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Can African Academic Knowledge Production Transform into Knowledge Economy for Global Market Competitiveness?

La production de connaissances académiques africaines peut-elle se transformer en économie de la connaissance pour la compétitivité sur le marché mondial ?

Nnaoma Hyacinth IWU[1]

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***Abstract**: This paper argues against conventional approaches that analyze the knowledge economy from a Euro-centric perspective. The debate on knowledge production in Africa raises serious questions among academics, as academic institutions have a compelling need to innovate in terms of technologies and human behaviors that are relevant to global competition. Emerging from the clutches of colonialism, postcolonial African scholars in the humanities and social sciences have accused European Enlightenment thinkers of universalizing knowledge expressed in the spirit of domination and using it as a reference to classify societies as developed, modern or underdeveloped and archaic. The problem lies not so much in identifying Euro-centric knowledge production, but in finding an appropriate theoretical model that can reorient knowledge production towards a knowledge economy of Africa. Caught in the trap of knowledge poverty and economic development, African scholars educated in the emerging Eurocentric development paradigm rationalize African failures to catch up on the basis of internal contradictions in accordance with Enlightenment thinkers. Unfortunately, Africa seems to be descending on an escalator that is going up, which pulls the demand for an academic program that can place Africa in the competitiveness of the global market down. Some questions emerge: Are African academic programs demand-driven? What kind of research methodology underlies research in Africa? How have African universities structured their evaluation criteria? Our point is to argue that the African historiographic explanation that has been detached from any positive contribution to humanity and scientific innovations is only part of the explanation. The substance lies in methodology and theory. The identification of an appropriate research methodology and theoretical model will not only domesticate existing technology, but will stimulate indigenous science and technology for competitiveness in the global marketplace. It is this gap that we want to fill in this article.*

Keywords: Knowledge production, global competitiveness, economic development, academic institutions.

***Résumé** : Ce papier s'inscrit ouvertement contre les approches conventionnelles qui analysent l'économie de la connaissance à partir d'une vision euro-centrique. Le débat sur la production*

[1] Department of Political Science Adekunle Ajasin University, Akungba-Akoko Ondo state (Nigeria)

de connaissances en Afrique suscite de sérieuses questions parmi les universitaires, car les institutions universitaires ont un besoin impérieux d'innover en matière de technologies et de comportements humains adaptés à la compétition mondiale. Émergeant des griffes du colonialisme, les chercheurs africains postcoloniaux en sciences humaines et sociales ont accusé les penseurs européens des Lumières d'universaliser les connaissances exprimées dans un esprit de domination et de les utiliser comme référence pour classer les sociétés comme développées, modernes ou bien sous-développées et archaïques. Le problème ne réside pas tant dans l'identification de la production de connaissances euro centrique, que dans la recherche d'un modèle théorique approprié qui puisse réorienter la production de connaissances vers une économie de la connaissance de l'Afrique. Pris au piège de la pauvreté des connaissances et du développement économique, des universitaires africains instruits dans le paradigme du développement euro centrique émergeant, rationalisent les échecs africains pour rattraper leur retard sur la base des contradictions internes conformément aux penseurs des Lumières. Malheureusement, l'Afrique semble descendre sur un escalator qui monte, ce qui tire la demande d'un programme universitaire qui peut placer l'Afrique dans la compétitivité du marché mondial, vers le bas. Certaines questions émergent : les programmes académiques africains sont-ils axés sur la demande ? Quel type de méthodologie de recherche sous-tend la recherche en Afrique ? Comment les universités africaines ont-elles structuré leurs critères d'évaluation ? Notre point est d'avancer l'explication historiographique africaine qui a été détachée de toute contribution positive à l'humanité et aux innovations scientifiques n'est qu'une partie de l'explication. La substance réside dans la méthodologie et la théorie. L'identification d'une méthodologie de recherche appropriée et d'un modèle théorique appropriés , permettront de non seulement domestiquer la technologie existante, mais permettront de stimuler l'autochtonie de la science et technologie pour la compétitivité sur le marché mondial. C'est cette lacune que nous voulons combler dans cet article.
Mots-clés : Production de connaissances, compétitivité mondiale, développement économique, institutions académiques.

Introduction

Post-coloniality, knowledge production, knowledge economy, and decolonisation of knowledge production have increasingly become a buzzword in this twenty-first century, going by the state of Africa's backward socioeconomic and technological development. Receiving considerable attention in information technology (IT) as it sets the contours of modern markets, the financial sector, telecommunications, and service delivery agencies emerge at the forefront of a knowledge-driven economy. Not only is information technology moving both local and global markets, but a disconnect from it can lead to a loss of continuation in the market. Knowledge economy understood only in this context is misleading, resulting in an emphasis on computer science in various levels of educational institutions. Knowledge economy is an outcome of research carried out that results in science and technology applied in the production of goods and services for which information technology, microelectronics, biotechnology, civilian and military aircraft, machine tools and robots, computer hard and soft wares, drugs, medical equipment, and so on are produced (Suh & Chen, 2007). This even includes solid and consolidated democratic and social institutions. The precision and sophistication exhibited by these technologies and institutions show a high level of academic input that defines the essence of knowledge production. This paper, therefore, espouses an autochthony of the knowledge economy that transforms science and technology expected from academic knowledge production to knowledge economy in Africa.

Knowledge can be explained using four frames: know-what, know-why, know-how, and know-who. *Know what* is known about a fact. For example, we know perfectly how many people live in Nigeria, Kenya, and Singapore, the byproducts contained in a particular product, and how many barrels of crude oil are produced in Africa annually. Medical practitioners must know drug prescriptions perfectly before administering them to patients. Lecturers and students must have adequate knowledge of the required books to teach or score high in the examinations. *Know-why* refers to scientific knowledge of the principles and laws of nature. This is the type of knowledge that underlies science and technological innovations. It involves the production and reproduction of a particular phenomenon found in society, universities, and laboratories to respond to the demand of nature and society. *Know-how* refers to skills or capability to do something. A person in a business can analyse market prospects, and the staff of a particular establishment can be trained to acquire a skill necessary for job performance. *Know-who* refers to information about who knows what and who knows how to do what. For example, many scholars in Africa have information about scholars elsewhere in their areas of specialisation and cite them appropriately in related research. The combination of these knowledge frames is essential for the knowledge economy. *Know-why*, which refers to deploying scientific knowledge to respond to the demands of society and laws of nature, is the bedrock of knowledge economy. While the other three frames can be derived from primary research, *know-why* emanates from applied research because it is demand-driven, and therefore, innovativeness becomes its thrust[1]. Knowledge economy, therefore, uses knowledge as the key to economic

[1]Whether this underpins research in Africa will later be expatiated in this paper

growth. It creates and disseminates knowledge inquiry effectively to enhance economic development. It does not necessarily revolve around high technology or information technology. It can be applied to new techniques to transform subsistence farming, traditional craft making, and modernising residential structures for the global market (Suh & Chen, 2007). Competition has gone beyond the pricing of a commodity to innovative designs, effective marketing, efficient distribution, and reputable brand names that require practical knowledge from learning institutions. When applied to development, research targets applied research but does not negate basic research, where scientific thinking is first incubated. Universities in Africa have focused on basic research concentrating more on teaching undergraduates to meet the labour market demand. However, research and development (R&D) that targets innovativeness must move from primary to applied research. Applied research opens an opportunity to create an educated and skilled labour force that continuously is upgraded and can efficiently create and use new knowledge and adapt the new knowledge to local needs.

A measure of knowledge economy is seen against the backdrop of patents granted to academic and research institutions. This is where South Korea has shown much effort in reforming its academic curriculum to meet the demand of global market competitiveness. The US Products and Service Patent Technology Monitor Team (USPTO) granted 597,175 patent applications for technologies meant for utility productions, 47 838 for design patent applications, 976 for plant patent applications, and 223 727 patent grants to foreign residents[1] in 2019. A breakdown of the global ranking of the patent granted to African universities and research institutions shows that South Africa is ranked highest in the table below.

Table 1: Global ranking of the patent granted to African and non-African countries by USPTO (2019)

Countries	Numbers	Percentages	Countries	Numbers	Percentages
South Africa	182	(0.1%)	Japan ranked	53,542	(15.1%)
Egypt	34	(0%),	State of California in the USA	46,177	(13%)
Morocco	4	(0%),	Germany	18,293	(5.2%)
Cameroon	3	(0%)	South Korea's	21,684	(6.1%)
Nigeria	2	(0%),	India	5,378	(1.5%)
Algeria	1	(0%),	Taiwan	11,489	(3.2%)
Burundi	1	(0%),	Singapore	1,119	(0.3%)
Cabo Verde	1	(0%),			
Eritrea	1	(0%),			
Ghana	1	(0%),			
Madagascar	1	(0%),			
Uganda	1	(0%),			
Zambia	1	(0%)			
Total	233	0.1%			

Source: https://www.uspto.gov/web/offices/ac/ido/oeip/taf/topo_19.htm#PartA1_2a. Acc. 24/06/2022

[1] Uspto.gov Accessed 22/06/2022

The other African countries granted patents by USPTO have a dismal share of 0.0% of the total granted. These included Egypt, Morocco, Cameroon, Nigeria, Algeria, Burundi, Cabo Verde, Eritrea, Ghana, Madagascar, Uganda, and Zambia. This amounted to 233 patents granted, including South Africa, with a total percentage of 0.1% compared. This compares very poorly with countries such as Singapore, South Korea, Japan, India, Germany, Taiwan, and the State of California in the United States in 2019.[1] These data present appropriate measures to assess knowledge output and demand-driven curriculum. Seen against the background, Africa is toddling and needs to refocus its research methodology.

The hallmark for academic pursuit in Africa should be a demand-driven curriculum that can produce ideas that can be commodified and even patented for the global market. The example, as cited by Chung and Suh (2007: 153), argues that because of in-house R&D, South Korean industries emerged as world leaders in semiconductor memory chips, cellular phones, and LCDs and also established themselves in the world market in the numerous areas such as shipbuilding, home appliances, automobiles, and telecommunications, to name a few. Certain scholars advanced the argument that in the 1980s, about 83% of R&D funds were used for applied research and technology development, but the share increased to 87% in the 1990s. Korea spends far less on basic research, contrary to conventional expectations, which shows the tendency for more prosperous countries like the United States, Japan, Germany, and France that spend more on basic research (Chang & Su 2007, 141). It is not difficult to understand the difference, as posited by Suh and Chen (2007). Ab-initio, South Korea favoured indigenous technological innovation, which reflects its understudying of technologies transferred from developed countries during the formative years when it experimented with import substitution industrialisation (ISI). Unlike Africa, South Korea understudied the technologies and modified them to suit the local condition. It did not jump into macroeconomic blueprints as would be the case in Africa (Rapley, 1996) but first invested heavily in building education and human resources that developed a domestic absorptive capacity to digest, assimilate and improve upon transferred technologies. This action raised suspicion among developed countries, which saw South Korea as a potential global competitor and became reluctant to transfer new technologies to her (Rapley 1996, 137&139).

Some scholars who raised concerns about the imposition of Eurocentric knowledge production from the field of humanities and social sciences attributed the problem of academic scholarship in Africa to a constructed epistemology imposed during colonialism (Mamdani, 1996, 1998, 2008, 2011; Ake, 1979; Diop, 1976; Amin, 2002; Arowosegbe, 2014, 2016; Adebanwi, 2016; Oyewumi, 2022). These works focused intensely on actualising an all-embracing African renaissance, reclaiming the humanity of Africans by decolonising knowledge and the strategies of knowledge production that promote endogenous knowledge as a recovery project, and projecting the African voice as the most authentic expression of the African condition. These authors were unanimous that historical knowledge production in Africa is markedly power-driven and anchored on an imagined ideology of authenticity and

[1]https://www.uspto.gov/web/offices/ac/ido/oeip/taf/topo_19.htm#PartA1_2a. Accessed 24/06/2022

nativism. Consequently, African studies will remain a colonised field of inquiry unless Africanism is decolonised from that epistemological mode. The problem with these scholars is that having identified the power-driven embedded in epistemological production still pride themselves on using Western publishing outlets to judge the authenticity of knowledge production in Africa. For example, benchmarking publication in the World Web of Science as the sole academic journal of science and other "strong outlets" set by Western scholars as assessment criteria is highly problematic. It raises questions about African scholars challenging the Western Enlightenment paradigm imposed on Africa. One of this confusion is noted in a paper which referred to examples from the late colonial and early post-colonial African universities as excellent traditions (Adebanwi, 2016, 352). The word excellent contradicts Mamdani's argument that those universities were established merely to train clerks. As noted, at the outset of the introduction of academic knowledge in Africa, Lord Lugard cautiously eschewed any form of knowledge that would result in a repeat of Indian disease in Africa (Mamdani, 2008, 4). We argue that 'retelling' African historiography detached from any positive contribution to humanity and scientific innovations is only a part. The substance lies in identifying the appropriate research methodology and theoretical model that will not only domestic existing technology but spur the autochthon of science and technology for global market competitiveness[1].

Therefore, we interrogate whether research carried out in African universities is guided by a knowledge economy that results in science and technologies in the same way as research by conducted scholars from America, Europe, and some parts of Asia. We argue for a knowledge economy that is not a mere adaptation of Western or Asian technology but a knowledge economy founded on autochthonous research from African academics whose research would result in the production of science, technology, and social engineering necessary for global competitiveness. The way to go about it is to interrogate extant literature on academic knowledge production in Africa and ask, what is the thrust of academic knowledge production in Africa? How far did extant African studies address the autochthony of research that produces technology and social engineering that can be highly useful for global market competitiveness? Is the academic curriculum in Africa demand-driven, and what type of demand? What theoretical model can sufficiently inject a paradigm for the autochthon of African scientific and technological development?

Methodologically, explanatory research techniques and content analysis are used to interpret relevant data from published articles on knowledge production in Africa and elsewhere. Also, neoclassical and dependency theories were considered essential explanatory tools for this study because neoclassical theorists do not only insist on the best economic theories that would guide Africa's economy but attempt to justify its tenets. This probably explains, to a large extent, the attack by the dependency theorists accusing them of Eurocentric bias.

[1] This debate will be strengthened with a simple illustration later in this paper.

The rest of this paper is organised as follows: in the next section, we show how scholars have tried to contextualise knowledge production in the educational institutions in Africa, followed by a succinct presentation of how Africa could domesticate existing technology and evolve autochthony of the knowledge economy that would spur global market competitiveness, and finally the conclusion.

1 Contextualising Knowledge Production in the Educational Institutions in Africa

It is a fact that colonial rule in Africa is diverse, and so is knowledge production by these colonial empires in the various regions of the continent. However, African states are commonly trapped in a dependency circle. Generally, African universities have followed the inherited pattern of educational institutions as a standard. This is not unconnected with the imprint of imperialism as contained in colonialisation (Hobson, 1965; Desai, 2001). Using inherited colonial educational institutions as a standard implies a model to be followed or imitated. Qualitatively assessed, the standard set by the colonial universities was to provide training for teachers and clerks in the colonisers' language and avoid a repeat of "Indian disease" (Mamdani, 2008, p. 4) in which those who acquired British education later queried colonial rule interpreted as Indian nationalism. The training included general education focusing on subjects of administrative studies, chemistry, physics, biology, and marketing necessary to service colonial enterprises.

Two standards can be gleaned in post-colonial learning and teaching in African educational institutions, especially universities. The first is publication and citation, and the second is research that concentrates on basic research rather than applied research. Subjectively, articles published in European and US journals indexed in standard publishing outlets approved by Western scholars are rated higher and often used as a benchmark for quality and assessment in Africa. Adopting the Western standard results in African scholars trying to meet the expectations. Young scholars, through mentorship, are expected to learn the styles and skills of writing articles that can be accepted for publication and even research areas that would attract the attention of publishing outlets. Delay in the review of articles and publications is considered a measure of quality standards. Articles that receive faster attention in the review process or money paid for their publications are considered less standard. Advertising publications in such high Publishing Houses became the first attraction to readers while reading or citing from other sources is primarily ignored. One serious problem of this faulty assessment criterion is the over-generalization and abandonment of essential areas of study in Africa. Research problems, especially in humanities and social sciences, might appear minor for these Western standard publication outlets. The writer would only have the option of generalising the problem as a continent based or taking the option of abandoning the study. The faulty assessment criteria raise an essential question about the success of decolonising knowledge production in Africa as canvassed in humanities and social sciences (Mamdani, 2008, 2011; Arowosegbe, 2014, 2016; Adebanwi, 2016; Oyewumi, 2022).

The other problem is that the extant papers on knowledge production in Africa are primarily driven by basic research whose target, more often, is to satisfy knowledge curiosity.

This position queries Mamdani's argument that the university is not a think tank institution, alluding to think tanks' preoccupation with the policy-oriented centres where the target of research is to make recommendations (Mamdani, 2011, 7). Though conceding that university research should consist of both primary and applied research, African scholars are inclined to prioritise basic research, thereby failing to schematise how research can lead to problem-solving. In other words, they want to escape the accusation of the behavioralist school of delving into the realm of subjectivity or value-laden in recommending a solution to an existing problem (Easton, 1953; Kateb, 1968). Those insisting on value neutrality have failed to understand that certain technologies reveal the political purposes hidden in them. The normative commitment of the researchers that influence their choice quickly manifests in prompt deployment when confronted by supposed targets. This explains the global imbalance in power politics, global economic restructuring, and even discourses on climate change. Avoiding problem-solving scholarship erodes the foundation on which knowledge economy is built. South Korean and Singaporean educational systems are built on problem-solving scholarship, necessitating a high premium for funding vocational skill acquisition centres to the extent that industries collaborate with academics to design learning curricula to produce human resources that feed the South Korean and the Singaporean complex industries. This is not only in sciences but in humanities and social sciences, where the educational sector laid the foundation upon which democratic principles and institutions that produced political knowledge that changed political behavioural patterns are based (Kim and Rhee 2007, 108).

There is common knowledge of teachers' training institutes found in Africa but what differentiates Africa from Europe or Asia is the content of the curriculum. Training teachers in tertiary institutions is mainstreamed into what is known in the academic community as mentorship (a voluntary learning process between senior and junior academic staff). As we argued earlier, the central preoccupation in this training process between a senior and a junior is to mentor the junior academic on how to write a paper that fits into the dominant theoretical model, a paper that would be acceptable in high-impact journals or vital outlets and paper that would attract grants from developed countries and institutions. In science, it is for the junior lecturer to prove why he is employed to lecture in the sciences, and senior or older lecturers to show that they have established a "ceiling that cannot be easily broken." Because of the claim to originality of research, the ambition of the junior lecturer is placed under suspicion. Within this context, the debate on the decolonisation of knowledge production in Africa loses direction, glossing over the purpose of knowledge production and for whom knowledge is meant.

Knowledge production in Africa can be presented under three historical contexts: before Western penetration, the era predating outright colonisation, and the colonial era. Before Western domination, Africa had three academic institutions: Al-Azhar of Egypt, Al-Zaytuna in Tunisia, and Sankore in Mali, a millennium ago (Mamdani (2011, 1). Two problems emerged in historicising the contribution of these centres of knowledge production because of relying on oral history that may not produce accurate information about what happened one or two hundred years ago. Again, relying on archaeological records that use instruments developed in the

Western world for authentication can also be queried by the critics of Eurocentric scholars. The second problem is that the knowledge or wisdom from the past competes for relevance with modern Western-driven knowledge production in various fields such as economics, sociology, conflict resolution, etc. However, the effort to disarticulate, suppress or even erase indigenous African knowledge and practices during colonial and even by post-colonial elites failed (Ranger, 1983; Osaghae, 1989; Malam, 1997; Osaghae, 2000; Zartman, 2000; Munoz, 2007; Iwu 2015, 2019, 2020).

The exploitation of raw materials meant for the European market using an instrument of force marked the era before the outright colonialisation of Africa (Lenin, 1939; Hobson, 1965; Warren, 1980; Frederick, 2015) through the instrumentality of slavery during which Europeans collaborated and competed with some Arab slave merchants and some African kings (Lovejoy, 1983). The raw materials and the enslaved people were meant to feed the industrial needs of the West. However, this business interest was denied and presented as a voyage to "civilize the backward continent, as argued by Griffiths and Hanna. They argue that colonialism is the outward expression of national energy. Therefore, the condemnation would amount to attacking the process by which civilization was diffused from outside, and Africa would have remained at a standstill over the last century (Griffiths and Hanna cited by Mohammed 1982, 30).

First, it is a truism that the civilizational role of the British empire is a function of knowledge extended to a technology of rule. The governance experiment in British colonies, albeit with different results, shows India and Singapore restructuring their educational curriculum towards a knowledge economy or market-driven type. The uprising in India in 1857 against Britain, though construed as superstition because Hindus and Muslims objected to using bullets greased with cow and pig fat (Mamdani, 2008), was, in our view, an expression to establish an indigenous economy seen in the swift move to produce salt from Indian salt water and the production of what is known today as Indian silk material. Thinking that the protest was motivated by religion, the British could not assuage the Indians by relinquishing religious matters to the private realm to be managed by the indigenes. The swiftness to control the Indian economy and the stoppage of importation of salt and other products that could be produced locally amounted to the reason for the protest. This is different in Africa, where the nationalist struggle was pitched towards swapping White rule with African politicians.

The era of colonial rule ushered in a new form of knowledge production in Africa, gleaned from Lord Lugard's dual mandate in India. Lord Lugard did not want the consequences of dual mandate expressed in the form of direct and indirect rule that created an attitude of insubordination resulting in manifest resistance to colonial rule in India, referred to as "Indian disease" (Mamdani, 2008, 4). The fear of a repeat of the Indian disease resulted in the preference and incorporation of uneducated traditional rulers in colonial governance and the slow pace of establishing universities in Africa. We cannot dispute that the sole intention of the British civilizing mission was to train local people on the required clerical task and not on education that would result in the production of superior technology that could compete with them if the success of their earlier pre-colonial mission and later direct colonialism was a function of

academic knowledge production. In the same vein, social sciences and humanities were strategically conceptualized not to raise critical minds that would challenge capitalist thought and production (Bond, 2006; Banaji, 2010; Wood, 2017). To expect anything contrary is a delusion. Most, unfortunately, African countries emerging from colonialism saw establishing universities at independence as national pride, just like the national anthem, national flag, and currency, without restructuring the academic curriculum that could compete with or challenge Western science and technology.

Flag independence interpreted as decolonization only saw the replacement of erstwhile colonial staff in the government institutions with Africans and a modification in the study of regional history ab-initio studied as European history and African folklores contrived epistemologically to prove the superiority of the Caucasian (White) race over others (Dubini, 1975; Furnivall, 1939) in few pre-independence universities. Re-historicizing or retelling the African past by the foremost historians in the University of Dar-es-Salaam, Makerere University in East Africa, University of Ibadan, and the University of Legon in West Africa countered what was seen as contrived Western hegemonic genealogies and footpath for progress meant for Africa (Mamdani, 1996, 1998). Therefore, these historians, sociologists, and linguisticians who followed later also tried that African languages should be for learning and teaching in academic institutions. Today's scholars in physical science are grappling with the indigenization of teaching biology, physics, chemistry, medicine, and pharmacy meant to produce only teachers. The most brutal hit are scholars in economics that were staunchly redirected from the study of political economy to macroeconomics when the dependency theorist, influenced mainly by Marxist thoughts, challenged uneven global development (Lowy, 2010).

Ake's (1979) book: Social Science as Imperialism radically challenged the discipline of social sciences as it exposed the guise of academic knowledge production by the Western scholars that have already set a linear developmental paradigm mainstreamed into the academic curriculum. The outcome of the linear paradigm is barrenness in critical intellectual thought that spurs the autochthonous of solid institutions and technological innovativeness. One major problem in Africa is the shifting of blame to political leaders by the academia and the masses, thereby pushing African political elites into seeking foreign financial aid (Bird, 1995; Isbister, 1998; Orjiako, 2000; Joseph & Gillies, 2009; Hudson, 2015; Iwu, 2022) that further cripples the economy because of internal insurrections, corruption by the political elites and conditionalities attached to the aid. Instead of rethinking and strategising the educational system to meet the challenges, Africans, especially those tutored on macroeconomics theories, became the leading scholars advocating neoclassical economic recipes based on World Bank/IMF escape routes (Sachs, 2000; Soludo, 2000a; Soludo, 2003; Obadan, 2003; Okonjo-Iweala, 2003; Okonjo-Iweala, Soludo and Muhtar, 2003; Enweze, 2003; Onimode 2000; Obadan, 2011). Therefore, academia and policymakers are caught in the trap of adjusting African social structures that create internal contradictions that favour consumption over savings, overpopulation, and corrupt social and political practices (Harris, 1986; Rapley, 1996; Jones,

1996). Aldcroft argues that the expectation that latecomers would take advantage to learn from the earlier starters' mistakes in economic development and overtake them by adopting the latest technology and skills has not in any way surfaced in Africa (1996, 3). Africans, though latecomers may have a legitimate claim that Western control and influence stultified their development, unfortunately. It imposed capital-intensive programs on its surplus labour force, adopting educational systems and other infrastructures often inappropriate to indigenous sociological and cultural conditions. This failure is what Jones attributes to macroeconomic populism operated by African governments that, for some cultural reasons, often finance inefficient projects and support bloated bureaucracies (1996, 85).

Unfortunately, trying to assert and rediscover a developmental track, African scholars already immersed in Western theorisations still fell into the Eurocentric Enlightenment trap by drawing from the modernisation paradigm propagated by Western research institutions. Using Western standards becomes a measure of rightness or wrongness even by those criticising Western knowledge production as couched in imperialism. Of importance is to critically assess the commitment of CODESRIA (Council for the Development of Research in Africa) towards decolonised and deracialised scholarship in Africa, which was the cardinal objective of the intelligentsia in postcolonial equatorial Africa. Like other research institutes in Africa seeking funding, the Western agencies and governments contributed to fracturing the cardinal objective of CODESRIA by turning the research institutes into mere consultants who have to submit reports of their research findings or publish them in outlets approved by donors. Seeking for external funding results in the emergence and proliferation of consultancy business in the educational sector which Mamdani identifies as fronting externally-driven projects that resemble more outreach for the UK or France doing research in Africa by partnering or incorporating individual local researchers rather than institutional partnerships that results in symmetric relations (Mamdani 2011, 4&6). The effect is to devalue original research or intellectual production in Africa, thereby relegating Africa to providing raw material (data) for outside academics who process it and then re-export finished products back to Africa. Some Western research outlets are domiciled in African university environments collaborating or identifying critical scholars for external funding. We argue that their positive contribution can be measured against the backdrop of patent applications granted to African universities or the technology transfer that indigenous African scholars can recalibrate.

Specific questions emerge: if African scholars have identified the problems, why are they still interlocked in modelling their research methodologies after Western epistemological theories? Why are publications in their journals rated high impact when Africans from where the raw data was derived barely have access to the papers? Why do Western journals serve as a benchmark for the quality of publication and promotion in African universities? Why is research from Africa barely commodified for global market competitiveness? These questions are addressed in the following section, which examines the implications of struggling to fix Western research theories and methodology and the implication of using such as a benchmark for valid, scientific, and acceptable knowledge production in Africa.

2 Autochthony of knowledge economy and African global competitiveness

The introduction of the structural adjustment program (SAP) in the 1980s signified the first step to entangling Africa into the global economic matrix because it tended to give Africa a level playing ground only if its products met the standard of global consumption. SAP encourages private sector investment, decentralisation of public service provisioning, private sector provision of basic infrastructure, trade liberalisation, privatization of state-owned agricultural enterprise, devaluation of local currency, and reform of public financial management and accountability procedures (Rapley, 1996, 71). 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. This is seen against the background that she could not domesticate the technologies transferred during her experiment with import substitution industrialisation (ISI) and is unable to adopt the infant industrial model (IIM) (like in some European states) because it requires producing goods and services from indigenously built science and technology to handle her industrialisation outside external interference or control[1]. It is based on Africa's experience with theories of development that keep puzzling about the type of theory or model that serves as the best recipe for Africa's development.

3 How can Africa engage in a knowledge economy?

In this section we discuss the inquest on the development that Africa needs and state our contribution to how Africa can engage in knowledge economy, taking an applied research method approach. That Africa constitutes a rich site of new knowledge is not debated (Ranger, 1983; Osaghae, 1989; Malam, 1997; Osaghae, 2000; Zartman, 2000; Munoz, 2007; Comaroff & Comaroff, 2011; Iwu 2015, 2019, 2020). The product of Knowledge manifests in the more extensive mode of production (material and social) and even where most artificial creation occurs (Taiwo, 2012). Since academic institutions, especially universities are the conveyor of knowledge production, we can draw from the fundamental principles of football to explain how and why tertiary institutions (Universities, Colleges of education, Polytechnic) act as national and state teams with professors and other lecturers in these institutions as the coaches that will spur knowledge economy which will reshape African competitiveness in production, services, and technology. Individual students, lecturers, and non-students can be set as players. The role of the coaches (professors and other lecturers) as team leaders in the institutions is to identify the skills of the students, fellow lecturers, and non-students; in the same way, young players are picked on the streets and trained to develop their skills or potentials in science, technology, and innovations. We separate Professors from other categories of lecturers because, in their hierarchy, they can identify the skill of young lecturers and, like a coach in a regular football team, will not feel humiliated to train and promote a young lecturer under him who perhaps could have more recognition than them for the sake of national and collective development. As a football coach, the Professor could sincerely help build up the talent of young lecturers that can be commodified for market value.

[1] See Friedrich List (1966) for a debate on the application of IIM

What skills should the professor(s) look out for in the students and other lecturers, including non-students? The question is essential because many skills can be scientifically harnessed for economic development. Imaginative thinking is often displayed in innovations, artists, and architectural experts that are highly instrumental to cloth-making industries, footwear industries, design and packaging industries, skills in fabrication and calibration of machine tools used for automobiles, and other complex engineering designs. Students or ordinary people who display knowledge of curative natural leaves, juice, and liquid substances made from herbs, traditional medical practitioners, herbal medicine in curing sick people, goldsmiths, traditional bone setters, and many others are found in African villages and urban areas. These individuals often assert the originality of their knowledge when accosted on the source of their knowledge, claiming that they inherited it from their parents or ancestors. 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 and social media. Some students and ordinary people who display knowledge of traditional medicines but are scorned by scholars oriented in Western hegemonic epistemology have skills and knowledge that fill the yearning gap in pharmacological science in Africa (Zartman 2000). Goldsmiths engaged in the local melting of iron or any other object display the skills and talents useful in calibration and fabrication in the refinery, shipbuilding, spare parts development, aeronautic engineering, and so on. Similar talents were used in South Korea during their earlier years of experimenting with import substitution industrialisation (ISI).

Indeed, some students and lecturers may have displayed skills and creative ideas within the campuses when fulfilling the requirements of their degrees or diplomas. Unfortunately, these skills and innovative ideas are merely celebrated as a feat without further effort to develop them into products for market value. When the ideas are contained in basic research or papers by students and lecturers, they are not taken to the realm of applied research, where the ideas can further be interrogated and turned into concrete products. Our argument[1] in this paper is to raise the consciousness of the academic community to realise its role as a centre for harnessing talents. Tertiary institutions should constantly search for good players interpreted as skills and talents in people irrespective of tribe, religion, or gender in the same way football players do. In the Nigerian case, tertiary institutions could set up a special fund, even 0.0001% of their revenue, either internally generated or from federal or state allocation, to identify and develop skills. There are specialised schools for technical and vocational studies that, in a practical sense, train people to acquire skills to manage existing technology, be self-employed and supply workforce to industries. Unfortunately, in the case of Nigeria, these specialised institutions like universities of agriculture and science and technology operate on the assumption that students and lecturers are imbued with scientific and innovative knowledge. This assumption proved illusory in Africa, and even polytechnic, Colleges of education are seeking transformation into

[1] See Iwu (2020) for more analysis of scientific and technological development based on football principles.

universities. In a true sense, the reverse should be the case if the knowledge economy sets the contour for education[1].

We must admit that the skills (or talents) displayed by the lecturers, students, or those harnessed outside the academic environment may be too expensive for a single African institution to finance. Again, an individual's talent in arts or science may not result in manufacturing a product or a complete technology for a product. However, the skill displayed can still be combined with another individual's talents to manufacture a complete product like a motorcar, motorbike, aeroplane, microchips, computer, biro, pencil, cardboard, toothpaste, toothbrush, footwear, pharmaceutical products, and so on. This is the reason the university and other tertiary institutions acting as a team should not be limited to their immediate campus but could propose a collaboration with other institutions in Africa and elsewhere for financing and developing ideas into products with market value, just like a football team higher footballers from other countries. Also, as in other climes, institutions can put a call for postdoc research to assess an application from researchers with the requisite knowledge that can contribute to the missing components. Monies spent funding such postdoc research becomes infinitesimal when products from the research enter the market. Academic institutions acting under the principle of a football team can also 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 the best African footballers to enhance the competence of their team in a global football competition.

Each state in Africa requires anthropological and sociological studies to identify its cultural areas and individuals that provided science and technology in 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). Still, the ultimate goal is to produce high-level science and technology that can compete globally, just like a FIFA-organized tournament. Each country may not achieve a complete production of any particular product as the case may be; producing a part provides the opportunity for crisscrossing investment. Even tertiary institutions in Africa can enter into crisscross research endeavours, unlike where individuals or universities serve as consultants for research institutes or universities in developed countries only to be paid as research assistants. Crisscross research that results in technology used for production means that the profits after sales of each product are continuously shared on the monetary value of each research input. Even designs are patented, which means they can be used for an industry's crisscross investment if another industry demands such design. Most importantly, universities and tertiary institutions may partner with individuals and other corporate bodies to fund, develop, and market ideas and products for economic gains.

A self-defeatist tendency by scholars and researchers, the porosity of research funding, consultancy syndrome, and faulty assessment criteria are significant problems affecting

[1] See Suh and Chen (2007) for Korea as a knowledge economy

Africa's knowledge economy development. Because the interest of funders determines research objectives, many scholars act as mere consultants, and handing the result of the research to the sponsor adds no economic value to the consultant's country. Even CODESRIA, with its African initiatives, has relied on external funding. Carnegie African Diaspora Fellowship Program (ADF) in North America and the African Higher Education Submit convened by Trust Africa in Dakar, Senegal, involved in funding research in Africa will not spur the indigenous knowledge economy because of the out-sourcing of funds to external institutions. Government funding institutions in Nigeria like TETFund even caved into the self-defeatist tendency by mandating that papers from the research funded by the agency must be published in a high-impact journal. In the same vein, some universities have mandated that the doctoral thesis of their students be sent to universities in Europe and America for assessment before it is accepted internally.

An inevitable question emerges. Can research be given out freely if it is meant for knowledge economy? Certainly no! The implication of researching and publishing the result online is raised by Zuboff (2019), who points out that research carried out and sent online is often commodified by information technology giants and sold to prospective entrepreneurs that turn them into products for market competition without the permission or knowledge of the original researchers. Some of these individuals are in litigation with APPLE and Google. To actualise research that targets knowledge economy, we strongly recommend that basic research by scholars in African universities and other tertiary institutions should be presented first at the department and faculty seminars where the merit of the research for the knowledge economy would be assessed by other scholars with cognate research experience after which the research can be transformed to applied research to commodify such for market or policy-making values. While not jettisoning online publications, the knowledge economy should be the driving motive for carrying out research in Africa in the same way it does in other countries that are scoring high in patenting research results.

Conclusion

For Africa to compete in the global environment, it needs to change its academic curriculum to be demand-driven. A knowledge economy is the end product of academic research, and to achieve its objective, the research must adopt an applied research methodology. "Retelling" African histories or pointing to the Eurocentric epistemological imposition on African tertiary institutions is only a part. Still, the substance lies in finding a theoretical model that can spur indigenous knowledge production or domesticate the existing one for developing the technology necessary for producing goods and services for global market competitions. Drawing from the principle of the football game, this paper shows how Africans can harness both manifest and potential talents and skills in Africa and could even, like other countries harness individuals elsewhere with skills to add to what it needs to make a complete technology for global market competitions. Finally, this paper argues that online publications of research papers are overemphasised instead of commodifying the results for global market competitiveness and therefore recommends that basic research by scholars in African

universities and other tertiary institutions should be presented first at the department and faculty seminars where the merit of the research for the knowledge economy would be assessed by other scholars with cognate research experience after which the research can be transformed to applied research to commodify such for market or policy values.

Reference

Adebanwi, W. (2016). Rethinking knowledge production in Africa. *Africa. Cambridge Journals. Vol 86 Issue 2.* 350-353

Ake, C. (1979). *Social science as imperialism: The theory of political development*. Ibadan: Ibadan University Press.

Aldcroft, D. H. (1996). Rich nations-poor nations: The penalty of lateness, in Derek H. Aldcroft and Ross E. Catterall (eds). *Rich Nations-Poor Nations: The Long-Run Perspectives*. UK: Edward Elgar Publishing Limited. 1-22

Amin, S. (2002). Africa living on the fringe. *Monthly Review, 53: 41-50*

Arowosegbe, J. O. (2014). African studies and the bias of Eurocentrism. *Social Dynamics: A Journal of African Studies vol 40. No 2.* 308-321

Arowosegbe, J. O. (2016). African scholars, African studies, and Knowledge production on Africa. *Africa. Cambridge Journals. Vol 86 Issue 2.* 324-338

Banaji, J. (2010). *Theory as history: Essays on modes of production and exploitation*. Chicago: Haymarket Books

Bird, G. (1995). *IMF lending to developing countries: Issues and evidence*. London: Routledge

Bond, P. (2006). *Looting Africa: The economics of exploitation*. Pieternaritzburg: University of KwaZulu-Natal Press

Chung, S. and Suh, J. (2007). Harnessing the potential of science and technology, in Joonghae Suh, and Derek, H. C. Chen (eds). *Korea as a knowledge economy: Evolutionary process and lessons learned*. Washington, DC: World Bank Institute. pp.135-165

Comaroff, J. and Comaroff, J. L. (2011). *Theory from the South: Or, how Euro-America is evolving toward Africa*. Boulder, CO: Paradigm Publishers

Desai, G. (2001). *Subject to colonialism: African self-fashioning and the colonial library*. Durham and London: Duke University Press

Diop, C. A. (1976). *African origin of civilization: Myths or reality*. London: London University Press

Dubini, N. P. (1975). "Race and contemporary genetics," in Leo Kuper. *Race, Science, and Racism*. Paris: The UNESCO Press. 68-94

Easton, D. (1953). *The political system: An inquiry into the state of political science*. (Second Edition). New York: Alfre A. Knopf

Enweze, C. (2003). Sustainable debt and development strategy in Africa, in Ngozi Okonjo-Iweala, Charles C. Soludo, and Mansur Muhtar (eds). *The Debt Trap in Nigeria: Towards a Sustainable Debt Strategy*. Trenton, NJ: Africa World Press, Inc. 75-90

Frederick, C. (2015). Africa in the world: Capitalism, empire, nation-state. Frederick Cooper. Citizenship between empire and nation: Remaking France and French Africa 1945-1960. *The American Historical Review, 120* (5), 1844-1847.

Friedrich List (1966). *The national system of political economy*. New York: Augustus M. Kelly.

Furnivall, J. S. (1939). *Netherlands India*. Cambridge: Cambridge University Press.

Harris, N. (1986). *The end of the Third World: Newly industrial countries and the decline of an ideology*. Penguin Books.

Hobson, J. A. (1965). *Imperialism: A study*. Ann Arbor: University of Michigan Press.

Hudson, M. (2015). Killing the host: How financial parasites and debt destroy the global economy. ISLET-Verlag.

Isbister, J. (1998). *Promises not kept: The betrayal of social change in the Third World*. USA: Kumarian Press.

Iwu H. N. (2015). *Traditional mechanism in conflict resolution in Igboland, Nigeria*. KG Heinrich-Böcking, Saarbrücken, Germany: LAP LAMBERT Academic.

Iwu H. N. (2020). Football theory of scientific development: A theory for the end of Africa's underdevelopment. *Socialscientia Journal of the Social Sciences and Humanities Volume 5. Number 3*. 10-27.

Iwu H. N; (2019). Autochthony of belonging in Umuleri / Aguleri war: the people and indigenous mechanisms for conflict resolution in Southeast Nigeria. Volume 4 Number 1 March.

Iwu, H. N. (2022). *Foreign Aid to Africa since 1940. Africa in Global History* – A Handbook, (eds). Toyin Falola and Mohammed Bashir Salau. Walter de Gruyter GmbH, Berlin/Boston, www.degruyter.com 335-354.

Jones, S. (1996). Macroeconomic populism and economic failure in Africa since 1960, in Derek H. Aldcroft and Ross E. Catterall (eds). *Rich Nations-Poor Nations: The Long-Run Perspectives*. UK: Edward Elgar Publishing Limited. 83-105.

Joseph, R. & Gillies, A. (eds). (2009). *Smart aid for African development*. London: Lynne Rienner Publishers.

Kateb, G. (1968). *Political theory: Its nature and uses*. New York: St. Martin's Press.

Kim, A. and Rhee, B. (2007). Meeting skill and human requirements, in Joonghae Suh, and Derek, H. C. Chen (eds). *Korea as a knowledge economy: Evolutionary process and lessons learned*. Washington, DC: World Bank Institute. 107-133.

Lenin, V. (1939). *Imperialism: The highest stage of capitalism*. New York: International Publishers

Lovejoy, P. E. (1983). *Transformation of slavery: A history of slavery in Africa*. Cambridge: Cambridge University Press.

Löwy, M. (2010). *The politics of combined and uneven development: The theory of permanent revolution*. Chicago: Haymarket Books.

Malam, J. (1997). Conflict resolution wisdom from Africa. *African Centre for the constructive Resolution of Disputes (ACCORD).*6-9.

Mamdani, M. (1996). Centre for African studies: Some preliminary thoughts. Social Dynamics: *A Journal of African Studies, 22:2*, pp. 1-14.

Mamdani, M. (1998). Are African studies to be turned into a new home for Bantu education at UCT? Social Dynamics: *A Journal of African Studies, 24:2*, pp. 63-75.

Mamdani, M. (2008). Higher education, the State, and the marketplace. *Journal of Higher Education in Africa. Vol. 6*, No. 1. 1-10.

Mamdani, M. (2011). *The importance of research in a university*. MISR Working Paper. Makerere Institute of Social Research (MISR). Makerere University, Kampala, Uganda.

Mohammed, B. (1982). Africa and nonalignment: A study in the foreign relations of new nations. Kano: Triumph Publishing CO. Ltd

Munoz, L.J. 2007.*The past in the present*: *Toward a rehabilitation of tradition*. Ibadan Spectrum Books Ltd.

Obadan, M. (2003). Towards Nigeria's sustainable debt strategy,in Ngozi Okonjo-Iweala, Charles C. Soludo, and Mansur Muhtar (eds). *The Debt Trap in Nigeria: Towards a Sustainable Debt Strategy*. Trenton, NJ: Africa World Press, Inc. 195-216.

Obadan, M. I. (2011). Past development plans in Nigeria: Performance, problems, and prospects. A Commissioned Paper presented at the 52nd Annual Conference of the Nigerian Economics Society, held at Covenant University, Ota, Ogun State, Nigeria, September 20-22.

Okonjo-Iweala, N. (2003). Managing Nigeria's debt: Institutional and governance aspects, in Ngozi Okonjo-Iweala, Charles C. Soludo, and Mansur Muhtar (eds). *The Debt Trap in Nigeria: Towards a Sustainable Debt Strategy*. Trenton, NJ: Africa World Press, Inc. 167-194.

Okonjo-Iweala, N., Soludo, C. C., and Muhtar, M. (eds). (2003). *The debt trap in Nigeria: Towards a sustainable debt strategy*. Trenton, NJ: Africa World Press, Inc. 23-74.

Onimode, B. (2000). *Africa in the world of the 21st Century*. Ibadan: University Press.

Orjiako, H. (2000). *Killing Sub-Saharan Africa with aid*. New York: Nova Science Publishers, Inc.

Osaghae, E. E. 2000. Applying Traditional methods in modern conflict: possibilities and limits, in Zartman, I.W. (ed.) *Traditional cures for modern conflicts: African Conflict "medicine*." Lynne Rienner, UK, pp. 201 - 217.

Osaghae, E.E. 1989. The passage from the past to the present in African political thought: The question of relevance. In John, A.A. Anyoade& Adigun, A.B. Agbeje, (eds.) *African traditional political thought and institutions*. Ibadan: Centre for Black and African Arts and Civilization (CBAA), pp. 53 - 75.

Oyewumi, O. (2022). Speech: (Re) centering African epistemologies: An intellectual journey. (The Acceptance Speech for the 2021 Distinguished Africanist Award), CODESRIA Bulletin online, No. 3 February https://www.blackagendareport.com/speech-recentring-african-epistemologies-intellectual-journey-oyeronke-oyewumi-2021

Ranger, T.O. 1983. The invention of tradition in colonial Africa, in Hobsbawm & T. Ranger, (ed.), *The Invention of Tradition*. Cambridge: Cambridge University Press. 221 – 262.

Rapley, J. (1996). *Understanding development: Theory and practice in the Third World*. UK: Lynne Rienner Publishers.

Sachs, J. D. (2000). A new global consensus on helping the poorest of the poor. Paper presented at the 2000 Annual World Bank Conference on Development Economics. Washington D. C.

Soludo, C. C. (2000a). Globalization tax and trade as remedies to underdevelopment traps and ineffective aid. Paper presented at the 12th World Bank Annual Conference on Development Economics. Washington D. C.

Soludo, C. C. (2003). Debt, poverty, and inequality: Towards an exit strategy for Nigeria and Africa, in Ngozi Okonjo-Iweala, Charles C. Soludo, and Mansur Muhtar (eds). *The Debt Trap in Nigeria: Towards a Sustainable Debt Strategy*. Trenton, NJ: Africa World Press, Inc. 23-74.

Suh, J. and Chen, D. H. C. (2007). *Korea as a knowledge economy: Evolutionary process and lessons learned*. Washington, DC: World Bank Institute.

Taiwo, O. (2012). What is "African studies"? African scholars, Africanist scholars, and the production of knowledge, in H. Lauer and K. Aayidoho (eds), *Reclaiming the Human Sciences and Humanities Through African Perspectives*: Volume 11. Accra, Ghana: Sub-Saharan Publishers.

Warren, B. (1980). *Imperialism: Pioneer of capitalism*. London: New Left Books.

Wood, E. M. (2017). *The origin of capitalism: A longer view*. London: Verso.

Zartman W., I. (2000). Introduction: African traditional conflicts "medicine." In I. William Zartman (ed). *Traditional cures for modern conflicts: African conflicts "medicine."* London: Lynne Rienner Publishers, pp 1-11.

Zuboff, S. (2019). *The age of surveillance capitalism: The fight for a human future at the new frontiers of power*. London: Profile Books.