96, two tailed probability of 0.00000897, less than 0.05 at 95% confidence level. This indicated that Library and Information Science education mediated the relationship between Entrepreneurship education and sustainable development goals. The level of mediation was however determined through observation of the beta values for direct and indirect regression analysis. The result (figure 2 and 3) indicated a reduction in the Beta value from $B = 0.439$ in a direct test to $B = 0.269$ in the indirect test. This indicated a partial mediation effect of Library and Information Science Education on the relationship between ENTREPREDU and SDGs. Notwithstanding, an observation of the t-statistics' value (Fig. 4) revealed that the path between ENTREPREDU and SDGs was still significant at t-statistics of 4.194 greater than 1.69 (Hair, Hult, Ringle, & Sarstedt, 2014, p. 134) which implies a partial mediation. Therefore, the null hypothesis which proposes a non-significant mediation effect of LISEdu on SDGs was therefore supported.

Table 3: Hypotheses test

Hypotheses	Factors	β	t-Value	Decision
H1	There is a significant impact of entrepreneurship education on sustainable development goals.	0.269	4.192	Supported
H2	There is a significant impact of Entrepreneurship Education on Library and Information Science education.	0.4242	6.709	Supported
H3	There is a significant impact of Library and Information Science education on Sustainable Development Goals.	0.396	5.925	Supported
Ho	Relationship between Entrepreneurship education and Sustainable Development Goals is not significantly mediated by Library and Information Science Education.		4.441	Supported

XI. DISCUSSION

The study examined the impact of entrepreneurship education on sustainable development goals and library and information science education. It further examined the mediating role of Library and information science education. Accordingly, the test of impact and relationship among the variables as shown in figure 2, result revealed that Entrepreneurship education had positive and significant impacted on Sustainable Development Goals at $\beta = 0.296$; t -statistics = 4.192. This result supported findings and opinions of authors in various studies such as Ahmed, & McQuaid, (2005), Akpomi, (2009) and UN (2004). Entrepreneurship education has brought noticeable changes in library education through curricular moderation and modifications. It is no wonder that the path between the two showed the highest impact value with $\beta = .4242$, $t = 6.709$ among the variables in this study. This findings agrees with other authors like (Onaade, 2012; Amidu, & Umaru, 2016; Ugwu & Ezeani, 2012). In addition to assessment of mediating role of LISE, was a question of whether LISE can impact on SDGs directly. This was one of a kind as very few studies have considered it. However, result proved that LISE is capable to impact SDGs by providing a channel for entrepreneurship activities, practical experiences, information brokering etc. this supported the result of a study by Madu, Musa, Makinta & Damsheed, (2018) in which relationship between LISE and SGDs was significant at $\beta = .252$, $t = 1.989$ at 0.05 significance level. A partial mediation was observed in the study due to slight different between t value for direct and indirect part test. The null hypothesis which proposed a non-significant mediation power of LIS was supported.

XII. CONCLUSION

Entrepreneurship education and library and information education have proven to be significant in pursuit of sustainable development goals. Most especially, LISE could tap on its students industrial work experience (SIWES) and curricular modifications provide a strong platforms for entrepreneurial skills among the students, which will invariably impact on SDGs.

RECOMMENDATION

Arising from above findings, this study recommends;

1. Government and educational authorities should consider entrepreneurial education as an integral part of school curriculum and educational system. Policy backing and methods of implementation must be enshrined with regular evaluation.
2. Facilities for practical studies that would enhance vocational skills should be provided.
3. Regular training for the teachers on entrepreneurship and hands-on the training equipment and facilities should be made regular.
4. Library and Information Science Educators and the librarians should evaluate SIWES with eyes on meeting objectives and possible review of methods and assessment.
5. Sustainable Development Goals should be made to be the focus of every entrepreneurship training in the library education

REFERENCES

- [1] A.S. Adejimola and T. Olufunmilayo. Spinning off an Entrepreneurship Culture among Nigerian University Students; Prospects and Challenges. *African Journal of Business Management*, 3(1), 2009, 80-88.
- [2] J.A. Agada and E.J.B. Pius. Entrepreneurship Education: A Prerequisite for Sustainable National Development. *Journal of Good Governance and Sustainable Development in Africa*, 2(3), 2014, 65-77.
- [3] A. Ahmed and R. W. McQuaid. Entrepreneurship, management, and sustainable development. *World Review of Entrepreneurship, Management and Sustainable Development*, 1(1), 6, 2005. doi:10.1504/wremsd.2005.007750
- [4] M.E. Akpomi. Achieving Millennium Development Goals (MDGs) through Teaching Entrepreneurship Education in Nigeria Higher Education Institutions. *European Journal of Social Science*, 8 (1), 2009, 154-157.
- [5] D. Alarcón and J.A. Sánchez. Assessing convergent and discriminant validity in the ADHD-R IV rating scale: User-written commands for Average Variance Extracted (AVE), Composite Reliability (CR), and HeterotraitMonotrait ratio of correlations (HTMT), 2015. Retrieved from: https://www.stata.com/meeting/spain15/abstracts/materials/spain15_alarcon.pdf

- [6] G. Amidu and I.M. Umaru. Repositioning of Entrepreneurship Education for Entrepreneurial Success of Library and Information Science Students. A Study of Nasarawa State Polytechnic Lafia, Nigeria. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 21(11), 9, 2016, 34-40.
- [7] N.N. Awan and N. Ahmad. Intentions to Become an Entrepreneur: Survey from University Students of Karachi. *International Journal of Business, Economics and Law*, 13(2), 2017, https://www.researchgate.net/profile/Nawaz_Ahmad3/publication/319755724.
- [8] J. Birkinshaw, A. Morrison and J. Hulland. Structural and competitive determinants of a global integration strategy. *Strategic Management Journal*, 16(8), 1995, 637-655. doi:10.1002/smj.4250160805
- [9] C. Blanka, N. Kailer and B. Wimmer-Wurm. Family Business Background and Succession Intentions - A Survey among Entrepreneurs' Children. Proc. of the Entrepreneurship Summer University, ISCTE-IUL, University of Lisbon, 2013.
- [10] Branson, R. Getting Good Idea to Start a Business. Sunday punch, April, 3, 2011 [Lagos]. Retrieved from: <http://www.dhifo.org>
- [11] C. G. St. The entrepreneurial advantage in information services. In *Entrepreneurial Librarianship: The Key to Effective Information Services Management* 2nd Ed. (London: Bowker, Saur. 2012), pp. 24-38.
- [12] E. F. Ejedafiru, and D. O. Toyo. Promoting Entrepreneurship in Library and Information Science for Self-reliance: Paradigm Shift for Lis Graduates in Nigeria. *International Journal of Library and Information Science (IJLIS)*, 4, (1), 2015, 70-77.
- [13] O.O. Ewetan. Insecurity and Socio-Economic Development in Nigeria. *Journal of Sustainable Development Studies*, 5(1), 2014, 40-63.
- [14] V. Fernandes. (Re) discovering the PLS approach in management science. *M@ n@ gement*, 15(1). 2012, 101-123.
- [15] W. O. Gabadeen and L. Raimi. Management of Entrepreneurship Education in Nigerian Higher Institutions: Issues, Challenges and Way Forward. *Abuja International Journal of Education and Management Sciences*, 2, 2012, 1-26.
- [16] D.L Goodheu. W. Lewis and R.Thompson. Does PLS have advantages for small sample size or non-normal data? *MIS Quarterly*, 36(3), 2012, 981-1001
- [17] J. F. Hair, C. M. Ringle and M. Sarstedt. PLS-SEM: Indeed a Silver Bullet. *The Journal of Marketing Theory and Practice*, 19(2), 2011, 139-152. Doi: 10.2753/mtp1069-6679190202
- [18] J. F. Hair. G.T.M.Hult, C. M. Ringle and M. Sarstedt. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. (Sage Publications, London. 2013)
- [19] J. K., Hall, G. A. Daneke, and M. J. Lenox. Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of Business Venturing*, 25(5), 2010, 439-448. doi:10.1016/j.jbusvent.2010.01.002
- [20] I. E. Innocent and O. O. Alice. Developing and implementing entrepreneurship curriculum in Nigerian library and information science programmes. *International Journal of Library and Information Science*, 8(6), 2016, 48-53. doi:10.5897/ijlis2016.0720
- [21] N.A. Inyang. Examining the Attitude of Library and Information Science (LIS) Students in University of Calabar towards Entrepreneurship. *Information and Knowledge Management*, 5(8), 2015, 41-45.
- [22] S. Kühnel. The didactical power of structural equation modeling. In R. Cudeck, S. du Toit, & D. Sörbom (Eds.), *Structural equation modeling: Present and future. A Festschrift in honor of Karl Jöreskog* (Lincolnwood, IL: Scientific Software International. 2001) 79-96
- [23] S. Kumar. Students' Willingness to Become an Entrepreneur: A Survey of Non-Business Students of President University. *IOSR Journal of Business and Management*, 15(2), 2013, 94-102. Doi: 10.9790/487x-15294102
- [24] S. Kumar. Students' Willingness to Become an Entrepreneur: A Survey of Non-Business Students of President University. *IOSR Journal of Business and Management*, 15(2), 2013, 94-102. Doi: 10.9790/487x-15294102
- [25] D. F. Kuratko. *Entrepreneurship education: Emerging trends and challenges for the 21st century*. (White Paper, US Association of Small Business Education, 22, Coleman Foundation) Chicago, IL. 2003. Retrieved from <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.511.1631&rep=rep1&typ=pdf>.
- [26] A. U. Madu, N. M. Bello, Y. Makinta and C.B. Damsheed. Information and communication Technology and Library and Information Science for Sustainable Development Goals. *Northwest Journal of Educational Studies*, 1(1), 2017, 149-164.
- [27] R. Nnazor. Adult Education in Nigeria: The Consequences of Neglect and Agenda of Action. *International Educational Journal*, 6(4): 2005, 530-536
- [28] J. C. Nunally and I. Bernstein. *Psychometric theory*. New York: McGraw-Hill. 1994.

- [29] Organization for Economic Co-operation and Development. *Fostering Entrepreneurship: A Thematic Review*, OECD: Paris. 1998. Retrieved from:<http://www.oecd.org/cfe/leed/fosteringentrepreneurship.m>.
- [30] Organization for Economic Co-operation and Development. *Entrepreneurship and Local Economic Development: Programme and Policy Recommendations*, OECD, Paris. 2003. Retrieved from: <http://www.oecd.org/cfe/leed/entrepreneurshipandlocaleconomicdevelopmentprogrammeandpolicyrecommendations.htm>
- [31] B. Oghojafor, O. Kuye, A. Sulaimon and P. Okonji. Empowering Nigerian youths for national economic development: the role of entrepreneurship education. *Journal of Research in National Development*, 7(2). 2010. doi:10.4314/jorind.v7i2.50945
- [32] A. Okpaga, S.C. Ugwu and O.I. Eme. Activities of Boko Haram and Insecurity Question in Nigeria. *Oman Chapter of Arabian Journal of Business and Management Review*, 1(9), 2012, 77-99. Doi: 10.12816/0002163.
- [33] R.E. Moore, *Interval analysis* (Englewood Cliffs, NJ: Prentice-Hall, 1966).
- [34] P.O. Bishop, *Neurophysiology of binocular vision*, in Houseman (Ed.), *Handbook of physiology*, 4 (New York: Springer-Verlag, 1970) 342-366.
- [35] D.S. Chan, *Theory and implementation of multidimensional discrete systems for signal processing*, doctoral diss., Massachusetts Institute of Technology, Cambridge, MA, 1978.
- [36] W.J. Book, *Modelling design and control of flexible manipulator arms: A tutorial review*, Proc. 29th IEEE Conf. on Decision and Control, San Francisco, CA, 1990, 500-506
- [37] O. J. Onaade. *Information Brokerage: An Entrepreneurial Approach to Information Services in Nigeria*. *Global Journal of Management and Business Research*, 12(20), 2012, 13-20
- [38] S. Owuala. *Entrepreneurship in Small Business Firm*. Lagos: Gmag Investment, 1999.
- [39] S. Rezaei, M.K. Shahijan, N. Valaei, R. Rahimi and W.K. Ismail. Experienced international business traveler's behaviour in Iran: A partial least squares path modelling analysis. *Tourism and Hospitality Research*, 2016. Doi: 10.1177/1467358416636930. Retrieved from <http://journals.sagepub.com/doi/abs/10.1177/1467358416636930?journalCode=thrb>
- [40] J. A. Schumpeter. *Capitalism, socialism, and democracy*. Mansfield Centre, CT: Martino, 2011.
- [41] J. A. Schumpeter and J.E. Stiglitz. *Capitalism, Socialism and Democracy*. Hoboken: Taylor & Francis, 2010.
- [42] G. T. Solomon, K., M. Solomon and L.W. Fernald Jr. *Pedagogical Methods of Teaching Entrepreneurship: An Historical Perspective*. *Gaming and Simulation*, 25(3), 1994, 67-79.
- [43] F. N. Ugwu. *Competencies Possessed By Library and Information Science Students for Entrepreneurship in Three Nigerian Universities* (Unpublished doctoral dissertation). University of Nigeria, Nsukka, Nigeria. 2012.
- [44] F, N. Ugwu and C.N. Ezeani. *Evaluation of Entrepreneurship Awareness and Skills among LIS Students in Universities in South East Nigeria*. *Library Philosophy and Practice* (e-journal). 836. 2012. <http://digitalcommons.unl.edu/libphilprac/836>.
- [45] United Nations General Assembly. *Summit for adoption of the post 2015-development-agenda*. (Document no. 120815, 12 August 2015) Available online at: https://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf
- [46] United Nations. *Unleashing Entrepreneurship: Making Business Work for the Poor*, Report of the Commission of the Private Sector and Development to the UN, 2004. Available at: <http://www.undp.org/cpsd/report/index.html>.
- [47] World Commission on Environment and Development. *Our common future*. Oxford: Oxford Univ. Press. 2009.
- [48] U. Yahya. *Why We Set Up Entrepreneurship Studies in Varsities- FG*. *Nigerian Voice* [July 20, 2011]. Abuja]. Retrieved from: <Http://Www.TheNigerianvoice.Com/Nvnews/45849/1/Why-We-Set-Up-Entrepreneurship-Studies-Invarsitie.Html>.

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