# ENGINEERS IN POLITICS: THE PANACEA TO REVAMPING THE ECONOMY

**Ayegbusi Olufunke A[1]., Adegbesan Ololade O.[1], Oguntade Omotolani I.[2]**
[1] Department of Civil Engineering, Federal Polytechnic, Ilaro
[2] Department of Civil Engineering Ogun State Institute of Technology Igbesa

**Abstract**

*The 2023 general elections have opened doors of political promises by politicians with major emphasis on massive infrastructural development notwithstanding the dwindling economy of the nation but at a time like this in our nation, infrastructural and developmental challenges could only be addressed frontally if Nigerian engineers offer themselves for elective offices because industrialization is about Engineers and Engineering. The enactment of the COREN Amendment Act 2019 represents a landmark in the quest to ensure that engineering regulation acquires the required teeth in the enforcement of policies favorable to the development of infrastructures in Nigeria since the economy of any country depends on the infrastructure development. Though engineers mostly keep away from politics because engineering principles don't work with Politics, however, putting the over-riding interests of the end-users in focus is paramount for socio-economic transformation of the country because most decision making for national development is made at the highest level of Government. The continued perspective of engineers on politics as being partisan and their abstinence would make sustainable development to remain a mirage, therefore Engineering bodies in the country must rise to these challenges by not seeing politics as a messy business because the nexus between infrastructure and active participation in politics is the key to achieving global sustainability.*

**Keywords: Development, Engineers, Government, Infrastructures, Politics**

## Introduction

Engineering is a very diverse discipline with widely different economic, environmental and social impacts and in practice, it is the nature of these impacts which determines the relevance of politics to the particular discipline (Simon O. 2015). The enactment of the COREN Amendment Act 2019 represents a landmark in our quest to ensure that engineering regulation acquires the required teeth in the enforcement of policies favorable to the development of engineering in Nigeria (Eniola 2019). According to William (2021), Engineering is a profession whose origin can be traced to a time and place, 19th century France, in which engineers were closely associated with government and politics. That history lives on today in the special role that professional engineers claim for themselves in service to the public. Engineers are at the core of national development, as no nation can develop in the absence of flourishing practice of engineering and technology.

## The Engineers and the Political System

Though engineers mostly keep away from politics because engineering principles don't work with Politics, however, putting the over-riding interests of the end-users in focus is paramount for socio-economic transformation of the country. For instance, according to Aaron (2017) engineers enjoy a prestige in China that connects them to political power. Steel mills and highways have provided China's ticket to prosperity over the last three decades, and the professionals who design and build them have controlled the levers of political power as well. Xi Jinping is an engineer, as were Hu Jintao and Jiang Zemin before him. It's obvious now that Nigeria engineers cannot afford to sit on the fence, they too ought to follow the china's engineers model by getting involved in politics.

Most infrastructural and developmental challenges could be addressed frontally only if Nigerian engineers offer themselves for elective offices because industrialization is about Engineers and Engineering. As Engineers, we need political power to execute beautiful ideas knowing well that Engineers are goal getters and result-oriented, and that if the future of Nigeria is industrialization then it is important engineers take the front seats in leadership positions across the country

**2023: Nigeria's future at stake**

As Nigeria moves towards the 2023 general election, there have been massive electoral promises by politicians to deliver the gains of democracy to the populace especially by focusing more on sustainable national development. Political parties are all out there to woo the people to support their candidates so that their parties can be in the driving seat in taking the country out of the economic meltdown its currently passing through. Adegbesan, O. O., Ayegbusi, O. A., & Omisande, L. A. (2020), acknowledged the inactive participation of engineers at the political table where decisions that will affect them and the country are being made as one of the banes of infrastructural development in the country and therefore urged engineers to be involved in politics by participating in the Next Level Agenda of President Muhammadu Buhari as their participation is critical to the success of the Next Level Agenda of this present government. Unfortunately, their participation has not been encouraging at all.

It seems engineers are forgetting that they have roles to play in the development of an economy that benefits and sustains all Nigeria. Integrating the Nigerian engineer into the development process is, therefore, a starting point to the development of our nation. In the time past, politicians have always made promises to the populace to ensure economic development but most have faltered because the right people were not involved in policies formulation. Though, these politicians will not be fully blamed because professionals that ought to be involved in policy formulation and implementation is seeing politics as a dirty game

**Why engineers are needed in Nigeria's politics'**

Engineers that ought to be in fully involved in infrastructural development are eschewing politics and knowing fully well that for the country to industrialize, attain rapid economic growth and sustainable development, engineers must be integrated into national development through policy formulation, programme development and project implementation. The continued perspective of engineers on politics as being partisan and their abstinence would make sustainable development to remain a mirage. It is worth noting that if the nation is expected to survive economically beyond 2023, Nigeria's socio-economic transformation and prosperity depends largely on industrialization and these can be achieved if Engineers are at the driving seat.

Engineering and technology are crucial to the creation of social amenities like healthcare, quality education and support infrastructures such as transport, power, water supply, and agriculture. Engineering activities revolve around technical, social and economic systems, providing a crucial impact on all identified development indexes. By training, engineers are to proffer solutions to problems confronting humanity and this has expanded to developing infrastructures on a larger scale to solve multiple problems in the society. And by this, they are not only tested but trusted. Therefore, for engineers to take our rightful positions, there must be a change of attitude on our part.As the race for 2023 election is gathering momentum, most politicians are busy campaigning and talking about manifestoes, whereas engineers in politics will rather be focusing on the roadmap to social transformation. The country is presently experiencing dearth of infrastructure and there is need to partner the governments and proffer professional advice to them at all levels. And this can only be done if the government is engaged at the higher levels mostly made possible through participation in politics.

**Engineers and Infrastructural Development**

Infrastructure refers to the large scale public systems, services and facilities of a particular place that are necessary for smooth socio-economic and political activities. These may include such things as power supplies, potable water supplies, access to qualitative healthcare facilities, good roads and public transportation, telecommunications, befitting educational institutions, good recreation facilities, hygienic environment and so on. In other words, Infrastructure covers virtually every sector of the economy: power plants, highways, seaports, airports, canals, dams, water supply, telecoms, railways, land reclamation, inter-sate transport systems, industrial estates or township development, housing, tourism development, waste management, ICT and database infrastructure. Precisely, infrastructure refers to a network of transport, communication, and public (social) services – all functioning as a system or as a set of interrelated and mutually beneficial services provided for the improvement of the general well-being of the population (Ogbuozobe, 1997). Aigbokhan (1999) gives examples of physical infrastructure as public utilities such as power, telecommunications piped water supply, sanitation and sewage, solid waste collection and disposal and piped gas as well as public works which include roads, major dam and canal work for irrigation and drainage, and other transport projects like urban and interurban railways, urban transport, seaports and waterways, and airports

The economy of any country depends on the infrastructure development. For example, hydrological engineers can play an important role in the dams' design and construction etc. Also the energy crisis could be tackled by the alternative energy resources. Although the role of engineers is usually defined in the context of infrastructure designing, yet they can also play an important role is in the management. Some engineers end up as leaders of technology-based companies or in other parts of the manufacturing, construction or service based industries or government that requires a different set of skills. Some engineers prove themselves to be excellent managers and never want to be leaders. Some have a desire to be a leader early in their career. So roles of the engineers are important which cannot be ignored

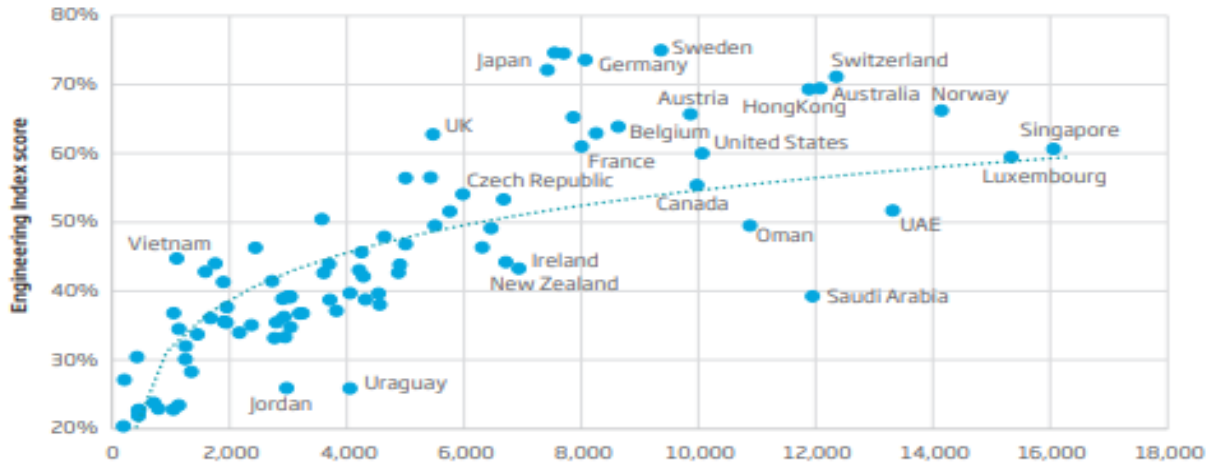
Engineers play a critical role in planning, developing, building and maintaining our public infrastructure stock. Whether it is water treatment facilities, bridges and roads, public transit, utilities and the electricity grid, engineers play a part in all aspects of public infrastructure.The Engineer deals with the creation, improvement, and protection of the communal environment, providing facilities for living, industry and transportation, including large buildings, roads, bridges, canals, railroad lines, airports, water-supply systems, dams, irrigation, harbors, docks, aqueducts, tunnels, and other engineered constructions within a given community

**Engineering and Economics**

It is an undisputable truth that engineers do an important job that fuels any country's infrastructure. It is the engineers who are behind our country's physical infrastructure, from roads to bridges to dams and waste management -as well as digital infrastructure, like the communications and navigation networks that are part of daily life. In fact, engineers are found in almost every field, including manufacturing, healthcare, research and more. If engineers now play more prominent role especially through participation in politics, it will be no surprise that their participation will have direct effect on the country's economy.

A study conducted by the Royal Academy of Engineering (RAEng) in the UK found that the amount a country invests in engineering directly affects the country's GDP. The research, gathered by the Centre for Economics and Business Research (Cebr) found that there is a direct link between a country's investment in engineering and it's GDP per capita. In order to come to this conclusion, the study measured the strength of the engineering sectors of 99 different countries. After ranking and analyzing their data, the researchers discovered that a 1% increase in the Engineering Index correlated with a 0.85% increase in GDP per capita. It follows that the more a country invests in its engineering sectors, the higher the country's GDP is likely to be GDP per capita measures the total output of each country divided by the total number of people in the country – enabling a comparison of the relative economic performance of one country versus another. It is an appropriate measure for economic development to apply here, as it is a widely accepted measure for living standards across countries. The figure shows the impact of Engineering on the GDP growth of countries. Most of these growths are dependent on the acknowledgement of engineers in infrastructural development of a country and also their participation in decision making process that will lead to the execution of policies geared towards infrastructural development.

Figure 1: Correlation between GFCF per capita and the Engineering Index




Source: The World Bank, Cebr analysis

Figure 1 above illustrates the strong correlation between the GDP per capita and the Engineering Index. Japan, Switzerland and Sweden record some of the highest Engineering Index scores and are among some of the richest countries in the world. One particular outlier observed is Luxembourg; while the country has the highest GDP per capita of over $80,000, it ranks 18th in the Engineering Index rankings. In contrast, while Slovenia has a relatively low GDP per capita of around $18,600, its Engineering Index score is relatively high at around 58% and ranks 20th across the 99 countries considered. The trend line shown in the figure above is non-linear (logarithmic), which suggests that any relationship between the Engineering Index and GDP per capita is unlikely to be constant as GDP per capita increases

In an article by The World Economic Forum entitled "Why Engineers are Increasingly Important" the significance and possibilities of engineering are shared. Engineers have the adaptive ability to tackle large-scale issues, including improving struggling economies. The diversity of engineering skill sets in today's field, expands the capabilities of engineering solutions. These sources reveal that engineers play a vital role, not just in affecting our everyday lives, but also in the health of our economy.

**Engineers and Politics**

Engineers create what the nation dreams. The reasons engineers are essential in the modern day and age is because engineers are the ones responsible for pushing the limitations of possibility; the ones constantly making advancements in any form of development and technology imaginable; the ones that think of an idea, take that idea and make it a reality. This then becomes the role of the engineer in the national development agenda. To create the possibility to fulfill the promise of the national government.

Considering the participation of engineers or someone with engineering background as ministers since the first republic to the fourth republic will help to understand if truly engineers are ready to be instrumental to taking this country out of its economic and infrastructural quagmire. The table 1 gives a summary of those that have been in key positions that could have catapulted this country to the level of prosperity

**Table 1: Education Background of Holders of Key Ministries for National Development in Nigeria**

| **REPUBLIC** | **SOME KEY MINISTRIES FOR INFRASTRUCTURAL GROWTH & DEVELOPMENT** | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | **AVIATION** | **ENERGY** | **COMMUNICATIONS** | **ENVIRONMENT** | **WORKS& HOUSING** | **POWER** | **SCIENCE & TECHNOLOGY** | **PRESIDENT** |
| FIRST | Teacher/Law | - | Law | - | Teacher<br>Teacher<br>Teacher | - | - | Abubakar<br>Tafawa<br>Balewa |
| SECOND | - | - | Humanity | - | - | - | **Engineering /AI** | Shehu<br>Shagari |
| THIRD | Law | - | - | - | - | - | **Engineering /AI** | Ernest<br>Sonekan |
| FOURTH | Geology<br>linguistic | | Public Administration | Arabic Studies | Police | Law<br>Geology | Economist | Olusegun<br>Obasanjo<br>1999-2003 |
| | Business Administration<br>**Engineering**<br>Law | Geology | Linguistic<br>**Engineering**<br>Zoology | Sociologist | Law<br>**Engineering**<br>Linguistic | Int. Rel<br>&<br>Econs/Law | | Olusegun<br>Obasanjo<br>2003-2007 |
| | **Engineering** | | | Architecture<br>Banking | Law | Energy<br>Economy | Zoologist<br>Sci &<br>Tech Edu | Umaru Yar' Adua |
| | Pharmacy | | **Engineering** | Banking | | | | Goodluck<br>Jonathan |
| | Aeronautics | | Law | Education/<br>Geography | Law | | **Engineering** | Muhammadu<br>Buhari |
| | Aeronautics | | | Common/Sharia<br>Law | Law | **Engineering**<br>Bus Admin | **Engineering**<br>Medicine | Muhammadu<br>Buhari |

It is obvious that during the first and second republic, none of the minister has an engineering background with many of them being trained teachers and politicians given the portfolios that required someone with basic knowledge of what is expected. These was corrected by the head of the interim national government, Ernest Shonekan by ensuring that the Minister for science and technology was headed by someone with engineering background knowing fully well that Technology plays a fundamental role in wealth creation, improvement of the quality of life and real economic growth and transformation in any society. Bartholomew Nnaji, the minister for science and Technology was a Nigerian engineer, innovator and one of the inventors of the E-Design concept. He also obtained a Post Doctorate Certificate in Artificial Intelligence and Robotics.

Decision making for National Development is made at the highest level of Government. Involvement of Engineers in politics affords them the opportunity to be at these policy/decision making bodies (Acheng' A. 2019). Engineers at these levels, use their professional knowledge to attract and defend important engineering infrastructural development projects. These played out when President Olusegun Obasanjo included in his cabinet ministers having engineering background during his second term. Abraham Babalola Borishade was known as an electrical engineer, teacher and political strategist and made to head Aviation, Obafemi Anibaba obtained a bachelor's degree in Mechanical Engineering and was a Minister of works and later communications. These number ought to be increasing but that has not been the case. The table 1 showed the number of minister that is/are having engineering background in both Presidents Goodluck Jonathan and Muhammadu Buhari governments. It is not likely that President Muhammadu Buhari may want to do cabinet reshuffling before the end of this present government and if he does, is there any likelihood that engineers will be favoured to sit on the table where policies will be made. Engineers need not shy away from politics or gathering where decisions that may affect the infrastructural development of the country are been made because engineers in politics contribute to the enhancement of the welfare of other engineers thereby motivating them to higher productivity for national development.

Though the impact of engineers in the infrastructural growth of Nigera may be disputed due to significant successes recorded in the South-West when Chief Obafemi Awolowo was the premier of the region, it is worth noting that politics is dynamics and the decay of the then infrastructures can be attributed to politics without engineers. The infrastructural and economic success of China cannot be without engineering inputs in policy making. According to Akingbagbohun F (2018), China has 15 high policy makers, 9 are Engineers and this has subsequently played a role in where China is today in terms of world power and National Economy Development. She further reiterated what Philip Greenish the chief executive officer of the Royal Academy of Engineering (RAEng) said about the major issues facing the world, such as climate change, water availability and energy security and that engineers are needed to fix them. Unfortunately, how can engineer really be impactful when not involved in the decision making?

President Muhammadu Buhari having seen the significant progress in railway transportation to link various parts of our federation had during the investiture ceremony of the 33rd national president and chairman-in-council of the Nigerian Society of Engineers (NSE), Engineer Tasiu Sa'ad Gidari-Wudil, at the International Conference Centre, Abuja has pleaded with Nigerian engineers**through**the minister of science and technology, Ogbonnaya Onu, an engineer, to partner with the federal government for the rapid infrastructural development of the country. The only way that engineers in Nigeria can partner the government is through participation in politics. Does it make a good sense to have a lawyer to be the decision maker as to what kind of heart surgery a patient has? Or how to address the challenge of producing clean energy? Or to deal with environmental change? No, It is square peg in a round hole to have people without a technical background serve as the sole decision makers on substantially technical issues. It is an aberration for someone without engineering background to decide how the infrastructural master plan of a nation must be achieved.

The Governor of Borno State, Babagana Umara Zulum, FNSE, a professor of soil and water engineering, in his keynote address on "Infrastructural Development in a Stressed Economy – the case of Borno State', during the investiture ceremony of the 33rd national president and chairman-in-council of the Nigerian Society of Engineers (NSE), referenced several cases in his state and lamented that the poor quality of materials often used by engineers in construction was detrimental to the infrastructural development of the country and to remedy the anomalies, he too urged **Nigerian engineers** to see the "need to strengthen their involvement and professional involvement in the infrastructural development of Nigeria and this was concurred to by Former President Goodluck Jonathan. He thereby acharged Nigerian engineers to work with governors in implementing the infrastructural development of the country.

The world is moving at a rapid pace; constantly evolving technologically and engineers cannot afford to take the back seat especially in Nigeria. The value of engineers taking an active and vocal role in government and policy-making is measurable because engineers think logically and systematically- which could enrich the policy-making process
In conclusion, the role of engineers can be defined by the sentence of the Hillier, 2010 that "Engineers are political actors"; engineers have practical field experience regarding different fields including management, so they should be made a part of the public policy making as they know better the facts and figures of the fields (Sohail A.N and Ali H.S 2010). Engineers should also be involved in the higher management or in the bureaucracy. As technocrats they can use their power of authority for taking decisions based on ground realities. A professional engineer is one who performs his work by knowing the norms and ethics of the society where he is working for the ease and appreciation of the public. In the admonition given by Adegbesan, O. O., Ayegbusi, O. A., & Omisande, L. A. (2020), The Nigerian Society of Engineers and Council for the regulation of Engineering in Nigeria (COREN) must rise to these challenges by not seeing politics as a messy business because the nexus between infrastructure and active participation in politics is the key to achieving global sustainability.

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