

Influence of Government Policy on Law for Sustainability of Dry Ports in Nigeria

Godson Okpara¹, and Hope Okpara, Esq²

¹PhD Scholar in Maritime Transport, Post Graduate School, Department of Maritime Science, Rivers State University, Port Harcourt, Nigeria.

²Captain Elechi Amadi Polytechnic, Rumuola, Port Harcourt, Nigeria

Abstract: The study examined the influence of government policy/law on sustainability of dry ports in Nigeria. The target population of the study consisted of all the key facilitators and supportive personnel of the eleven functional, non-functional and proposed dry ports in Nigeria. A sample of 222 facilitators and supportive personnel selected from 6 geopolitical zones participated in the study. The hypotheses were tested through the help of SPSS 22.0 and the use of inferential statistical tools of Pearson Product Moment Correlation Coefficient (r). The study found that understanding and managing hinterland roads and rails play a significant role in enhancing sustainability of dry ports. The study concludes that both government policy and legal framework are positively and significantly related to the optimization of dry ports. In addition, government policy and legal framework have positive and significant relationship with the growth of dry ports. Therefore, the study recommends that government should come up with effective legal framework and policies on dry port operations in Nigeria as there are no such instruments to navigate effective and sustainable operations of dry ports in Nigeria. There should be a sustained port access maintenance programme in Nigeria.

Keywords: Government Policy, Legal Framework, Sustainability, Dry Ports, Optimization

I. INTRODUCTION

Dry ports are commonly defined as inland terminals that have strong connections to gateway seaports by high capacity and frequent transport services. Within a supply chain setting, dry ports might work as extensions of seaports or inland hubs to facilitate the movement of cargo between seaports and the hinterland (Khaslavskaya & Roso, 2019). In advanced economies, such as North America or Europe, seaport authority and operators are the main drivers of dry port development with the purpose of solving the problems of limited capacity, natural constraints and externalities at seaports or improving hinterland access particularly for import cargoes (Talley & Ng, 2017).

In contrast, dry ports in developing economies are naturally land-driven, established for consolidating (export) cargoes from regional economic zones and forwarding them to gateway seaports. In developing economies, dry port development is accelerating to improve the inland logistics efficiency (Khaslavskaya & Roso, 2019). One of the imperative issues of dry port development in developing economies is location planning. While the minimization of set up costs and total logistics costs are key factors in dry port

location analysis, there are also other more qualitative location factors driven by multiple stakeholders involved like operators, users and the community.

This paper aims at building a conceptual framework for the government policy and law for sustainability of dry ports in Nigeria. Inspired by the LAMBIT model as espoused by Alam (2016), the paper evaluates the need for government policy and legal framework for sustainability of dry ports in Nigeria, proposing alternative location policy, defining stakeholder groups, their criteria and sub-criteria in a hierarchical system as well as the methods to measure and weigh sustainability factors. The conceptual framework is applied to the developing country like Nigeria. The sustainability of a new dry port projects will be evaluated against the existing inland clearance depots (ICDs) in Kaduna that has already been built and operational. The results will take into account the relevant criteria for each stakeholder group and the specific setting in Nigeria. Finally, a sensitivity analysis will be performed before turning to the conclusions.

The study unraveled the following research questions: 1. What is influence of government policy on the optimization of dry ports in South-South, Nigeria? 2: How does government policy affect the growth of dry ports in South-South, Nigeria? 3: How does legal framework affect the optimization of dry ports in South-South, Nigeria? 4. What is the nature of relationship between legal framework and the growth of dry ports in South-South, Nigeria

II. LITERATURE REVIEW

Theoretical Foundation (Stakeholder Theory)

Stakeholder theory originally founded by Freeman (1984) is a view of capitalism that stresses the interconnected relationships between a business and its customers, suppliers, employees, investors, communities and others who have a stake in the organization. The theory argues that a firm should create value for all stakeholders, not just shareholders. Stakeholder theory of organizational management and business ethics that addresses morals and values in managing an organization. His award-winning book *Strategic Management: A Stakeholder Approach* identifies and models the groups which are stakeholders of a corporation, and both describes and recommends methods by which management

can give due regard to the interests of those groups (Talley & Ng, 2017)..

Also called the “Friedman doctrine,” shareholder theory, outlined in Friedman’s book “Capitalism and Freedom,” states that a company has no real “social responsibility” to the public, since its only concern is to increase profits for the shareholders. The shareholders, in turn, would privately shoulder any social responsibility (Wang et al., 2016).

The theory suggests that a company’s stakeholders include people like employees, customers, community members, competitors, vendors, contractors, and shareholders. Stakeholders could also be institutions, like banks, governmental bodies, oversight organizations, and others (Wang et al., 2016). In this paper, stakeholder theory has been used to explain all the beneficiaries and variety of types of stakeholders involved in the establishment, maintenance, growth and sustainability of dry port in Nigeria. Phillips (2003) posits that in line with stakeholder theory, stakeholders are affected by externalities generated by entities, and in turn stakeholders exert influences on these entities to mitigate negative externalities. For dry port city sustainable development, it is important to identify key stakeholders and the objectives that they look for. With reference to Wang et al. (2016), the various stakeholders unique to a dry port city are identified. This stakeholder analysis highlights the level of influence that stakeholders have to effect reforms towards sustainable development.

There are four groups of stakeholders, namely, internal stakeholders, the public sector, market players/corporate bodies, and community/interest groups. Except for the last group, the other three groups contain stakeholders who are decision-makers in port city development matters at various authoritative levels (Freeman, 1984). The stakeholders come from very diverse backgrounds, ranging from port owners to logistics companies. It means that decision-making is a complex process, with multiple interests confronted and hopefully resolved (Witte, Wiegman & Ng, 2019). Therefore, they are in conflict with port employees and community groups. In particular, port employees and community groups are not usually the decision makers in port city development matters or policies, and their voices may be under-represented or even unheard. A stakeholder management approach should rightfully balance the economic, social, and environment aspects

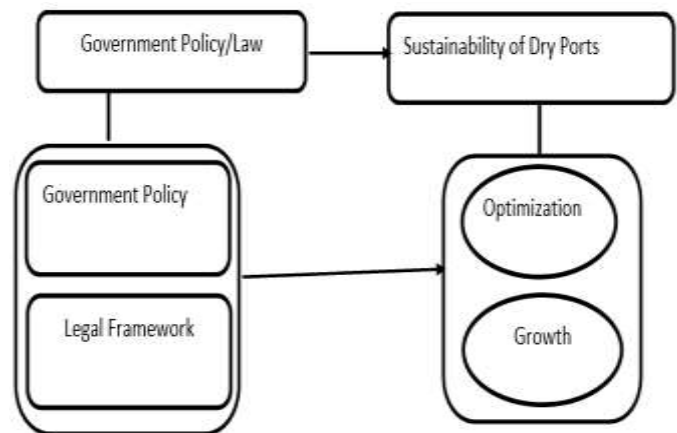
After identifying the key stakeholders, their needs, values, and objectives are analyzed based on a review of the literature and sustainability reports of major dry port cities (by cargo and shipping tonnage), such as Shanghai and Singapore (Wang, Chen & Huang, 2018). The stakeholder objectives are divided into two levels: (1) Corporate level, which is useful for individual companies or organizations, (2) National/Multi-national level, which is useful for governments and government-linked units. It is important to note that such needs vary with governments, cultures, company policies, and strategies. Hence, the analysis is not meant for a one-size-fit-

all solution, but a high level guideline that would be helpful for each port city for further development. Resolutions for conflicting stakeholders should be aligned to the overarching objective of achieving sustainable development. The legal framework of stakeholder and user groups with different objectives and needs requires that the core group of the indicators selected have sufficient flexibility to be tailored to specific user’s needs. Prior to adopting frameworks and indicator sets, a clear definition of policy goals towards sustainability is needed (Talley & Ng, 2018).

Conceptual Framework

From the literature, we have examined the constructs being investigated in this study. The two main variables are government policy/law and sustainability of dry ports, which are the independent and dependent variables respectively. The dimensions or the predictor variables are government policy and legal framework. The dependent variable has its measures as optimization and growth. The conceptual framework is diagrammatically displayed in Figure 1:

Figure 1: Conceptual Framework of the Influence of government policy on law for sustainability of dry ports in Nigeria



Source: Adapted from Khaslavskaya, A., & Roso, (2019). Outcome-driven supply chain perspectives on dry ports. Sustainability, 11-42.

Concept of Dry Port

A variety of dry port terminologies is being used in the extant literature such as inland clearance depot (ICD) or inland custom depot (Nigerian Shippers’ Council (2018), inland terminals (UNOHRLLS, 2017), inland container depot (Khaslavskaya & Roso 2019), and inland port (Qiu, Lam & Huang, 2015). The term dry port is defined as: “an inland intermodal terminal that is directly connected to seaport(s) with high-capacity transport mean(s), where customers can leave/pick up their standardized units as if directly to a seaport” (Notteboom & Yang 2017).

A full range-service dry port covers a wide range of functions including customs clearance; storage; cargo consolidation; cargo handling for different transport modes; depot function; container maintenance and repair and value-added services. Khaslavskaya and Roso (2019), classified inland

nodes as close, mid-range and distance dry ports, based on the distance to seaports and the position in the hinterland supply chain. This typology is similar to the concept of satellite terminals, transmodal centers and inland load centers (Khaslavskaya & Roso, 2019). Another way to classify dry ports is based on the directional development (ESCAP, 2015). An outside-in or sea-driven dry port means that its development is driven by a seaport actor, such as a port authority or terminal operator. This is mainly the case in developed systems like Europe and North America where seaports have reached the phase of regionalization (Fazi & Roodbergen, 2018) through a strong cooperation and coordination with inland logistics locations. In contrast, inside-out or land-driven inland terminals are developed by inland parties, such as a local government or transportation companies, mainly in view of serving the local market.

Most inland terminals in developing economies are land-driven as they have been established to serve the export-based industrial zones. Thus, inland locations in developing economies are dominated by land-based players' interests and generally lack a high level of intermodal integration with seaports through high capacity, reliable and flexible train or inland waterway shuttles.

Dry ports in developing economies differ from dry ports in developed systems also in other ways. First, they are likely to be situated close to production bases, or even inside economic zones, as illustrated in the case studies of India, Indochina region (ESCAP, 2015) and South Africa (UNOHRLLS, 2017). According to Ng and Cetin (2012), the least-cost model for dry port positioning, which is working well in advanced economies, might therefore be insufficient for a developing system. They argue that inland nodes in developing countries might be more "cluster-oriented" than "supply chain-oriented". Next to a location at the end node of an inland supply chain, dry ports in developing countries could also be situated in the middle of the chain for transloading between two transportation networks. Such type of dry port is easily seen at border locations. Inland terminals in close proximity of seaports are rarely found in developing systems as such kind of dry ports are mostly sea driven.

Second, production bases in developing nations are numerous but scattered across a large area. This supports the creation of numerous small ICDs which further complicates cargo bundling for intermodal services and results in a high reliance on road transport to transport cargo from/to seaports over mid-range or long distances.

Third, dry ports in developing countries have more chance of facing a lack of trained/experienced human resources and a poor information system support for inland transportation (Nigerian Shippers' Council (2018).

Finally, dry ports in developing nations are frequently used by smaller shippers with less experience in global supply chain management. Using the transaction cost theory introduced by Khaslavskaya and Roso (2019), it is

argued that the problem of bounded rationality and bounded reliability lead to a higher transaction cost with distant dry ports. This makes local inland terminals preferable for shippers to receive higher control and flexibility, therefore reducing uncertainty and lowering transaction costs. The study argues that the specific characteristics of dry ports in developing countries should in some ways be reflected in dry port location analysis. Before introducing a conceptual framework on dry port location in developing countries, we briefly discuss existing approaches to dry port location.

Government Policy on Dry Ports (Policy Considerations for Dry Port Location Planning in Nigeria)

Dry port location planning requires a thorough decision-making process as it is too costly to relocate the facility in the short term. Many models used for facility location attach a substantial role to transport costs in view of finding the optimal location. Least transportation cost approaches as listed by Ng and Cetin (2012) include conditional logit model, mixed-integer programming, the dynamic programming model and the center of gravity model. We argue that dry port location analysis in developing countries can benefit from a methodological approach based on (a) the inclusion of multiple stakeholders' perspectives; (b) the inclusion of softer location factors and indicators; (c) an explicit consideration of the dry port environment in developing countries as outlined in the previous section.

First, location analysis should follow a multiple stakeholder perspective. Stakeholder theory has received increasing attention in transportation (Xie et al., 2017). More specifically, the increasing integration between ports and their hinterland as captured by notions such as port regionalization and extended gates (ESCAP, 2015) has led to a stronger involvement of a range of stakeholders in the further geographic reach of seaports (Jeevan et al. 2015b). In a dynamic world in which stakeholders do not act in a deterministic way, optimization techniques have their limitations in view of decision making (Xie et al., 2017). The least cost model has its limitations as it does not consider all stakeholders involved. In the light of stakeholder theory (Freeman, 1984), the only way to create value for shareholders is taking care of their stakeholders simultaneously. The main stakeholders in a dry port setting include seaport actors, shippers, forwarders, investors, terminal operators, central and local government, infrastructure managers, residents, and road users. Each stakeholder has its own interest, which leads to different demands for site selection. Any new dry port facility project should meet the demand of the market, or dry port users; be compliant with public planning and create value for the community to receive public support; and in the end be financially viable for investors and operators.

Second, there is room for the inclusion of softer indicators in location analysis. The factors influencing dry port site selection can be economic or non-economic, quantitative, or qualitative. Dry port planning should consider several softer

more qualitative factors such environmental factors, land and labour availability, information technology level, regional trade facilitation level, reliability to name but a few (Haralambides, 2017). The need for the inclusion of soft criteria in a multi-stakeholder environment is echoed in the work of Notteboom and Yang (2017) who illustrated the importance of aiming for the high triple 'P' (people, planet and prosperity) bottom line sustainability of dry ports while maintaining a high public trust or 'social license to operate'.

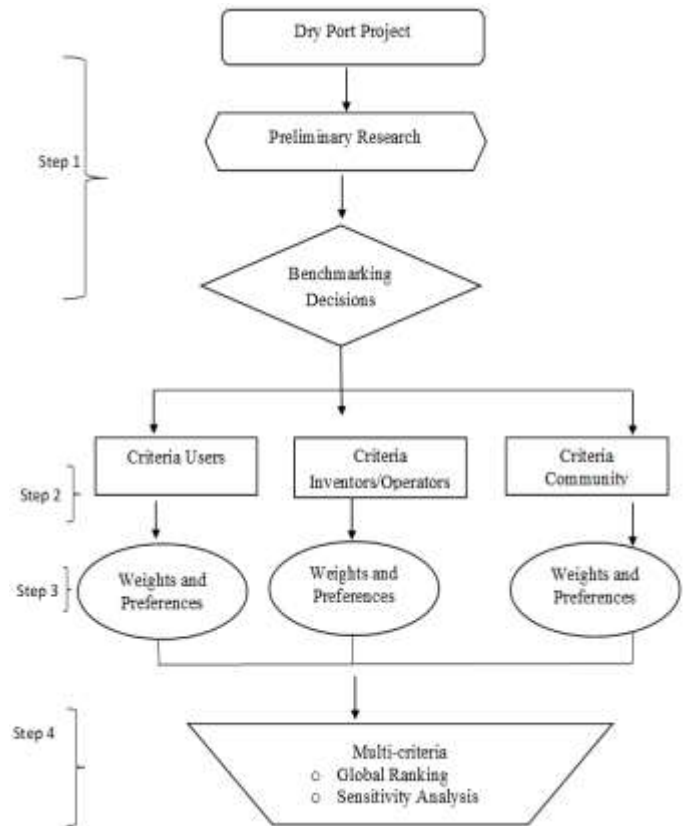
Third, it is argued that location analysis techniques used in developing countries should acknowledge the specific dry port environment in these countries at the level of spatial, economic and institutional characteristics and criteria such as the functional profile of dry ports in developing countries, the role they play for scattered production centres, their relative disconnection to seaports and moderate to low intermodal connectivity, etc.

Conceptual Framework based on the MADM Policy Approach

In this paper we use multi-criteria decision-making (MCDM) as we are dealing with various and diverse factors measured using different units and driven by various stakeholders (ESCAP, 2015). We follow the multi-attribute decision-making (MADM) approach as the number of potential locations for dry port planning is finite due to the high requirements linked to a dry port site in terms of land availability and suitability. The most important goal of the analysis is to find out whether one alternative is preferred over another, not their exact value. The inclusion of soft criteria is possible in MADM since the preference among alternatives could be shown in a ratio based on a more qualitative evaluation, such as a Likert scale or a pairwise comparison.

In order to apply the MADM approach we classify the stakeholders in rather homogenous groups with the members of each group sharing similar key objectives and concerns (Saaty, 2005). The LAMBIT model (Macharis & Verbeke, 2002) helps to organize the hierarchy of criteria. The model clusters stakeholders into three groups: terminal users, terminal service providers and the community. Notteboom and Yang (2017) used a similar approach when evaluating the best location to develop a new large-scale container facility in south Africa. The parties in the same group are homogenous since they have similar interests when it comes to terminal location. Terminal users include actors that are concerned with the logistics desirability of the project. The service providers are investors and operators who care about the financial viability of the project. Finally, the parties in the community group share the same interests in terms of environmental protection, low congestion and employment creation. Inspired by the LAMBIT model (Macharis & Verbeke, 2002), we further specify a conceptual framework based on the MADM approach for evaluating dry port locations in developing countries. The framework considers four steps (figure 2).

Figure 2: A four-step conceptual framework to evaluate dry port locations



Source: Authors, adapted from Macharis and Verbeke (2002)

By including all stakeholders and clustering them in groups, the framework aims to cover all factors that influence dry port site selection, including softer non-economic criteria and criteria specifically relevant to developing countries. This framework allows the inclusion of both quantitative and qualitative methods to measure and weigh criteria. The framework, when applied to a concrete case, is hoped to provide detailed conclusions that can support decision makers in selecting a site.

Step 1: Preliminary Research to Identify Policy Location Alternatives

This step is needed when no discrete set of existing dry port locations has been pre-selected by public or private actors. Possible options are screened, and unlikely locations are removed based on restriction criteria, such as freight demand, overall capacity, expansion ability, connectivity, natural and society restrictions, international importance and users' special needs. This step results in a set of discrete choices for potential location assessment, which serves as a basis for the next steps.

Step 2: Determination of Criteria, Sub-criteria, and Measuring Methods and Clustering Stakeholders

In this step, all stakeholders involved in or affected by dry port planning are clustered in groups. Then we define criteria

and sub-criteria that have an influence on the site selection of each group. The classification of stakeholders is imperative for directing a questionnaire for interviews in order to find out the weights and scores for the criteria (ESCAP, 2015). We consider three main dry port stakeholders: the community, dry port service providers and dry port users.

Dry port service providers include dry port investors and operators, who show great interest in financial viability and the development potential of the location (for example, room for further growth). The group of the dry port users includes shippers, logistics providers, transport companies and freight forwarders. Their primary attractiveness in hub locations is logistics efficiency in cargo movements from the regional economic zones to gateway seaports. Finally, the community stakeholder group includes the local government (which should be the prime defender of the local community interests), local residents and road users who care about the regional economy impact, job creation and the reduction of externalities.

After grouping stakeholders, we define criteria and sub criteria for each stakeholder group based on insights gathered from (Nguyen & Nottenbom, 2016; UNOHRLLS 2017) and in-depth interviews with local stakeholders from Nigeria. Apart from criteria based on each separate group's needs and objectives, criteria describing the interactions between these stakeholders are added. The defined criteria should be independent from each other to avoid double counting, which causes bias for the model.

Criteria relevant to the dry port users are listed in Table 1. The reduction of transport cost and time refers the savings dry port users can make when using the intermodal service of the dry port. Assuming that the cargo handling cost is the same in all locations, the ratings of these criteria are based on the differences in time and cost between using intermodal transport and road transport. The longer distance the trip by train, the more transport cost and time saved by the shippers.

Table 1. Criteria relevant to dry port users

Policy Criteria	Indicators	Measuring method	Measuring units
Reduction of transportation cost	Cost saved by using intermodal service in dry port	Compare intermodal transport cost with the road system	USD per route per TEU
Reduction of transportation time	Time saved by using intermodal service in dry port	Compare intermodal transport time with the road system	Hours per route per TEU
Accessibility to road infrastructure:	- Proximity to highway; - Average Daily Traffic - Level of Service	Expert evaluation	Likert scale: 1- very bad; 5 - very good
Accessibility to railway infrastructure	Proximity - Capacity -Frequency; - Reliability	Expert evaluation	Likert scale: 1- very bad; 5 - very good
Accessibility to inland waterway infrastructure	Proximity; - Capacity- Frequency; - Reliability	Expert evaluation	Likert scale: 1- very bad; 5 - very good
Range of service	- Service available	Expert evaluation	Likert scale: 1- very bad; 5 - very good
Proximity to the production base	- Distance to target production bases	Expert evaluation	Likert scale: 1- very close; 5 – too far
Proximity to other logistics platform	- Distance		Km

Source: Researcher's (2022), compilation based on various sources

The criteria related to the accessibility to a transport mode measure how easily different inland transport infrastructures can be accessed from the dry port location. For road transport, we consider the distance to the nearest highway exit, average daily traffic and level of service (Nguyen & Nottenbom, 2016). Rail and barge integration concern the distance to the nearest system, daily capacity, frequency and reliability of the connection. The next criterion compares the range of services provided by each location. Dry ports can provide a wide range of services, including cargo receipt and dispatch; packing and unpacking of LCL export containers; container storage; container repair; railhead/shunting operation; provision of customs clearance; provision of office space for relevant

commercial activities; provision of cargo handling equipment; provision of appropriate security; provision of communication facility (UNOHRLLS, 2017)). The rating is based on the service available at each location.

As explained, shippers in developing countries prefer local dry ports to have a better connection with and control to their cargo movements. The criterion of proximity to the production base refers to the distance between the dry port location and the target industrial zones. The ratings/scores on this criterion then is obtained by consulting local experts. The last criterion is the proximity to other logistics platforms. The distance to other logistics center shows the potential of the dry port to interact with the whole logistics system of the country

(Nguyen & Nottenbom, 2016). Being situated close to a logistics center or similar logistic platforms will guarantee a good basis for dry port success.

Table 2 presents criteria relevant to dry port service providers. The demand for dry port services in the location is one of the most important concerns to investors. Its rating/score can be obtained from demand forecasts related to the dry port project. The investment and operating cost is another imperative criterion. In terms of cost factors, the model considers land cost, energy cost, labor cost and the cost to relocate the railway station for rail network accessibility. Another factor is the room for expansion at the site, here measured by the maximum area allocated to the project. The next criterion is the investment and operational climate, which is indicated

by the banking environment, government support and existing competition in the area. They reflect the ease of doing business, economic governance and administrative management and reform of local government, or in other words, the interaction between investors/operators with government and local players. Available indices such as the PCI (Provincial Competitiveness Index) can be used for rating this criterion. The last criterion of inter-project explains that some investments are made despite of their negative net project value if they generate positive inter- project effects for other projects (Khaslavskaya & Roso, 2019). This could be seen in contracting with government in order to provide a public service. This criterion could be identified by reputation enhancement and capability upgrade of the investors after making the investment.

Table 2. Criteria Relevant to Dry Port Service Providers

Policy Criteria	Indicators	Measuring method	Measuring unit
Demand for dry port services	Forecasting container flow	Acquired from the dry port planning project	TEU
Investing & operating cost	- Land cost - Labor cost - Energy cost - Railway relocation cost	Acquired from the dry port planning project and local government	USD
Room for expansion	Maximum area for dry port expansion	Acquired from the dry port planning project	Ha
Investment & operational climate	- Banking environment - Government support - Competition	Expert evaluation or using existing index if available	Likert scale: 1- very bad; 5 - very good
Inter-project spillover effect	- reputation enhancement - capability upgrading	Expert evaluation	Likert scale: 1- very bad; 5 - very good

Source: Researcher's (2022), compilation based on various sources

Lastly, criteria relevant to the community are shown in Table 3. The first factor that influences the site selection of the community is the efficiency of the transport network, or how the new dry ports could complement seaports and other inland transport planning. The second public concern is how the dry port project supports land use reorganization policy, such as the relocation of companies/industries from a high-density area to a less urban area. Another factor is the impact of value added and return to local government from the new site, but taken into account the loss from the involved land reclamation (ESCAP, 2015). The employment creation is another criterion highly relevant to the local government and residents. The next consideration of the community is pollution. There are two main sources of pollution, including pollution on route caused by moving vehicles and pollution

caused by dry port related activities. The former one could be estimated based on the modal shift when using a dry port, while the latter could be evaluated by looking at the population density in the surrounding area, which might be affected by the pollution generated by dry-port activity. Noise might be considered in many cities due to its long-term influences over natural environment and urban environment (Gerald & Jin (2015). The simplest way to benchmark noise effects is giving the expert judgments based on the distance to the influenced subjects. However, in many cases of developing countries, this criterion should not matter since their dry ports are mostly located in the proximity of remote industrial zones. Visual intrusion and congestion reduction are other considerations relevant to the community.

Table 3. Criteria relevant to the Community.

Policy Criteria	Indicators	Measuring method	Measuring units
Complementary with other inland transport & seaport planning		Expert evaluation	Likert scale: 1- very bad; 5 - very good
Contribution to land use reorganization		Expert evaluation	Likert scale: 1- very bad; 5 - very good
Maximizing value added services and return to government	- Tax paid - Value added	Expert evaluation	Likert scale: 1- very bad; 5 - very good
Employment generation	Number of estimated employees	Estimation based on dry port planning project	Employees
Minimizing transportation pollution	CO2 reduced per TEU per route by modal shift	Estimation	Gram CO2 per TEU per route

Dry port related pollution created	Affected population	Population in resident areas within a certain radius of the location	People
Noise		Expert evaluation	Likert scale: 1- very bad; 5 - very good
Minimizing visual intrusion		Expert evaluation	Likert scale: 1-strong violation, 5- no violation
Minimizing road congestion	Local traffic and road used	Analysis of local traffic	Likert scale: 1- very bad; 5 - very good

Source: Researcher's (2022), compilation based on various sources

Step 3: Weighing Methods

In order to carry out the multi criteria analysis, it is required that each defined factor is assigned a weight of importance. The weights are often collected from groups of stakeholders' preferences through questionnaires using different methods. There are several popular methodologies for obtaining attribute weights, including analytical hierarchy process (AHP) (ESCAP, 2015), SWING (UNOHRLLS, 2017)), direct point allocation and the simple multi-attribute rating technique or SMART (Gerald & Jin 2015). Those methods are discussed and compared in the work of Gerald and Jin (2015). In short, AHP weighing is based on the pairwise comparison of criteria. Direct point allocation inquires the decision maker to allocate points to each criterion corresponding to the attribute's importance. The SWING technique requires the participants firstly choose the most important attribute and give it a score of 100, before allocating a score of less than 100 to other attributes. In the SMART technique the decision maker is asked to start with the least important factor, giving it a score of 10, and then to grade other factors based on their relative importance compared to the former.

Sustainability of Dry Ports

Improving railway infrastructure and establishing dry ports are important elements in a hinterland consolidation-distribution system, and the latter needs to be regulated and supported by policies and special institutions. Mirzabeiki et al. (2016) studied the effects of hinterland transportation between seaport and dry port with the inclusion of a collaborative tracking and tracing (CTT) system. The study concluded 275 Dry ports: research outcomes, trends, and future implications that CTT positively affects the speed of operations, resource utilization, reliability, safety, and data quality. Fanti et al. (2015) addressed the optimization of lead time in both dry ports and seaport areas: the results of their modeling supported suggestions for reorganizing workflow to better utilize human resources. Qiu et al. (2015) investigated the problem of storage pricing at dry ports and its dependency on seaport pricing. Xie et al. (2017) focused on the problem of repositioning and coordinating empty containers at dry ports and seaports. By establishing dry ports, seaports could increase capacity without expanding their seaport terminals, as in the case—among many others—of Russian ports (Witte, Wiegman & Ng, 2019). In this way, seaports free up space for sensitive goods such as alcohol and tobacco and gain a competitive advantage as a result of better access to hinterland areas (UNOHRLLS, 2017).

Dry port operations optimization

Studies have been conducted on optimization of dry port operations from different perspectives. Gerald and Jin (2015), focus on the tactical level of transportation planning with the involvement of dry ports. Their model addresses the problem of optimizing a shuttle schedule between dry ports and seaports. A study by Chang et al. (2015) focuses on cost optimization for the stakeholders involved, including installation, storage, and transportation costs. Underperforming dry ports and dry ports facing operational issues are studied mainly in Asia. Witte, Wiegman and Ng (2019), study dry ports in India with a focus on regional development around dry ports, which could attract users. Value added services offered at dry ports can make a region more attractive to the actors in the immediate vicinity, as well as attract potential new users from more remote locations. Jeevan et al. (2017) study Malaysian dry ports, identifying primary factors that influence their sustainability of dry ports, such as information sharing, availability of value-added services such as customs clearance, the capacity of the facility, and the location of dry ports. Alam (2016) identified factors such as issues with direct rail connection to the seaport that hinder efficient dry port operations in Pakistan and concluded that supportive policies are needed to overcome such issues and improve dry port sustainability of dry ports.

Improving railway infrastructure and establishing dry ports are important elements in a hinterland consolidation-distribution system, and the latter needs to be regulated and supported by policies and special institutions. Mirzabeiki et al. (2016) studied the effects of hinterland transportation between seaport and dry port with the inclusion of a collaborative tracking and tracing (CTT) system. The study concluded that CTT positively affects the speed of operations, resource utilization, reliability, safety, and data quality. Fanti et al. (2015) addressed the growth profile of lead time in both dry ports and seaport areas: the results of their modeling supported suggestions for reorganizing workflow in order to better utilize human resources. Qiu et al. (2015) looked into the problem of storage pricing at dry ports and its dependency on seaport growth. Xie et al. (2017) focused on the problem of repositioning and coordinating empty containers at dry ports and seaports. By establishing dry ports, seaports could increase capacity without expanding their seaport terminals, as in the case—among many others—of Russian ports (UNOHRLLS, 2017). In this way, seaports free up space for sensitive goods such as alcohol and tobacco, and gain a

competitive advantage as a result of better access to hinterland areas (Witte, Wiegman & Ng, 2019).

Government policy/law and sustainability of dry ports

Despite the phenomenal efforts put in place through legal, research and sensitisation both globally and locally, not all dry ports fully understand and embrace legal framework and its benefit on sustainability of dry ports to their dry ports. Although a myriad of studies has been undertaken on government policy/law, scholars could not all agree on the link between the factors that influence government policy/law, and their impact on sustainability of dry ports. In a study conducted by Durach, Kembro and Wieland (2017), they suggest that understanding and implementing legal framework plays a significant role in enhancing organisation's sustainability of dry ports and effectiveness. Their finding is consistent with the earlier findings of Alam (2016).

Gerald and Jin (2015) further revealed that, government policy/law created room for appreciation, innovation and creativity that dry ports can leverage to tackle diverse markets. This implies that depending on the way it is managed; legal framework could help a business enter more market which could lead to improved sustainability of dry ports. In addition, the authors revealed that there is a positive relationship between cultural and gender legal framework and organisational effectiveness and by extension sustainability of dry ports. Consistent with Alam's (2016) finding, Nguyen and Notteboom (2019) investigated the relations between dry port characteristics and regional port- hinterland settings: Findings for a global sample of dry ports, confirm that legal framework enhances innovation and optimization.

Haralambides (2019), emphasised that implementing and valuing legal framework enhances sustainability of dry ports. The author went further to confirm that legal framework strongly influences sustainability of dry ports. Although most of the studies have found a positive and significant relationship between government policy and sustainability of dry ports, Durga (2017) argued that no significant relationship exists between government policy and organizations' effectiveness, but only a minimal impact exists between the two.

Government policies and Sustainability of Dry Ports

Awad-Núñez et al. (2016) argued that important government policies include accessibility to a rail network, high-capacity roads, and seaports, and that dry port government policies tend "to cater more to political preferences rather than technical criteria". Ng and Cetin (2012) studied examples from India, emphasizing the importance of dry ports for a developing economy. Dry ports in the studied area deviated from good government policies due to the influence of production facilities on government policies, informal relationships between stakeholders, and policy restrictions. Witte, Wiegman and Ng (2019) also adopted a long-term perspective and investigated the positioning of dry ports. The authors considered the consequences that might arise with the

development of dry ports as elements of port regionalization strategies, i.e., changes in transportation flow management, land use, governance, and planning.

An interesting perspective was taken by Wang et al. (2018), who suggested the closure of existing dry ports with low throughput, together with the opening of new dry ports in more strategic locations, like the case of India, where oversupply of dry ports had led to economic losses. However, as Wang et al. (2018) noted, it might be practically difficult to eliminate inefficient infrastructure considering the issue of "project image," often tied to the image of local officials. Another body of publications focuses on finding optimal dry port locations and selecting better sustainability methods. Gerald and Jin (2015), investigated opportunities for establishing dry port networks in proximity to the port of Genoa, Italy, considering government policies, volumes, mono- and multimodal approaches, and options for multiple or single mid-range dry ports. Feng et al. (2013) proposed implementation of dry ports in the Fujian region of China, dedicated to a seaport, or shared among different seaports—something that could facilitate transportation cost reduction. Most importantly, *success in facility placement* depends greatly on infrastructure development and as noted by Witte, Wiegman and Ng (2019), "any place" within a proper transportation network is suitable for a dry port.

Legal Framework and Sustainability of Dry Ports

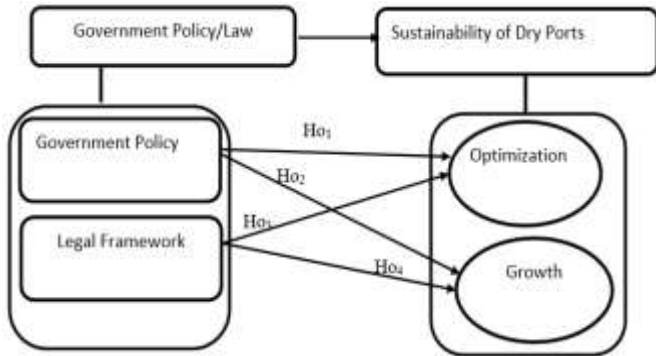
Once established, a dry port becomes part of a competitive transportation system that has numerous stakeholders with diverse strategies and interests. The growth stage of dry port development, referred to as "bidirectional development—outside-and-inside," implies a joint effort towards dry port development by different actors engaged in hinterland transportation, and coincides with the active legal framework and business improvement phase of the dry port sustainability (Witte, Wiegman & Ng, 2019). Fazi and Roodbergen (2018) present evidence from Brazil, where governmental institutions act either in support of or as an impediment to dry port development. That is, coordination between dry ports and seaports can be impeded due to lack of regulations, or, on the contrary, various difficulties in seaport legal framework s might enhance dry port utilization. According to Chang, Notteboom and Lu (2015), the direction of dry port development as *inside-out* or *outside-in* is determined by existing policies for both public and private sectors.

This conclusion is drawn from studying cases in Sweden, the USA, and Scotland (Fazi & Roodbergen, 2018). However, in the case of China, lack of coordination between institutions at different levels and the inability to interpret policies issued at higher levels in a beneficial manner hinder dry port development (ESCAP, 2015). The problems are associated with the planning, legal framework, and regulation of hinterland transportation networks that are shared between authorities. Uncertainty, combined with new regulations, can slow the development of dry ports, i.e., they can deter long-term planning and investment (Witte, Wiegman & Ng, 2019).

On the other hand, supportive policies might accelerate a growing business, as illustrated by Jeevan et al. (2015a) in the case of container transportation through ports to the Malaysian hinterland. Strategies oriented towards better connectivity with foreign markets encourage seaports to develop connectivity with hinterland areas based on rail transport and, where possible, inland waterway transport (Notteboom & Yang 2017). Dry ports are elements of a hinterland transportation system, and their development depends on the state of other infrastructure. From the foregoing presentations, the study hypothesized thus: Ho₁: There is no significant relationship between government policy and the optimization of dry ports in Nigeria; Ho₂:

There is no significant relationship between government policy and the growth of dry ports in Nigeria; Ho₃: There is no significant relationship between legal framework and the optimization of dry ports in Nigeria; Ho₄: There is no significant relationship between legal framework and the growth of dry ports in Nigeria.

Figure 3: Operationalized Framework of the influence of government policy on law for sustainability of dry ports in Nigeria



Source: Adapted from Khaslavskaya, A., & Roso, V. (2019). Outcome-driven supply chain perspectives on dry ports. *Sustainability*, 11-42.

III. METHODOLOGY

The target population of the study consisted of all the key facilitators and supportive personnel of the Eleven functional, nonfunctional, and proposed dry ports in Nigeria. The sample frame consisted of the facilitators and supportive personnel of the Eleven functional, nonfunctional, and proposed dry ports in Nigeria; they include: Isiala Ngwa, Aba, Abia State, Erunmu, Ibadan, Oyo State, Heipang, Jos, Plateau State, Zawachiki, Kano State, Zamfarawa, Funtua, Katsina State, Jauri, Maiduguri, Borno State, ICNL, Kaduna, Kaduna State, Dagbolu in Osun State, Lolo in Kebbi State, Onitsha in Anambra State and Ogwashi-Uku in Delta State. The sample setting consisted of the facilitators and supportive personnel of the dry ports and 46 of them were selected from each of the 6 geopolitical zones of the country giving a total of 276 facilitating and supportive workers. The sample size of 222 was determined using the Taro Yamane’s formula. The reliability of the instrument was achieved using the Cronbach Alpha coefficient with all the items scoring coefficients above 0.70 threshold. The data for the study were generated from the

staff through questionnaire and secondary sources which were collated, sorted, edited, and analyzed using percentages, frequency distribution, ranking, scaling, ratios, means, variances and standard variation to achieve descriptive statistical objectives. Also, the hypotheses were tested with inferential statistical tools of Pearson’s Product Moment Correlation Coefficient (r).

IV. RESULTS AND DISCUSSION

Administration and Retrieval of Questionnaire

Collection of data was carried out by the researchers, which involved the administration of the copies of questionnaire to the selected staff of dry ports in Nigeria by email addresses. After administering the instruments, the respondents were given a time space of one month to respond to the instruments. Thereafter copies of questionnaire were retrieved through established email contacts of the surveyed staff by the help of Monkey Survey. A total number of 276 copies of questionnaire were distributed to the respondents from the dry ports under survey and 241 copies of questionnaire were retrieved from them. After editing the retrieved copies of questionnaire, the copies found useful were 222. The 222 copies of questionnaire were considered as valid and suitable for data analysis in this study. The administration and retrieval of copies of the questionnaire are shown in Table 4 below:

Table 4: Questionnaire Administration and Retrieval

S/ N	Job Status	Copies distributed	Copies retrieved	Copies found useful	Response Rate
1.	Dry ports Managers	28	26	23	82.14%
2.	Operation Managers	65	59	56	86.15%
3.	Accountants	29	24	20	68.96%
4.	Supervisors	120	102	98	81.67%
5.	Client service Officers	34	26	25	73.53%
	Total	276	241	222	80.43%

Source: Survey Data, 2022

Table 4 shows the details of how the copies of questionnaire (survey instruments) were distributed and retrieved from the respondent staff of dry ports in Nigeria. The data collection shows that 28 copies of questionnaire were administered to dry ports managers and 26 copies retrieved from this class of respondents while 23 copies of questionnaire representing 82.14% response rate were found useful from this segment. Also, 65 copies of questionnaire were administered to the Operation Managers and 59 copies were retrieved from them while 56 copies of questionnaire representing 86.15% were found useful. With respect to the accountants 29 copies of questionnaire were administered to them and 24 copies retrieved from this category of respondents while 20 copies of questionnaire representing 68.96% were found useful in this

segment. For the Supervisors, 120 copies of questionnaire were administered to them and 102 copies retrieved from this class of respondents while 98 copies of questionnaire representing 81.67% were found useful. For the Client Service Officers 34 copies of questionnaire were administered to them and 26 copies of questionnaire were retrieved from this category of respondents while 25 copies of questionnaire representing 73.53% were found useful in this segment. In all, 276 copies of questionnaire were distributed to the two surveyed dry ports and 241 copies of questionnaire were retrieved from them. However, after going through them, 222 copies of questionnaire representing 80.43% response rate were found useful for data analysis.

Government Policy as a Dimension of government policy/law

Table 5 gives the detailed analysis on how government policy as a dimension of government policy/law has been examined to determine its effect on sustainability of dry ports and to show its descriptive statistical outcome based on the questions deposed.

Table 5: government policy as a Dimension of government policy/law

S/N	Question Items on government policy	N	\bar{X}	SD
1	To what extent is government policy used to achieve optimization objective in your dry port?	22 2	3.39 1	1.00 4
2	To what extent are your dry port's staff very strict in attending to customers in order to achieve sustainability of dry ports?	22 2	3.24 7	1.04 0
3	To what extent does efficiency offer veritable opportunities to optimize capacity in dry ports services?	22 2	3.49 0	0.95 4
4	To what extent does your dry ports introduce government policy in order to encourage sustainability of dry ports?	22 2	3.05 8	1.09 3
5	To what extent do staff talk good about the dry ports' willingness to use the best government policy/law for the dry ports to succeed?	22 2	3.35 1	0.98 9

Source: Survey Data, 2022, and IBM SPSS Statistics 22 Window Output

Table 5 shows that five question items represent a dimension in the 5-point scale. The data revealed that with the mean and standard deviation scores of 3.391 ± 1.004 , the respondents agreed that to a large extent government policy used to achieve optimization objective in your dry port. Also, with the mean and standard deviation scores of 3.247 ± 1.040 , the respondents agreed that to a large extent staff are very strict in attending to customers in order to encourage sustainability of dry ports. The data also revealed that the respondents agreed that to a large extent efficiency offers veritable opportunities to optimize capacity in dry ports services with the mean and standard deviation scores of 3.490 ± 0.954 . With the mean and standard deviation scores of 3.058 ± 1.093 the respondents indicated that to a moderate extent dry ports introduce government policy in order to encourage sustainability of dry ports. Finally, the data in Table 2 revealed that with the mean and standard deviation scores of 3.351 ± 1.098 , the respondents

agreed that to a moderate extent staff talk good about the dry parts' willingness to use the best surface-level government policy/law for the dry ports to succeed.

Legal Framework as a Dimension of government policy/law

In order to ascertain the extent to which legal framework as a dimension or component of government policy/law affect sustainability of dry ports, the study used 5 question items on the 5-point scale as shown in Table 6.

Table 6: Legal framework as a Dimension of government policy/law

S/N	Question Items on Legal framework	N	\bar{X}	SD
1	To what extent does legal framework offer veritable opportunities for the sustainability of dry ports?	222	3.256	1.042
2	To what extent does quality of your staff inputs encourage the introduction of the legal framework for the sustainability of dry ports in Nigeria?	222	2.810	1.037
3	To what extent does passing information on legal framework lead to the achievement of the growth objective of dry ports?	222	2.981	.9221
4	To what extent does your dry port give rooms for staff to suggest new ways or approach to introduce legal framework for the success of dry ports?	222	3.054	1.156
5	To what extent does legal framework aid the optimization of dry ports in Nigeria?	222	2.882	1.123

Source: Survey Data, 2022, and IBM SPSS Statistics 22 Window Output

As shown in Table 6 above, the responses of the respondents have indicated the mean and standard deviation scores of 3.256 ± 1.042 , showing that the respondents collectively specified that to a moderate extent legal framework offer veritable opportunities for the sustainability of dry ports. Also, with the mean and standard deviation scores of 2.811 ± 1.037 it is quite obvious that the respondents indicated on the aggregate that to moderate extent quality of staff inputs in controlling engender the legal framework in dry ports. As to the extent to which passing information on legal framework lead to the achievement of the growth objective of dry ports, the mean and standard deviation scores of 2.858 ± 0.9221 indicate aggregate agreement. The data additionally revealed that the respondents agreed that to moderate extent dry port give rooms for staff to suggest new ways or approach to introduce legal framework for the success of dry ports; this is shown by mean and standard deviation scores of 3.054 ± 1.1561 . Finally, the mean and standard deviation scores of 2.882 ± 1.123 indicate that the respondents agreed that legal framework aid the optimization of dry ports in Nigeria.

Optimization as a Measure of sustainability of dry ports

Table 7 shows the descriptive statistical results on optimization which is measured with five question items on the 5-point scale. The response distribution as shown by the

results is indicative that optimization will enhance sustainability of dry ports

Table 7: Optimization as a Measure of sustainability of dry ports

S/N	Question Items on Optimization	N	\bar{X}	SD
1	To what extent does effective government policy/law boost the sustainability of dry ports?	22 2	3.39 6	0.972
2	To what extent are you always involved in important dry ports services that improve optimization of dry ports?	22 2	3.42 7	1.114
3	To what extent does your supervisor consider the opinion of others before making important decision that affects optimization of dry ports?	22 2	3.11 7	1.099
4	To what extent do senior staff discuss issues concerning the increase of optimization in your dry port?	22 2	3.33 3	1.103
5	To what extent is optimization often used as a key sustainability of dry ports index (KPI) to review organizational sustainability of dry ports in your dry port?	22 2	3.21 1	0.991

Source: Survey Data, 2022, and IBM SPSS Statistics 22 Window Output

Table 7 shows the mean and standard deviation scores of 3.39640 ± 0.972 indicating that the consensus opinion of the respondents revealed an agreement that to a moderate extent effective government policy/law boost the sustainability of dry ports of dry ports services. Also, the mean and standard deviation scores of 3.427 ± 1.114 imply the respondents agreed that to a moderate extent staff are always involved in important services that improve sustainability of dry ports. The statistical result of 3.117 ± 1.099 (mean and standard deviation scores) show that the respondents agreed that to a large extent supervisor consider the opinion of others before making important decision that affects optimization. Table 7 also reveals the mean and standard deviation scores of 3.333 ± 1.103 implying that the respondents agreed that to a moderate extent senior staff discuss issues concerning the increase of optimization in dry ports. Finally, the mean and standard deviation scores of 3.211 ± 0.991 show that the respondents agreed that to a moderate extent optimization is often used as a key sustainability of dry ports index (KPI) to review organizational sustainability of dry ports in dry ports.

Growth as a Measure of sustainability of dry ports

Table 8 shows how growth as a measure of sustainability of dry ports was examined and empirically expressed through the raising descriptive statistical analysis of 5 question items.

Table 8: Growth as a Measure of sustainability of dry ports

S/N	Question Items on Allocative Efficiency	N	\bar{X}	SD
1	To what extent does your dry port value giving satisfactory services to customers in order to engage them for patronage leading to growth?	222	3.288	1.045
2	To what extent is growth level often used as a key sustainability of dry ports index (KPI) to review organizational sustainability of dry ports in your dry port?	222	3.391	1.004

3	To what extent does your dry port give rooms for staff to engage customers for the growth	222	2.995	1.044
4	To what extent does your dry port allow customers to make variety of choices through appropriate service engagements that elicit growth	222	3.009	0.983
5	To what extent do staff in your ship have the requisite skills to engage customers for the increased growth of the of the dry ports	222	3.211	1.123

Source: Survey Data, 2022, and IBM SPSS Statistics 22 Window Output

As shown in Table 8 above, the responses of the respondents have indicated the mean and standard deviation scores of 3.288 ± 1.045 showing that to a moderate extent dry ports value giving satisfactory services to customers in order to engage them for patronage leading to growth. Also, the mean and standard deviation scores of 3.391 ± 1.004 imply that the respondents agreed that to a moderate extent growth level is often used as a key sustainability of dry ports index (KPI) to review the organizational sustainability of dry ports of dry ports.

With the mean and standard deviation scores of 2.995 ± 1.044 , the respondents have indicated that to a moderate extent dry ports give rooms for staff to engage customers for the growth. Table 8 shows the mean and standard deviation scores of 3.009 ± 0.983 proving that the respondents indicated that to a moderate extent dry ports allow customers to make variety of choices through appropriate service engagements that elicit growth. Finally, the data revealed the mean and standard deviation scores of 3.211 ± 1.123 indicating that to a moderate extent ships have the requisite skills to engage customers for the increased growth in dry ports.

Test of Hypotheses

In the previous sections, we have explored a descriptive univariate analysis of all the data generated from field, which were done through the application of SPSS window output, version 22.0 in such text, descriptive analysis on the study variables was also done, using frequencies, arithmetic percentages, means, standard deviation and variances. These have guided us, as well as, given us the limelight to The study delved into the inferential statistical testing of stated hypotheses in this section. Having done with the exploration of the univariate analysis in the previous section, the study delves into the bivariate tests analysis, since more than one group is involved, and the test of hypotheses is done here. To determine the relationships that exist between these variables, the hypotheses have been stated thus: H_{01} : There is no significant relationship between government policy and the optimization of dry ports in Nigeria; H_{02} : There is no significant relationship between government policy and the growth of dry ports in Nigeria; H_{03} : There is no significant relationship between legal framework and the optimization of dry ports in Nigeria; and H_{04} : There is no significant relationship between legal framework and the growth of dry ports in Nigeria.

Table 9: Results of government policy/law (GP) and sustainability of dry ports (SDPs)

Statistics	HO ₁	HO ₂	HO ₃	HO ₄
	GP (ODPs)	GP (GDPs)	LF (ODPs)	LF (GDPs)
Pearson correlation	0.823**	0.867**	0.719**	0.885**
Sig(2-tailed)	.000	.000	.000	.000
N	222	222	222	222

Source: Research Data 2022, and SPSS Window Output, Version 22.0
 **correlation is significant at the 0.05 level (2-tailed)

Table 9 above shows the results of the test of hypothesized statements, Ho₁, Ho₂, Ho₃ and Ho₄. The results of the hypotheses tested showed positive relationships. For government policy and optimization (Ho₁) the rho outcome of 0.823 @ p0.000 <0.05 means that a positive relationship exists between the examined variables, and it is also significant. This implies that the null hypothesis as stated is rejected and the alternate is accepted. In respect to Ho₂ legal framework and optimization, the r outcome of 0.867 @ p0.000 <0.05 mean that there is a strong positive relationship between Ho₂ legal framework and growth and it also significant, which also means that the null hypothesis as stated is rejected and the alternate is accepted. In the case of government policy and optimization which is Ho₃ the r outcome of 0.719 @ p0.000 <0.05, it shows a weak positive and significant relationship among the examined variables. The null hypothesis in this instance is also rejected. The examined relationship between legal framework and growth which is our Ho₄ also showed a positive and significant relationship with rho = 0.885 @ p0.000<0.05. It also implies rejection of the null hypothesis earlier stated.

Table 10: Summary of the Results on Test of the Research Hypotheses

Research Hypotheses	rho-value	Significant/Probability Value	Result	Decision
Ho ₁ : government policy has significant effect on optimization	0.823	0.000	Positive and significant relationship	Reject
Ho ₂ : government policy has significant effect growth	0.867	0.000	Positive and Significant relationship	Reject
Ho ₃ : Legal framework has a significant effect on optimization	0.719	0.000	Positive and Significant relationship	Reject
Ho ₄ : Legal framework has significant effect on growth	0.885	0.000	Positive and Significant relationship	Reject

Source: Research Data 2022, and IBM SPSS Statistics 22 Window Output

From the inferential analysis so far and the revelations in Table 10 it can be stated that: government policy as a dimension of government policy/law has a positive and significant relationship with optimization as a measure of sustainability of dry ports of dry ports in Nigeria; government policy as a dimension of government policy/law has a positive and significant relationship with growth as a measure of

sustainability of dry ports of dry ports in Nigeria; legal framework as a dimension of government policy/law has a positive and significant relationship with optimization as a measure of sustainability of dry ports of dry ports in Nigeria; and legal framework as a dimension of government policy/law has a positive and significant relationship with growth as a measure of sustainability of dry ports of dry ports in Nigeria.

V. DISCUSSION OF FINDINGS

The findings of this study were drawn from the analyses of the results in the previous section. In this section, the study discusses the findings in order to draw the conclusions appropriately. The first deals with how government policy relates to sustainability of dry ports of dry ports in Nigeria. The second centres on how legal framework influences sustainability of dry ports of dry ports in Nigeria.

Government policy and sustainability of dry ports of dry ports in Nigeria

The findings of the study revealed that dry ports operators are guided by government policy in order to improve on optimization and growth leading to the sustainability of dry ports in Nigeria. A critical appraisal of the finding reveals that government policy has positive and significant relationship with optimization (rho-value = 0.823). There is positive and significant relationship between government policy and growth (rho-value = 0.867). In all, government policy/law has strong positive and significant relationship with optimization and growth. The full import of this finding is that dry ports industry operators work diligently to achieve sustainability of dry ports objectives (Agamez-Arias & Moyano-Fuentes, 2017). government policy is being extensively used by dry ports in collaboration with other government policy/law tools, as they can be integrated with nearly every other management device or strategy to maintain optimization. Every dry port operator with a foresight for success and sustainable development tries to be guided by government policy that transcends the prevailing objectives of companies and dry ports towards optimization and growth. In many cases dry ports introduce government policy that aims at linking serious staff and clients with tourism operators for effective and efficient sustainability of dry ports by making goals explicit and emphasizing profit maximization, (Christopher, 2011).

The study found that government policy offers veritable opportunities to optimize the sustainability of dry ports in Nigeria as it helps to build optimization and growth of dry ports in Nigeria. The implication of this finding is that dry ports and tourism-oriented companies successfully use government policy and legal framework to operationalize government policy/law that lead to optimization and growth (Fazi & Roodbergen 2018). In asserting this position, Khaslavskaya and Roso (2019) insists that government policy now largely falls under the remit of highly interactive dry ports services that differ little from traditional policy of normal ports operations.

The findings of this study agree substantially with the works of Awad-Núñez et al. (2016), who found that there is a positive and significant relationship between ethnic legal framework and employee sustainability of dry ports. This means that an increase in ethnic legal framework, leads to an increase in employee sustainability of dry ports. The above findings are in consonance with the findings of Haralambides (2017), who found that in well managed dry ports establishment, there is a high probability among the dry ports.

Also, Nguyen and Nottenboom (2019), find that the purpose of government policy/law is to enhance the sustainability of dry ports of a heterogeneous workforce and inclusive development of people with differences in gender, ethnicity, nationality, cultural and educational backgrounds. The reason for heterogeneity in the workforce is the spread of ethnic based dry port and the migration of people in search of job opportunities. This also, agrees with Durach, Kembro and Wieland (2017), as they posit that government policy/law is the business strategy adopted by dry ports to elicit the development of individuals from a variety of backgrounds. The dry port concept has become increasingly important due to globalization and the migration of people across the globe.

Also, Haralambides (2019), observes that the goal of government policy creates confidence among all the stakeholders in dry ports. For the surveyed dry ports, there are key targets, the optimization agendum and the efficient growth mark, the study has revealed. This is in line with Khaslavskaya and Roso's (2019) work which maintains that to successfully manage the challenges of a dry port, organizations have to emphasize the understanding the operations of dry port and finds out that government policy/law can address the problem and enhance problem-solving and decision-making power.

Legal framework and sustainability of dry ports of dry ports in Nigeria

The study found a positive and significant relationship between legal framework and optimization as well as growth and this points to the fact that, legal framework is one of the key resourceful devices under which government policy/law could be perfected to impact on the sustainability of dry ports of sustainability of dry ports in Nigeria. A diagnostic examination of the findings reveals that the relationship between of legal framework and optimization was positive and significant; the relationship between legal framework and growth was positive and significant indicating (rho-value = 0.719 and rho-value = 0.885). This means that the dry port operators have fully embraced the legal framework of which Witte, Wiegman & Ng (2019), insist that there is relationship between policy on dry port and sustainability of dry port. The results of this study agree with the works of Talley and Ng (2017) who noted that dry ports businesses implicitly make a trade-off between the requirements of government policies and the dry port operators.

Nguyen and Nottenboom (2016), in their study maintain that legal framework definitely leads to improved optimization and sustainability of dry ports, they however stated that it may prove tragic if good and effective policy is not formulated to propel the running of dry ports. The ability of any dry port business to succeed depends on the level of profitability this is because profit is the major reason why organization get involved in one business or the other. Without profitability and by extension optimization, the business will not grow in the long run (Jeevan et al., 2017).

Alam (2016), opines that as dry port optimize and become more internationalized, and newly industrialized countries have taken their place alongside the Organization for Economic Corporation and Development (OECD) countries, the dry port sector has provided the vehicle for an extraordinary growth through legal frameworks. This has also resulted to the progression from a world of isolated communities to an integrated global village transport wise

VI. CONCLUSION

The conclusion of this study provides holistic outcome of the paper. The study revealed the perception of the respondents on how government policy/law affect the sustainability of dry ports. The hypotheses tested indicate that there is a significant relationship between the dimensions of government policy/law and measures of sustainability of dry ports. The conclusion of the study indicates that: Government policy has a positive and significant relationship with the optimization of dry ports in Nigeria; legal framework has a positive and significant relationship with the optimization of dry ports in Nigeria; government policy has a positive and significant relationship with the growth of dry ports in Nigeria; and legal framework has a positive and significant relationship with the growth of dry ports in Nigeria.

VII. RECOMMENDATIONS

Based on the conclusion drawn from this research, the study recommends the following:

- i) Government should come up with effective legal framework and policies on dry port modalities and operations in Nigeria as there is no such instruments to navigate efficient and sustainable operations of dry ports in Nigeria.
- ii) The present port authority, the regulators of Nigeria's seaports should recommend a sustained port access maintenance programme. Good accessibility to these inland facilities would reduce transport costs borne by the shippers when using dry ports for their operation.
- iii) There is need to integrate operations at the dry ports with Information and Communication Technology (ICT) facilities. This would improve custom's procedures and reduce the presence of too many agencies that operate at the conventional seaports. Shippers' costs of operation are invariably increased by the activities of these agents.

- iv) Dry ports should be designed to offer more specialized and value-added services like packaging, semi processing, depot maintenance etc.
- v) Shippers' patronage of dry port services can only be attracted and sustained if there are adequate and functional cargo handling facilities at the terminals. This is a necessary condition for speedy handling of inward and outward cargoes at the Dry ports.

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