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Human Capital and Higher Education as a Catalyst for the Development of Knowledge Economy in Northern Nigeria

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Abstract:
The aim of this paper is to look at implications of higher education and human capital vis-a-vies Nigeria developing its economy into knowledge based. The study employs cross-sectional research design as secondary data collected on documents on investments in education infrastructure in Nigeria and knowledge economy index of the World Bank. The sample of the study is 11 Northern Nigerian states with low Human Capital Index of 0.483 and below, which were purposively selected. The descriptive and inferential statistics was employed as methods of data analysis. The finding of the study reveals that Northern Nigeria is lacking behind in all the indices of human capital development and hence its backwardness. The study concludes that though the reforms being undertaken in the educational sector is commendable, more efforts need to be done to make Nigeria and indeed the Northern part of the country, a truly knowledge-based economy in order to compete with the southern part of the country in all spheres of human endeavour, especially in this era of digital economy. Furthermore, the paper implores reducing the high illiteracy rate in the region by timely funding of our educational system and enrollment, as well as inculcation of relevant skills acquisition through entrepreneurship education to our teeming populace with a view to reducing poverty and improving human capital of the region via a quality higher education.

Keywords: Knowledge economy, human capital, higher education, innovation, information technology

1. Introduction

Developing human capital through higher education is a stepping stone for moulding of unskilled people, workers in a society with a view to developing a country's potential economically and technologically. For these to be achieved, Igbokwe-Ibeto, Agbodike and Osakede (2018) argued that, the right entrepreneurial curriculum and qualified teachers must be in place to perform this vital function as education is crucially important for many of the policy outcomes that citizens and political leaders of today care about. At an individual level, our education affects our earnings, our employability, and our chance of succeeding in life, especially among the disadvantaged people in the society. It also affects standard of living and well-being of a society and human development achievement. From the county's perspective, the level of educational development also matters for its progress and advancement. The distribution of skills as argued by Burges (2016) is a pointer to discrimination in terms of employment or other opportunities with regards to educational achievement and hence to the degree of social or intergenerational mobility.

The world today is experiencing another form of production which is called knowledge economy. A knowledge economy is an economy in which the production of goods and services is based primarily upon knowledge-intensive activities involving the collection, analysis, and synthesis of information (Abdussalam, Okezie& Agbo, 2003). It is the most advanced form of productionwhereby intangible assets, such as knowledge and information management, become the new core of competencies.Hadad (2017) opines that knowledge assets (also known as intellectual capital) are the most powerful prodders of wealth, sidelining the importance of land, the volume of labour and physical of financial capital which if deployed effectively will energizes the country's economy.

However, instead of this phenomenon to spread widely, it is restricted to few countries of the world. This is because knowledge economy depends on continually learning and improving skills and expertise of people and organizations to promote innovation. The success of a country developmental agenda depends on human innovative ideas and creativity (Johnson, 2011). Campbell (2013), posits that to produce people with highly intellectual capital and skills in the face of globalization requires the need to pay more attention on information and computer technology (ICT) and the application of knowledge to serves as creative thinking for nations development. The author further argued that organization requires people with advanced skills and knowledge with view to assist its growth and the nation's developmental stride. Higher Education therefore is expected to play an important and increasing role in the molding of the intellectual capital of a nation.

Human capital consists of providing adequate and quality education in tandem with the emergence of skills acquisition to serve as creative tendencies of the people. Thus, it is the physical and mental efforts, experiences, skills and capabilities possess by people. Human capital is associated with investment in man and his development as creative and productive resources and therefore considered as asset of organizations and societies (Johnson, Conway &Kattuman, 2013). According to World Bank (2018) by improving the intellectual capital of the people through the provision of higher education, standard of living-people can be inventive as well as change agent in the country's stride to its growth and development and alleviating poverty. Fuente and Ciccone (2002), suggested that "investment in people is both a crucial growth factor, particularly in the current context of rapid technological change, and a key instrument for enhancing social cohesion, and are therefore supportive of the Sustainable Economic Goals (SEG) policy strategy''.

For example, the World Bank Human Capital Index (HCI) indicates that Nigeria is currently lagging behind in HCI of the World as it was ranked among the worst countries in 2019 (World Bank, 2020). Meanwhile, a statement by the World Bank (2018) revealed that the HCI reveals that half of the unborn children across the globe will face severe hardship and financial difficulty in their lifetimes, just because, their leaders are not concerned with their educational and standard of living that will results in producing highly skilledpopulace. The World Bank (2019) further recognizes that schooling that produces learning is needed to build human capital and Kim (2019) stressed that ''for the poor of the people, the only capital they have is human capital acquired through education''.

Nigeria is immensely endowed with material and personnel resources which are unquantifiable. With good leadership and foresightedness; economic prosperity can beachieved in the continent through the emancipation of intellectual capital. The ability of a country to develop technologically depends on absorptive capacities and innovative capabilities. Therefore, intellectual capital is a critical element that determines a country's ability in those dimensions (Chang, 2012). Thus, for the Nigerian economy to become knowledge based it willdepend on its ability to imitate foreign advanced technology (absorptive capacities) and the extent to which to be able to produce new advanced knowledge also depends on illiteracy rate of its citizen.

In Nigeria, the rate of education enrollment in school is very high especially in Northern part of the country compare to its southern part. Most of the people in the region are unskilled and they make use of outmoded capital, equipment and methods of production. Unemployment and failure rate of established businesses in Nigeria have skyrocketed in recent years (Johnson, 2011; UNDP, 2018, Tosin, 2017). Many studies have examined the relationship between human capital and economic growth and development. For instance, Johnson (2011) evaluates human capital development and economic growth in Nigeria by adopting conceptual analytical framework that employs the theoretical and ordinary least square (OLS) to analyze the relationship using GDP as proxy for economic growth; total government expenditure on education and health, and the enrolment pattern of tertiary, secondary and primary schools as proxy for human capital. The analysis confirms that there is strong positive relationship between human capital development and economic growth.

A study with an empirical bases revealed that there was apositive and significant relationship between investment in human capital and technology capabilities (Strobel, 2014; Diaz-Chao, 2015). Empirical review by Garba (2004) shows that cross-country regressions have shown that a positive correlation between educational attainment and economic growth and development exists. This finding corroborated with Odekunle (2001) who affirmed that providing effective quality education in people result in country's realizing its potential for producing entrepreneurs' and technology driven populace that can think in applying the knowledge they acquired.

With the aforementioned problems, this study attempts to answer the following questions.

- To what extent has states in Northern Nigeria invested in education, health and nutrition of its people and have attracted and retained highly skilled workers?
- Does investment in Knowledge enhance technological innovations in Northern Nigeria?
- The main objective of this study is to evaluate the relationship between human capital and instilling knowledge-based economy in Northern Nigeria. The specific objectives are to:
- Determine the relationship between investment in education, health and nutrition of people and participation in the labour force
- Assess the relationship between investment in Knowledge and Technological innovations in Northern Nigeria
  The following research hypotheses are raised in order to realize the objective of the study
- $H_{01:}$ There is no significant positive relationship between investment in education and knowledge economy
- $H_{02:}$ There is no significant positive relationship between education and
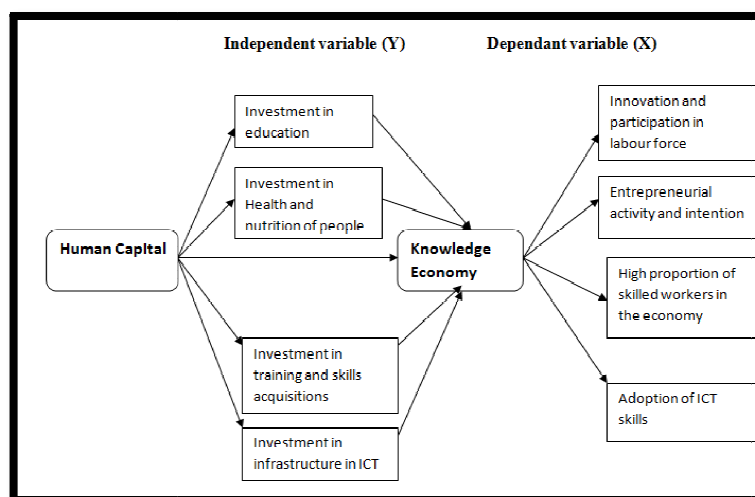
2. Literature Review

Figure 1: Conceptual Framework of the Study

2.1. Concept of Human Capital

The notion of intellectual capital or human resource can be traced back to the eighteenth century when economists underscored the role of the capacities of people in creating economic value (Marshall, 1948; Mill, 1926; Smith, 1952 as cited in Fitzsimons, 2015). Later, researchers began to determine the empirical basis of human capital theory (Fitzsimons, 2015). These researchers focused on the impact of investment in education on economic growth, wealth accumulation and personal income.

Human capital is defined in the Oxford English Dictionary as 'the skills the labour force possesses and is regarded as a resource or asset.' It encompasses the notion that there are investments in people (e.g., education, training, health) and that these investments increase an individual's productivity (Goldin, 2016). Theodore Schultz begins his 1960 article on Capital Formation by Education and said; "as a proposition that treats education as an investment in man and treats its outcomes as a form of capital''. Schulz (1960) as cited in Holden and Biddle (2016) emphasized that since ''education is a part and parcel of the people acquiring it, he termed it; as Human Capital.'

Burges (2016) in his paper outlines three large policy domains for which higher education is critical. First, a country's stock of skills is a pointer, and hence potential for economic growth in a highly competitive international environment. Second, the distribution of that intellectual asset is a pointer of income inequality, ever more important with a high wage premium for skills. Thirdly, the link between a person's human capital and their background is a fundamental determinant of social mobility and the perpetuation of disadvantage.

2.2. Concept of Knowledge Economy

According to Encyclopedia.com (2008), the term knowledge economy refers to a society in which the creation, dissemination, and utilization of information and knowledge has become the most important factor of production. In such a society, knowledge assets (also known as intellectual capital) are the most powerful producer of wealth, sidelining the importance of land, the volume of labour and physical or financial capital. Issa (2003) stated that there has come to be in today's world, a full realization of the fact that information remains the prime commodity for this present age and it has continued since the dawn of civilization to the modern age. Indeed, the availability and free flow of information has brought about knowledge which has great potentials to provide the impetus for the social, cultural, spiritual, political, economic, scientific and technological advancement of a nation.

According to the World Bank (2015), knowledge economies are defined by four pillars. These are: institutional structures that provide incentives for entrepreneurship and the use of knowledge, skilled labour availability and good education systems, ICT infrastructure access, and, finally, a vibrant innovation landscape that includes academia and the private sector. We have seen how Silicon Valley has made America what it is today in terms of IT and internet development. Basically, all the major IT companies of the world are situated/domiciled right there at Silicon Valley, like the Samsung, Apple computers, Facebook, twitter just to mention but a few.

Jemme (2012) pointed out that, Africa is going through an economic transition and it is therefore desirable to inculcate a knowledge-based skill for many young African entrepreneurs who have plenty of ideas and can think for themselves. The author still argued that the African region is faced with many myriads of problems and obstacles in erecting a vibrant human capital with relevant skills that will remodel their economies to ICT and digital economy compliant. Most of these efforts (building technological entrepreneurs) are in the area of missing a clear business strategy, exit plan and framework for who the potential beneficiaries should be.

Entrepreneurs simply need business education; someone to look into the early stages of their idea effectively and realistically. By failing to look at those areas as argued by Graham (2014), many solid innovations have failed to become a reality and profitable. Other business skills are also needed to create and boost our knowledge economy. The ability to learn effectively is one. Secondly, the ability and intention to disseminate feedback is another and thirdly, beyond business

skills, there is another challenge to building knowledge economy which is to fill the gap between creativity and knowledge technical skills through STEAM (Science, Technology, Engineering, Art and Mathematics) (Graham, 2014).

2.3. Empirical Review

There is a broad consensus in the academic literature that human capital is an important determinant of productivity and other economic outcomes, both at the individual and at the aggregate level, and that its role is particularly crucial in today's knowledge-driven economy (Fuente &Ciccone, 2002).A number of researches have been conducted where an attempt has been made to link education to human capital development and by extension technological innovation, dissemination, adoption and consequently economic growth and development. Odekunle (2001) empirically confirmed that proper and timely funding of higher education significantly impact on the production of highly skilled and ICT driven people in Nigeria.

A study by Tosin (2020) revealed that an exponential increase in technology innovation, skills acquisition, technology infrastructure, and technology adoption would increase labour productivity in Nigeria. A study by Clarke and Gholamshashi (2018) on developing human capital and knowledge-based economies; the organizational and people attitudes towards innovation in the Asia Pacific was examined, beginning with analysis of the significance of intellectual capital for the development of knowledge-based economies. In the Organization for Economic Cooperation and Development (OECD) countries, the findings revealed that more than half of GDP is accounted for by knowledge-based industries, including the main producers of high-technology goods, high and medium technology manufacturing, and knowledge driven services such as finance, insurance, business, communication and social services.

In a study conducted in Russia by Alkhimenko, Asaliev, and Kuksova (2014) the study found a correlation between human capital and knowledge economy as it was revealed that continuing education is a pointer that enhances employee salary, job attitude, output and efficiency and an economy's ability to develop as well. These findings are supported by the empirical work that examines the connection between human capital and productivity at the firm level, which documents that high human capital workers increase productivity and are a direct source of innovation and long-term competitiveness. The literature also finds that the link between human capital and individual wages becomes stronger in times of rapid innovation (Allen, 2001 as cited in Fuente and Ciccone, 2002)

According to a report conducted in EU countries, Fuente and Ciccone (2002) found that investment in people plays a key role because it is seen as both an essential growth factor and a key lever of social cohesion policy. Human capital is considered to be a crucial input for the development of new technologies and a necessary factor for their adoption and efficient use, but also a prerequisite for employability and an instrument for fighting social exclusion and gender discrimination. The analysis involves the use of statistical techniques (generally regression analysis) to try to determine how an increase in educational attainment will affect individual earnings or average productivity at the aggregate level. Hence, the authors' findings revealed that, years of schooling is the measure of the stock of intellectual capital most commonly used in both micro and macroeconomic level of a nation.

It is generally often said that higher education remains one of the tools for the transformation of an individual and society at large. It is recognized as one of the most powerful mechanisms for social modification, which plays a decisive role in nation-building (Suleiman, Abubakar&Akanbi, 2018).

2.4. Theoretical Framework

The underpinning theories for this chapter are Human Capital theory, Growth Theory and Triple Helix Theory. Human capital theory sees continuing education, training and re-training as products of expertise and innovations (Schultz, 1962; Becker, 1992). A similar strand of studies focuses on the interaction between the educational/skills levels of the workforce and measurements of technological activities (Nelson & Phelps, 1966). According to this theory, production of highly skilled labour force engenders a firm or an organization to easily apply new way of doing things, thus synergizing education and skills acquired. Growth Theory on the other hand, argues that knowledge and skills embodied in humans directly raise productivity and increase an economy's ability to develop and to adopt new technologies.

Lastly, Triple Helix Theory (Etzkowitz&Leydesdorff,1998; Etzkowitz& Zhou, 2006) postulates that research and tertiary education systems are primary drivers of information rich; knowledge-based; science, technology and innovation (S, T&I) driven, skills acquisition and value-adding research and development (R&D) which are critical enablers of entrepreneurship and wealth generating enterprises. Research institutions are challenged with industrial problems with research-driven solutions being deployed to relevant micro, small and medium enterprises (MSMEs) in a continual process of increasing the industrial competitiveness of these actors by playing three key roles - they produce cutting edge knowledge; they transfer, exchange and apply that to drive innovation; and they educate and produce skill knowledge workers (Tetfund, 2019). This has been achieved in most rapidly developing economies through the operation of the government-industry-academia partnership, usually referred to as the Triple Helix. The Theory opines that a synergy of collaboration must exist between the government, industry and academia in order to achieve a sustainable knowledge based–driven economy. Government provides the needed conducive atmosphere for learning and acquisition of knowledge and skills relevant to the knowledge based–driven economy.

2.5. Linking Higher Education to Human Capital and Development of Knowledge Economy

One of the linkages of the higher education and human capital and development of knowledge economy is the rapidly developing economy that is digitalworldwide. To this end, the importance of digital economy to the growth and development of African countries economies cannot be overemphasized. The digital economy is developing rapidly

worldwide and it is the single most important driver of innovation, competitiveness and growth and it holds huge potential for entrepreneurs and small and medium sized enterprises (SME's). How business adopt digital technologies will be a key determinant of their future growth.

New digital trends such as cloud computing, mobile web services, smart grids and social media, are radically changing the business landscape, reshaping the nature of work, the boundaries of enterprises and the responsibilities of business leaders (EU, 2016). These trends enable more than just technological innovation. They spur innovation in business models, business networking and the transfer of knowledge and access to international markets.

According to UNESCO (2005) while national research structures are wider than those found in the higher education sector alone, the research function of academia remains a prime source of a country's knowledge base. Over the past decade, most industrialized states have strived to address the dual challenge of providing wider access to post-secondary education and training, and in ensuring adequate investment in high-level research. This duality is proving to be a delicate balancing act which demands visionary policies and a more diversified funding base (UNESCO, 2005). The UNESCO report continues that governments should seek to build world-class systems which assure quality provision in both teaching and research. In contrast, universities wishing to be considered as 'world-class' are usually aiming at research excellence and good repute in STI (i.e., Science, Technology and Information) domains.

Against this background, the challenges for these institutions are continuing to grow as according to UNESCO (2005) about 22 of the world's elite 25 research universities are located in one country, the USA. While American higher education deserves full credit for the breadth and resourcing of this sector, this monopoly cannot be expected to meet global needs in terms of research. For this reason, support for research universities has become an important priority in OECD and African countries.

3. Research Methodology

The study will employ correlational research design because most of the studies reviewed used cross sectional design. The target population of the study is all the 19 states in Northern Nigeria including FCT Abuja. Eleven states (Kano, Adamawa, Niger, Katsina, Bauchi, Zamfara, Jigawa, Gombe, Yobe, Kebbi and Sokoto) with Human Capital Development Index (HCI) (2018) of 0.483 and below, will be purposively selected as the sample of the study. Secondary data is collected through documents on investments in education infrastructure, human capital index and knowledge economy index. The descriptive and inferential statistics was employed as methods of data analysis. Specifically, the mean and standard deviations of the responses is calculated, while multiple regression method was used to test the hypotheses of the research. In order to ensure that all the pre-conditions for conducting parametric analysis are satisfied, pre-estimation test will be conducted which include normality test and multicollinearity test. If it fails, non-parametric analysis will be adopted.

4. Results and Data Analysis

Descriptive statistics and inferential are analyse in order to gives the features and characteristics of the properties of the variables employed and correlation and regression analysis is also done to test the association/relationship and hypothesis.

The model of the study is express as change in knowledge economy occurs, it will have significant impact on human capital in Northern Nigeria and it is express in linear form as:

$\Delta KNE = \Delta HCI + \Delta EDI + \Delta LTR + \Delta HDI \ldots \ldots \ldots \ldots \ldots \ldots \varepsilon$

Where,

KNE = knowledge Economy

HCI = Human Capital index

EDI = Education index

LTR = Literacy Rate

HDI = Human Development Index

4.1. Descriptive Analysis

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
KnowledgeEconomyIndex	11	400.00	1369.00	7.9773E2	294.54239	.507	.661	-.219	1.279
Human CapitalIndex	11	.34	.48	.4188	.05376	-.302	.661	-1.136	1.279
Education Index	11	.33	.66	.4526	.09673	.897	.661	.988	1.279
Literacy Rate	11	21.70	48.90	32.9182	8.27488	.450	.661	-.363	1.279
Human DevelopmentIndex	11	.30	.43	.3565	.04148	.336	.661	-1.110	1.279
Valid N (listwise)	11								

Table 1: Descriptive Statistics
Source: The Author (2021) Using Spss, 20 Versions

The descriptive statistics reveals the features and properties of the variables employed in the study. The knowledge economy shows the mean average as 7.97 in all the Northern states sampled with maximum and minimum value as 1369 and 400 respectively, with a standard deviation or the dispersion of the mean as 294 which was quiets large. The Human capital index has a low average return (mean) of 0.418 and a low standard deviation (0.053). Education index has mean value of 0.45 and a standard deviation of 0.097. The literacy rate has a mean value of 32.918 and a standard deviation of 8.27 and finally the human development index of the Northern part of the country are found to have an average return of 0.356.

The skewness and Kurtosis measure the normality of the data to show if the data are normally distributed (asymmetrical). From table one above, it shows that the data are positively skewed with the exception of Human capital that skewed to the left. The kurtosis measures the peak of the plot. The table shows most of the variables have a negative kurtosis and the normality test suggest all data should be zero or close to zero (Gupta, 2011).
Therefore, based on the analysis above the data for this study is normally distributed which qualify the use of parametric test.

4.2. Correlation Analysis

The coefficient of correlation as shown in appendix 1 (and computed in table 2) measures the extent of the association between two or more variables. The results from the correlation matrix below (table 2) indicates that the dependable variable in this case knowledge economy had weak but positive relationship with Human Capital Index (0.082), and HDI (0.810), also Education Index (0.528) and Literacy Rate (0.263) have also a very weak and positive relationship. This result implies that in Northern Nigeria if an increase in human capital index, education index, literacy rate and human development index (comprises of nutrition and healthy living standard) are raised to a higher level, it will be associated with increase in knowledge economy of the region.

	KEI	HCI	EDI	LR	HDI
KEI	1.00	.082	.528	.263	.810
HCI	.082	1.00	.813	.574	.383
EDI	.528	.813	1.00	.602	.804
LR	.263	.574	.602	1.00	.510
HDI	.810	.383	.804	.510	1.00

Table 2: Correlation Matrix
Source: Computed by the Author (2021)

4.3. ANOVA Results

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	626812.419	4	156703.105	3.906	.068[a]
	Residual	240739.763	6	40123.294		
	Total	867552.182	10			
a. Predictors: (Constant), Human Development Index, Human CapitalIndex, Literacy Rate, EducationIndex						
b. Dependent Variable: Knowledge Economy Index						

Table 3: ANOVA[b]
Source: The Author (2021) Using SPSS, 20 Versions

The Anova result above (table 3) indicate that the F-statistics is 3.906 and statistically significant (0.06) at 10% level of significance which indicates that the model is fit for the study and can be relied upon for analysis and predicting knowledge economy and human capital development in Nigeria.

4.4. Regression Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.850[a]	.723	.538	200.30800	.723	3.906	4	6	.068	2.239
a. Predictors: (Constant), HumanDevelopmentIndex, HumanCapitalIndex, LiteracyRate, EducationIndex										
b. Dependent Variable: KnowledgeEconomyIndex										

Table 4: Model Summary[b]
Source: The Author (2021) using SPSS, 20 versions

The summary of the regression analysis reveals the causal effects between the dependent and the independents variables as shown in table4. Itindicates that the coefficient of determination (r^2) is 0.72 and when adjusted the R square is 0.53. These results indicate that the value of R square which is 72% explain all the variables in the study and the remaining 28% is explained by other unexplained variables which were not captured in the model. The Durbin Watson value of 2.239 indicates that there is no multicollinearity between the variables under study and therefore, the regression analysis is free of spurious results and which can be used by policy makers in Nigeria for decision making on how to improve our human capital development vis-à-vis knowledge economy.

The F-statistics of 0.068 indicate that the dependent variable is linearly and significantly related to the all-explanatory variables at 10% level of significance. Therefore, we reject the null hypothesis which said that there is no significant relationship between the dependent and the independent variables as outline in section one of the paper. This result is consistent with the work of Fuente &Ciccone, (2002), Tosin (2020) and Clarke and Gholamshashi (2018).

5. Conclusion

The knowledge economy holds a great promise for developing countries especially Nigeria, but depending on the availability of human development indices (i.e., infrastructure, good nutrition, Healthy standard of living) as well as human capital (higher education), this promise can turn into a mirage. The economic ideology of creating economic growth through boosting knowledge cannot be applied without proper planning. Therefore, before jumping head first into the knowledge economy, Nigerian governments need to take stock and ask itself whether such a system is achievable, and indeed if it is desirable, for its people.

Furthermore, Nigerian leaders need to be more alive with their responsibility as regards higher education and education generally. Emphasis should be more on building, funding more of world class research institute, universities, polytechnics and colleges of education for the purpose of developing the country and making it a power to reckon with in terms of learning, innovation and entrepreneurship. Application of knowledge should become the priority and focal points of our higher education curriculum in order to reduce the level of poverty, societal problems and elevate the level of human resource in the region. On the whole, the conclusion of this chapter suggests that investment in people is both a crucial growth factor,particularly in the current context of rapid technological change, and a key instrument forenhancing social cohesion, and are therefore supportive of the policy strategyof sustainable development goals (SDG) of the United Nation.

Based on the above conclusions following recommendations are proffer for Nigerian policy makers;For meaningful development to take place in Northern Nigerian higher educational sector, the governments at all levels need to re-address the issue of funding and enrollment. Also, private educational investors, teachers, parents/guardians and students need a reorientation towards achieving the goal of education. Technical education and innovation/adaptation centers must be encouraged and well-funded, if this country must move out of this present technological and scientific dependence. Nigerian and states Government in the North, the organized private sector must as well fund research

programmes, inventions and encourage mass production of invented products with patented right.The successful countries in the global arena are those whose higher education institutions are at the forefront of innovations, information and technology. Therefore, the system of higher education and dissemination of knowledge in Nigeria and indeed Northern Nigeria has to change most especially with the global challenge posed by Covid-19 pandemic. Northern Governors need to reform their higher education curricular and emphasize more on research and development. If all these are done it will go along away in solving some if not all the social upheavals we are witnessing now. From Banditry to kidnapping for ransom and cattle rustling which are all a by-product of incompetent human capital and low or absent of quality education.

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Appendix

		Knowledge EconomyIndex	Human CapitalIndex	Education Index	LiteracyRate	HumanDevelopmentIndex
Knowledge Economy Index	Pearson Correlation	1	.082	.528	.263	.810**
	Sig. (2-tailed)		.811	.095	.435	.003
	N	11	11	11	11	11
Human CapitalIndex	Pearson Correlation	.082	1	.813**	.574	.383
	Sig. (2-tailed)	.811		.002	.065	.245
	N	11	11	11	11	11
Education Index	Pearson Correlation	.528	.813**	1	.602	.804**
	Sig. (2-tailed)	.095	.002		.050	.003
	N	11	11	11	11	11
Literacy Rate	Pearson Correlation	.263	.574	.602	1	.510
	Sig. (2-tailed)	.435	.065	.050		.109
	N	11	11	11	11	11
HumanDevelopment Index	Pearson Correlation	.810**	.383	.804**	.510	1
	Sig. (2-tailed)	.003	.245	.003	.109	
	N	11	11	11	11	11
**. Correlation is significant at the 0.01 level (2-tailed).						

Table 5: Correlations

Coefficients[a]							
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-717.289	1532.749		-.468	.656		
HumanCapitalIndex	-1807.888	3474.003	-.330	-.520	.621	.115	8.692
EducationIndex	493.207	2844.607	.162	.173	.868	.053	18.868
LiteracyRate	-2.701	10.300	-.076	-.262	.802	.552	1.811
HumanDevelopmentIndex	5997.592	4345.718	.845	1.380	.217	.123	8.100
a. Dependent Variable: KnowledgeEconomyIndex							

Table 6:Coefficients[a]

STATES	KEI	HCI	EDI	LTR	HDI
Katsina	400	0.454	0.44	21.7	0.303
Sokoto	448	0.339	0.334	30.1	0.31
Zamfara	575	0.415	0.424	33.9	0.339
Bauchi	626	0.426	0.415	34.1	0.323
Kano	676	0.483	0.496	48.9	0.359
Niger	772	0.48	0.56	37.5	0.399
Jigawa	841	0.414	0.431	24.2	0.359
Yobe	967	0.365	0.33	26.6	0.32
Kebbi	988	0.339	0.396	25.3	0.381
Gombe	1113	0.41	0.492	39.3	0.4
Adamawa	1369	0.482	0.661	40.5	0.428

Table7: Data Used for Analysis