DETERMINANTS OF HUMAN CAPITAL FORMATION, INEQUALITY MEASUREMENTS AND ATTAINMENT OF SCALABLE ECONOMIC GROWTH IN NIGERIA

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ABSTRACT

Despite the huge abundance of human and capital resource endowments, Nigeria's rate of economic growth is still low. This is often manifested in the declining gross domestic product (GDP), per capita income, literacy rate, and balance of trade profile of the country. This study, using the descriptive and econometric analytical approaches found out that the GDP had a positive and significant impact on the total national expenditure on healthcare delivery while the mortality rates negatively impacted the total expenditures on healthcare delivery. The fertility rates and family labour supply level also had a negative effect on total national expenditure on education. Marriage rates declined steadily from 10.8 % in 1980 to 7.8% in 2010 and 6.4% in 2020 while the rate of divorce increased steadily. Elderly population (≥ 60 years) were 53.80 % men and 46.20% women (in 2019) and 53.62% men and 46.38% women (in 2020). Employment inequality profile depicted that 86.27% of the federal ministers were males while 84.09% of the senatorial positions were won by the male politicians. In conclusion, all the positive attributes of human capital development indices like qualitative education, skill acquisition, and sound healthcare facilities should be sustained to make Nigeria's economy buoyant.

Keywords: *Determinants; economic growth; human capital formation; inequalities; sustainability*

1.0 INTRODUCTION

The human capital theory posits that human beings can increase their productive capacity through greater education, skill acquisition and training schemes. However, the critics of the theory argued that this definition is inadequate since it does not encompass labour and other factors of production. Chikwe *et al* (2015) described human capital as the stock of competence, knowledge and personality attributes embodied in the ability to perform (labour) to produce economic value. Human capital could also be seen as a means of production into which additional investment yields extra labour. Thus, human capital (or resources) includes knowledge, skills, attitudes, and motivation that belong to an enterprise or society and are engaged in the development of that enterprise (or society) to fulfil its objectives and to enhance the quality of life of its members (UNDP,1996). However, Eigbiremolen and Anaduaka (2014) noted that the human capital status of any nation will directly influence and positively correlate with the economic and social indicators such as the Gross Domestic Product (GDP), per capita income, balance of trade, life expectancy, literacy rate, level of industrialization and the quality of available infrastructural facilities. Quite often, the value of the human capital assets of a nation is a function of the quantity

and quality of the operating environment. It has been noted (Dauda,2010; Jaiyeoba,2015) that human capital formation is fundamental to a nation's economic progress and that the difference in the level of socio-economic development across nations is attributed not only to the presence of natural resources and stock of physical capital but to the quality and quantity of human resources. In other words, the wealth and prosperity of nations often rest ultimately upon the development of people and the effective commitment of their energies and talents. Jhingan (2007) however opined that the terms: human capital development, human capital formation and human –resource development could be used inter-changeably as they connote the same thing. Therefore, to develop human resources (or human capital), it was recommended that there should be on-the-spot training including old type apprenticeships that originated by firms, establishment of health-care facilities and services such as expenditure on life expectancy strength, stamina and the vigour and vitality of the people. It was also recommended that organized educational system and study programmes for adults (including extension programmes) should be established while monitoring and co-ordination of the migration of individuals and families should be put in place to adjust to changing job opportunities. Nigeria is naturally endowed with a huge reservoir of human and capital resources but these endowments, unfortunately though, have not effectively transformed to the expected levels of growth and development for the nation. For instance, the rate of illiteracy is high, educational system is weak, there is poor quality training for manpower, high unemployment rates, insecurity of lives and property, limited access to basic health facilities, among others. As a result, there is a general decline in the marginal productivity of labour, thus leading to low real income, low savings, low investment, and therefore low rate of capital formation in the economy. Indeed, the United Nations Development Programme (UNDP) in its Human Development Report (2004) ranked Nigeria 151st among the 177 countries that were considered. Some of the indices that were measured in the report included the level of economic performance (captured by the GDP), the per capita income, life expectancy status, health risks and the rate of technological diffusion and use. Overall, the UNDP (2004) noted that the under-employment, brain-drain (through various forms of migration) and low ratings in human development indices such as access to qualitative education, skill and health care services for the people are some of the major challenges to human capital development in Nigeria.

Again, there is a general notion that there are different manifestations of inequalities in the Nigerian socio-economic system. Inequality *per se* is a phenomenon which expresses unequal and/or unjust distribution of resources and opportunities among the members of a given society. Quite often, there are reported cases of wage inequality, occupational sex inequality, educational inequality, and gender inequality, among others. On gender inequality, reproductive/health issues such as maternal mortality ratio and adolescent birth rates are common. Employment inequality is usually based on the proportion of men and women that are allowed by law to occupy political positions or civil service jobs. Generally, women complain of huge marginalization in appointments and elections into public offices hence the recent agitations by the Nigerian women lobbying the Federal and States' houses of assembly requesting for more quotas for women in appointments/elections into public offices especially now that the nation is preparing for another set of elections. The 1995 Beijing Conference in China upheld an affirmative action which recognized 35% for women globally, as the sharing formula for appointment into political offices. Despite this position, appointments into offices in Nigeria, and many other countries in Sub-Saharan Africa (SSA), is still largely lopsided against women. During the conference, the international community came together to a consensus and agreed to a comprehensive blueprint of commitments supporting the full development of women and their equality with men in 12 areas of concern. These areas include women and poverty, education and training of women, women and health and violence against women, among others. Again, there are common cases of gender discrimination in education and child marriages (especially in Northern Nigeria), early pregnancies, sexual violence/abusive marriages, and unrecognized domestic works in many parts of the country.

Borrowing from Doepke and Tertilt (2016) there are two different ways in which family economics and macroeconomics intersect. One side of the coin is to focus on questions that originate in family economics but use the methodology of the dynamic macroeconomics to answer the questions. For example, macroeconomics models can be adapted to answer questions

about how fertility rates, marriage rates, divorce rates and others, are determined and how they evolve over time. The details of families are quite important for how decisions are made. For example, the organization of families (e.g. monogamous versus polygamous marriage) changes the incentives for saving and acquiring education and determines the possibilities for risk sharing. It should be noted that in the recent times, large changes have occurred in the size and composition of households. Fertility rates have declined, divorce risk has increased, the fraction of single households has grown steadily, and women have entered the labour force in large numbers compared to the old tradition among womenfolk. Given these trends, the nature of family interactions has changed drastically over time and so have the implications of family economics for macroeconomics. This study therefore described the status of major human capital development indices and the major types of inequalities in Nigeria. It also examined the determinants of human capital formation and the effect of total annual expenses on healthcare delivery and education of the people on economic growth. Finally, the effect of family economic indices on human capital development was examined.

Hypotheses:

For this study, the following hypotheses, stated in the null forms, are stated:
i.Indices of Human Capital Formation in Nigeria do not equally contribute to economic growth (captured by the GDP) in Nigeria i.e. $\beta_1 \neq \beta_2 \neq 0$; $\theta_1 \neq \theta_2 \neq 0$; $\varpi_1 \neq \varpi_2 \neq 0$

Here, β_1, β_2, θ_1, θ_2, ϖ_1 and ϖ_2 are the co-efficients of the indices of Human Capital Formation in Nigeria
ii.Nigeria's annual expenditure on healthcare delivery and education do not equally affect the level of economic growth (captured by the GDP) i.e. $\psi_1 \neq \psi_2 \neq 0$.

Here, ψ_1 and ψ_2 are the co-efficients of the Nigeria's annual expenditures on healthcare delivery and education respectively. To test the validity of these hypotheses, t-test and chi-square test were carried out.

2.0 LITERATURE REVIEW

In this section, the reviews of the existing empirical documents on human capital formation, inequality and its dimensions and the concept of economic growth and development in Nigeria were done. These reviews further provide information that will further enlighten the readers on the basic concepts and state of art in research in terms of the type of datasets and methodologies that were used, findings and the ensuing recommendations. These pieces of information are quite cardinal in putting the current research works in proper perspectives and shaping the directions for further investigations on the topics of discourse.

2.1 Human Capital Formation

It has been established that several empirical studies are available on the relationship that exists between human capital formation and Nigeria's economic growth. For instance, Mathew *et al* (2008) examined the existing relationship between human capital formation and economic growth in Nigeria, using secondary data (1970-2004). The study adopted the Cobb-Douglas production function and the Ordinary Least Square method of estimation. The real gross domestic product was regressed against some economic variables such as labour force, total government expenditure on education and real gross capital formation. The results indicated that labour force, government expenditure on education and the real gross capital formation had a positive and significant effect on the real gross domestic product. Government expenditure, however, barely had a trivial effect which could be attributed to the misallocation of resources by both the

government and its officials. Thus, it was recognized that there was a positive and significant relationship between human capital formation and Nigeria's economic growth.
Similarly, Sanyaolu, *et al*, (2019) conducted a study on human capital development and economic growth in Nigeria. Annual time series data from 1981-2015 were used in their study. Findings showed that human capital development had a positive and significant impact on economic growth. Specifically, it was noted that human development indicators such as secondary and tertiary school enrolments, total government expenditures on health and education exhibited a positive and significant impact on the Nigeria's economic growth.

In the same vein, Dauda (2010), borrowing from Mankiw *et al* (1992), examined the role of human capital in the growth of Nigerian economy. Unit root tests, co-integration tests and error correction mechanism (ECM) were used for the analysis. Results indicated a long-run relationship among labour force, physical capital investment (captured by the real gross domestic capital formation), human capital formation (captured by enrolment in educational institutions) and economic growth in Nigeria. Findings indicated that there was an interaction between human capital formation and the Nigeria's growth profile over the years. Again, Johnson (2011), in his study investigating the synergy between human capital development and economic growth in Nigeria. The theoretical and Ordinary Least Square (OLS) model was used to analyze the existing relationship between the two parameters. The gross domestic product (GDP) was taken as a proxy for economic growth while the total government expenditure on education and health and the enrolment for the tertiary, secondary and primary schools were used as the proxy for human capital. Findings confirmed that there was a strong positive and significant relationship between human capital development and Nigeria's economic growth silhouette.

Likewise, Adawo (2011), in his study on the existing association between education (human capital) and economic growth in Nigeria, used an econometric model to examine the contributions of the primary, secondary, and tertiary educational levels to the Nigeria's growth level. These variables were captured by school enrolments at various levels. Other variables included the physical capital formation and total expenditure on health. In all, primary school input, physical capital formation and health were found to have contributed to the nation's economic growth. Furthermore, secondary school input and tertiary institutions were found to have repressed the level of economic growth in Nigeria. Similarly, Isola and Alani (2012), in their study on "*Human capital development and economic growth: Empirical evidence from Nigeria,"* evaluated the contributions of the different measures of human capital formation to economic growth in the country. Growth account model, which specifies the growth of the GDP as a function of labour force and capital, was used. The regression and descriptive statistical analyses of the trends in government's commitment to human capital development was evaluated. The results indicated that education and health components of human capital development were crucial to economic growth of Nigeria. Likewise, Anyanwu *et al*, (2015) investigated the relationship between human capital development and economic growth in Nigeria, using time series data for the period between 1981 – 2010.Endogenous modelling approach, within the auto-regressive distributed lag (ARDL) framework was deployed for the analysis. Findings indicated that the bounds testing analysis showed the existence of co-integration between economic growth and human capital development indicators. These indicators were also found to have had a positive impact on the economic growth of the nation. Again, Osoba and Tella (2017) examined the interactive effects of the human capital investment components on economic growth in Nigeria for the period between 1986 and 2014.Annual data on total expenditure on education, health, real GDP, and gross capital formation were used while Fully Modified Ordinary Least Squares (FMOLS) technique was employed for the analysis. The results showed that there was a positive and significant relationship between human capital components and economic growth in the country. Thus, it is evident that there is a strong correlation between human capital formation and economic growth indices in Nigeria. Thus, if the level of Nigeria's economic growth must be sustainably enhanced, there is the need to rigorously address the factors that work against the indices of human capital formation in this country.

2.2 Inequality and Its Dimensions in the Nigerian Educational System

The issue of inequality in Nigeria has a historic perspective. Studies (Alesina,2016; Easterly and Levine,1997) have properly documented negative relationships between ethnic inequality, income, and public good provision. While there is a growing literature on the effects of these inequalities, their patterns, origins, and the mechanisms through which they persist, remain under-studied in the economic literature in Nigeria.

Archibong (2018), for instance, noted that equitable access to public services like electricity, sanitation and water infrastructure was crucial for improving the well-being and expanding the productive capacities of individuals in societies. Using a survey data between 1999 and 2003 to test the hypotheses concerning the existence and origins of persistent inequality in accessing public services by ethnic group identity, Archibong (2018), noted that the Nigeria's ethnic distribution was delineated into six geo-political zones with three ethnic groups (Hausa, Yoruba and Igbo) dominating the zones i.e. Northwest, Southwest and Southeast respectively.

The Kanuri people dominate the Northeast, the Ijaw/Edo/Bini/Ibibio weakly dominating the South- South zone while the North central is dominated by the Tiv, Nupe and other smaller groups. The results of the study indicated that there was a limited access to certain federally administered services such as grid-based electricity. However, there was an increase in the level of access to locally administered services (like sanitation from improved pit latrines, potable water from piped water and tube wells/bore wells). Results also showed persistence in the patterns of distribution of wealth and education across ethnic groups in the country, with the Northeast and Northwest ethnic zones often fall behind. Nigeria, according to the International Monetary Fund, IMF (2019), is categorized as a poor and under-developed country. Its national per capita Gross Domestic Product (GDP) is estimated to be $1,994, placing it in the lower third of countries. It was also reported (IMF,2019) that it has a very low Inequality-adjusted Human Development Index (IHDI). However, Nigeria's Gini co-efficient, based on the World Bank income centiles, is among the last 6 % of all countries. High level of under-development in Nigeria is often reflected by the dominance of the informal employment, which is estimated to be about 93% of the country's total employment, in the national economy. Kuznar (2019) also reported that the Nigeria's inequalities lie along several different dimensions that interact in many complex ways. Such dimensions include ethnicity, jobs, income, politics, and religions, among others. These different dimensions often dictate the levels of socio-cultural and economic development of the Nigerian people. For instance, the Nigerian politics has been historically dominated by the Hausa-Fulani from the predominant Muslim north (Mustapha,2006). However, wealth has concentrated in the Christian-dominated south, especially among the Yoruba and Igbo people (Archibong,2018; Madu,2006; Mustapha,2006).

Ironically though, there is a noticeable disjunction between political power and wealth as inequality is greater within the Hausa-Fulani segments of the Nigerian society. The elite Hausa-Fulani dominate the Nigerian political system and receive the benefits, yet these benefits often fail to trickle down to their constituents in the northern region, hence the marked level of inequalities in the socio-economic measures of the quality of lives of the average northerners in Nigeria (Archibong, 2018). Again, Babatunde (2008) observed that an urban –rural divide further worsens the ethnic and religious divides in Nigeria. Just like in other parts of under-developed economies in Africa, the level of inequalities is greater in the rural areas than in the urban settings (Madu,2006;Oyekale *et al*,2006).The urban-rural divide is often complicated by the geographical and ethno-religious dimensions since the most rural and poorest regions of Nigeria are situated in the Islamic north (Archibong,2018;Madu,2006).In a study on the factors that are responsible for income inequality in rural and urban areas in Nigeria, Ayinde *et al*,(2012) reported that the age of the household head, number of dependants and the total income were the major factors that were responsible for the income inequality in the rural areas. However, it was noted that in urban areas, the household size, farm size, total household income and expenditure were the significant variables that affect inequality in income distribution. The result of the study indicated that these variables were significant at 5% level. Again, the pooled result, using double-log regression modelling, indicated that, for both the rural and urban areas, the age of the head of the household,

educational status, total income, and expenditure were the significant determinants of the level of inequality in income distribution in both the rural and urban households.

2.3 Concept of Economic Growth and Development in Nigeria

The concept of growth has been described by several scholars. For instance, Olayide, *et al* (1981) defined economic growth as an increase in *per capita* real income over time while economic development, on the other hand, was defined as the process whereby the real *per capita* income increases over time through changes in the quality and quantity of productive factors and the institution of the growth process. By this definition, development implies not merely the growth of *per capita* real income, but also its distribution, the sources of growth, the development of infrastructure and administrative framework considered essential to sustained and cumulative growth. Development is, therefore, a much broader concept than economic growth. Thus, a country may be ranked very high in the scale of economic growth and yet be found at the bottom of the scale when development criteria are used. Similarly, if a country is interested primarily in economic growth, it may not bother very much about the process by which it is achieved. Many countries, in their quest for higher *per capita* incomes, adopt a development strategy which emphasizes capital intensive and large-scale projects in the industrial and agricultural sectors. Consequently, though these countries achieve high growth rates of per capita incomes, they are plagued by problems of unemployment and inequitable income distribution. However, Edward (1988) and Mellor (2017) opined that most leaders in under-developed world fail to distinguish between growth and development. Even when these leaders appear committed to development, they very often embark on policies which foster the growth in *per capita* incomes at the expense of development e.g. they often fail to make adequate investment in the training of manpower or the building of rural infrastructure and finally, they are disappointed to realize that in spite of years of development planning, the rural sector is still stagnant and there is still an acute shortage of skill and capital goods in these rural areas. These scholars again, identified some growth models such as classical and neo-classical model, basic resource theory, internal combustion theory and dual economy model, among others, as critical templates in the narration of paradigm shifts in the economies of many developing countries.

3.0 METHODOLOGY

3.1 Study Area-Nigeria

This study was conducted in Nigeria. Nigeria is a vast and highly resource-based economy. It is blessed with minerals (solid and liquid) which are distributed across its geographical space in different quantities. It has an area of 9,323,768-kilometer square bounded in the west by the Republic of Benin, north by Niger and Chad Republics, east by the Republic of Cameroun and South by the Bight of Benin. It is noted to be the most populous country in sub-Saharan Africa and has the highest population growth rate. According to the NBS (2019) the human population stood at 55.7 million in 1991,140.0 million in 2006,182.2 million in 2015 and 195.9 million in 2018.Between year 2000 and 2018, the average annual growth rate stood at 2.7% (CBN,2010; CBN,2016). Nigeria is a multi-cultural society with about 250 ethnic groups and more than 500 languages. The nation's socio-economic indicators remain at low levels, with a human development index (HDI) of 0.527, ranking 152nd out of 177 countries.

3.2 Data Type and information sources:

Secondary data were used for this study. These data were sourced from the various publications of the Central Bank of Nigeria, the World Bank, World Health Organization, the Nigeria's Ministries of Education, Labour and Productivity and Health, the Food and Agriculture

Organization (FAO) and several publications of the African Economic Review, National Bureau of Statistics (NBS) and those of the African Financial Journals, among others. The scope of the study is 41 years i.e., 1980-2020 (all years inclusive).

3.3 Methods of Data Analysis:

Based on the specific objectives of this study, several analytical models will be used. Descriptive statistics such as the mean, median, mode, tabulations, frequencies, and other measures of central tendencies were used. Again, econometric approach, which is the three -stage least square (3 SLS) was used. This model, which was borrowed from Becker (2007) and Ubi-Abai and George-Anokwuru (2018), indicates that the health status of the people, as a human capital resource, relies on the investments in health by all stakeholders (individuals, drug companies and government). Similarly, Becker (2007) noted that people invest in education to increase their stock of human capacities. Hence, the level of economic growth of the nation (with the GDP as proxy) is linked to the quantum of expenditures on education and health of the citizens at a particular point in time. However, the basic assumption here is that there are no leakages such as diversion or misappropriation of funds or any other corrupt practices either by government officials or by the contractors handling the implementation of projects or even the banking system that manages and releases funds for project implementation from time to time. Thus,

$$GDP_t = \beta_0 + \beta_1 EDU_t + \beta_2 TEH_t + \mu_t \quad \text{..... (1)}$$

Where GDP_t is the Gross Domestic Product (which describes the level of economic growth), at period *t*,EDU_t is the total national expenditure on education at period t while TEH_t is the total expenditure on health care delivery in period *t* while μ_t is the stochastic error term at period *t*. Similarly, still borrowing from Becker (2007) and Ubi-Abai and George-Anokwuru (2018),

$$TEH_t = \Theta_0 + \Theta_1 GDP_t + \Theta_2 MR_t + \mu_t \quad \text{..... ..... .(2)}$$

Where, TEH_t is the total expenditure on health care delivery in period *t*, GDP_t is the Gross Domestic Product in period *t* while MR_t is the mortality rate among the population in the economy in period *t*, Θ_1 and Θ_2 are the co-efficients of parameters while μ_t is the error term (as earlier defined).In the same vein, Becker (2007) believed that the quality of education that is given to the citizenry (either in terms of logical or analytical reasoning) increases the marginal productivity of the workers. Thus, it was stated that,

$$EDU_t = \Theta_0 + \Theta_1 GDP_t + \Theta_2 TSE_t + \mu_t \quad \text{.....}. (3)$$

Where, EDU_t is the total expenditure on education in period *t*, TSE*t* is the total school enrolment (primary, secondary, and tertiary education) in period *t*, while GDP_t is the Gross domestic Product in period *t*. Here, the analysis is done separately for the primary, secondary, and tertiary educational levels to ascertain the effect of each institutional level on the Nigeria's educational system within the period of study. Thus, equation (3) above is now disaggregated as below;

$$EDU_t = \Theta_0 + \Theta_1 GDP_t + \Theta_2 TSET_t + \Theta_3 TSES_t + \Theta_4 TSEP_t + \mu_t \quad \text{.....} (4)$$

Here, Θ_1, Θ_2,..Θ_4 are the co-efficients of the parameters while μ_t is the error term (as earlier defined) and TSET,TSES and TSEP stand for the total school enrollment at the tertiary, secondary and primary school level respectively. For objective (d), a multiple linear regression model was used to assess the effect of the total annual expenditure on healthcare delivery, education, and fertility rate on the economic growth (using the Gross Domestic Product as proxy) of Nigeria.

$$\text{Thus, } GDP_t = \psi_0 + \psi_1 TEH_t + \psi_2 EDU_t + FR_t + e_t \text{.....} (5)$$

Where,
GDP*t*=Gross Domestic Product was used as proxy for economic growth at period *t*.
TEH_t =Total annual expenditure of the nation on healthcare delivery at period *t*
EDU_t =Total annual expenditure of the nation on education at period *t*
FR_t=Fertility Rate (%) period *t*
ψ_0= Constant
Ψ_1, $\psi 2$ = Co-efficients of the parameters
e_t = Error term which is stochastic/random in nature

According to Doepke and Tertilt (2016), the major variables in the family economics include the fertility rates, marriage rates, divorce rates, and family labour supply. These variables are known to have an important implication on the human capital investment through education and vocational training (formal and informal). Invariably, the interaction of all these factors has an over-bearing consequence on the macroeconomics of the nation. For the purpose of this study therefore, the effect of fertility rates, marriage rates, divorce rates, family labour supply on human capital development, as required by objective (e), is captured in equation (6) stated as follows;

$$HCDt = \gamma_0 + \gamma_1 FR_t + \gamma_2 MAR_t + \gamma_3 DIR_t s + \gamma_4 FLS_t + \mu_t \quad \text{..... (6)}$$

Where,
HCD_t=Human Capital Development at period *t (*with family investment in education, vocational training as proxy) i.e. EDU*t* ($)
FR_t=Fertility Rate (%) period *t*
MAR_t=Marriage Rate (%) at period *t*
DIR_t=Divorce Rate (%) at period *t*
FLS_t =Family Labour Supply at period *t*
γ_0 = Constant
$\gamma_1 \ldots . \gamma_4$ = Co-efficients of parameters
μ_t is the error term

4.0 RESULTS AND DISCUSSION

In this section, the results of the analysis of data and appropriate discussion are done herewith. To start with, the mean values were obtained for the major determinants of human capital formation in Nigeria. Such determinants include the gross domestic product (GDP), yearly total expenditures on education, total expenditures on health (in millions of dollars),total school enrollments in primary, secondary and tertiary levels, mortality rate, fertility rate, marriage rate, divorce rate and family labour supply level (in millions) (Table 1).For the whole period of 41 years (1980-2020),the average values for the GDP was $192.87 billion, total yearly expenditures on education was $1.03 billion, total expenditures on health was $0.89, while the average enrollment rates in the tertiary schools, secondary schools and primary schools stood at 7.17% 31.40%, and 93.36% respectively. Again, the average mortality rate for the period being investigated was 16.56%, fertility rate was 6.13%, marriage rate was 8.81%, and divorce rate was 4.99% while the family labour supply was 43.58 million.

Table 1: Status of major indices of human capital development in Nigeria (1980-2020)

Year	GDP ($'b)	EDU ($'b)	TEH ($'B)	MR (%)	TSES (%)	TSEP (%)	TSET (%)	FR (%)	MAR (%)	DIR (%)	FLS ('M)
1980	64.2	0.19	0.38	19.68	13.68	94.84	1.84	6.76	10.8	0.31	20.2
1981	164.48	0.13	0.42	19.39	17.11	103.07	2.33	6.76	10.8	0.31	21.5
1982	142.77	0.38	0.51	19.1	21.03	112.76	2.68	6.76	10.8	0.31	21.7
1983	97.09	0.47	0.48	18.81	25.18	113.08	2.87	6.76	10.8	0.31	22.4
1984	73.48	0.58	0.59	18.87	28.84	111.84	3.02	6.73	10.7	0.31	22.9
1985	73.75	0.46	0.61	18.75	29.33	106.28	3.41	6.7	10.7	0.31	23.7
1986	54.81	1.2	0.72	18.72	27.22	93.49	3.57	6.67	10.5	0.32	24.6
1987	52.68	0.75	0.77	18.69	27.11	89.74	3.51	6.63	10.5	0.32	26.9
1988	49.65	1.21	0.82	18.66	26.81	85.39	3.88	6.6	10.4	0.37	25.5
1989	44.4	1.08	0.85	18.62	24.22	83.05	4.15	6.56	10.3	0.35	26.8
1990	54.04	2.03	0.78	18.59	24.72	86.49	5.08	6.51	9.9	0.42	27.3
1991	49.12	3.04	0.91	18.55	23.52	85.65	6.07	6.46	9.7	0.56	27.3
1992	47.79	2.52	0.93	18.52	23.31	89.7	5.59	6.42	9.9	0.63	26.8
1993	27.75	1.58	0.95	18.49	23.12	93.82	6.46	6.37	9.6	0.75	29.7
1994	33.83	1.13	0.84	18.43	24.56	93.61	7.03	6.33	9.6	0.98	30.3
1995	44.06	1.01	0.99	18.37	24.36	89.3	8.44	6.29	9.5	1.44	32.1
1996	51.08	0.61	0.63	18.32	24.22	78.66	8.48	6.25	9.5	1.49	36.3
1997	54.46	0.58	0.81	18.26	23.04	80.45	9.06	6.21	9.5	1.94	42.1
1998	54.6	0.51	0.56	18.2	23.96	88.87	7.88	6.17	9.4	2.08	46.3
1999	54.37	0.39	0.98	18.02	23.55	94.11	6.12	6.15	9.3	2.23	47.5
2000	69.48	0.37	0.16	17.84	24.61	98.69	5.18	6.12	8.7	2.48	49.7
2001	74.03	0.21	0.38	17.66	27.03	96.38	5.29	6.1	8.5	2.96	51.8
2002	95.39	0.22	0.37	17.48	29.61	98.01	7.69	6.08	8.5	3.88	53.6
2003	104.91	0.11	0.39	17.3	31.77	99.47	9.71	6.05	8.4	4.59	55.9
2004	136.39	1.13	0.45	16.86	35.32	100.68	9.93	6.02	8.1	5.58	56.4
2005	176.13	0.22	0.55	16.43	34.96	101.37	10.49	5.6	7.8	6.64	56.8
2006	236.1	0.28	0.84	15.99	34.46	102.11	10.28	5.97	7.8	7.57	58.2
2007	275.63	0.29	0.99	15.56	31.87	93.31	10.17	5.94	7.8	8.05	60.3
2008	337.04	0.25	1.18	15.12	35.39	84.14	9.09	5.91	7.7	8.72	61.1
2009	291.88	0.34	1.05	14.08	39.23	85.39	9.24	5.88	7.6	9.45	62.2
2010	361.46	0.34	1.11	14.48	44.22	85.12	9.57	5.84	7.8	10.35	53.3
2011	404.99	0.45	1.55	14.18	45.56	90.67	10.17	5.81	7.8	10.35	64.4
2012	455.5	0.51	1.82	13.83	47.18	92.09	9.98	5.77	7.6	10.35	55.6
2013	508.69	0.66	1.82	13.51	56.21	94.12	9.45	5.74	7.2	10.76	53.3
2014	546.68	0.84	1.69	13.2	45.63	90.1	8.79	5.68	7.2	10.19	54.4
2015	486.8	1.2	1.35	12.89	46.78	87.99	8.89	5.61	7.2	10.76	55.8
2016	404.65	1.45	0.99	12.58	42.21	84.73	10.11	5.55	6.9	11.08	57.3
2017	375.75	2.71	1.01	12.27	43.14	90.13	10.14	5.48	6.9	12.78	59.2
2018	397.19	2.88	1.32	11.96	44.61	93.11	9.08	5.42	6.7	14.22	61.3
2019	448.12	3.42	1.38	11.77	47.22	97.56	9.19	5.35	6.6	13.83	62.1
2020	432.29	4.45	1.42	11.58	46.05	88.45	10.12	5.28	6.4	14.23	62.3

Source: Computed from the survey data from the NBS & CBN publications, several editions.

Specifically, there was a sharp decline in the nation's gross domestic product (GDP) from $164.0 billion in 1981 to $27.75 in 1993.The value however rose steadily again from $33.83 million in 1994 to $486.8 million in 2015 but thereafter declined marginally again to $432.29 million in 2020 (Table 1).Factors such as irregularities in energy supply, strike actions by labour

unions, which are often instigated by inadequate remunerations and other inclement working conditions of the workers, are some of the reasons for the fluctuations in the patterns of behaviour of the GDP in Nigeria over the years (NBS,2011,CBN,2010;CBN,2019).It needs to be emphasized that an increase in the nation's GDP may not necessarily be instigated by a mere growth in the nation's labour force but rather by its quantity and quality as well. This position had earlier been established in the classical and neo-classical theory of economic growth as explained by Schultz (1961) who opined that economic growth (captured by the quantum of the GDP) can only proceed if the physical and human capital rose together. This position was again amplified by Olayide *et al* (1981) who stated that the growth of any economy, whether rural or non-rural, is a function of capital investment and employment of labour. However, capital tends to flow into sectors characterized by high rates of return and high marginal productivity of capital. Labour also moves into a sector characterized by high wage rates. Therefore, to promote economic growth in the rural areas, there is the need to undertake measures that will raise the return to capital investment and earnings of labour. Again, the total expenditures on education experienced a rather fluctuating pattern starting from $0.19 billion in 1980 to $0.25 billion in 2008.However, there was a steady increase in the total annual expenditure in the sector right from $0.34 billion in 2009 to $4.45 billion in 2020 (Table 1). In the health sector, the total annual expenditure also experienced a predominantly fluctuating pattern right from 1980 ($0.38 billion) up to 2016 ($0.99 billion) but the sectoral expenditure increased steadily right from 2017 ($1.01 billion) up to 2020 ($1.42 billion). The marginal increase in the sectoral expenditure was necessitated by the rising cost of manufacturing of drugs and equipment and other facilities locally and high exchange rates to procure those imported from overseas. Still on health sector, the mortality rates largely experienced a steady decline throughout the period of study, standing at 19.68 % in 1980 and dropping to 14.48% in 2010 and 11.58% in year 2020.This decline further confirmed that a smaller number of people died per 1000 of the patients seeking medical attention in the formal sector. The decline could have been largely explained by the rather improved access to the health care facilities both within the rural and urban landscapes of the economy.

The fertility rate at a given age is the number of children born alive to women of that age during the year as a proportion of the average annual population of women of the same age. There was a marginal decline in the fertility rates which stood at 6.76% in 1980 but dropped to 5.88 % in 2010 and further down to 5.28% in year 2020 (Table1). This marginal decline may not be unconnected with the deteriorating access to primary health care facilities, especially by the Nigerian women seeking either the post-or anti-natal care in the hospitals. Marriage rate is the ratio of marriages to the population of a particular area or during a particular period, usually consummated several marriages per 1000 people per year. Even though there are limited records on the marriages between couples, especially in rural Nigeria, available facts indicated that the rates of marriage declined steadily from 10.8 % in 1980 to 7.8% in 2010 and 6.4% in 2020 (Table 1). It needs to be noted that, several marriages were also consummated, especially in the rural areas, without proper documentations and as such they are often not reckoned with.

Divorce rate is the ratio between the number of divorces pronounced in a year and the average total population for the year. In Nigeria, dearth of appropriate recording of events at the customary court and other agencies of government make it difficult to have concise and reliable records on marriages in Nigeria, and other developing economies in Sub-Saharan Africa. In this study, there was a steady increase in the rate of divorce which stood at 0.31 % in 1980 but rose to 10.35% in 2010 and 14.23% in 2020 (Table 1). The steady increase in divorce rate may not be unconnected with the worsening socio-economic situation in the country. This situation has led to astronomical increases in crises among families thus causing the collapse of family values and the eventual separation of the married couples. The family labour supply describes the total number of members of the households who are qualified and willing to provide their services to support the household economy. This labour participation by household members must be done in due respect to the Child Right Act (2003) which frowns at the abuse of children in all forms of economic activities. In Nigeria, the Child Right Act (2003) guarantees the rights of all children in the country and most of the 36 states of the federation had adopted the act for implementation. The aggregate of the family labour supply produces the total (national) labour supply for the economy. In this study, the total labour supply, which stood at 20.2 million in 1980 rose steadily

to 64.4 million in 2011 but dropped marginally to 62.3 million in 2020 (Table 1).The drop in the figure might be attributable to the decline in employment opportunities especially in the formal sector of the economy as many qualified youths no longer gain access to white collar jobs and therefore they cannot be captured in the nation's job records. This situation may improve as more qualified and willing job seekers are employed in the civil service and other formal sectors of the Nigerian economy. In the same vein, the behavioural patterns of these indices of human capital development, were shown collectively (Figure 1), over the same period of 41 years, are illustrated below.

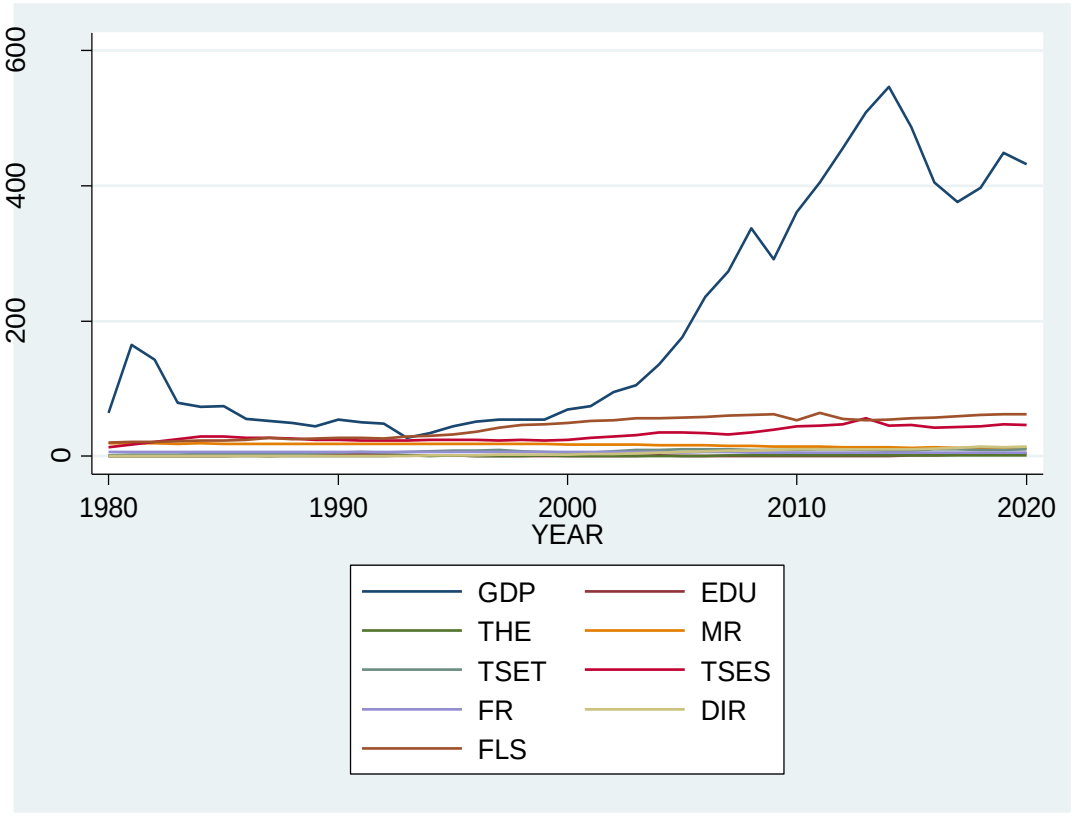

Figure 1: Behavioural Patterns of major indices of human capital development in Nigeria (1980-2020)

It is occasionally important to explicitly assess the patterns of variability (annual growth rate) in human capital development indicators in each of the sectors in the economy. Such an assessment provides the opportunity for comparison and analysis over a period. For instance, in the educational sector, the total enrollments among the primary, secondary, and tertiary schools indicated a steady rise throughout standing at 9.84%, 13.68% and 1.84% respectively in 1980. In 2010, these figures jumped to 85.12%, 44.22% and 9.57% respectively in year 2010. However, the enrollment figures further rose to 88.5%,46.05% and 10.12% respectively in 2020 (Table 2). This upsurge in enrollment figures may have been occasioned by the increased awareness on western education through various propaganda such as the radio jingles/advertisements, campaigns, and other sensitization media. In addition, the highest annual growth rates in the primary, secondary and tertiary schools +9.69%, +4.99% and +2.4% respectively while the annual decline rates of performance for the three tiers of educational institutions in Nigeria stood at -12.79%,-10.58% and -1.76% respectively (Table 2). Similarly, the highest growth rate in the yearly total expenses by the Federal government of Nigeria on education and health sectors stood at +1.26% and +0.44% respectively while the least annual decline rates were -0.94% and -0.84% respectively (Table 2).

Table 2: Annual Growth rate in human development indicators per sector in Nigeria (1980-2020)

YEAR	TSET(%)	Growth rate %	TSEP(%)	Growth rate %	TSES(%)	Growth rate%	TEE('B)	Growth Rate%	TEH('B)	Growth rate
1980	1.84	-	94.84	-	13.68	-	0.19	-	0.38	-
1981	2.33	+0.49	103.07	+8.23	17.11	+3.43	0.13	-0.06	0.42	+0.04
1982	2.68	+0.35	112.76	+9.69	21.03	+3.92	0.38	+0.25	0.51	+0.09
1983	2.87	+0.19	113.08	+0.32	25.18	+4.15	0.47	+0.11	0.48	-0.03
1984	3.02	+0.15	111.84	-1.24	28.84	+3.66	0.58	+0.11	0.59	+0.11
1985	3.41	+0.39	106.28	-5.56	29.33	+0.49	0.46	-0.12	0.61	+0.02
1986	3.57	+0.16	93.49	-12.79	27.22	-2.11	1.2	+0.74	0.72	+0.11
1987	3.51	-0.06	89.74	-3.75	27.11	-0.11	0.75	-0.45	0.77	+0.05
1988	3.88	+0.37	85.39	-4.35	26.81	-0.30	1.21	+0.46	0.82	+0.05
1989	4.15	+0.27	83.05	-2.34	24.22	-2.59	1.08	-0.13	0.85	+0.03
1990	5.08	+0.93	86.49	+3.44	24.72	+0.50	2.03	+0.95	0.78	-0.07
1991	6.07	+0.99	85.65	-0.84	23.52	-1.20	3.04	+1.01	0.91	+0.13
1992	5.59	-0.48	89.70	+4.05	23.31	-0.21	2.52	-0.84	0.93	+0.02
1993	6.46	+0.87	93.82	+4.12	23.12	-0.19	1.58	-0.94	0.95	+0.02
1994	7.03	+0.57	93.61	-0.21	24.56	+1.44	1.13	-0.45	0.84	-0.11
1995	8.44	+1.41	89.30	-4.31	24.36	-0.20	1.01	-0.12	0.99	+0.15
1996	8.48	+0.04	78.66	-10.64	24.22	-0.14	0.61	-0.40	0.63	-0.36
1997	9.06	+0.58	80.45	+1.79	23.04	-1.18	0.58	-0.03	0.81	+0.18
1998	7.88	-1.18	88.87	+8.42	23.96	+0.92	0.51	-0.07	0.56	-0.25
1999	6.12	-1.76	94.11	+5.24	23.55	-0.41	0.39	-0.12	0.98	+0.42
2000	5.18	-0.94	98.69	+4.58	24.61	+1.06	0.37	-0.02	0.16	-0.82
2001	5.29	+0.11	96.38	-2.31	27.03	+2.42	0.21	-0.18	0.38	+0.22
2002	7.69	+2.40	98.01	+1.63	29.61	+2.58	0.22	+0.01	0.37	-0.01
2003	9.71	+2.02	99.47	+1.46	31.77	+2.16	0.11	-0.11	0.39	+0.02
2004	9.93	+0.22	100.68	+1.21	35.32	+3.55	1.13	+1.02	0.45	+0.06
2005	10.49	+0.56	101.37	+0.69	34.96	-0.36	0.22	-0.91	0.55	+0.10
2006	10.28	-0.21	102.11	+0.74	34.46	-0.50	0.28	+0.06	0.84	+0.29
2007	10.17	-0.11	93.31	-8.80	31.87	-2.59	0.29	+0.01	0.99	+0.15
2008	9.09	-1.08	84.14	-9.17	35.39	+3.52	0.25	-0.04	1.18	+0.19
2009	9.24	+0.15	85.39	+1.25	39.23	+3.84	0.34	+0.09	1.05	-0.13
2010	9.57	+0.33	85.12	-0.27	44.22	+4.99	0.36	+0.02	1.11	+0.06
2011	10.17	+0.60	90.67	+5.55	45.56	+1.34	0.45	+0.09	1.55	+0.44
2012	9.98	-0.19	92.09	+1.42	47.18	+1.62	0.51	+0.06	1.82	+0.27
2013	9.45	-0.53	94.12	+2.03	56.21	+9.03	0.66	+0.15	1.84	+0.02
2014	8.79	-0.66	90.10	-4.02	45.63	-10.58	0.84	+0.18	1.69	-0.15
2015	8.89	+0.10	87.99	-2.11	46.78	+1.15	1.2	+0.36	1.35	-0.34
2016	10.11	+1.22	84.73	-3.26	42.21	-4.57	1.45	+0.25	0.99	-0.36
2017	10.14	+0.03	90.13	+5.40	43.14	+0.93	2.71	+1.26	1.01	+0.02
2018	9.08	-1.06	93.11	+2.98	44.61	+1.47	2.88	+0.17	1.32	+0.31
2019	9.19	+0.11	97.56	+4.45	47.22	+2.61	3.42	+0.54	1.38	+0.06
2020	10.12	+0.93	88.45	-9.11	46.05	-1.17	4.45	+1.03	1.42	+0.04

Source: Computed from survey data from the NBS & CBN publications, several editions.

4.1 Major types of inequalities in Nigeria

Inequality refers to the phenomenon of unequal and/or unjust distribution of resources and opportunities among members of a given society. Thus, inequality could be viewed in terms of wages, education, occupational sex inequality and gender among others. Specifically, gender inequality revolves round reproductive health vis-à-vis issues like maternal mortality ratio and adolescent birth ratio. Employment inequality is also common in Nigeria. This is often based on the proportion of male to female workers in public offices. Generally, women complain of huge marginalization in appointments and elections into public offices hence the recent agitations by the Nigerian women lobbying the Federal and States' houses of assembly requesting for more quotas for women in appointments/elections into public offices especially now that the nation is preparing for another set of elections. Again, there is gender discrimination in education, child marriage and pregnancies, sexual violence, and unrecognized domestic works.

According to the National Bureau of Statistics, NBS (2020), the mortality rate in Nigeria is put at 132 per 1000 live births before the fifth birthday. This is not a good record for the nation's health sector which has been in comatose due to lack of adequate attention from government over the years largely due to the dwindling state resources. Again, the proportion of HIV/AIDS patients that have access to anti-retroviral treatment in the year 2020 was put at 33.5% for male and 66.5% for female. More access to the treatment by the patients portends the chances of having a healthier labour force and a higher productivity which promises better economic growth. Similarly, the NBS (2020) noted that the national average of pregnant women who had four or more antenatal care visits in 2018 was put at 56.8% with about 74% of them residing in the urban areas while 46% reside in the rural areas. Again, the percentage of women that are currently married (or in unions), that are using or whose partner is using contraceptive method by place of residence in 2018 was put at 90.1% for the rural areas and 73.6% for the urban areas. Those women using any other modern contraceptive methods were estimated to be about 7.8% for the rural areas and 18.2% for the urban areas. The estimated proportion of elderly population who are 60 years and above are 53.80 % men and 46.20% women (in 2019) and 53.62% men and 46.38% women (in 2020). This situation now imposes more challenges to government and other stakeholders in the need to buoy up the social security/ pension schemes that will give more assurance to the ageing working population in Nigeria. With robust retirement/pension packages for the Nigerian workers, those that are still in service will be ready to put in their utmost best into the service of their fatherland and with this the productivity of labour and the nation's GDP will be enhanced.
On education, the enrolment figures in the nation's tertiary institutions (by gender) in 2019 stood at 56.54% for female and 43.46% for male. This thus implies that more female students enter tertiary institutions in recent times in Nigeria. This notion calls for a serious policy action to take care of the matters that may arise therefrom in a couple of years. Similarly, the total postgraduate enrolment (in 2019) was estimated to be 119,881 (or 60.82%) for male students and 77224 (or 39.18%) for female students. Again, the occupational sex inequality (for male and female) for the Nigerian medical doctors and dentists for the year 2018-2020 is indicated in Table 3. For the two types of occupations, male professionals are in the majority recording between 62.97% -65.40% membership for the medical doctors as against 55.60%-57.84% membership for the dentists.

Table 3: Percentage distribution of medical and dental doctors by sex and year

	Doctor		Dentist	
Year	Male (%)	Female (%)	Male (%)	Female (%)
2018	65.40	34.60	55.60	44.40
2019	64.44	35.56	57.84	42.16
2020	62.97	37.03	57.72	42.28

Source: Computed from the data obtained from the National Bureau of Statistics,2021

On power sharing and decision making, it was noted that, between 1999 and 2020, about 86.27% of the ministerial appointments were picked up by the males while 13.73% were given to their female counterparts. Again, 84.09% of the senatorial positions were worn by the male politicians while 15.91% were captured by the female counterparts during the same period. However, the position of the Secretary to the Government of the Federation (SGF) has never been occupied by any female since the return of democratic rule in 1999.These observations, among others, have continued to instigate a louder quest for gender equality by womenfolk in Nigeria, especially in the past one decade. It is hoped that there will be an appropriate parliamentary cum constitutional support for the women agitations to ensure and sustain the achievement of their clamour for gender equality in the nearest future in Nigeria. In the third objective, this study examined the determinants of human capital formation in the Nigerian economy (with the GDP as its proxy). Here, three (3) major components of human capital formation: the GDP, total national expenditure on education (EDU) and the total national expenditure on health care delivery (TEH) were captured in the analysis. The major determinants of each of these parameters are as stated in equations (1) to (4) under section 3.3 above. All the parameters are as previously defined.

From the 3-stage Least Square (3-SLS) simultaneous estimation technique, the results of the analysis of the determinants of human capital formation, using the Stata software, indicated that the total national expenditure on education had a negative impact on the GDP while the total national expenditure on healthcare delivery had a positive and significant impact on the GDP for the period being investigated (i.e.1980-2020).The Adjusted R^2- value and the F-statistics were 0.6077 and 31.98 respectively. The Adjusted R^2 value thus indicated that about 61 per cent of the of the nation's GDP was explained by the total national expenditure on health care delivery system while other unidentified variables not included in the functional form may have been responsible for the balance (Table 4).

Table 4: Relationship between GDP, total national expenditure on education, (EDU) and total national expenditure on health care delivery (TEH)-1980-2020

Variable(Xi)	Co-efficient(βi)	Standard error	T	P>/t/	Yi:GDP
EDU	-9.396962	17.48264	-0.54	0.594	
TEH	332.8616	43.60751	7.63	0.000	
Constant	-93025.47	39848	-2.33	0.025	
Sample size=41; Adjusted R^2=0.6077;F-stat.31.98; Sig. level=5%					

Source: Computed from survey data from the NBS & CBN publications, several editions.

The results of the analysis in Table 5 indicated that the nation's GDP had a positive and significant impact on the total national expenditure on healthcare delivery at 5% level while the mortality rates had negative effect on the total expenditures on healthcare delivery during the period of study. The Adjusted R^2 value was 0.6050 and the F-statistics is 1.13. This Adjusted R^2 value of about 61 percent implied that there was a robust relationship between the total national expenditure on health care delivery (TEH), GDP and the mortality rates among Nigerians.

Table 5: Relationship between total national expenditure on healthcare delivery (TEH), GDP and Mortality Rates (MR):1980-2020

Variable (Xi)	Co-efficient(βi)	Standard error	T	P>/t/	Yi:TEH
GDP	0.0018246	.0006804	2.68	0.011	
MR	-7.24145	45.78896	-0.16	0.875	
Constant	655.7169	884.6162	0.74	0.463	
Sample size=41; Adjusted R^2=0.6050; F-stat.31.63; Sig. level=5%					

Source: Computed from survey data from the NBS &CBN publications, several editions.

Again, the results of the existing relationship between the total national expenditure on education, GDP and the enrollments at the tertiary, secondary and primary school levels were shown in Table 6. Total expenditures on education had a negative effect on the total school enrollment figures at the primary and tertiary levels while the enrollment at secondary school level had a positive effect on the total expenditures on educational sector at 5% level of significance. The Adjusted R^2 value was 0.1826 and F-statistics was 3.23, thus indicating that about 18.26% of the variations in the total national expenditures on the sector was explained by the identified variables which were included in the function (Table 6).

Table 6: Relationship between total national expenditure on education, (EDU), GDP and total school enrollments (tertiary, secondary and primary levels):1980-2020.

Variable(Xi)	Co-efficient(βi)	Standard error	T	P>/t/	Yi: Log EDU
TSET	-0.051701	0.068616	-0.75	0.456	
TSES	0.1066005	0.030692	3.47	0.001	
TSEP	-0.007563	0.008887	-0.85	0.400	
LogGDP	-0.870958	0.290070	-3.00	0.005	
Constant	14.38738	2.875921	5.00	0.000	
Sample size=41; Adjusted R^2=0.1826;F-stat.3.23; Sig. level=5%					

Source: Computed from survey data from the NBS &CBN publications, several editions.

Similarly in Table 7, the existing relationships between the total annual expenditures on healthcare delivery (TEH) and educational sector (EDU) and fertility rates and their over-bearing effects on the GDP (which stands as proxy for economic growth) was shown. Results indicated that the total national expenditures on healthcare delivery (TEH), had positive and significant relationships with the nation's GDP at 5% level while the total national expenditures on education and the fertility rates negatively impacted the GDP. The Adjusted R^2-value was 0.7913 while the F-statistics was 51.55, thus indicating a rather robust association between the explanatory variables (i.e. the expenses on health care, education and fertility rates) and the GDP for the period being investigated (Table 7).

Table 7: Relationship between GDP, total national expenditure on education, (EDU) and total national expenditure on health care delivery (TEH) and Fertility Rates (FR) :1980-2020

Variable(Xi)	Co-efficient(βi)	Standard error	T	P>/t/	Yi: GDP
THE	212.1262	37.88398	5.60	0.000	
EDU	-23.58676	12.97933	-1.82	0.077	
FR	-207820.5	35421.06	-5.87	0.000	
Constant	1302352	239598.6	5.005.44	0.000	
Sample size=41; Adjusted R^2=0.7913; F-stat.51.55; Sig. level=5%					

Source: Computed from survey data from the NBS &CBN publications, several editions.

Finally, in Table 8, the existing synergy between the total national expenditures on educational sector, marriage rates, fertility rates, divorce rates and the family labour supply level were captured. The results indicated that both the fertility rates and the family labour supply level, though significant at 5%, had a negative effect on the total national expenditure on education for the period under investigation. The negative sign for the fertility rate and family labour supply runs contrary to the *a priori* expectations. This notion might be because of the limited access to healthcare care facilities by Nigerians and increasing rates of unemployment among young graduates, especially within the past two decades. The marriage rates (MAR) and the divorce rates (DIR) had a positive but insignificant effect on the total expenditure on the educational sector. The Adjusted R^2-value was 0.4760 while the F-statistics was 10.08, thus indicating that the

identified independent variables probably explained about 47.6% of the variations in the value of the total expenditures on educational sector (Table 8).

Table 8: Relationship between total national expenditure on education, acting as proxy for human capital development, Fertility Rates, Marriage Rates, Divorce Rates and Family Labour Supply:1980-2020

Variable (Xi)	Co-efficient(βi)	Standard error	T	P>/t/	Yi: EDU
FR	-4122.329	984.8549	-4.19	0.000	
MAR	3.103396	8.176152	0.38	0.706	
DIR	25.39202	69.15925	0.37	0.716	
FLS	-107.4902	19.65134	-5.47	0.000	
Constant	30818.49	6827.634	4.51	0.000	
Sample size=41; Adjusted R^2=0.4760; F-stat.10.08; Sig. level=5%					

Source: Computed from survey data from the NBS&CBN publications, several editions.

5.0 CONCLUSION

Human capital development indices often determine the socio-economic directions of nations. Thus, the quantum and quality of the major development measures such as the gross domestic product (GDP), per capita income, trade balance, literacy level, life expectancy and access to healthcare facilities are often taken with utmost seriousness by the managers of the resources of the State. Again, there are generic manifestations of inequalities in the nation's socio-economic system. Such manifestations include wage inequality, occupational sex inequality, educational, gender and employment inequality, among others. These inequality measures often deny men and women equal and balanced access to State's resources with the men having the upper hands most of the time. However, despite the human and capital resource endowment, Nigeria still faces a lot of challenges transforming her economy to a reliable and sustainable frontier where the quality of lives of Nigerians is robustly enviable. This study therefore investigated the determinants of human capital formation, inequality measurements and attainment of scalable economic growth in this country.

Secondary datasets, which were sourced from government agencies, ministries/parastatals, multi-lateral organizations, corporate bodies, and international organizations were analyzed using descriptive and econometric models. Some of the major findings of the study is that the total annual expenditure in the health sector experienced a predominantly fluctuating pattern right from 1980 ($0.38 billion) up to 2016 ($0.99 billion) but the sectoral expenditure increased fairly steadily right from 2017 ($1.01 billion) up to 2020 ($1.42 billion).The marginal increase in the sectoral expenditure was necessitated by the rising cost of manufacturing of drugs and equipment and other facilities locally, and high exchange rates to procure those imported from overseas.

It may therefore be recommended that government and other stakeholders in the manufacture of drugs and equipment and related facilities should intensify efforts in increasing local contents in these activities and thus depend less on imported drugs and health equipment and materials. Again, there was a marginal decline in the fertility rates which stood at 6.76% in 1980 but dropped to 5.88 % in 2010 and further down to 5.28% in year 2020. This marginal decline may not be unconnected with the deteriorating access to primary health care facilities, especially by the Nigerian women seeking either the post-or anti-natal care in the nation's hospitals.

Increased funding by government and other stakeholders in the health sector is necessary to further enhance the level of access to the primary health care facilities especially those within reproductive age groups in Nigeria. Findings also indicated that the rates of marriage declined steadily from 10.8 % in 1980 to 7.8% in 2010 and 6.4% in 2020. It needs to be noted that, quite several marriages are also consummated, especially in the rural areas, without proper

documentations and as such not properly captured in official documents in government agencies and ministries.

Due to the poor socio-economic situation in the country, many men can no longer meet marriage requirements such as dowries, decent accommodations, and means of mobility such as cars and yachts. Government, corporate bodies, and all other stakeholders in the labour market should create more job opportunities for the youths so that they have can better incomes and more qualitative lives and as such consummate marriages as desired.

Again, it was noted that there was a steady increase in the rate of divorce among Nigerians. The rate stood at 0.31 % in 1980 but rose to 10.35% in 2010 and 14.23% in 2020. The steady increase in divorce rate may not be unconnected with the worsening socio-economic situation in the country. This situation has led to astronomical increases in crises among families thus causing the collapse of family values and the eventual separation of the married couples.

Family issues need to be handled more seriously. The newly established family courts in 16 states of the federation, which ensures child-friendly justice for children either as victims or offenders of crimes/violence should be operational in all the 36 states of the federation. Many family matters should be handled by the Ministry of Women Affairs, which was created by the Federal Government of Nigeria and ensure that issues of dispute are resolved amicably before they get out of hands. Similarly, the total labour supply, which stood at 20.2 million in 1980 rose steadily to 64.4 million in 2011 but dropped marginally to 62.3 million in 2020. The drop in the figure might be attributable to the decline in employment opportunities especially in the formal sector of the economy as many qualified youths no longer gain access to white collar jobs and therefore cannot be captured in the nation's job records. This situation may improve as more qualified and willing job seekers are employed in the civil service and other formal sectors of the Nigerian economy.

It is therefore recommended that government, private individuals, corporate bodies, and co-operative societies, among others, should create more job openings especially for the teaming number of young graduates of the nation's tertiary institutions. The present N-Power programme and the National Directorate of Employment programme of the Federal Government of Nigeria should be fortified, better funded, and expanded for the benefits of the job seekers. With this, the family labour supply level will markedly increase. Findings also showed that the mortality rate in Nigeria was 132 per 1000 live births before the fifth birthday. This may be due to lack of adequate attention from government over the years because of the dwindling state resources and limited budgetary allocation to the health sector. This is not a good record for a nation that is struggling to attain enviable position through an enhanced human capacity development. Increased mortality rates constitute a long-term threat to the vibrancy and productivity of the nation's labour force and the growth of the economy. It therefore recommended that there should be an increased access to the basic health care facilities especially by nursing and expectant mothers and children.

Results also indicated that estimated proportion of elderly population who are 60 years and above were 53.80 % men and 46.20% women (in 2019) and 53.62% men and 46.38% women (in 2020). This situation ordinarily imposes more challenges to government and other stakeholders in the need to buoy up the social security/ pension schemes that will give more assurance to the ageing working population in Nigeria. It is therefore recommended that all the employers of labour (government, private and corporate bodies) should put in place, a workable and sustainable structure such as social security/pension packages for the working population so that when they ultimately retire from service, their future will be assured. Again, it was revealed that the enrolment figures in the nation's tertiary institutions (by gender) in 2019 stood at 56.54% for female and 43.46% for male. This thus implies that more female students enter tertiary institutions in recent times in Nigeria. This notion calls for a serious policy action to take care of the socio-economic implications of this finding in a couple of years. Towards this end, it is recommended that robust policy frameworks should be put in place such as sensitization programmes especially in the rural areas, to encourage more males to show interest in school enrolment. Sustainable vocational programmes should also be put in place for the training of the male and female graduates especially under the tutelage of the Ministry of Labour and

Productivity. This activity should be replicated in all the states of the federation for a well-coordinated result.

On power sharing and decision making, it was again noted that, between 1999 and 2020, about 86.27% of the ministerial appointments were picked up by the males while 13.73% were given to their female counterparts. Again, 84.09% of the senatorial positions were won by the male politicians while 15.91% were given to their female counterparts during the same period. However, the position of the Secretary to the Government of the Federation (SGF) has never been occupied by any female since the return of democratic rule in 1999. To further support the course of women's agitation on power sharing therefore, much louder voices should be in favour of their request for the grab of a higher proportion of the appointments. A revisit of the call for the implementation of Beijing Conference affirmative action on women's 35% share of appointments should be taken with all seriousness across nations.

Again, the 3-stage Least Square (3-SLS) simultaneous estimation technique, using the Stata software, indicated that the total national expenditure on education had a negative impact on the GDP while the total national expenditure on healthcare delivery had a positive and significant impact on the GDP for the period being investigated (i.e.1980-2020).The *a priori* expectation is that the total national expenditure on education should normally have a positive implication on the nation's GDP through an increased human capacity development and better productivity of labour. But this finding is indicating a contrary viewpoint. It is therefore necessary to check for the leakages on the funding patterns of the educational sector over the time. The services of external auditors may be required for an effective and thorough action. Findings also showed that the nation's GDP had a positive and significant impact on the total national expenditure and healthcare delivery at 5% level while the mortality rates had a negative effect on the total expenditures on healthcare delivery. These findings totally agreed with the *a priori* expectations. Increased budgetary allocations are therefore recommended in the health care sector to further jerk up the nation's GDP and further lower the mortality rates among the people. With this, the productivity of labour will rise, and the nation's revenue may improve thus leading to economic growth. Finally, it was indicated that the total expenditures on education had a negative effect on total school enrollment figures at the primary and tertiary levels. This position runs contrary to the *a priori* expectation as school enrolments were expected to soar as more funds are expended on the sector by government and private owners. Enrollments at secondary school level however recorded a positive effect on the total expenditures on educational sector at 5% level of significance. It is therefore recommended that there should be a proper evaluation of the funds spent on both the primary and secondary school systems to find out if there were any leakages over time and the need to block them where they exist. Appropriate sanctions should be placed on any culpable offenders. Again, there should be rigorous awareness campaigns/sensitization programmes for increased enrollments in the primary schools while there should be a review of admission criteria to further ease the process of admission into tertiary schools in Nigeria.

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