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## Article

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## Article

# The Indigenous Logistics System in Africa: The Case of Nigeria, Past to Present

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**Abstract:** *Background:* Centuries after its introduction in Africa, the western-style logistics system has not replicated the same results as it has in other parts of the world. The continent continues to grapple with poor logistics infrastructure and low intra-Africa trade at a time when governments in Africa are committed towards the expansion of trade and manufacturing through the implementation of the African Continental Free Trade Area (AfCFTA) agreement. There is a pressing need, therefore, for the development of a logistics system designed for the African socioeconomic environment and the peculiarities of the people. *Methods:* This paper examines the operations of the Indigenous Logistics Systems (ILS) in pre-colonial Nigeria and its development over time through qualitative data gathered from the six geopolitical zones in Nigeria and a review of literature. *Results:* ILS in Nigeria is the cultural creation of the people through the efficient management of available resources and the use of indigenous knowledge. The system derives its strengths and effectiveness from its availability, simplicity, affordability, and trust. *Conclusions:* The paper concludes that if improved with the application of simple technology, ILS has the answers to the challenges of logistics and Supply Chain Management (SCM) in Africa.

**Keywords:** logistics; supply chain management; indigenous logistics system; supply chain; Africa



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## 1. Introduction

Africa has a long history of trade. “The very earliest evidence of African trade is described by Herodotus (c. 484–425 BC) who wrote of the trade across the Sahara. This record of trade was preserved in rock paintings dating from 10,000 BC” [1]. Even at the earliest of times, evidence of a culturally developed and environmentally adaptable Indigenous Logistics System (ILS) can be inferred from the depiction of “salt, ivory, animal skins” on “mules and horse-drawn wheeled carts” being transported to points of delivery or exchange [1]. In pre-colonial Nigeria, the indigenous nations making up modern-day Nigeria had their first engagement in foreign trade mainly through itinerant travelling merchants of the Mediterranean stock. These seasoned and weather-hardened traders plied the trans-Saharan trade route [2]. The existence and sophistication of trade via the trans-Saharan trade route presuppose the fact that an extensive logistics system was in place to facilitate the movement of goods along the different trade points across the continent including the Niger area. Such logistics and supply chain management would have depended on the tradesmen who were key stakeholders and the primary facilitators of trade. The distance from one trade point or market to another would have led to the establishment of stop-over points or trade districts where tradesmen could spend some time and store their goods in safe places. Such an Indigenous Logistics System (ILS) would have sprung out of the shared culture, value system and indigenous knowledge of African cultural groups. Additionally, the absence of any evidence to suggest that these early African traders and operators of ILS in pre-colonial Africa travelled to Europe or other parts of the world to understudy the logistics system in operation in those climes is further evidence that the logistics system in pre-colonial Africa must have been indigenously

developed. The logistics system developed by the African people pre-dates the non-colonial contact with Europeans along the coastlines of West Africa that started around 1480 AD [3]. Hence, it can be hypothesized that African cultures had their own culturally developed ILS, which was influenced and regulated mainly by their culture, value system, and, to a limited extent, the shared cultural values and beliefs of non-African actors.

Despite the evidence of the development of its own logistics system, however, there is hardly any substantial body of work when it comes to ILS in Africa. Even when it comes to conventional supply chain management in Africa, the available literature is scanty. This phenomenon is not different in the case of Nigeria, despite its rich historical background and significant economic ranking in Africa. Oyedijo et al. (2021) stated that only a few studies have considered Nigeria when it comes to supply chain management [4]. This lack of attention to conventional supply chain management within the African context fosters the view that Africa is simply a veritable dumping ground of ideas from the industrialized world, many of which have failed to replicate the successes witnessed in their land of origin. Moreso, the finding that the Nigerian business environment has an unstructured and characteristically different configuration distinct from global industrialized nations [5] may have contributed to the limited number of research on conventional supply chain management in Nigeria and Africa generally. This reality has grave implications for the development of an effective supply chain management system suitable for the African context. More worrisome is the fact that after centuries of the presence of the western system of logistics and SCM in Africa [3], the African continent continues to grapple with vast under-development of key infrastructure that would drive the imported western systems of logistics and supply chain management [6]. The present state of western logistics and SCM in Africa favors a higher volume of trade between Africa and other continents and lower intra-African trade which results in higher cost of goods for consumers in Africa. This has prompted Africa to take bold steps to boost trade within the continent with the signing of the African Continental Free Trade Area (AfCFTA) agreement. AfCFTA is projected to expand intraregional trade in manufacturing within the continent along with the facilitation of the inclusion of African businesses in the global supply chain system. By 2035, the volume of total exports would increase by almost 29 percent relative to business as usual. Intracontinental exports would increase by more than 81 percent, while exports to non-African countries would rise by 19 percent [7]. Given the current state and challenges of western logistics and SCM in Africa, these projections would be unrealized without the support and facilitation of an improved and effective logistics system made for Africa, hence the need to look inwards towards finding logistics and SCM solutions developed in Africa.

Given the historicity of trade and the exchange of goods in pre-colonial Africa, the expected expansion in intracontinental trade through AfCFTA, and the challenges bedeviling conventional logistics and supply chain management in Africa, Africa needs to look behind to learn to develop an effective logistics system that facilitates economic development by proffering solutions to the challenges and bottlenecks that confront logistics systems in Africa. Thus, the central objective of this paper is to describe ILS in pre-colonial Nigeria and its operations today, as well as its potential. It will provide answers to the following research questions:

1. What Indigenous Logistics Systems supported trade in pre-colonial Nigeria?
2. What is the state of ILS in Nigeria today?
3. What are the strengths of ILS in Nigeria?

### 1.1. Literature Review

The word “logistics” was adopted, from the military lexicon, by business organizations after World War 2 to create and confer competitive advantages in business practices [6]. Since its commercialization, logistics or logistics systems have been defined in many ways. Johnson et al. (1999) provided a concise definition of logistics as “the entire process of materials and products moving into, through, and out of a firm” [8]. The United Kingdom’s

Chartered Institute of Logistics and Transport (CILT) expounds on the processes of logistics when it described logistics as the positioning of resources to meet user requirements, which involves getting the right products to the right place in the right quantity at the right time in the right conditions and at the right costs [9]. Similar definitions that harp on the processes and aims of logistics include that of the Council of Supply Chain Management Professionals (CSCMP), a United States-based body, which defined logistics as “the process of planning, implementing, and controlling procedures for the efficient and effective transportation and storage of goods including services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements. This definition includes inbound, outbound, internal, and external movements” [10]. Logistics management has also been defined as “that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers’ requirements” [11]. Whereas Lourenço (2005) simply defines it as “as the management of all logistics activities throughout a firm and supply chain” [12]. Farahani et al. (2011) also define logistics as “the management of all activities which facilitate movement and the co-ordination of supply and demand in the creation of time and place utility” [13]. Kukovič et al. (2014) gave what they referred to as the “final definition of logistics in general” when they opine that logistics “entails different activities such as planning, production, purchasing, transportation, warehousing, loading and unloading, handling, packaging, processing, distribution, control, information processing and traceability. These activities in the right proportion are necessary to achieve the basic goal of logistics which is reflected in the effective flow of goods/services/people/information, at the right time with the right equipment/devices /competent personnel, in the right place, all in adequate quality and the right quantity in order to satisfy customers. Logistics should also strive to be cost-effective and environmentally friendly” [14].

The concept of the supply chain was coined and introduced to literature at the beginning of the 1980s by R.K. Oliver and M.D. Weber, consultants in the field of logistics [15]. A supply chain is defined as “a set of three or more entities (organizations or individuals) directly involved in the upstream and downstream flows of products, services, finances, and/or information from a source to a customer” [16]. This definition emphasizes the entities between the source and the customer as the supply chain. Ayers (2001) highlights “life cycle processes comprising physical, information, financial, and knowledge flows” designed to satisfy end-user needs as the core of the supply chain [17]. A simple and nontechnical definition of a supply chain is that which defines it as consisting of “all parties involved, directly or indirectly, in fulfilling a customer request” [18]. These definitions show that the supply chain involves all persons and entities involved directly or indirectly in the product, information, finance, services, and other resource processes between the supplier and end-user. The primary objective of the supply chain is to satisfy the wishes and needs of the customer. On the other hand, however, the origin of the term—Supply Chain Management—seems a mystery, and what makes it different from physical distribution and logistics is a subject that is still being debated [19]. Hence, it is no surprise that many authors use the term “logistics management” and “supply chain management” interchangeably [12]. Some have expressed the opinion that logistics and SCM are interchangeable terms [20]. However, most present-day discourse on SCM shows that “the term supply chain management is increasingly used to refer to strategic issues and logistics to refer to tactical and operational problems” [21]. Hence, supply chain management is defined as “all activities associated with the flow and transformation of goods from the raw material stage, through to the end user, as well as the associated information flows” [22]. Another definition of SCM is “a network of facilities and storage options conducting the tasks of content sourcing, converting these products into intermediate and completed materials, and delivering them to the customer” [23]. Kleab (2017) explains further that “modern supply change management encompasses the strategic alignment of end-to-end business processes to realize market and economic value, as well as giving a firm the competitive

advantage over their business rivals" [24]. While Ballou (2007) states that SCM at present "is concerned with realizing the opportunities from integrated management of product flow processes across functions and between channel members" [19]. According to Stevens (1989) the objective of SCM is as follows: "managing the supply chain is to synchronize the requirements of the customer with the flow of materials from suppliers in order to effect a balance between what are often seen as conflicting goals of high customer service, low inventory management, and low unit cost" [25].

### *1.2. Definition of Terms*

There is, however, no working definition for Indigenous Logistics Systems (ILS) and Indigenous Supply Chain Management (ISCM), although the term indigenous logistics and supply chain management is known to literature [26]. Additionally, a major gap identified in the few available studies on SCM in Nigeria is the inability of most scholarly work to focus on the social aspect of the logistics and supply chain management systems that are most prevalent in Africa. This work will attempt to give working definitions to these two closely related concepts, ILS and ISCM, in a bid to draw the needed attention to these concepts and to give impetus to trade in Africa. We define Indigenous Logistics Systems (ILS) as referring to all activities and processes, developed from an amalgam of local cultures, beliefs, and external influences and entrenched over time in a specific geographical area, that are geared towards the movement and storage of goods from the original producer to the final consumer and the movement of goods from the consumers to the manufacturers for the purpose of repair or exchange for new goods, thereby reducing waste and conserving resources. The distinguishing factor of ILS is the originality and localization of the development of the processes by native culture and its adaptability to the people and their socio-economic environment. Moreover, Indigenous Supply Chain Management (ISCM) is defined as the coordination of all activities and processes across various interrelated operational levels geared towards getting goods and services to consumers, anchored on the utilization of indigenous knowledge and resources in a way consistent with the cultural norms, values, and habits of a people while minimizing operational costs and maximizing customer satisfaction, in a profitable and sustainable manner.

## **2. Methodology**

A mixed-method approach was applied in this study. First, a systematic desk review of literature was carried out to understand the research landscape and to interrogate the ideas of Indigenous Logistics Systems (ILS) presented in the trade history of Nigeria, and Africa in general, from the pre-colonial era up to the present time. After a careful examination of the literature, ideas about ILS were gleaned from existing documents and historical records, allowing for strong and factual inferences about the existence and operational features of ILS to be made. Next, key-informant interviews were conducted among major stakeholders in the operation of ILS to obtain information on the evolution of ILS over time and on its operational features today.

### *2.1. Study Background*

The study was conducted in Nigeria, and it included five states and Abuja, the Federal Capital. Nigeria is the most populous African country, with an estimated population of 217,093,603 [27]. Nigeria is one of the most diverse multinational states in the world and is home to 250 indigenous ethnic groups and over 500 distinct languages [28]. The rationale for selecting Nigeria was based on the country's wide pool of indigenous populations from which a critical appraisal of the indigenous logistics systems, its past, and its evolution over time can be examined. In addition, "in many ways, insights from Nigeria present a fairly accurate reflection of realities in other African countries, at least in West Africa" [4]. To ensure the inclusion of each region of the country in the study, one state was selected from each of the six geopolitical zones of the country. The selected states are Borno in the northeast; Kano in the northwest; Anambra in the southeast; Lagos in the southwest; Akwa

Ibom in the south-south; and Abuja in the north-central region. Borno was selected for its rich pre-colonial trade history and culture. It is home to the Kanuri, Shawa Arabs and Mandara tribes. Kano is the most populous state and economic capital of the northwest region with a long history of trade and cultural practices. Abuja is home to the Gbagyi and Nupe tribes and an international airport as well as the headquarters of major logistics companies in Nigeria. Anambra is populated mainly by the Igbo tribe and is reputed for trade and production. Lagos is the commercial nerve center of Nigeria. It is home to an international airport and a major seaport. The Ibibio, Anang, and Oron tribes are native to Akwa Ibom state. They have a rich cultural context and history of trade across the Atlantic.

## *2.2. Study Population*

Stakeholders in supply chain management and indigenous leaders are the focal point of this study. Since the study is geared towards examining the pre-existing indigenous methods of goods facilitation along various points in the supply chain and the evolution of peculiar indigenous logistics systems, efforts were made to reach key actors like traditional leaders, transport unions, senders/receivers (consumers), logistics companies, motor park officials and drivers. A total of 84 interviews were conducted. Traditional leaders are custodians of the oral history of their tribes and the cultural value system of the people. They are stakeholders in supply chain management in their various localities. They play a major judicial role in cultural matters and some secular matters, including motor park matters, within their domains while wielding a strong influence on the cultural behavior of their subjects. Whereas transport union officials, drivers, senders, and receivers are stakeholders in the operation of ILS today. They are involved in the collection, delivery, and storage of goods and products brought to the motor parks. The transport union workers are also responsible for supervising and coordinating all activities in the motor parks as well as resolving grievances between motor park users and drivers and other park workers. The interviews conducted were evenly distributed among the six study locations, with 14 interviews conducted in each state and the FCT. Respondents were selected from the three senatorial zones in each study location, and efforts were made to include different ethnic groups in the study locations.

## *2.3. Methods of Data Collection*

The main type of data that was collected for this study is qualitative. Secondary data were collected from extant literature on the history of major ethnic groups in Nigeria and the evolution of logistics management in Africa, where available. However, data collected through this method was limited. Extensive work was done in documenting the oral history of indigenous logistics systems in Nigeria. This oral history was obtained from key stakeholders during the study since this field is uncharted and largely undocumented.

## *2.4. In-Depth Interview*

In-depth interviews were conducted with key actors across the six geopolitical zones in Nigeria. In all, 84 in-depth interviews were conducted and the themes covered were the history, development, effectiveness, strengths, weaknesses, and standardization of ILS. The key actors were traditional leaders, transport unions, senders/receivers (consumers) logistics companies, motor park officials, and drivers. Four structured interview guides were prepared to capture the objectives of this novel study. They are Traditional Leaders IDI, Motor Park IDI, Private Logistics Company IDI, and Customer IDI Guides.

## *2.5. Data Analysis Procedure*

The qualitative data gathered from the in-depth interviews (IDIs) were transcribed for ease of analysis. They were thereafter analyzed using the ATLAS.ti Windows version 22.1.4 using the deductive analysis approach. This approach was used because the in-depth interview guides were structured to elicit responses to already predetermined themes. The already established themes as identified in the objectives of the research work were mapped



to the responses of the respondents, corresponding to the established categories. This was done to ensure the integrity of the data generated from the fieldwork.

### 3. Results

#### 3.1. Trade and History of the Kanuri of Borno

Present-day Borno State was part of the ancient Kanem-Bornu empire of the 9th century. The Kanem-Bornu empire finds its roots between Lake Chad and the Bahr el-Ghazal in the region of Kanem (modern-day Chad). By the 11th century, Kanem, as the empire was called at the start of its development, had extended towards the northern oases of Kawar. Further conquest by the fledgling empire led to the creation of a trans-Saharan empire that survived until the 19th century [29]. “For over 1000 years Borno was established as a kingdom, [as a part of] the vast Kanem-Bornu empire which is vast and which has boundaries reaching up to the North African state because our boundary from the north reaches up to the shores of Morocco, from the south it reached the Mandera Hills, Junku area. Then in the west, it reached the borders of the Hausaland with Kano as its boundary, and to the East, it borders the Nubians” [30]. The norms and values of the Kanuri people are derived from the religion of Islam because Islam has been the main religion practiced in Borno for the past 1000 years. Borno was the first gateway of Islam to this part of the world and they received the religion of Islam, some say, in the 11th century but “there are written documents which also argued that it received Islam before the 11th century” [30]. This latter view is based on “written documents that indicated that during the caliphate of Umaru bin Al Qatar, he sent a governor to the black African areas and the rulers of Borno went to him to receive not Islam par say but teachers who can teach the Quran and other texts of Islam to the people. Hence the way of life of the people of Borno has long since been based on and guided by the traditions and the teachings of the Koran, the prophet, and the characters of those who brought the faith of Islam to Borno” [30]. Borno’s links with the rest of the Muslim world were also significant, and a hostel for Borno students and pilgrims en route to Mecca was built in Cairo during the reign of Sultan, or according to his Kanuri title, mai, Dunama Dibalami (1203–1242) [29].

#### 3.2. Borno and the Trans-Saharan Trade

By the use of camels, caravan trade routes were developed across the Sahara between West and North Africa, and for a long period, these routes were the only ways to and from West Africa and the outside world. The caravan trade is at least 2000 years old [31]. The trans-Saharan trade routes were operated by wealthy merchants from Northern and Western Africa who had the financial capital to buy articles for trade, and pay protection money to desert people and guides, trade between Kanem-Bornu and North Africa via the Sahara had been in use before and at the time the Europeans reached West Africa via the coast [32]. It is a fact that the Kanem-Bornu empire was rich in salt production and since the 15th century, commerce in salt was a profitable enterprise in the empire. Indeed, it is striking that the capital of Kanem-Bornu, Birni Gazargamo, was located at the heart of a salt-producing region in Bornu. This salt which was sold throughout Central Sudan was used as part of raw materials in the textile industry and for medicinal and culinary purposes [29]. Further, historical records confirm that there was trade between Kanem-Borno and the Berber merchants from North Africa. Grain was sent to Bilma in exchange for salt. Nitrate which was obtained from Lake Chad was carried to Kano and from there to some other parts of West Africa. Copper trade was carried on by Kanem middlemen between Darfur in the east and the Nupe area in the southwest. Trade with the south was channeled through Kano but trade in kola-nuts with the south was sometimes done directly [32]. The representative of the Shehu of Borno, the paramount traditional leader in Borno, describes the involvement of the Borno people in the trans-Saharan trade: “You must have heard about the trans-Saharan trade. We had trade routes. From here Arabs come. You know we have capitals that were moved because of crisis. We had Njimi. Njimi was very popular and vibrant and had been engaging in trade with Arab land, but as a result of the crisis

of that time, the rulers moved down west and established a capital which is somewhere around Gaidam in Yobe. Even at that time, there were trade routes via the trans-Sahara. All the capitals established in ancient Borno were trading capitals because people will bring their goods and they will also transport our goods. The goods then because of the existence of lake Chad, there were too many beautiful and exotic wild animals there in addition to the fish and arable land. Rice was a new thing to us, but sorghum, millet, lettuces, and the common food were there, there were also cattle. So, there is trade in hides and skin, salt is also been manufactured there, and potash is produced there, so there are a lot of things to be traded. The people will come, they will buy whatever they want in these kinds of items and exchange by barter, we also have gum Arabic. Sometimes they bring woolen clothing, gun, gun powders, and so many things" [30].

### 3.3. Trade and History of the Hausa People

The geographic region called "Hausaland" is reported to have been located in the Sahel between the Niger River and Lake Chad in north-central Africa in what is today northern Nigeria [33]. This description situates Hausaland in present-day Nigeria. The Sahel is the semi-arid strip of land running across Africa between the Sahara Desert in the north and the Savannah grassland to the south. Hausaland, specifically, stretched from the Air mountains (north) to the Jos plateau (south) and from Borno (east) to the Niger Valley (west). This region saw the development of towns by the Hausa-speaking people from 1000 to 1300 CE. Kano is one of "the seven true Hausa states" [34]. Kano has a long history of cherished cultural values and norms. It is interesting to note that the Kano people still conservatively adhere to these values today. One of such key values is hospitality and kindness to strangers. A typical indigene from Kano treats strangers kindly and is willing to assist them in finding their way, getting accommodation and something to eat. Most of the values and norms of the people in Kano are gotten from the Koran. "Some of [the] common cultural norms/beliefs that influence how people in Kano state behave or conduct their business activities is based on dedication, honesty, and socialization. Kano [people] hold their culture firmly to the extent that even in the conduct of their business activities, cultures play [a] significant role. So, there is [a] cultural influence in their business activities" [30].

### 3.4. Trade in Ancient Hausaland

Historians say that the Hausa states traded gold, ivory, salt, iron, tin, weapons, horses, dyed cotton cloth, kola nuts, glassware, metalware, ostrich feathers, and hides. There was trade with the coastal region of West Africa, Oyo in the Bight of Benin, and the Songhai Empire (c. 1460–1591 CE) to the east. Cities specialized in the manufacture or trade of certain goods, for example, dyes—especially indigo at Katsina and Daura or silver jewelry at Kebbi and Zamfara. Hausaland became famous (and still is today) for its finely worked leather goods such as water bags, saddles, harnesses, and sacks to transport goods for the region's trade caravans. Various crafts were organized into guilds which ensured standards were maintained and prices were kept fair. Each city had its markets where both men and women sold their wares, and many cities also had international trade markets where merchants sold in bulk. Goods were exchanged in kind although salt, cloth, and slaves were often used as a standardized form of commodity currency [33]. An insightful description of the trade in ancient Kano and its place in the trans-Saharan trade was given by the representative of Kano's foremost traditional ruler. He sheds light on how trade prospered in the 1400s in Kano and how deep-rooted trade is in Kano. The aforementioned are contained in the following description: "The heart of trade in kano is the Tran Saharan trade. Those who set up Kano were farmers, [and] hunter-gatherers like other societies. They were able to farm more than they could utilize, [and] they were able to make more iron tools than they needed which they trade. Naturally, because they don't live on an island, they engage in trading with their neighbors. Through the middle ages there was trade between the Maghreb countries, today will be called Libya, Algeria, Morocco and Mauritania. When these countries need the trade goods that are found in the other part



of the Sahara, they bring goods that are needed here, and exchange will take place. The “ships” will cross the Sahara, they consider the Sahara to be an “ocean”, an ocean of sand. The countries that are on the southern side of the Sahara are called “Sahel, Sahel in Arabic means the coast. When they arrive [at] the “coast” they discharge their goods in mostly 4 places Maraba, Katsina, Kano, and Gobir. These are all terminals; they are at the edge of the Sahara. Somewhere about 1400, I think the then Emir of Kano, Mohammadu Rumfa built up what is today known as Kasuwa krumi [market]. Kasowa krumi at the time it was built was the largest [and] most modern in the Sahel region. What was unique about it was that for the first time a market had segments, distinct segments, they had where they do ironwork, other places had cotton and clothing products, you had leather works some other places do animal hides and skin, etc. The trade in Kano as we know it has been as old as the city itself. Because the origin of Kano has been put at about the year 900 AD, and so if you put in 600/700 years later the trans-Saharan trade has been firmly established and kano has been an integral part of that trade” [30].

### 3.5. Trade and History of the Yoruba People

The Yoruba ethnic stock comprises the Egbado and Awori of the Ilaro division of Abeokuta province, the Egba of Abeokuta province, the Ijebu of the Ijebu province, the Oyo and Ilorin provinces, the Ife and Oyo province, the Ondo, Idoko, Ikale, and Ilaje people of Ondo province, the smaller group of related people collectively known as the Ekiti, and the Yagba and the Igbomina of Ilorin and Kabba Provinces. ‘The various divisions of the [Yoruba people] are united in their common claim of having descended from Oduduwa and of having originally hailed from Ile-Ife’ [35].

### 3.6. Trade in Yoruba Land

The Yorubas engaged in different economic activities which include farming, trading, blacksmithing, iron-smelting, pottery making, soap making, dye making, dyeing, shea butter production, palm-kernel oil production, making of beads, mats, baskets, plaited wares, and camwood dyes for body beautification. Others are hairdressing, tattooists brass and lead workers, carpenters, wood carvers, leather sellers, calabash cleaners and dressers, and herbalists. A noticeable feature of Yoruba’s economic organization is that of specialization by compounds. There are compounds of blacksmiths, weavers, calabash dressers, and so on [35]. Markets were also highly organized. The markets were usually open areas in front of the King’s or Baale’s house or compound. There were local markets and central markets. Local markets are for day-to-day buying and selling by townspeople, while central markets are meeting grounds for people of different towns and villages and may be situated in a town or outside towns or on a convenient highway which links several centers. Central markets were held at intervals of four or eight days and lasted for the greater part of the day. In some cases, the market does not begin to get full until about four o’clock. Attendance at the central market is mammoth. Anyone, individually or in conjunction with others could erect a shed or hut as a shelter from both sun and rain. Whether markets are local or central, traders are usually compartmentalized based on the line of goods they sell [35]. The Yorubas are very shrewd in driving bargains, and hence foreigners speak of them as “African Jews” in reference to their commercial instincts [36]. William (1969) attests to the trade history and organization of the Yoruba people in his description of the market system of the Yorubas: “the markets are composed of areas occupied by women selling the same commodities: poultry in basketry coops, tethered goats and sheep, yams, peppers, plantains, green vegetables, meat, salt, palm oil, soap, cloth, pots, firewood, the ingredients of charms and medicines and European cloths and other imported items. They are dominated by women traders. A farmer’s wife may carry his produce to market and sell it for him, turning over the full sale price to her husband. Each palm wine tapper has a group of women who sell for him, each receiving the same amount each day to sell at a price set by the tapper. All the money received on the first two days belongs to the tapper, and that received on the third day belongs to his agent” [37].

### 3.7. Trade and History of the Igbo People

The Igbo occupy the bulk of the southeastern parts of Nigeria. They share a common border with the Igala and the Idoma on the northern part of Nigeria, the Ijaw and Ogoni on the south, the Yako and Ibibio on the eastern boundary, and the Bini and Warri on the west. The principal rivers are Niger, Imo, Anambra, and Uasi Rivers. The Niger divides the Igbo into two uneven areas. The bulk of the population lives east of the Niger river, with heavy concentration at Okigwe, Orlu, Owerri, Onitsha, and Awka. The other part of the Igbo group lives west of the Niger river [38].

### 3.8. Trade in Ancient Igboland

At first, agriculture was the most important economic activity of the Igbo people [39]. The main agricultural produce were yams, cassava, cocoyam, palm oil, palm kernel fruits and vegetables. Trading, however, was an important aspect of society in Igboland. The importance attached to trading can be seen in the fact that the Igbo market week consists of four days: *Eke*, *Orie*, *Afor* and *Nkwo* [40]. Different towns or villages hold their markets on different market days. All local deities have special market days that are sacred to them [38]. Varvar and Akor (2016) claim, however, that ecological differences and varied vegetation appear to have been the major reason behind the development of local and regional trade amongst the Igbo. That the soil of northern and central Igboland appeared to have been overworked by the concentration of the population, so people took to trading and manufacturing to supplement agriculture [39].

### 3.9. Indigenous Logistics System in Pre-Colonial Nigeria

Available data indicates that ILS was in operation in pre-colonial Nigeria. In ancient Borno, the operators of ILS were “people who own the camels, the oxen, the donkeys, the mules that can transport their goods, so you come, you negotiate whatever amount and they take it down for you. That is our own indigenous system” [30]. The animals are said to have served as “ships” that “sailed the sea of the desert” and brought goods to the Sahel, or “coast” [30]. These logistics operators were different from traders, who owned camels and could render logistics services, in that they were not traders. They owned animals and used them for logistics services. Hence, ILS in ancient Borno was a specialized practice that was fully entrenched in the system. ILS operators were well-known in the society and they could be easily reached by those in need of their services. More so, ownership of animals such as camels in ancient Borno was common to those in the middle class or upper class. Thus, it can be concluded that the operators of the indigenous logistics system were the people who had acquired animals through inheritance or outright purchase and who made them available for logistics services. Confidence in the system may have been drawn from the economic background and financial strength of the operators ILS in ancient Borno. ILS operators also had “their camel route boys, scouts who can lead the camel” [30]. In addition to leading the camels, these scout boys served as guards to secure goods in transit. Other operators in ILS were the traders that owned animals and used them in providing logistics services to other traders. These traders, along with the scout boys, were responsible for inbound and outbound information between the different trade points and the people. ILS in ancient Borno was not free, payments were made for the services. However, there were no fixed charges, charges were arrived at through bargaining between the parties. More so, the activities of the indigenous logistics businessmen were regulated by traditional and cultural institutions, norms and societal values. Hence, “there was no exploitation” even when the number of those in the logistics business was few compared to the number of traders [30]. Ancient traditional regulators include inspectors stationed at each district in Borno. At every district stop along the trade route, for example, “there are official inspectors, just as you have customs now”, who inspected goods and could provide interested parties with trade information as well as reports on ILS operators [30]. Additionally, the districts had warehouses or “storehouses where the traders could keep their goods at night before they continued their journey the following morning” [30]. The

ILS was based on trust and brotherliness: “the belief is that once you trust somebody, the trust is a permanent thing. If I give you my goods today, I don’t fear anything because I have given you in trust to sell and buy the things that I need you to buy for me and bring it” [30]. The trust people had in the ILS was such that when ILS operators report cases of “armed robbers, like accident or sickness” that led to the loss of goods “these were attributed to natural causes and are believed to have been the handwork of God” [30]. In such cases, no compensation is paid to the sender and neither did the sender expect to be compensated. Also, “no one has the right to complain . . . there was no distrust at that time” [30].

In ancient Kano, the ILS available was similar to that in ancient Borno. The means of transportation used for ILS in Kano were animals, donkeys were specifically mentioned. Traders who owned donkeys helped other members of the community to supply their goods or produce to the market after the payment of an agreed sum. In many cases, it is the transporter that supplies or sells the goods to another trader or the final consumer. He then deducts the cost of transportation from the proceeds of the sales and returns the balance to the sender. Some people owned donkeys but were not traders. These too deliver goods after charging the sender. They may also be asked to sell the goods at the market and deduct their charges before remitting the balance to the sender. On both ends of ILS, traders also doubled as secondary suppliers. They supplied goods in demand, which they obtain from primary suppliers, on both ends of the system. Hence, they were the conveyors of information in ILS. A description of how the operations of ILS in ancient Kano is provided in the following comment: “There are two means of transportation, one is the individual transportation whereby the owner brings goods from his home to the market and then the traders who move from one place to the other on donkeys which [are] from the point of production to the market and sometimes, the buyers pay the owner of donkeys or camels to transport their goods. In antiquity, the camels belong to the traders” [30]. These traders reached as far as Ghana from Kano. “They go on a huge 1000 camel caravan through Sokoto, through Kumasi, and eventually to Ghana and there are many settlements” that they reached [30]. As they travelled along, they trade in the markets along their route, supplying goods and buying goods in demand at other markets and places. While the route to Ghana from Kano takes them through markets in the arid regions of Northern Nigeria, on their return journey, “They don’t come back through the route they followed, they will go through the coastal route: Dahomey into Lagos, into Ibadan, into Shagamu, then they come up all the way to Zaria and then eventually to Kano” [30]. These trips usually take about a year from Kano to the coastal region in Ghana, and another year to return to Kano [30]. The fact that such men could be entrusted with goods with instructions to sell in distant markets, retrieve their charges and remit the balance to the primary supplier after more than a year abroad, shows that the ILS system operated in ancient Kano was based on trust. More so, the operators of ILS treated the goods entrusted to them as though they were theirs. They also sought to get a good bargain when selling the goods entrusted to them by the primary suppliers. This ensured that the primary suppliers make profits from the sales after the deduction of transportation charges.

The Yorubas in the south also traded with their neighbors and went as far as the north in trading. Contacts with the Europeans expanded the dimensions of trade in Yorubaland to include imported goods from Europe. Oral traditional history indicates that Yoruba traders facilitated the movement of goods and products from one part of Yorubaland to the other. These traders leave their villages and travel on foot to sell their goods at different market destinations and then bring back goods that are in demand from the markets that they visit. These itinerant traders, *alajapa*, banded together in (foot-) caravans that moved either from one town to another or to a target market. These caravans were usually dominated by women who were traders themselves [35,41] and not the wives or concubines of male traders. The men in the Yoruba caravans were traders or served as porters or escorts, however, the number of women was generally higher. The caravans covered long distances. For example, the Ibadan caravans went to Ilorin, Igbomina, and Ekiti through Osun, and

to Akoko, Owo and Benin, through Ife and Ilesa. Different products were obtained from those places, they include “camwood, guns, gunpowder, cotton, kola-nuts, cloths, potash, slaves, black antimony, horse accouterments, coats of mail, beads, etc.” [41]. Additionally, caravans from “Abeokuta traveled some 150 miles to Ilorin taking with them goats to sell, and bringing back the lines of goods which the people in Ilorin specialized for sale. The double journey frequently took more than forty days” [35]. Furthermore, William (1969) identified a guild of importers known as the *Ipanpa* [37]. This group specialized in the regulation of European goods imported into Yoruba land and markets. Hence, it can be deduced that the indigenous logistics system in ancient Yorubaland was operated by traders. Like their northern counterparts, these traders take the products of the land or their towns and villages and sell them to traders or consumers in the markets or places they go to. Then, they buy and return carrying the products of the other towns or cultures, and these they sell to local manufacturers or final consumers in their towns and villages. However, ILS among Yoruba people was limited in operation to the markets within Yoruba land.

### 3.10. The Indigenous Logistics System in Nigeria Today

Today, the Indigenous Logistics System in Nigeria is called the “waybill” or “message” system [30]. The waybill or message system involves the use of motor park passenger buses and vehicles in delivering goods, products, items and documents to different destinations within and outside Nigeria. This system is primarily based in motor parks across the country. All interstate and intercountry motor parks operate this system in Nigeria, and this delivery method is also adopted at intracity motor parks when the need arises. The logistics system is not new. It is simply an adaptation and an enhancement of past indigenous logistics methods with modern-day technological conveniences that are widely available in the country. It is the modern-day equivalent of the ILS system in the days before vehicles and mobile phones. Fifty-three respondents opine that buses and vehicles are now the means of transportation in ILS just as “donkeys and camels” served as the “means of transportation” for ILS in pre-colonial Nigeria [30]. Moreover, motor park drivers and officials are now the operators of ILS today. They ensure the security and delivery of items entrusted to them just as traders and security guards did in ancient ILS. The logistics system operates 24 h, 7 days a week. Although the sending of goods may be limited at some parks during the night period, there is always a park official on hand to receive goods brought in by drivers from other states or countries. More so, in parks known for night travel, sending of goods continues long into the night until the last bus leaves in the early hours of the morning. Stakeholders explain the processes of ILS in Nigeria today:

*“You bring your luggage [goods] to send, you meet the driver directly and bargain with him. You can pay instantly or the receiver pays. If a third party meets you at the gate and collects it from you, after negotiating with you the driver will give the third party a commission” [30].*

In cases where the goods are bulky or a sender or supplier cannot bring the goods to the motor park, arrangements can be made for the supplier or sender along with the driver to pick up the goods with an empty bus. This is usually the case with goods in remote areas, farms, and warehouses. Once contact has been made with the driver at the motor park and the cost of transporting the goods has been negotiated and agreed upon, the process continues as the sender or motor park official:

*“Collect[s] the driver’s phone number and give to the receiver and we give the phone number of the receiver to the driver and give them the item to load into the vehicle. Then there is a law that we check the goods to know what it contains; we check to know whether is legal or illegal and who and who has the right to receive the item before it can be sent” [30].*

In most cases, the driver contacts the receiver using the phone number he gave to the sender. This is often done in the presence of the sender. In some cases, the sender first confirms the driver’s phone number by dialing it while with the driver before sending the number

to the receiver. That act of establishing contact between the driver and the receiver in the presence of the sender builds trust in the system. When the passenger capacity of the bus is filled, either with goods only or with goods and passengers, the bus departs the motor park with the goods. Sixty-seven respondents explain that goods in transit “are tracked through the phone numbers collected” [30]. At any point before or after departing the motor park, the sender or receiver can call the driver to find out the stage of the journey, and if there are challenges along the way that may cause delays and the expected arrival time. The drivers deliver goods along their routes and at the final destination. Hence, goods are marked with the name and phone number of the intended receiver written boldly on the package. In cases where the recipient is not on hand to receive the goods from the driver, the goods are received by storekeepers at the motor parks. The storekeeper then contacts the receiver to confirm the receipt of the goods at the motor park and updates the receiver on the new phone number to call when ready to pick up the goods. The receiver is charged an extra fee for storage before receiving the goods. Where goods are to be delivered along the route and the receiver is not on hand, the driver takes the goods to the main motor park at the final destination, he then updates the receiver on the new pick-up point. Additionally, goods can be delivered directly to retailer stores, supplier warehouses, production units, or final consumers through motor park buses, depending on the arrangement between the sender and the driver. More so, receivers can arrange the pickup of goods from motor parks by conventional logistics companies after they have been delivered to the parks through ILS.

ILS is an integral part of the overall motor park operations. The basic requirements for the operation of ILS are: a recognized National Union of Road Transport Workers (NURTW) motor park, NURTW registered transport buses or vehicles, and the payment of motor park taxes each day of work. Each motor park has an office and/or official that coordinates ILS-related matters. Some offices are physical structures while others are just spaces with shades provided by tree canopies or umbrellas. These offices have simple registers where the particulars of goods received are entered as well as the name and phone number of the sender and receiver. Any name by the sender will suffice; there is no request for any form of identification. The mobile phone numbers of senders and receivers as well as a description of the goods to be sent are the important details kept in the ILS registers in motor park offices. Motor park offices, though, are not the sole authority on ILS operations at the motor parks. ILS operations at the motor parks are conducted with cooperation and respect between drivers and motor park officials in a mutually dependent manner. Hence, senders are not required to register at motor park offices before sending goods through the motor parks. Senders can meet the drivers directly to negotiate and hand over goods to them for delivery. However, many senders prefer to go through motor park offices as it serves as an “insurance” or “guarantee” that their goods are in safe hands and would be delivered [30]. It also means that if disputes occur after payment, motor park officials will readily take it up and resolve it. However, even in cases of disputes involving a sender that approached the driver directly, motor park officials get involved in dispute resolution when it is reported to them. They do this to preserve the reputation of the ILS as a system that can be trusted. Moreover, motor parks have storehouses where goods delivered are kept for pick-up and the storekeepers maintain an up-to-date inventory of goods and the particulars of intended receivers. Where there are no storehouses at the motor parks, the office of the motor park official or another safe place within the motor park is used. Some roadside motor parks (drop off/pick up parks) have “unofficial” storekeepers that receive items from drivers and contact the receivers. Bus drivers and motor park officials are eager to deliver goods in addition to passengers as it provides them with additional income [30]. The revenue generated from ILS by motor park officials is not taxed by the government. Additionally, payments received by drivers for ILS services are regarded as personal earnings and are not included when providing an account of daily earnings to bus owners.



#### 4. Discussion

History shows that an Indigenous Logistics System (ILS) was developed by different tribes in pre-colonial Nigeria, and ILS was very effective in facilitating trade and industry for centuries in pre-colonial Africa. “We saw how people from Chad, people from Niger bring their goods loaded on camels, hundreds of camels coming in. That was the means of transportation before cars and trucks” [30]. The system was developed through an efficient use of available resources along with the application of indigenous knowledge of the environment. In pre-colonial northern Nigeria, animals such as camels, oxen, donkeys, and horses were used by their owners solely for the logistics business, while traders and guards carrying goods on their heads and shoulders run the business in the south. With the use of animals or humans, traders and ILS operators ferried goods to distant markets and trade points within the continent. Storage houses for goods were also built in some trade districts where traders and ILS operators would usually visit and spend some days trading and resting before proceeding to the next market. This was typical of ILS in northern Nigeria. In pre-colonial southern Nigeria, ILS operators stored goods in open places where cultural beliefs and taboos ensured that such goods were not stolen. Additionally, as traders and operators of ILS in pre-colonial Africa journeyed and met at trade districts, they exchanged information received before their meeting. Thus, these traders and operators carried inbound and outbound goods and information between suppliers, end-users, and other actors in the Indigenous Supply Chain Management System (ISCM). Moreover, a departing ILS operator, on getting to the next district or trade point, can give information about the arrival of the ILS operator he met at the previous districts. A simple report such as ‘I saw so-and-so at so-and-so district’ or ‘I met so-and-so’ on the road was enough for the sender or anxious receiver to track his goods [30]. The speed and delivery time were based on the route of the operators, the distance and number of markets goods will be supplied to, and the speed of the animals. Each operator had a well-known trade and delivery cycle pattern; hence individuals could select the ILS operator that meets their needs. Except for unforeseen circumstances, a sender or receiver can estimate where the goods should be at a particular time in the delivery journey and can use the knowledge of the delivery pattern of the operator along with reports received from arriving ILS operators to determine the efficiency and effectiveness of particular ILS operators. More so, there was no standard measurement for the cost of delivery, the cost of delivery was negotiated between the sender and the operator while factoring in the distance of the delivery point, weight, size and value of the goods to be delivered. The system was regulated by the cultural norms and values of the people and this prevented exploitation. ILS was based on mutual trust and fraternity, allowing for some goods to be delivered, on compassionate grounds, without cost. The indigenous logistics system in pre-colonial Nigeria was truly an embodiment of the African way of life. Intra-Africa trade flourished when trade and industry in Africa depended mainly on ILS.

Today, ILS in Nigeria is called a “waybill” or “message” system at motor parks in all 36 states of the Federation [30]. Sixty-nine respondents refer to ILS as “waybill”, three as “waybill” or “message”, and 12 as “message” [30]. A similarity between ILS in pre-colonial Nigeria and the ILS in operation today is the efficient use of available resources along with indigenous knowledge. ILS developed in pre-colonial Nigeria and evolved into what it is today as buses and vehicles became available and replaced animals as the means of transportation. Hence, people naturally turned to drivers and motor parks to send and receive goods. Drivers and motor park officials thus replaced traders and other operators of ILS in pre-colonial Nigeria. Additionally, the operations of ILS today are based on the same foundations of cultural norms, value systems, trust, and fraternity that supported ILS in the past. Like ILS in pre-colonial Nigeria, the process of ILS today is simple. The language of communication is the common language of the people. There are no complicated requirements for the registration of goods or items, a simple name, and telephone numbers of the sender and receiver along with the particulars of the goods to be sent are all that is required. No form of identification is required. The registration of goods



delivered to the motor parks or to be sent out through motor parks was introduced in the recent past for efficiency and tracking. ILS today delivers goods directly to warehouses, production units, retailer shops and to end-consumers. In addition, just as ancient trade districts had storehouses for the temporary storage of goods in transit, motor parks today have storehouses where goods brought in at night or goods that were not picked up by the receivers are kept. Goods to be sent from the park are also kept in the storehouses pending the time they will be sent. The particulars of the receiver are written boldly on the goods to ease delivery. Before phones became widely available in Nigeria, goods were tracked through the information supplied by drivers plying the same route when they arrive at the motor parks. The arriving driver gives reports of the different points in the journey where he met or saw other drivers on their way to their different destinations. Later, as phones became common, receivers and senders tracked goods through a direct call to the drivers using the phone numbers given to them by the driver.

The Indigenous logistics system moves different kinds of products and goods ranging from documents, farm products, electronics, engines, furniture, household items, personal items, documents, machines, spare parts, and anything that can fit into a bus. It is fast, as buses move once the passenger capacity is reached. Buses are not delayed to carry more goods. It is the most widely available logistics system in the country as it is present in every part of the country, connecting people and goods to places and markets that they frequently visit. It is so effective and reliable that even “private [western-styled] logistics company come to the park to send goods. Then when we deliver it, they use their vehicle to carry it to their customer” [30]. When asked about the strengths of ILS in Nigeria, 81 respondents express the view that ILS is the cheapest and most popular form of logistics system in the country, and 57 respondents said that its simplicity makes it appealing to people of different socioeconomic classes. The simplicity of the ILS process can be attributed to the characteristics of ILS operators. Most ILS operators, drivers and motor park officials are more culturally oriented, and have limited exposure to western education and writing. It is not surprising, therefore, that ILS processes are simple, uncomplicated, and verbal with limited written records. Keeping records of the particulars of goods and senders is only a recent development in ILS operations. On the cost and charges for ILS services, users of ILS confirm that “the charges are not much and are negotiable” [30]. One reason for this is that there is no standard measurement to determine the cost and no fixed delivery cost is stipulated. Moreover, the fact that taxes are not paid on revenue generated from ILS and payments made to drivers are additional personal sources makes ILS cost flexible. Factors such as the distance of the delivery point, price of the passenger ticket, weight, size and the value of the goods to be sent determine the cost of delivery. There are no charges for insurance. However, senders usually bargain with the drivers or officials to reach a mutually acceptable price which the sender considers as fair and affordable. Bargaining is one of the distinctive flavors of ILS. This is so because bargaining is enshrined in many cultures in Nigeria as a way of reaching a mutually acceptable price for goods or services. It is no wonder then that ILS operators who are culturally oriented expect and accept bargaining. After an ILS operator mentions an initial charge, he encourages bargaining by asking the clients to mention the amount that they are willing to pay if the mentioned price is not favorable. That begins the process of bargaining. One ILS operator expressed how the cost of delivery is reached when he said: “you need to bargain until we reach an agreement” [30]. In the case of an accident or theft of goods in transit, senders do not expect compensation for their loss. However, if the loss is due to theft or negligence on the part of the driver, the sender can appeal to the motor park officials who in turn will adjudicate the matter and enforce the payment of compensation of the sender and discipline of the driver where necessary.

#### *4.1. The Indigenous Logistics System for The Future*

The Indigenous Logistics System (ILS) in Nigeria draws its strengths and effectiveness from its availability, affordability, speed, and cultural roots. However, occasional delays,

poor communication, unsafe tracking practices, and lack of insurance coverage are some of the weaknesses of the system. To serve the needs of businesses more efficiently and to adapt to future needs, there is a need to improve and scale up ILS processes. The use of simple technology can enhance ILS processes. Simple phone-based apps can be developed to link ILS users to nearby motor parks. Such apps can also be used to link all motor parks and expand the reach of ILS from any motor park. Moreover, motor park associations can partner with reputable insurance companies to provide insurance coverage for goods at an affordable cost to users of ILS.

#### 4.2. Limitations

One limitation of the study is the limited sampling area. The study was carried out in only five states and the FCT, out of the 36 states of the federation. Additionally, the number of respondents selected in each study area is relatively low compared to the population of the state and the different cultures present in the states. The availability of funds would have made the inclusion of more states realizable. A future advanced study could include more states and cultures, and widen the participant pool to mitigate response bias.

### 5. Conclusions

There are indisputable historical facts that prove that the indigenous people in pre-colonial Nigeria developed and operated an Indigenous Logistics System (ILS) that supported intra-African trade and industry. ILS was developed through the efficient management of available resources along with indigenous knowledge of the environment. Culture, value system, trust and fraternity were the foundation on which the system was based. ILS was developed by Africans to fit their way of life and environment. ILS has evolved over the years, adapting to new resources and technology, as well as changes in the socioeconomic environment. However, the building blocks of culture, value system, trust and fraternity have remained deeply rooted and unchanging. ILS in Nigeria today remains the most popular, available, and affordable logistics system in the country as it is natural to the way of life of the people. It is simple and widely used by people of all socioeconomic and educational backgrounds. However, its weaknesses in occasional delays, poor communication, unsafe tracking methods and lack of insurance coverage are some of its drawbacks. Scaling up and improving ILS with the use of simple technology, while maintaining its distinctive African cultural flavors would position ILS as the answer to the logistics challenges in Nigeria, and the driver of intra-Africa trade in the continent.

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### Abbreviations

AfCFTA	African Continental Free Trade Area
ILS	Indigenous Logistics System
ISCM	Indigenous Supply Chain Management
NURTW	National Union of Road Transport Workers
SCM	Supply Chain Management

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