Predictors of High Job Skills and Career Success of Undergraduates in Selected Universities in Sokoto, Kebbi and Zamfara States, Nigeria

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Abstract: *In Nigeria, the challenges of unemployable graduates have become a central focus of concern among academics, policymakers and researchers in spite of an emphasis on high job skills needed to achieve career success in the era of 4th industrial revolution. The study aims at exploring predictors of high job skills and undergraduates' career success in selected universities in Sokoto Kebbi and Zamfara States, Nigeria. Quantitative research design was used. Population of the study comprised all undergraduate students of the selected universities and convenient random sampling was used to choose 379 respondents. Data was collected via questionnaire and the analysis was done using Statistical Package for Social Science (SPSS) version 21.0. Multiple regression was used to explore predictors of high job skills and career success. Results indicated that there was no violation of multicollinearity. The value of R-Square was 13.9% of variance in career success in connection with independent variables (i.e., connection; sense of purpose; sense of competence; digitization and automation). In addition, Beta in standardized co-efficients was taken into consideration and the most predictive factor of high job skill in fostering students' career success was sense of competence (SOC) due to the fact that it has largest coefficient of .314 as compared to other two factors (i.e., social connection and, sense of purpose) respectively. The normal probability plot (P-P) of regression standardized residual showed that there was no major deviation from normality. In conclusion, the paper has shown that the data collected fit with the hypothesized model of the study. It is recommended that all stakeholders in the education sector should improve the employability skills and competencies in order to comply with the needs of the 4th industrial revolution in the 21st century Nigeria.*

Keywords: *Social Connection, Sense of Purpose, Sense of Competence, Digitization and Career Success.*

Introduction

There are vital changes happening in the nature of work. These changes are occupying central climax because of the needs necessitated by the fourth industrial revolution (Industry 4.0, 2014). Germany according to Henchey (1999) is taking a step forward in this regard and a number of factors are contributing to the changes such as the impact of technology, growing significance of knowledge for socio-economic development, global competitiveness and shift to the service sector. Undoubtedly, the higher education is important in making knowledge for socio-economic development in Nigeria in general and North-Western part in particular especially in making the quality of education responsive to the reality of labour market and increase in the use and application of technology in the modern time (Brynjolfsson and McAfee, 2014). Indeed, the higher institutions should demonstrate the capacity to address these scenarios specifically in bridging the gap between academic and industry. It is on this note that, National University Commission (NUC) (2007) has identified essential components of overall academic programmes in the country as an integral part of its benchmark, which are follows: regime knowledge, competencies & skills and behavioural attitude (NUC, 2007). Regime knowledge relates to ability of students in solving different problems of the society. Competence is used as an ability discharge a particular task efficiently after being acquired experience and training. Behaviour attitude refers to cultivation of societal moral values and norms (NUC, 2007).

On one hand, the effectiveness of academic programmes should be determined by galvanizing the efforts of experts in the institutions who are expected to review the academic programmes. On the other hand, various skills and competences should be cultivated in the learners in order to make them employable after graduation from the universities. Indeed, the quality of education can guarantee national and international competitiveness; hence, focus on improving standard of education becomes imperative (NUC, 2007).

Thus, the Nigerian university system has been making tremendous efforts in providing academic rigour and entrepreneurship skills to students. However, the system is not adequately responding to university work transition in fulfilling the needs of 4th industrial revolution. In other words, the universities are not adequately responding to the future of work as literature advocates that the universities are expected to respond to the changes occurring in the society especially for the future of work as literature contends (Betcherman and Samuel, 1997). Moreover, as an integral part of the fourth industrial revolution, it is necessary to bridge the gap between academics learning and career preparation of the learners in Sokoto, Kebbi, and Zamfara States Nigeria.

Furtherance, in responding to the foregoing, since the 4th industrial revolution emphatically stresses on the future of work is determined by two important elements (i.e., digitization, and automation) (Arntz, Gregory and Zierahn, 2016). Thereby, literature contends that, most businesses and industries should be reorganized in line with the demands for more highly skilled workers in aspects require high decision making which cannot be automated as being indicated that most future jobs shall be done by robots as literature posits (Acemoglu & Restrepo, 2018).

Thereby, the university education is necessary to produce the highly skilled workers that will fit into international demands of highly skilled workers. Therefore, this study will conceptualize three factors as predictions of responsiveness for undergraduates' career preparation to the fourth industrial revolution. The predictive factors are namely: social connection, sense of purpose and sense of competence. The aforementioned factors are important because digitization

and automation are technological elements that aim at reshaping the labour market in the aspect of opportunities and quality of essential skills that are demanded in the workplace. Thus, the afore-mentioned predictive factors of work in the country are briefly explained in the subsequent paragraphs.

Furthermore, sense of social connection is essentially important for highly skilled job in the modern time as the literature contends that low and mid skilled jobs shall be digitized and automated (Arntz, Gregory and Zkrahn, 2016). Indeed, sense of social connection refers to inter-personal trait as well as cooperative and collaborative skills necessary to make an organization excel (Acemoglu & Restepo, 2018). In addition, sense of purpose is integrally significant in making students attach paramount importance of their academic learning to their performance in the work place. This is essential to create a clear link between higher education and work force (Dries and Verbruggen, 2012). Onwards, pertaining to sense of competence and work. Also, education should prepare students to improve their competencies toward enhancing the performance in work place. The study by Hirsch (2018) explicated the triadic components of career preparation of students as an integral part of the demands of the 4th industrial revolution. This study therefore will explore the afore-mentioned predictors of undergraduates' career preparation for the future of work especially looking at the level of preparedness through educational system in Sokoto, Kebbi and Zamfara States-Nigeria in the era of 4th industrial revolution.

Methodology

Descriptive Survey research will be used in the study which literature such as Creswell (2014) considers it to be appropriate in collecting data from undergraduates from six (6) universities will be too large to collect data from them. More specifically, questionnaire is considered as instrument for data collection as literature suggests (Creswell, 2014). Population refers to target respondents of a particular study. The population of the study comprised all undergraduate students across six (6) public universities (federal and state universities) in the Sokoto, Kebbi and Zamfara States of Nigeria. Raososft Sample size calculator shows that the sample to be selected from 30, 000 is 379.

Concerning measurement and instrumentation, there are four variables hypothesized as predictors of undergraduates' career success in the era fourth industrial revolution among the undergraduate students in the Sokoto, Kebbi and Zamfara States. The variables are: social connection (SCC), sense of purpose (SOP), sense of competence (SOC) and digitization (DIG). The first three factors (SCC, SOP & SOC) are considered as exogenous factors while DIG is considered as endogenous factors. The instrument (questionnaire) of this research adapted from earlier studies (Savickas, 2013; Rudolph, Lavigne & Zacher, 2017; Hirshi, 2018) in order to make it relevant for the purpose of this research. The instrument will be tagged: "Questionnaire for Predictors of Undergraduates' Career Success (QUPUCAS) There are two sections in the questionnaire. Section A covered demographic information of the respondents (gender, age, ethnicity, name of current university and Strata) while Section B covered different items measuring different constructs. This research used five parameters (items) as Pallant (2011) suggests to measure each of the five constructs that will be investigated in this study. The constructs and items are: (social connection (SCC) = item 1-5; sense of purpose (SOP) = item 6-10; sense of competence (SOC) = item 11-15 and digitization (DIG) = 16-20. The total numbers of twenty (20) items were used in the instrument (questionnaire) to measure both exogenous and endogenous variables that were examined in this research. More

so, a 5-likert scale will be used in this research namely: 1= strongly disagree (SD), 2=disagree (D), 3=neutral (N), 4=agree (A) and 5=strongly agree (SA).

Content validity of the instrument was determined by considering simplicity, appropriateness, flexibility and understandability of the items that were developed through the exploration of previous studies (Savickas, 2013; Rudolph, Lavigne & Zacher, 2017; Industry, 2014; Hirshi, 2018). In this research, views of the 15-experts in the field of career guidance in education were sought from faculties of education from each State that constituted the areas of this research (i.e., Sokoto, Kebbi and Zamfara States). The judges were given with a 3-page description of the factors investigated in this research namely: social connection (SCC), sense of purpose (SOP), sense of competence (SOC), digitization (DIG) and automation (AUT). Notably, the judges were required to look at the relevance of the items in measuring the constructs and thereafter, the feedbacks were used to improve the instrument (questionnaire). Onwards, the researchers also determined the reliability of the construct of the 20- item by reporting Cronbach's Alpha for internal consistency of the instrument as recommended in previous literature (Pallant, 2011). Undoubtedly, it provided a substantial finding confirming the internal consistency of the instrument as follows: Social Connection (SCC)=.884; Sense of Purpose (SOP)=.792; Sense of Competence (SOC)=.681; Digitization (DIG)=. 669 which confirmed the that factors were reliable according to the criteria of George and Mallery (2003).

In respect of data collection, questionnaire was used through the assistance of trained six (6) research assistants among undergraduate students in various universities. The research assistants collected the data within the period of two weeks and any incomplete questionnaire was removed prior to the final analysis of the data. In addition, regarding data Analysis, various statistical tools would be employed through the employment of Statistical Package for Social Science (SPSS) version 23.0. Descriptive statistics was used for demographic information of the respondents through the computations of frequencies and percentages. Lastly, Multiple Regression Analysis (MRA) was used to answer research question raised in the study in order to establish the most predictive factor of undergraduates' career success.

Results

This section presents the data analysis of the study which is sub-divided into demographic information and results of the study. On one hand, from the demographic information of the respondents, it is demonstrated that the majority (286 or 75%) were males while only 93 (25% were females. Concerning the age of the respondents, the majority (103 or 27%) were between 16 and 20 years and others are: 21-25 (100 or 26%); 26-30 (85 or 22%) and 31 and above (91 or 24%). Concerning the ethnicity of the respondents, the majority (317 or 84%) were Hausa/Fulani; 20 (5%) are Yorubas, 15 (4%) were Igbos while 27 (7%) were from other ethnic groups. Concerning the universities of the respondents, the majority (81 or 21%) were from Usmanu Danfodiyo University Sokoto; 73 (19%) were from Sokoto State University; 57 (15%) were Federal University Birnin Kebbi; 57 (15%) were Federal University Guzau; 56 (15%) were from Zamfara State University while 55 (15%) were from Kebbi State University of Science and Technology Aliero. In addition, concerning the respondents' strata, the majority (241 or 64%) were from urban and just only 138 (36%) were from rural areas. On the other hand, research question "How well do the predictors of high job skills predict the career success of the undergraduate students in

selected universities in Sokoto, Kebbi and Zamfara?" is therefore raised to guide the presentation of data. in order to answer the research question of this study, standard multiple regression analysis was employed.

On the other hand, various social connection (SCC), sense of purpose (SOP) and sense of competence (SOC) are considered as exogenous factors while digitization (DIG) is regarded as endogenous factor. In order to determine correlation among the set of variables whereby the criterion of .7 was used a threshold as literature suggests (Pallant, 2011). Thus, the values of correlations obtained from the data output demonstrated as follows: social connection (SCC)=.62; sense of purpose (SOP)=.54 and sense of competence (SOC)=.61. The values obtained from correlations on the variables of the study were retained due to the fact that they were less than the required or recommended threshold of .7.

Furthermore, collinearity diagnostics is an important assumption to be taken into consideration as literature recommends (Pallant, 2011). In so doing, coefficients with specific attention on tolerance and VIF where the value of former should be less than .10 while the later should be more than 10. The values of tolerance obtained for variables are: social connection (SCC)=.626 sense of purpose (SOP)=.545 and sense of competence (SOC)=.616 while the values of VIF for the aforementioned variables also supported by values of coefficients. This inferably means that, there was no violation with regards to the multicollinearity.

In addition, beta of standardized coefficients was determined and literature contends that negative sign of beta threshold does not in any way affect the interpretation of the data (Pallant, 2011). Thus, the most predictive factor of high job skill in fostering students' career success was sense of competence (SOC) due to the fact that it has largest coefficient of .314 as compared to other two factors (i.e., social connection and, sense of purpose) respectively. Inferably, it indicates that SOC uniquely contributed to the learners' career success despite the fact that there was a control in variance explained by other factors reflected in the model of the study. Nonetheless, sense of purpose (SOP) had a slight lower beta value of -.015 in standardized coefficient. This indicates that there was no significant contribution of SOP to the career success of the learners. Table 1 shows coefficients of data output.

Table 1: Coefficients

Model	Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	*t*	Sig.	95% Confidence Lower Bound	Interval for B Upper Bound	Collinearity Statistics Tolerance	VIF
(Constant)	10.279	.951		10.803	.000	8.408	12.150		
SOP	-.014	.054	-.015	-.254	.800	-.119	.092	.626	1.597
SOC	.309	.064	.314	4.817	.000	.183	.435	.545	1.836
SCC	.064	.048	.082	1.341	.181	-.030	.159	.616	1.625

a. Dependent Variable: DIG

Moreover, the variance of dependent variable (digitization) is explicated by the model in connection with three independent variables namely: social connection (SCC), sense of purpose (SOP) and sense of competence (SOC) whereby the value of R-squared was taken into account (13.0%) of variance in digitization among undergraduate students in selected universities in Sokoto, Kebbi and Zamfara States.

Table2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
									Change Statistics	
1	.360[a]	.130	.123	3.68869	.130	18.601	3	375	.130	1.633

a. Predictors: (Constant), SCC, SOP, SOC

b. Dependent Variable: DIG

Similarly, analysis of variance (ANOVA) was taken into consideration to determine the statistical significance demonstrated from the model as (sig. .000, which showed $p<.0005$). This further indicates the variables of high job skills (social connection, sense of purpose and sense of competence statistically predicted digitization for their career success. Furthermore, it should be stressed that the normal probability plot (P-P) was further determined from regression standardized residual. Thus, based on the data obtained, P-P indicated that, on a diagonal line, there were different points lying from bottom left to the top right. Hence, this shows that there were no fundamental deviations from normality. Figure 1 shows
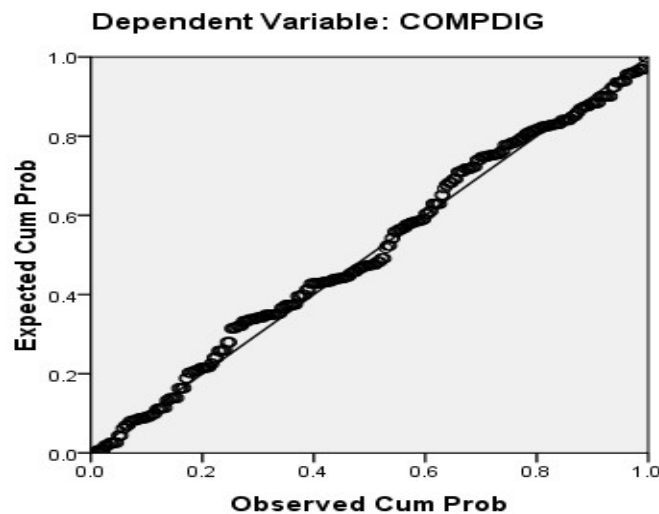

Figure 1: Normal probability plot (P-P) of the egression standardized residual

Similarly, the scatterplot further buttressed the aforementioned findings of the study. Notably, the standardized residual was not more than the recommended threshold of 3.3 or less that -3.3 which is an indication that there were no outliers in the data of the study as literature recommends (Pallant, 2011).
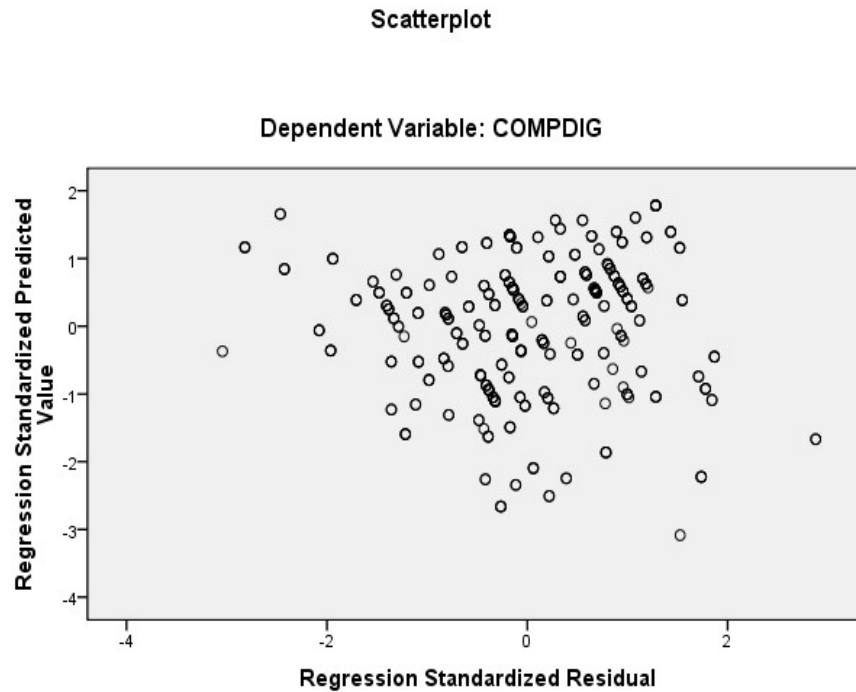
Scatterplot

Dependent Variable: COMPDIG

Figure 2: Scatterplot of the Model

Discussion of Findings

This section presents the discussion of overall findings of the study. The demographic information of the respondents demonstrated that they were qualified to respond to the instrument (questionnaire) of the study. Three predictors of high skill jobs (i.e., social connection (SCC), sense of purpose (SOP) and sense of competence (SOC) are explored in connection with the career success (i.e., digitization). This study has demonstrated that the variables of the study were reliable through the establishment of Cronbach's Alpha for internal consistency of the factors. Overwhelming studies have posited that career success of students are determined by the acquisition of high skilled jobs in the era of 4th industrial revolution required in the workplace after graduation from the university. The findings of this study have demonstrated that the set of variables (social connection, sense of purpose and sense of competence) explored in this study significantly correlated with the application of digitization an integral part of students' career success. This finding has been substantiated with previous studies that posits that learners' social connection to adequately interact with others, has significant impact in their personal and career lives which tends to lower rate of students' depression and anxiety (Santini *et al.*, 2020). It is also buttressed that, at the workplace, those with social connection tend to show cheerfulness and

cooperativeness that are central to human wellbeing and career success (Pirvi and Zamfirescu, 2017, Hirshi, 2018). It is further reiterated that, students' involvement in co-curricular activities such as community service, sports etc. will important their social connection require in high skilled works that cannot be automated (Arntz, Gregory and Zierahn, 2016). It is not disagreeable to posit that, social connection can be better improved with technological facilities that can help students contribute to digitization and automation an integral part of the fourth industrial revolution (Hirshi, 2012; Arntz, Gregory and Zierahn, 2016; Hirshi, 2018, Hirshi et al., 2018).

More so, pertaining to sense of purpose, this study has confirmed that education plays significant role in building sense of purpose which should be ascribed with the academic programme. Literature contends that to set a purpose life, judicious use of time is important in enabling one to get motivation for the successful life (Zhang, 2014). It is noteworthy to say that, social engagement is also important sub-element towards reshaping one's image as well as improving one's sense of purpose in life as literature contends (Philips, 2013).

This study has further established that sense of competence is importantly related to cultivate the mindset of digitization as an integral part of 4th industrial revolution whereby education is centrally pivotal in cultivating the sense of competence in learners. This study is in agreement with a number of previous studies that tertiary institutions and parents play a complimentary role in enhancing learners' competence through their involvement in academic activities (Bugental & Johnston, 2000). Additionally, it is noted that, parental self-esteem plays an impactful role in activating the competence level of their children.

Furthermore, there is shift from education without skill but it harmonizes digitization of all spheres of human endeavours. This is in agreement with literature that establishes a link between quality education and economic prosperity (David and Alan, 1996). In the academic setting, more importantly, there are archives and many materials are provided in digital forms, which increase accessibility to customers even from a distance. Literature contends that digitization refers to data process, storage and transmission which is being promoted by smart factory in the era of fourth industrial revolution (Pirvi and Zamfirescu, 2017). In the digitization of economy and workforce, industries play significant role. Literature contends that, the future of works is sliding towards digitization, therefore, higher institutions have significant roles to play in this regard by preparing students with technological facilities (Santini *et al.*, 2020) into the digital world, prepare a sense of purpose (Jilly, 2016) as well as sense of competence in order to response to this challenge of digitization and automation of jobs in the modern time. Hence, sense of competence highly predicted digitization with largest coefficient compared to two other factors. This inferably means that there is need for more improvement on social connection (SCC) and sense of purpose (SOP) in connection with digitization in fostering career success of the undergraduate students in Sokoto, Kebbi and Zamfara States, Nigeria.

Conclusion

This study has indicated that there are four factors explored as high skilled job in enhancing learners' career success in selected universities in Sokoto, Kebbi and Zamfara States, Nigeria. The variables of the study have buttressed the data collected from the undergraduate students. The uniqueness of this study is that the variables are empirically explored with specific focus of preparing students for career success acquainting with digitization in the era of 4th industrial revolution in Nigeria. Despite the fact that the study provides substantial direction for future

studies. Nonetheless, the limitation of the study is that only three variables are dependent variables (social connection, sense of purpose and sense of competency) while digitization is an independent variable. Most studies on tertiary institutions in Sokoto, Kebbi and Zamfara States in the recent did not explore students' high skilled job through learners' career success. Figure 1 depicts conceptual framework of the study:
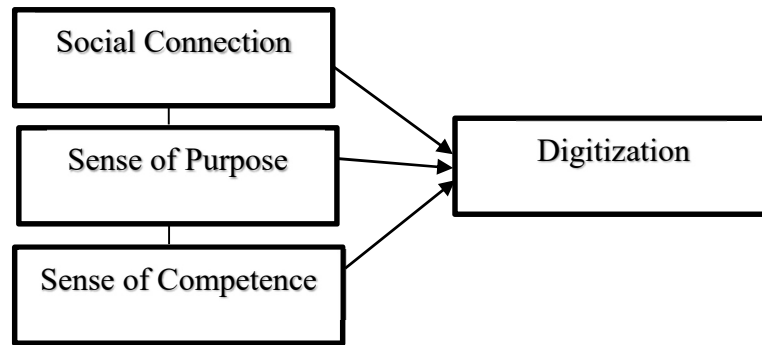

Figure 1: Conceptual Framework of the Study

Recommendations

The following recommendations are made based on the overall findings of the study:

1. The stakeholders in the education sector should collaborate together in improving highly skilled jobs for career success of undergraduate students in the era of 4th industrial revolution in Nigeria.
2. The entrepreneurship centres in various tertiary institutions should strengthen digitization which will be helpful to the students after graduation from the university.
3. The governments at state and federal levels should provide funds to the universities in fostering their skills necessary for job at workplace after graduation.
4. This study used quantitative methodological approach, it is hoped that future studies shall use qualitative and mixed methods in utilizing factors of career success in enhancing digitization among the students in public universities in Sokoto Kebbi and Zamfara States in particular and other states in general in the context of Nigeria.

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