Expanding the Logical and Existential Foundations of N.H. Iwu's Football Theory of Scientific Development as a Recipe for African Scientific and Technological Development

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ABSTRACT

The development of Africa has been a subject of debate within scholarly research, with increasing attention given to indigenous approaches that leverage local knowledge and skills. One notable approach is the "Football theory of scientific development; a recipe for Africa." This paper seeks to delve into the logical and existential foundations of this theory and assess its practicality. The theory posits two perspectives on African development: the cultivation and advancement of diverse skills within individuals, groups, and traditions, and their strategic utilization for national and global progress. The objective is to scrutinize N. H. Iwu's football theory of scientific development within the context of contemporary standards and economic considerations. Game theory serves as a philosophical tool to comprehend the essence of Iwu's theory, employing a methodology that combines logical and phenomenological analysis. The study is built on a theoretical framework of game theory, emphasizing the significance of individual skills and collaborative teamwork in fostering scientific development. It extensively explores the historical underpinnings of the present-day concept of development in Africa, while also addressing the challenges and shortcomings encountered. The paper concludes by critically evaluating the knowledge derived from the existential values associated with football, thereby concluding the comprehensive analysis.

Keywords: Observation, Empiricism, Existential, Development, Logic, Football game, Skills, Talent

INTRODUCTION

The core physical actions in football, such as passing, blocking, running, tackling, and kicking, exemplify essential principles in physics, biomechanics, and mathematics. Fundamental concepts like inertia, momentum, vectors, and parabolas play significant role in the game, just like helmets and huddles are integral components. The expectation is to show how we can connect the passing, blocking, running, tackling, and kicking**,** features of football to physics, biomechanics, and mathematics. Passing, blocking, running, tackling, and kicking can be found in physics, mechanics and other sciences, as it highlights several processes that are deployed to arrive at its objects. passing, blocking, running, tackling, and kicking are needed to score but unfortunately, the skill to actualize are found in different individuals so also skills that are needed to actualize a single physics, biomechanics, and mathematics. Football theory of scientific development raises these fundamental processes observed in football games similar to physical science and advocates the same for social theory that largely glosses over a systematic and explanatory paradigm based

on observation that is suitable for African toddling scientific and technological development. Scholarships not built on these fundamentals observed from football result in inertia, depriving the theoretical prescription of the momentum, vectors, and parabolas of their significant roles in the game of global science and technology. Football theory of scientific development therefore provides Africa the helmet to navigate the hurdles as it seeks to be an integral component of the global player in science and technology.

Being a football lover and political scientist, Iwu (2020: 10-27) observes that football has something to offer in human development if understudied. N. H. Iwu proposes a new recipe for development in Africa, using football theory which emerged from his observational skills as a social scientist (Iwu, 2020: 16, 21, 22). He writes that this theory emerged out of his observational and speculative skills (as a political scientist) as well as a lover of the game of football; in Iwu's words:

It is time to apply these observed skills and technicalities in football in propelling human development. Football theory of scientific development as I want to show in this piece may not apply to other climes but certainly can apply to Africa. This is because Africa is still toddling with scientific and technological development (Iwu, 2020).

A theory does not emerge in a vacuum; it is always for someone and some purpose. No doubt, there is an extent to which social, cultural, and historical aspects of life are embodied in the way football is played and the skills young footballers develop during learning. Scholars have contended that certain aspects of the world (i.e., environmental properties) are "weighted" with social and cultural significance, "standing out" to be more readily perceived and simultaneously acted upon when playing football (Vaughan Mallet *et al,* 2021). There is no such thing as a theory in itself divorced from a standpoint in time and space (Waheed, 2017). Iwu's theory emerges having observed football games over the years. Though, a game, football is conceived to provide an opportunity for unequal countries and continents to interact on one football pitch. Unlike other sports that largely display some cultural bounds, nations use football to interact with one another, neglecting the fact that; among the many teams playing only first to third-position winners will emerge. This is a wonderful device by a human being that can be extrapolated to deal with the manifest gap in scientific technological development (Iwu, 2020:10) in Nigeria in particular and Africa in general. The football theory of scientific development emerged to rescue Africa from the various challenges and failures that subsumed its development from reaching the height of other world economies in terms of development.

The categories of challenges Africa has encountered on her road to development are simply classified here as internal and external factors in the following section. It also discusses the flaws of those previous policies and development programs as paradoxes in African ideology, reliance on external communities, and problems for her well-being. We, then proceeded to discuss the nature of games in human development. This is because the football theory of scientific development being a recipe, in N. H. Iwu's postulation, needs to be re-evaluated, to find out in what sense football as a form of game could fit into developmental studies and procedures for Africa. Following from here are two sub-headings discussing the role of games in human development and the nature of game theory. Thus, a game-theoretic perspective indeed seems pervasively useful in understanding phenomena across the full range of social sciences. Game theory is a universal language for the unification of the behavioural sciences (Gintis, 2009). What it is economically rational for a player to do is highly sensitive to the learning states of other players. In general, when players find themselves in games where they do not have strictly dominant strategies, they only have uncomplicated incentives to play. This leads to section five where the football theory of scientific development is discussed. This is then followed by section six where the existential virtues in football theory for scientific development were as well discussed. These virtues include team reasoning, commitment, organization, and preparedness which could be applied in the quest for successful development in Africa. It is here that the conclusion follows. So, we begin now with methodology and then the paradoxes of development in Africa.

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METHODOLOGY

This works combines logical with phenomenological analysis as its methodology to enhance the composition of this research design. Logical and phenomenological analysis provided appropriate techniques to scrutinize the primary and secondary sources of data needed for this study. Phenomenology allows us to collect empirical data from the lived-experiences gained from observing the football game. Phenomenological analysis elucidates this research design by providing the tools to harness the primary data that is, our lived experiences in football games through eye witness account, recorded live matches, documentaries on football game, observational, and empirical knowledge derived from football game. Phenomenology concerns itself with human predicament. It is the science of entries which help humans look into their sufferings and experiences and questions the meanings of life (Alawa, 2021) destiny and after life. It helps us to narrate accurately human experiences and do critical investigations in all things. Phenomenology in this research will enable us analyze critically our football experiences by looking inwardly at how it will help us resolve African economic and scientific frustrations, as well as reconcile our ideas, innovation and strategies to make our world better developed. Phenomenological analysis will also enhance our experiences in drawing out the existential values and virtues embedded in football game. Beyond football game, we adopt phenomenology as a toolkit to derive the relations of collaborations within institutions of knowledge production and product producing firms in Africa as games based on skills and talents thus appropriating academic knowledge and / or institutions for market value. Logical analysis provided the toolkit to analyze symbolically, deductively, inductively and diagrammatically how football theory can provide an existential foundation to support scientific and over all development when appropriated in human social and economic situations. Logical analysis is also used to critically explain other secondary data.

This work is further lazed on theoretical framework of game theory which enables us to analyze and model behaviours in situations where football game will be critically appropriated to game theories relative to human development. Game theory here will furnish the essential concepts for understanding the stabilization of football game languages, bodily movements, team interactions and football skills moving the frontier of experimental / behavioural applications of classical game theory. It focuses on studying strategic and interactive decision-making among rational participants, whether they are individuals, organizations, nations, corporations, or teams. By recognizing the interdependence of players' decisions, game theory helps in formulating strategies by considering the potential choices or strategies of others. Furthermore, game theory provides analytical tools for examining scenarios involving interdependent decision-making. It enables players to assess the possible decisions and strategies of others, ultimately aiding in the formulation of optimal strategies. A game's solution refers to the description of the best decisions for the players involved, taking into account their potentially similar, opposing, or mixed interests, and the possible outcomes resulting from those decisions. In practical terms, game theory finds numerous applications in the business world. It assists in determining different strategies by providing valuable tools for solving strategic problems. By expanding the logical and existential foundations of N.H. Iwu's football theory of scientific development for Africa, we bring together the potential choices and behaviours of competitors, collaborators, or other relevant entities, in football game which aids in making informed decisions that maximize outcomes and achieve desired objectives in terms of economic development.

THE PARADOXES OF DEVELOPMENT IN AFRICA

Africa is a continent characterized by diversity. These diversities are classified into two; internal and external. Internal aspects show Africa as multi-cultural, with diverse linguistic, values, and ideological practices. Africa's divergent ideologies emerge from within and outside its continent. These ideologies influence cultural orientations, political economies, security, religion, and other multinational relations

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arising from the diverse colonial experiences and impacts. On the external aspect of diversity, Africa as a continent has divergent alliances with varying foreign countries which affects their relationship within each independent state in Africa in their quest for development. Development in this regards has to do with the processes of growth. It is all about evolving, unfolding and expanding of something. It is a transition from one stage of existence to another. Ezedike (2023: 129) notes that development is multi-dimensional concept which comes through different packages; qualitative and quantitative, mental and material, intellectual and structural, spiritual and physical, scientific and economic, social and political. Development is said to be parochial and selective when the focus is on one aspect of the package. It is integrative when all these different packages are considered and explored.

Africa has followed the neoclassical economic theory that stresses the transformative power of capitalism that spurs individual productive units from meagre self-sufficiency to an integrated network of markets, information technology, and international institutions. The theory as adopted by African States has failed to produce the expected results. The failure is blamed on the internal dynamics of the African political economy; therefore, an expanded version of the theory that required total deregulation of the economic institutions to attract foreign investment was recommended, and, displayed the same result. Having found African political elites culpable of the economic failure, the attraction by African scholars to deploy dependency theory as an explanatory paradigm is losing momentum. Theories serving the African economic development paradigm have kept the African state economy in shambles. Import Substitution Industrialization (ISI) emerged as a "theoretical vehicle" by the 1940s in developing nations after Africa gained independence from colonial rule (Rapley, 1996). ISI is a theory that guided African nations on how to put a stop to the importation of goods consumed locally. Part of the failure of ISI is that it deals with imported technology and experts. Paying tariffs and import duties and stratifying local needs at a high cost. ISI encouraged governments to invest in heavy industries such as car assembling plants and refineries, leaving consumer goods to local entrepreneurs whose operations were favoured by protective tariffs and in some cases complete prohibitions on imports (Rapley, 1996:30). Africa needed to invent its development strategy; one that eschews capitalism and communism. The African past that rested on collectivist and peasantry modes of economic production was thought to represent a model that can be replicated in this modern era. ISI and African socialism, therefore, failed to move Africa away from economic dependence on the developed countries.

The paradoxes of the packaged economic theoretical matrix and their implications refer to the contradictions and unintended consequences of the Structural Adjustment Programs (SAPs) implemented in Africa in the 1980s. These programs were intended to bring African economies to a level playing ground with the rest of the world by introducing market-oriented reforms. However, their implementations had mixed results and raised various concerns. One of the paradoxes is that while SAPs aimed to promote economic growth and development, they often exacerbated poverty and inequality in African countries. The liberalization of trade and the emphasis on export-led growth led to a concentration of resources in sectors that were competitive internationally, such as cash crops or natural resources. This resulted in neglecting other sectors, like agriculture for domestic food security, and marginalized vulnerable populations. Another paradox was the impact of SAPs on social services. The decentralization of public service provisioning and the encouragement of private sector involvement in basic infrastructure provision often led to reduced access to essential services for the poor. Privatization of state-owned enterprises, including agricultural enterprises, sometimes resulted in the displacement of rural communities and the loss of their livelihoods. Furthermore, SAPs often required the devaluation of local currencies to improve export competitiveness. While this could boost exports, it also increased the cost of imported goods, leading to inflation and reduced purchasing power for local populations. The devaluation also made it more challenging to repay external debts, as the debts became relatively more expensive in local currency terms.

Additionally, the reform of public financial management and accountability procedures aimed to enhance

transparency and reduce corruption. However, in some cases, the reforms created additional burdens for governments with limited capacity, making it difficult to effectively implement and monitor the changes. Overall, while SAPs aimed to integrate African economies into the global market and improve economic conditions, their implementation had unintended consequences and created various paradoxes. The implications included increased poverty and inequality, reduced access to social services, inflation, currency devaluation, and challenges in implementing reform measures. It is important to acknowledge these paradoxes and address them when designing economic policies to ensure more inclusive and sustainable development (Rapley, 1996:71). SAP as a rational economic theorem ignored the ecological context on which the African socio-political environment is based. This is a paradox because the rules of the SAP were made for the fall of the African economy and to throw them extremely backward. Particularly, Bauer argues, that Third World peoples did not follow the rules of market rationality (Bauer, 1984). Thus, being backward, uneducated, and bound by the cultural traditions that frowned on selfishness and individualism, states in Africa were seen as the only investors because there were too few private entrepreneurs for the job (Iwu, 2020:4). It is now obviously seen that Africa has continuously strived to grapple with backwardness. The way to explain this underdevelopment is probably using the paradoxes of latecomers. Africa being referred to as third world countries must deal with the problems peculiar to technological latecomers.

Another challenge here is the paradox of technological transfer. This is seen in its yeaning to meet with technological gap in universities of science and technology. Africa must overcome the mentality of expecting that countries with high technological skills and expertise are supposed to transfer technological skill sets to developing countries; this is indeed a paradox and a great delusion. It is a great illusion to think that closing uneven development (Okongwo, 2007 & Lowy, 1981) existing among nations could come from mere wishes. The problem of Africa lies more in her inability to develop indigenous scientific technological innovation that could leverage her competition with others in the global system. Notwithstanding, Thus, Infant Industrial Model (IIM) (like in European states) may be difficult to implement in Africa unless Africa develops indigenous science to handle the technology needed for her industrialization. It is based on Africa's experience with theories of development that one keeps puzzling what sort of theory serves as the best recipe for Africa's development.

Another challenge is the paradoxes of internal and external influences. This has to be done with the world powers, institutions, and which one may refer to as 'world economic game referees' in this research. These categories are the masters of economic policies; they know have to navigate across countries with policies to determine whose economy would be stronger or less successful. Africa's reliance on them over the years has influenced economic backwardness and non-development. Classifying the African economy as a third-world or underdeveloped country was evidence of the paradoxes of internal and external influences. Thus that there has been a failure of development is misleading. The problem is not so much that development has failed as it was never really on the agenda in the first place. By all indications, political conditions in Africa are the greatest impediment to development (Ake, 1996). Dr. Iwu's football theory of scientific development is a subtle critique of both failed and dominant paradigms.

FOOTBALL THEORY AS A RECEIPT FOR AFRICAN SCIENTIFIC AND TECHNOLOGICAL DEVELOPMENT: A CORONA'S THE INQUEST

Iwu's work, *Football Theory of Scientific Development for Africa"* needs to be elaborated amongst other development theories in other to critique and improve the development we experience. One cannot but imagine what sort of development Africa needs in a globalizing world. What sort of technology can emerge from Africa that will gain global acceptance in a technological-get age? Where is Africa in this development and digital world? Should we start our technology afresh, or should we adopt already developed advanced technologies? Or should we develop our already existing technology? How should Knowledge be conceptualized? (Osuji, 2021: 81-108). If we should continue with our cultural development, how are we

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going to meet up in the growing technological world? All these burden my thoughts. Thus Africa is faced with the global challenge of wilder application with our socio-cultural, scientific, and technological development.

Three schools of thought emerged on development in Africa in this modern age: the first group proposes the development of indigenous knowledge; (Akinnawonu & Osuji, 2020) the second proposes adapting Western science and technology in Africa, while the third group proposes harnessing indigenous skills and adapting. These theories have not been given proper attention by African actors that shape African political and cultural structures. The attribution of who can "think" and produce valid knowledge of human existence has always been political (Osuji, 2018: 148 -157). For example, a controversy between trado-medical practitioners and medical practitioners in Nigeria over the use of herbs as treatment formulas in Nigeria (Mordi, 2010: 4-6): The altercation[1] rages even though the World Health Organization (WHO) in 2002 launched a comprehensive strategy to assist countries create an enabling environment for the development of traditional medicine. This would have created a synergy between the Nigerian Natural Medicine Development Agency (NNMDA) and the Medical and Dental Council of Nigeria (MDCN). The argument extends to traditional African bonesetters and orthopaedic surgeons (Uche-Okobi, 2013: 50). African bonesetters are derided by orthopaedic surgeons despite the wide knowledge that traditional bonesetters are recognized in countries such as China and India and their works are as effective as Africans are.

The essence of this paper is to seek critical reinvention in the building of Africa, science, technology, and development that will produce an irreducible yet interrelated plurality of modern African (world) development. This will give legitimate standing to development in Africa's science, technology, and other spheres. From another perspective, Africa has not been briefed on ideas. The major problem is that these ideas have not been harnessed, developed, and scienticized. Instead, Africa has been suffering from ideological complexes with others from the West and Orient. Secondly, there are many solid minerals such as iron, etc that can be turned into finished products. Starting from the educational system that serves as a conveyor of ideas, Africa has not adequately designed her curriculum to elicit creativity and innovativeness right from primary to secondary school level where technical skills are identified and harnessed among students for national technological development as in Asian educational institutions. Suh and Chenposit (2007: 7) that Korea expanded higher education while investing in indigenous research and development. Even if African tertiary institutions are not designed specifically to develop indigenous knowledge like in the USA or Korea, some African scholars who worked elsewhere in scientific discovery institutions exhibit knowledge that can spur technological development.[2] Professor Animalu collaborated with another staff member of the Massachusetts Institute of Technology Lincoln Laboratory at Lexington Massachusetts USA. Lincoln Laboratory is a United States Air Force Laboratory run by America's Premier Technological University – the Massachusetts Institute of Technology (M.I.T), created in 1951 out of the M.I.T. Radiation Laboratory, which worked on the U.S. radar programme during the Second World War Animalu, Osakwe, & Akuru, 2000: 1 – 5). Dr. E.N.C. Osakwe was a former member of the National Policy Development Centre of the Supreme Headquarters, Code-named "Think-Tank". His work shows that the Project Development Institute (PRODA) Enugu was established in the East-Central state in 1970 to harness the talents discovered during the Nigerian Civil War. The federal government of Nigeria took over PRODA in 1977 rather than consolidate it; there has not been political will to ensure its success (Osakwe, 1978). There are other scholars like Prof Amagh Nduka from the Federal University of Technology Owerri Imo State Nigeria, whose contribution to science is celebrated in the developed world. Philip Emegwali in computer innovation, Dr. Ezekiel Izuogu a researcher and inventor of the Z-600 motorcar, in which Eni (2010: 53) shows that 90% of the raw materials for the car were manufactured locally in Nigeria, and Prof Hillary Inyang and many others (African Science 2015). There are works of African American scientists whose scientific innovations contributed greatly to American technological development (Aaseng 1977 & Kessler, 1996). Latterly we have an indigenous car manufacturing company in Nigeria called Innoson Motors, which according to social media is presently using 75% of locally manufactured parts for its production. Tertiary

institutions in Africa can through research contribute the remaining 25% or reduce it to 10% through crisscrossing investment.

Iwu argued that the problem is that their scientific contributions are not harnessed rather they are celebrated for publishing their research findings in international reputable journals where scholars from other countries for their local market value quickly harness even their findings Iwu, 2020: 24 & Iwu, 2022). He further stated that this contradicts the notion of tertiary institutions established elsewhere for a knowledge economy and even runs contrary to the calls by African leaders who have often called on the African Diasporas to bring back their knowledge acquired from the Western world and elsewhere (Iwu, 2020:22). Since these indigenous contributions are not celebrated, we usually run to already made knowledge seeking for the transference of science and technology, giving rise to one foreign policy after another (Iwu, 2020: 16, 23). These policies and bilateral engagements have not favoured Africa. Discourses on the challenges and failures of these foreign policies in Africa are numerous.

GAMES AND HUMAN DEVELOPMENT

Games and Sports have a long history in human development. There are different games around the world. These games are originated by humans, played by them, and enjoyed by them. These games include football, handball, athletics, volleyball, tennis, golf, and so on. Games and sports have been used in various ways to serve human desires, emotions, passion, as well as economy. Games are used for recreation, maintain healthy living, unite people, and fuel the team spirit in them. Some games cut across cultures and continents. Games also bring national unity and shared passions. This is seen in the game of football. And this is why the game is used to propound a theory of development in Africa. This studies how the nature of a football game; its technicalities, practices, and the game itself can be appropriated in the development of a nation.

If game theory is to be used to model actual, natural behaviour and its history, outside of the small-world settings on which micro-economists (but not macroeconomists or political scientists or sociologists or philosophers of science) mainly traffic, then we need some account of what is attractive about equilibrium in games even when no analysis can identify them by taming all uncertainty in such a way that it can be represented as pure risk (Binmore *et al*, 1993 & Gintis, 2009). A lively controversy, with important philosophical implications and fought on both sides with game-theoretic arguments, currently rages over the question of whether this capacity can be wholly explained by cultural adaptation, or is better explained by inference to a genetic change early in the career of *H. sapiens*.

Thus the contemporary researcher applying game theory to model a social situation is advised to unearth her subjects' utility functions by (i) finding out what community (or communities) they are members of, and then (ii) inferring the utility function(s) programmed into members of that community (communities) by studying representatives of each relevant community in a range of games and assuming that the outcomes are coordinated equilibrium. Since the utility functions are the dependent variables here, the games must be independently determined. We can typically hold at least the strategic forms of the relevant games fixed, Gintis supposes, by (a) our confidence that people prefer egalitarian outcomes, all else being equal, to in-egalitarian ones within the culturally evolved 'insider groups' to which they perceive themselves as belonging and (b) a requirement that game equilibria are drawn from stable attractors in plausible evolutionary game-theoretic models of the culture's historical dynamics (Don, 2019).

Requirement (b) as a constraint on game-theoretic modelling of general human strategic dispositions is no longer very controversial — or, at least, is no more controversial than the generic adaptationism in evolutionary anthropology of which it is one expression. However, some commentators are sceptical of

Gintis's suggestion that there was a genetic discontinuity in the evolution of human sociality.

The Nature of Game Theory

There are the liveliest arguments from the domain of philosophical argument in the foundations of game theory and its applications. It also features the importance of correlation for stabilizing game solutions lends theoretical support to this suggestion. All situations in which at least one agent can only act to maximize his utility through anticipating (either consciously, or just implicitly in his behaviour) the responses to his actions by one or more other agents is called a *game* (Don, 2009). Agents involved in games are referred to as *players*. If all agents have optimal actions regardless of what the others do, as in purely parametric situations or conditions of monopoly or perfect competition (Don, 2009). We can model this without appeal to game theory; otherwise, we need it. Game theorists, like economists and philosophers studying rational decision-making, describe these using an abstract concept called *utility*. This refers to some ranking, on some specified scale, of the subjective welfare or change in subjective welfare that an agent derives from an object or an event. By 'welfare' we refer to some normative index of relative alignment between states of the world and agents' valuations of the states in question, justified by reference to some background framework. For example, we might evaluate the relative welfare of countries (which we might model as agents for some purposes) by reference to their per capita incomes, and we might evaluate the relative welfare of an animal, in the context of predicting and explaining its behavioural dispositions, by reference to its expected evolutionary fitness. In the case of people, it is most typical in economics and applications of game theory to evaluate their relative welfare by reference to their own implicit or explicit judgments of it. This is why we referred above to *subjective* welfare.

Game theorists assume that players have sets of capacities that are typically referred to in the literature of economics as comprising 'rationality'. Usually, this is formulated by simple statements such as 'it is assumed that players are rational'. In literature critical of economics in general, or of the importation of game theory into humanistic disciplines, this kind of rhetoric has increasingly become a magnet for attack. There is a dense and intricate web of connections associated with 'rationality' in the Western cultural tradition, and the word has often been used to normatively marginalize characteristics as normal and important as emotion, femininity, and empathy. Game theorists' use of the concept need not, and generally does not, implicate such ideology. Cooperative game theory begins from the assumption that players have already, by some unspecified process, agreed on a vector of strategies, and thus on an outcome. Then the analyst deploys the theory to determine the minimal set of conditions under which the agreement remains stable. The idea is typically illustrated by the example of a parliamentary coalition (Don, 2009) that game theory has become so tightly entangled with microeconomic theory in general that the question becomes difficult to distinguish from inquiry into the moving frontier of that entire sub-discipline, which is, in turn, the largest part of economics as a whole. Thus the boundary between the *philosophy* of game theory and the philosophy of microeconomics is now similarly indistinct. Of course, as has been stressed, applications of game theory extend beyond the traditional domain of economics, into all of the behavioural and social sciences. But as the methods of game theory have fused with the methods of microeconomics, a commentator might equally view these extensions as being exported applications of microeconomics (Don, 2009).

EXPANDING THE LOGICAL AND EXISTENTIAL FOUNDATIONS OF IWU'S FOOTBALL THEORY OF SCIENTIFIC DEVELOPMENT

In this piece, football game theory is a normative theory that tells Africans what they ought to do if they wish to be rational and strategic in the development of science and technology. Utility functions are explicitly worked which can plausibly be applied to groups of people, leading to game-theoretic models

with plausible and stable solutions.

Football theory of scientific development derived from observation

Observational research is a social research technique that involves the direct observation of phenomena in their natural setting. Observation is a systematic data collection approach. Researchers use all of their senses to examine people in natural settings or naturally occurring situations. Observation of a field setting involves the following: prolonged engagement in a setting or social situation, clearly expressed, self-conscious notations of how observing is done, methodical and tactical improvisation to develop a full understanding of the setting of interest, imparting attention in ways that are in some sense 'standardized', recording one's observations. Thus, theories and concepts can be driven by templates and result in focused data collection. Templates can deflect attention from unnamed categories, and unimagined and unanticipated activities that can be very important to understanding a phenomenon and a setting. The benefits of observation are numerous, this is so because immersion and prolonged involvement in a setting can lead to the development of rapport and foster free and open speaking with members. Observation fosters an in-depth and rich understanding of a phenomenon, situation, and/or setting and the behaviour of the participants in that setting. Observation is an essential part of gaining an understanding of naturalistic settings and their members' ways of seeing. Observation can provide the foundation for theory and hypothesis development.

The Game of Football

My interest in the game of football unlike other games and/or sports is that football largely displays some universal principles, which can be used to tackle diversity in Africa. The football game highlights fundamental lessons that triggered my interest, these include

- Football is the most popular game amongst all sports. It is viewed by all irrespective of class, race, or culture. It provides a common feeling among diverse groups and social interests.
- It is played with vigour, energy, skills, techniques, and team spirit (team reasoning). It draws the collective sentiment and support of the entire fan.
- Football is a game that is driven by the intention for success (trophy) even at that the sponsors are not deterred by the embedded failure associated with the game.
- It caches the interest of all; states, nations, individuals, co-operate bodies, governments and (sports) academies, Federal of International Football Association (FIFA), CAF.
- As an organized game, it is played at different levels. Groups, quarterfinal, semi-final, and final, to ensure continuity and consistency.

A football team is comprised of two big components; the team (the coach, and players) and the sponsors (fans). They all have their specific roles. The role of the coach is to train the players in his team. The coach him/herself knowing the full techniques of football is humbled to provide training to players to upgrade their skills.

Extrapolating the Football Theory as a Recipe for African Development

If we want to equate African development to a successful football team, it means that the development is driven by energy, consistency, vibrant, and among the first world's best economies. The football game is a *repeated game*, that is, games in which sets of players expect to face each other, Games are often played with *future* games in mind, and this can significantly alter their outcomes and equilibrium strategies in similar situations on multiple occasions. We approach these first through the limited context of repeated prisoner's dilemmas.

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This means that African development must be vibrant, organized, and steady just like a successful team in football, thus the football theory of scientific development comes to bear. Africa (political, Scientific, economic, or development) or as a continent is a universal set comprising of different subsets: the following subsets emerge; coaches, players, sponsors, fans, and others. Let say;

U = {C, P, S, F, O}: Where U – Universal set, C – Coaches, P – Players, S – Sponsors, F – Fans, O –others (including spectators)

There is a need to demonstrate each role and its relationship with the other. This will enable a broader understanding of how best to conceive African development; stating, building, and sustaining it. To conceive of Africa's Development is to look for their relationship; intersection, unions, and disjoints.

The relationship between the C and P is {C U P} (union)

The success of the football team includes essentially the transitive and consistent relationship between the coach and the players.

The success and achievement of scientific development in Africa using the football theory depends on the intersections of all the subsets. That is {C U P} ∩ {F ∩ O}. There is no disjoint set when we clamour for development in Africa. Probably the set of O may include ordinary people who do not watch the game of football but participate when there is victory.

Let us apply this;

I set the African continent as the 'field'. I first set out tertiary institutions (Universities, Colleges of education, Polytechnic) as the national and state training grounds or research venues. I set the professors and other lecturers (masters in their varying fields of scientific development) as the coaches. I set the individuals: students, lecturers, and non-students including illiterate individuals found scattered in rural and urban areas as the players.

Thus the set of c will consist of the following: The coaches whose jobs include the following; talent search (TS), transfer of skills (S) through training (T), preparation for competition (P), and provision of directive / Instructions on the field (D). That is:

C = {TS, S, T, P, D)

The Coaches: The role of the coaches (professors and other lecturers) as team leaders in the institutions (Universities, Colleges of education, Polytechnic) is to identify the skills in the students, lecturers, and non-students including illiterate individuals found scattered in rural and urban areas and train them to develop their skills or potentials in science, technology, and innovations.

The lesson here is that the role of the coaches is to identify the skills in the individuals, (students, lecturers, non-students, illiterates), polish them, train, develop, and monitor these skills and potentials across humanities, science, technology, and innovation. Iwu separated Professors from other categories of lecturers because in their hierarchy they can identify the skills of young lecturers and like a coach in a normal football team will not feel humiliated to train and promote a young lecturer under him for national and collective good.

Now if we ask: what skills should the coaches look for in the players? So many skills can be scientifically harnessed for economic development. Science as used in this theory simply denotes a systematic process that is applied to the development of any knowledge or skills. Iwu (2020: 17-8) proposed harnessing talents

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or skills from both students in the tertiary institutions and non-students including illiterates because talents are more often genetically gifted than learned. Also, some people that could have a high imagination in rudimentary science may not have the resources to get admission into tertiary institutions in Africa. It is understandable that the skills.[3] As an obligation, therefore, the coaches in the tertiary institutions assume the role of searching for individuals with skills. Art skills known artists can be highly instrumental to the cloth and footwear industries. Extending from artists are those who have skills in architecture. Artists and Architects are highly useful in plastic industries involved in packaging, automobile industries, and other complex engineering designs. There are also those moving about carrying natural leaves, juice, and liquid substances made from herbs shouting or telling people their efficacy in curing one ailment or the other. They have often asserted the originality of their knowledge when accosted on the source of their knowledge. These set of people are called trado-medical practitioners, who apply herbal medicine in curing their patients. They are highly useful for pharmacological science that is seriously yearning for attention in Africa. Again, there are some individuals known as goldsmiths and some that have natural talents in sculpture scattered all over Africa. Their role is mainly to fabricate using locally melted iron or any other object. These are the talents India harnessed to re-fabricate machines and tools imported using its natural iron deposit found in the country during her early experiment with ISI.

Some young and elderly Africans have displayed skills in building cars, electrical-driven devices, and other surprising innovations on the street to the admiration of onlookers. To achieve the assumption of the FTSD, Dr Iwu opined that Africa's curriculum must be overhauled. In his view, the overhauling should be done in a manner that the curriculum is designed to elicit "creativity and innovativeness from primary to secondary school levels where technical skills are identified and harnessed among students for national development." To a large extent, this argument holds for a country like Nigeria (Ihembe, 2020). Doubtless, Nigeria is not bereft of talents and raw materials. These are in abundance. What it however lacks is the capacity to properly harness the talents and raw materials to its advantage in the global marketplace, hence Iwu's prescription on how to achieve that. So, at the basic level, perhaps reviving the technical schools and designing their curriculum to accommodate the much-needed creativity and innovation at the primary and post-primary levels as Iwu opined would be a good way to start Ihembe, 2020).

Academic institutions as a team should harness these individuals so that their ideas can transformed into products for market value. Certainly, some students and lecturers may have displayed these skills identified within the campuses but the skills are merely celebrated as a feat without further effort to develop them into products for market value. Iwu (2020:19) says; my theory is to raise the consciousness of the academic community to the realization of their role as football team. They should be in constant search of a good player. Tertiary institutions set up a special fund, even 0.1% of its revenue either internally generated or from federal or state allocation to identify and develop skills of this nature. Some countries in Africa have specialized schools for technical and vocational studies that in a practical sense are training people to acquire skills on how to manage existing technology and largely to be self-employed. My theory advances higher knowledge than that. It seeks to elicit original ideas in people that will create new technology or indigenize existing knowledge.

The skills (or talents) that may be displayed by the lecturers, students, or those harnessed from outsiders may be too expensive for a single institution in Africa to finance. In addition, the ideas may not result in complete science that can produce one complete product like a motorcar, motorbike, etc, but only a part of it, just like a component of a chemical, which requires other chemicals for the production of a particular drug. The university and other tertiary institutions acting like a team are not limited to its immediate campus but can propose collaboration with other institutions in Africa and elsewhere for financing and developing the idea into a product for market value. The institutions also can buy the component idea from other institutions or incorporate the conveyor of the idea in the ownership of the technology. This is observed when super football teams in Europe, America, and Asia purchase African football players to enhance the

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competence of their teams in global football competitions.

The Players

The players form active members displayed during the football game. These players consist of individuals who are young and possess well-displayed and understood fully blown potential. They have been identified, picked up, coached, and ready to play for the competition. These skills possessed by these players are more important than their certificates, colours, beauty, handsomeness, and even race. Best players are sorted and harnessed by the team's coaches irrespective of ethnic background. They are prepared and materials needed for the football competition are properly given (training, directives, uniforms for identification on the field, transferred skills). We can then paraphrase his five constraints on aggregation as follows:

(1) Conditioning: A team member's preference ordering may be influenced by the preferences of other team members, i.e. may be conditional. (Influence may be set to zero, in which case the conditional preference ordering collapses to the categorical preference ordering to standard)

(2) Endogeny: A concordant ordering for a team must be determined by the social interactions of its sub-teams. (This condition ensures that team preferences are not simply imposed on individual preferences.)

(3) Acyclicity: Social influence relations are not reciprocal. (This will likely look at first glance to be a strange restriction: surely most social influence relationships, among people at any rate, *are* reciprocal. In what appears to be a subtle critique of the dominant paradigms in development discourse as it relates to Africa in the social sciences, and in an attempt to proffer an idea that could help resolve Africa's development gap, Hyacinth Iwu has advanced what he termed the *football theory of scientific development* (still at its embryonic phase). As the name implies, it is a theory he conceived having carefully observed the game of football over the years. Consequently, he extrapolated the football analogy by advancing a theory of development he thinks is apt in addressing the protracted problem of underdevelopment in Africa (Ihembe, 2020). We need to keep conditional preference distinct from agent fusion, and this condition helps to do that.[4] More importantly, as a matter of mathematics, it allows teams to be represented in directed graphs. The condition is not as restrictive, where modelling flexibility is concerned, as one might at first think, for two reasons. First, it only bars us from representing an agent *j* influenced by another agent *i* from *directly* influencing *i*. We are free to represent *j* as influencing *k* that in turn influences *i*. Second and more importantly, in light of the exchangeability constraint below, aggregation is insensitive to the ordering of pairs of players between whom there is a social influence relationship.

(4) Exchangeability: Concordant preference orderings are invariant under representational transformations that are equivalent concerning information about conditional preferences. In football, the ability for acute exchange of the ball is key to mastering the success of the ball. In development too, the exchangeability of ideas, routines, implementations, and strategies are the keys to sustainable development. Thus development is not static; its sustainability is both present and continuous.

(5) Monotonicity: If one sub-team prefers choice alternative A to B and all other sub-teams are indifferent between A and B, then the team does not prefer B to A. Good leadership skills and succession are not monopolized if development must be sustained. Background exposures and history (landmarks) must be considered during sub-team preferences and selection for authentic sustainable development (Osuji, 2018). Again selection of team teams of skills, adaptability, and result-oriented should be considered in strategizing development for Nigeria and Africa in general. No one should monopolize leadership considering the dynamics of skilling, re-tooling, and in-flow of ideas. Under these restrictions, Stirling proves an aggregation theorem that follows a general result for updating utility in light of new information that was developed (Abbas, 2023). Individual team members each calculate the team preference by aggregating

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue VII July 2024

conditional concordant preferences. Then the analyst applies *marginalization*. Let XnXn be a team. Let Xm={Xj1,…,Xjm}Xm={Xj1,…,Xjm} and X={Xi1,…,Xik}X={Xi1,…,Xik} be disjoint sub- teams of XnXn. Then the marginal concordant utility of XmXm concerning the sub- team {Xm,Xk}{Xm,Xk} is obtained by summing over AkAk, yielding Uxm(αm) = ∑αkUxmxk(αm,αk)Uxm(αm)=∑αkUxmxk(αm,αk) and the marginal utility of the individual team member XiXi is given byUxm(αm)=∑∼aiUxn(a1,…,an)Uxm(αm)=∑∼aiUxn(a1,…,an)

where the notation ∑∼ai∑∼ai means that the sum is taken over all arguments except aiai (Sugden, 2003: 165- 181, & Sugdan, 2000: 175 -204). This operation produces the *non-conditional* preferences of individual *i* ex- post—that is, updated in light of her conditional concordant preferences and the information on which they are conditioned, namely, the conditional concordant preferences of the team. Once all ex-post preferences of agents have been calculated, the resulting games in which they are involved can be solved by standard analysis.

Stirling's construction is, as he says, a true generalization of standard utility theory to make non-conditioned ("categorical") utility a special case. It provides a basis for the formalization of team utility, which can be compared with any of the following: the pre-conditioned categorical utility of an individual or sub-team; the conditional utility of an individual or sub-team; or the conditional concordant utility of an individual or sub-team. Once every individual's preferences in a team choice problem have been marginalized, NE, SPE, or QRE analyses can be proposed as solutions to the problem given full information about social influences. Situations of incomplete information can be solved using Byes-Nash or sequential equilibrium.

Football as a conditionalized game: no one plays without mastering the rules and regulations of football as well as the technical constructions; thus making football a conditionalized game invariably, Iwu's football theory of scientific development is a conditionalized game theory. Inductively, we can posit what conditional game theory (CGT), in the case of Iwu's theory means as follows. CGT models the propagation of influence flows by applying the formal syntax of probability theory (through the operation of marginalization) to game theory and constructing graph theoretical representations. As social influence propagates through a group and players modulate their preferences based on other players' preferences, a group preference may emerge. Group preferences are not a direct basis for action, but encapsulate a social model incorporating the relationships and interdependencies among the agents. CGT shows us how to derive a coordination ordering for a group that combines the conditional and categorical preferences of its members, in much the same way as, in probability theory, the joint probability of an event is determined by conditional and marginal probabilities. So, just as the conventional application of the probability syntax is a means of expressing a cognizer's epistemological uncertainty regarding belief, extending this syntax to game theory allows us to represent an agent's practical uncertainty regarding preference. Beyond the game of football, Iwu's football theory of scientific development proposes a social model of relationships and interdependence among people (groups of players or team leaders) for development to take place. This will not be automatic but will be conditional with marginal probabilities (necessary because of human actions and indeterminacies) for sustainable development to occur. CGT would be little more than a pre-processing mechanism for identifying standard games. The real innovation lies in representing the influence of concordance considerations on equilibrium determination. The social model can be used to generate an operational definition of group preference and to define truly coordinated choices. There is no assumption that groups necessarily optimize their preferences or that individual agents coordinate their choices. The point is merely that we can formally represent conditions under which agents in games can do what actual people often seem to: adapt and *settle* their individual preferences in light both of what others prefer, and of what promotes a group's stability and efficiency. Team agency is thus incorporated into game theory instead of being left as an exogenous psychological construct that the analyst must investigate in advance of building a game-theoretic model of socially embedded agents.

ISSN No. 2454-6186 | DOI: 10.47772/IJRISS |Volume VIII Issue VII July 2024

The Sponsors

They provide the platform and the material and financial support for the team. They ensure the organization and continuity of football. They include the government, corporate bodies, academics, and philanthropies. Football is a game that is driven by the intention for success but the sponsors are not deterred by the embedded failure associated with the game. At the national level in some African states, individuals, corporate bodies, and governments own football teams and some own sports academies where the young talents identified are trained. At the continental level, each state in Africa has a national team as a mark of sovereign identity competing with each other for a football trophy known as the Confederation of African Football (CAF). As designed by the Federation of International Football Association (FIFA), each continent is expected to have one or few football teams that compete with other continents at the global level. A team playing at this level appears to draw the collective sentiment or support of their entire continent, especially during the quarterfinal, semi-final, and final game. Football games are wonderful and in a real sense globalization in practice. The theory therefore, drew from the principle of the football game seeing it as a game that provides a common feeling among diverse ethnic groups within Africa while playing with teams from other continents and within a country, the best players are sorted and harnessed by team coaches irrespective of ethnic background.

The Fans: The Fans (Aijazeera, 2021) are the lovers of football who join a team to provide support and cheers on the competition ground. Some play internal roles while other exerts external influence. Some are spectators who observe and critique while others just enjoy the game as it is. This is also applicable to Iwu's football Theory, in the process of scientific development, some will observe, critique, and oppose while others watch the developmental processes without a difference.

THE EXISTENTIAL VIRTUES FROM THE FOOTBALL THEORY FOR AFRICAN DEVELOPMENT

There several virtues one can identify by analyzing the nature of football theory. These virtues are existential and can be developed as part of leadership models for enhancing human capacity for Africa's sustainable development. These virtues are described below.

Team reasoning: The players undermine their welfare, one might argue because they obstinately refuse to pay any attention to the social context of their choices (Sugdan, 2018 & 1993). seems to have been the first to suggest that players who truly deserve to be called 'rational', including non-altruistic ones, would in the one-shot reason *as a team,* that is, would each arrive at their choices of strategies by asking 'What is best for *us*?' instead of 'What is best for *me*?'. They play down their selfish interest and move on as a team to achieve success. The nature of the individual is to require appeal to very strong forms of both descriptive and normative individualism. The football game calls for altruistic behaviour in other to achieve development. The players also value their team, (we must value our nation before we can sacrifice for its development) If players value the utility of a team they're part of over and above their more narrowly individualistic interests, then this should be represented in the payoffs associated with a game theoretic model of their choices for avoiding appeal to preferences over unrestricted domains in analyzing welfare.

The team 'reasoners' then re-frame the situation to defend themselves. This introduces a crucial aspect of Bacharach's account. Individualistic 'reasoners' and team 'reasoners' are not claimed to be different types of people; People, Bacharach maintains, flip back and forth between individualistic agency and participation in team agency. The choice of 'football game' here instead of lawn tennis where there are individualistic attitudes because of the play-off is why team reasoning is valued here. Thus there is a need to adopt philosophical reasoning on the pathway for development in Africa; this is because the axiom for team

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reasoning should be built into the refined foundations of African development. Team-centred player with team reasoning could be liken to 'why in Nigeria,' for instance, government investment is being privatized; there is no team reasoning.

Development is a form of Team sports. Members of such teams are under considerable social pressure to choose actions that maximize prospects for victory over actions that augment their statistics. The problem with these examples is that they embed difficult identification problems concerning the estimation of utility functions; a narrowly self-interested player who wants to be popular with fans might behave identically to a team-centred player. Soldiers in battle conditions provide more persuasive examples. Though trying to convince soldiers to sacrifice their lives in the interests of their countries is often ineffective, most soldiers can be induced to take extraordinary risks in defence of their buddies, or when enemies directly menace their hometowns and families. It is easy to think of other kinds of teams with which most people plausibly identify some or most of the time: project groups, small companies, political constituency committees, local labour unions, clans, and households. Strongly, individualistic social theory tries to construct such teams as equilibrium in games amongst individual people, but no assumption built into game theory (or, for that matter, mainstream economic theory) forces this perspective

Conditional games: Football is a conditionalised game: with rules, regulations, and set standards. It is important to distinguish the dynamics of preference conditionalization in teams of distinct agents from the simple *collapse* of individual agency. Applying this to Africa's development, it is a development that will not entrench personal opinions, preferential or hierarchal shifts, and acceptance. Our set conditional preference will be a preference that is influenced by information about the preferences of (specified) others. It will also accommodate *concordance*. This refers to the extent of controversy or discord to which a set of preferences, including a set of conditional preferences, would generate if equilibrium among them were implemented.

Organization and preparation: Skills and preparedness are key factors for scientific development. Iwu's football theory accepts that teams are well prepared before playing in any competition. Members of teams are organized in such ways that they can play with maximum confidence, strength, energy, and zeal. Organization describes how one operates, what one offers, and how one is organized to meet such goals. With football theory, stakeholders in national development are organized and prepared to set forth the developmental task. Their principles and values are lucid, and priorities, practices, and projections become visible and achievable. Thus having an organizational philosophy (Marcinkevičien *et al*, 2010) will explain how practical social, economic, and overall complex societal problems can be solved.

Strategic: The diagram of a football pitch shows a demonstration of strategy, met to achieve goals. Game theory offers a valuable tool in solving strategy problems. Development at its sustainable level must go with strategy. This means that national aims, objectives, and focus must be clear and distinct in such a way that they can be direct. When compared to football, the value-directedness of players'-environment intentionality must demonstrate the values aims, objectives, and targets of the team. This is achieved by constraining individual character (and discipline) to maintain intentionality. This applies to scientific development where individuals are constrained in character and discipline to achieve goals and targets, more so social institutions are established to achieve the social order by well-illuminated value-directedness towards development. Strategy is achieved using existential relational concepts that help point up the extent to which *affordances* are value-realizing and intentionality is value-directed. This will help fight socio-cultural constraints, ethnicity, tribalism, emotions, nepotism, bribery, corruption, and selfishness that harm patriotism.

Skilled intentionality and the language associated with skilled intentions, while also introducing the principle of Non-linear Pedagogy. The focus is on shaping the value-directedness of player-environment intentionality. It emphasizes the importance for sports practitioners to skilfully attend to socio-cultural

constraints and shape the intentions of players within training environments and games (Vaughan *et al*, 2021). Failure to do so would result in the social, cultural, and historic constraints of the environment taking over, constantly influencing which affordances are prioritized and directing skill development. This exactly happens to untrained agents and personnel at the helm of development.

Consistency and Commitment: Football theory draws attention to the consistency measurement of techniques which when applied to scientific development produces new directions. Consistency theories are grounded in the idea that people possess a willingness to maintain consistency in their lives (Sam, 2023). Our cognitive systems function best when our beliefs, attitudes, values, and external evidence align harmoniously, creating a state of comfort. However, cognitive dissonance arises when there is a lack of alignment, compelling us to seek consistency in our worldview. Additionally, our strong desire to conform to social norms often overrides our personal beliefs, leading us to prioritize behaviours that align with societal expectations, even if they conflict with our inner systems, causing internal conflict. We can achieve consistency through rationalization and excuses, separation to skill or learn, transcendence and persuasive.

Rational Choice Decision Making and Football Theory: Game theory studies interactive situations to make interactive decisions. Iwu's football theory is an interactive situation to study and make interactive decisions of development, as well as take into account the deliberations of opponents. Game theory recommends rational choices for developmental decisions. Both decision theory and game theory evaluate the rationality of decisions by considering individuals' preferences for outcomes and their beliefs regarding the likelihood of those outcomes occurring. Commitment and consistency are powerful tools for influencing behaviour because they tap into people's innate desire to maintain consistency with their self-concept, values, and behaviours (Isenberg & Brauer, 2014). When individuals make commitments, they bind themselves to future actions, creating a sense of obligation to follow through. By leveraging commitment, people are more likely to stay consistent with their stated intentions. The principles of commitment and consistency have been utilized in various ways to shape behaviour. Organizations and individuals can encourage commitments through explicit agreements, public declarations, or written contracts, which increase the likelihood of consistent behaviour. By emphasizing and reinforcing previous commitments, individuals can be motivated to align their actions with their stated beliefs or goals. This strategy leverages the psychological drive for consistency to influence behaviour in a desired direction.

DISCUSSIONS AND FINDINGS

Engaging in football at national and international levels operates like a defining factor for the existence of any state as a member of a committee of nations. States play in football organized at their regional and sub-regional levels as a mark of emergence into statehood. The consistency and commitment to resurface even when victories are not recorded previously is interpreted as the cost of belonging. Africa will encounter failures emanating from structural design or as a newcomer needing to learn or understudy the principles necessary for the development of science and technology as a result of her late entry into the arena of capitalist economy that is embedded in science and technology. Like in football where success or failure does not lead to exit, Africa's participation in the processes aimed at leapfrogging into scientific and technological breakthroughs for global market competitiveness is not deterred by successes or failures. Africa's quest for science and technological development necessarily needs learning by trial which is the first principle in a football game. This is evidenced in the fact that some young and elderly Africans have displayed skills in building cars, electrical-driven devices, and other surprising innovations on the street to the admiration of onlookers. Academic institutions as a team should harness these individuals so that their ideas can transformed into products for market value. Certainly, some students and lecturers may have displayed these skills identified within the campuses but the skills are merely celebrated as a feat without further effort to develop them into products for market value. My theory is to raise the consciousness of the academic community to the realization of their role as a football team (Iwu 2020). They should be in

constant search of a good player. Tertiary institutions set up a special fund, even 0.1% of its revenue either internally generated or from federal or state allocation to identify and develop skills of this nature. Some countries in Africa have specialized schools for technical and vocational studies that in a practical sense are training people to acquire skills on how to manage existing technology and largely to be self-employed. My theory advances higher knowledge than that. It seeks to elicit original ideas in people that will create new technology or indigenize existing knowledge.

The skills (or talents) that may be displayed by the lecturers, students, or those harnessed from outsiders may be too expensive for a single institution in Africa to finance. In addition, the ideas may not result in complete science that can produce one complete product like a motorcar, motorbike, etc, but only a part of it, just like a component of a chemical, which requires other chemicals for the production of a particular drug. The university and other tertiary institutions acting like a team are not limited to its immediate campus but can propose collaboration with other institutions in Africa and elsewhere for financing and developing the idea into a product for market value. The institutions also can buy the component idea from other institutions or incorporate the conveyor of the idea in the ownership of the technology. This is observed when super football teams in Europe, America, and Asia purchase African football players to enhance the competence of their teams in global football competitions.

Each state in Africa requires anthropological and sociology studies to identify its cultural areas and individuals that provided science and technology on which pre-colonial Africa was embedded. The talents identified and developed will prepare each country as a national team to play with other African states at the continental level just like the Confederation of African Football (CAF) but the ultimate goal is to produce such high-level science and technology that can compete at the global level just as FIFA game. Each country may not achieve a complete production of any particular product as the case may be; producing parts provides an opportunity for crisscrossing investment. Even tertiary institutions in Africa can enter crisscross research endeavour, which in the end can be used for crisscross investment with other technology producers in Europe or America after which the profits after the sale are shared on the monetary value of each part. Even arts or drawing is a part that is paid for in industries. Most importantly, universities and other tertiary institutions may have corporate integrity to enter into partnerships with individuals and other corporate bodies for funding, development, and marketing of any idea and product for economic gains.

CONCLUSION

This paper uses the football theory of development to illustrate vividly how the game of football can be used to foster development in Africa. It analyzes the two different ways the game is used; first the players and second the organization of the football game, as well as creates room for cross-pollination of ideas and skill-sets. If Africa needs a vibrant economy it has to go back to the indigenous people to draw undiluted skills from people irrespective of class, harness these skills, train them, and position for scientific and technological development, it should also study the organization of football game in terms of its consistency and sponsorship and used this game as a model for development. Lastly in this paper, we discussed the virtues that can be drawn from the game of football. These virtues include team reasoning, conditionality, and commitment amongst others. These virtues are as well needed to drive vibrant and strategic development in Africa.

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FOOTNOTES

[1] This argument was constructively handled by I. William Zartman in edited book "Traditional Cures for Modern Conflicts. Citing other scholars who share the same view Zartman (2000: 1-2) argues that "in recent times, medical scientists have turned attention to medicines and healing practices used in pre-colonial Africa in order to understand the bases for their effectiveness in modern scientific terms. In some cases, such study has brought to light new chemical compounds and psychological effects enriching the scientific repertory with previously unknown substances and practices. Without the benefit of modern science, Africans discovered chemical substances through their effects and used them effectively for medical purposes…….in other cases, it turned out that the substances and practices of African traditional medicine were the same as those used today, independently discovered and developed in Africa and in other parts of the world".

[2]Dr. Omotuyi Olaposi I. *et al* (2018). of Adekunle Ajasin University Akungab-Akoko, Ondo state Nigeria scientific discovery into Lassa virus nucleoprotein in 2018 is an evidence of scientist whose research findings can be developed for market value.

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[3] Iwu also highlighted in this theory that in learning curriculum but the non-talented individuals who got admission to read such course often struggle to regurgitate what they were taught or unable to revolutionized the ideas learned. He also advocated that the coaches' in the tertiary institutions do not force English or mathematics courses to players harnessed from outside tertiary institutions but to simple observe and ask them questions in the languages they understand to explain their skills displayed in the innovations that drew attention of coaches.

[4] In this instance of development for Africa, the conditions of both external and internal influences (as have argued earlier) should be distinguished and made distinct. This allows for objective assessment of impacts of both external and internal agents.