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MODERATING IMPACT OF GOVERNMENT POLICIES ON AGRO CLUSTERS AND ENTREPRENEURIAL INNOVATION

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Abstract

Extant literature has shown the inherent benefits of Agro Cluster (AC) approach to regional development, but a limited approach to the role of policy makers have been analyzed. This paper seeks to present a conceptual framework for future research carrying out reviews of the role of policy makers in using cluster approach effectively in regional development. This study is primarily a conceptual paper focusing on the methodology of conducting empirical research on the moderating role of government policy on the relationship between business cluster and entrepreneurial innovation (EI). Nonetheless, this paper draws on a database of reviews of relevant research previously conducted on the relationship between the AC, public policies and EI. Based on the reviewed literature, we identify three dimensions that defines the relationship between AC and EI as well as the role of government policies: initial capital, human capital and technological support. This framework provides a basis that scholars might use to guide the conduct and evaluation of the African Continental Free Trade Area (AfCFTA) agreement on the development of the Africa region and in Nigeria in particular. It is expected that this study will provide useful procedural direction that will enhance efforts in the field of research

advancement. Our contribution to the emerging literatures on ACs and its benefits lies in the application of this conceptual framework in conducting an empirical research across the Africa continent. Also, based on our literature review and the conceptual framework, we set forth future research areas to guide scholars' efforts.

Keywords: Agro-cluster; entrepreneurial innovation; government policies. AfCFTA

Introduction

Significant amount of research has shown that micro, small and medium enterprises are catalysts to socioeconomic growth in the developing countries through: entrepreneurship innovation and productivity (Sultan, 2014; Rocha, 2015) that are generating employment for the citizens (Wardhana *et al*., 2017); increase competitive advantage among business enterprises (Sultan, 2014; Wardhana *et al*., 2020). All these through the agglomeration of businesses (Ketels and Protsiv, 2021).

The concept of a cluster of businesses, however has received global interest in the last few years through the formation of industrial parks, high-tech hubs and agro-clusters. From an historical point of view, Porter (1998) first uses the word Clusters to mean a geographic concentration of interrelated entrepreneurs and/or companies in a particular region to foster the development of their trade. The recognition and attention given to the concept of business cluster formation are closely related to the role of policy makers' impact on entrepreneurial development (Yu *et al*., 2013), socioeconomic growth in a country (Njøs and Jakobsen, 2016) and micro, small and medium enterprises (MSMEs) development (Bourletidis, 2014; Temouri *et al*., 2020). The inherent impact of business clusters formation has manifested in many fields of endeavour in clustering for example the information technology in Silicon Valley. This assertion explains why other countries or group of people are using the initiative of clustering as policy for regional development.

Overview on Cluster and Agro Cluster

Alfred Marshal (1890 - 1920), was seen by some researchers as the proponent of the industrial cluster theory when he discussed the "concentration of specialized industries in a particular district" in his book Principle of Economics. The theory industrial cluster states that the agglomeration of specialized industry in a particular region create many advantages. Industry clusters stimulate cooperation and competition among these firms in the same localities. The healthy rivalry forced businesses to continuously innovate to create advancement in the industries. These innovations leads to the acceleration and expansion of micro, small and medium enterprises business which in turn improves the economic development of the region (Jankowiak, 2018).

However, Porter (1990) began the exploration of the cluster theory when he studied the competitive advantage of each region. The concept of business cluster has since received global interest. Porter (1998) defined cluster to mean "a geographic concentrations of interconnected companies and institutions in a particular field. Clusters encompass an array of linked industries and other entities important to competition. They include, for example, supplier of specialized inputs such as components, machinery and services, and providers of specialized infrastructure. Clusters also often extend downstream channels and customers and laterally to manufacturers of complementary products and to companies in industries related by skills, technologies or common inputs. Finally, many clusters include government and other institutions – such as universities, standard-setting agencies, think tanks, vocational training providers, and trade associations – that provide specialized training, education, information, research and technical support."

Porter (1998) also identifies that the interrelationships between businesses in a cluster are critical to healthy competition, which is based on increasing productivity, driving the pace of innovation and formation of new business in three different ways. This in turn stimulate the environment and expand cluster itself. He observed that there are three ways in which clusters affect competition: (1) increasing the productivity of firms in the same area. (2) It drives direction and pace of innovation, which lead to the growth of future productivity; and (3) encouraging the development (entry) of new firms in

the cluster for expansion and strengthen of the business cluster. Business Cluster as explained by Porter can view to have constitute four components. Clusters encourage the interrelated or linked of firms which enhance relationships. Specialized firms that belong to the same industry – "sectorial concentration". Collaborations among these businesses
spurs knowledges spill over which leads to entrepreneurship innovations. (Dhewanto et al., 2012).

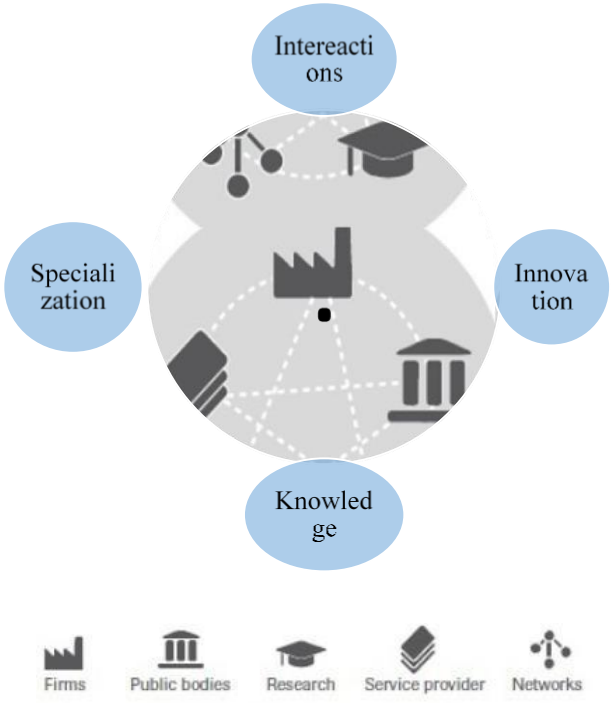

Figure 1. Cluster Components (Adapted from Dhewanto *et al*., 2012)

Sæther (2014) define an agricultural cluster, with a reformulation of Porters (1998) as "as a geographic concentration of interconnected farmers, specialized suppliers, service providers, firms in related industries, and associated institutions (for example universities and trade associations) in the field of food production that compete but also co-operate".
Steiner and Ali (2011) argue that the relationships within firms and non-firms within agro clusters provides an enabling environment to access to skilled labour and finance. These are the important tools for innovative activities. Dorzhieva and Dugina (2015) noted that the formulation and implementation of clusters in the agricultural sector would lead to increase

in agricultural jobs, food price reduction and enhancing the technological structure to more innovations. He also noted that the development of agro clusters necessitated the socioeconomic and environmental benefits, especially in Siberia Region.

Previous Research and Gap

Empirical studies had been conducted in examining the role of government policies on clusters as it impact innovation. For example Lehman and Menter (2017) in their research on High Tech industry in Germany argued that public policy backed business clusters can be efficient with active participation of policy makers. Cluster sustainability has a role in promoting knowledge transfer and enhance innovation and creativity. This is supported by Vernay *et al*. (2018), however the members within the clusters should be given the opportunity to manage the clusters. Sosnovskikh, (2017) described how government roles in the establishment of a cluster affects business activities and prevent the much needed innovative collaborative activities among the firms in clusters. Even though the growth of clusters is beneficial, Letaifa and Rabeau (2013), on the other hand, argue that clusters created by government policy are less prone to innovation which in turn impact the economic performance.

Existing literatures on clusters are on the effect of public policy on firm and regional performance with emphasis on the industrial clusters. Hence, this paper would like to consider the conceptual framework of moderating roles of government policies on the relationship between agro clusters and entrepreneurial innovation.

Government Policy and Entrepreneurial Innovation

Entrepreneurship innovation (EI) is described by Tsolakidis *et al.* (2020) as the use of "creative ideas" for the unearthing and utilization of resources in an entrepreneurial firm. Innovation and entrepreneurs have been used together in most research, as innovation is seen as of the key features of an entrepreneur. As Schumpeter (1934) noted that there is no entrepreneurs if there is no continuous innovation. Muralidharan and Pathak (2020) succinctly put EI as the use of technology to develop new products and causing a combination in the new product market.

Empirical research has shown that government policy could be a catalyst for the improvement in EI of a region. For example, Skokan *et al*. (2012) argued that financial support by the government can enhance innovation in firm clusters and can strengthen the relationship between industry and academia. Although expected innovation benefits, through knowledge sharing may be low in a policy driven cluster may be low (Steiner and Ali, 2011; Meihua and Shanyong, 2013). However, this simile low impact may be accelerated through the use of workshops, conferences and training of stakeholders within the cluster (Richardson, 2013).

The study of Liu et al. (2013) disclosed that three types of support by government in creating an enabling environment: preliminary capital for development, availability of skilled labour and technological support by government agencies are critical to facilitate EI in a business cluster. However, these government support needs to be controlled and moderated so as to avoid distortion of healthy competition within the clusters (Varga *et al.*, 2013).

Dilaver *et al.* (2014) noted that an increase in the entrepreneurship of a region may pose a negative effect on the other region due to competition for factors of production and innovative outputs. Therefore, the need for development of public policies to address this imbalance that aspire to support clusters in similar areas of industrial specialization which will impact on the regional innovation and economic growth.

Government Policies and Agro Clusters

Xue and Liu (2015) defined cluster as "a spatial accumulation of bodies and organizations in a specific industry, within a certain area and with different divisions and cooperatives, which have close relations with each other." In this paper, we view an agro cluster as a concentration of interrelated agricultural, agro allied firms and associated value-chain businesses in a particular region bound together by common interest on sustainable basis, most often regulated by government policies.

Government policies are measures created or set by the government responding to the economic or social challenges resulting in a positive effect on a community or country. Hence, the concept of cluster has gained tremendous traction over the last few years as a concept to use in developing

and improving the socioeconomic status of a region. Frattini and Prodi (2013) noted that business cluster can be used effectively to balanced development created by rapid growth of a section of the economy. Garone *et al*. (2014) argue that the concept of cluster can be initiated to link small and medium enterprises (SMEs) in agro allied industry to international market, as there exist a "positive spillover on export outcomes in the medium and long term."

Otsuka and Ali (2020) disclosed that in transforming agro clusters to effectively and efficiently impact on the economic development. There is need for the right regulatory framework to be implemented. This is aside the provision of access to finance, improved technological support, basic shared common infrastructure and mobilization of clusters' stakeholders. In simple term, to act as the lead in the formation of the agro cluster and however incorporate other stakeholders in the management.

The Relationship Between Business Clusters and Entrepreneurship Innovation Letaifa and Rabeau (2013) noted the advantage of clusters as the most important in achieving collaboration. This collaboration are most likely to provide new type of economy based on innovation – producing dense knowledge flows for strengthening entrepreneurship (Fundeanu and Badele, 2014). In his research, Kim (2014) argued that the formation of San Diego Biotechnology industry cluster is attributable to the continuous and constant creation and circulation of local knowledge and practices.

Through the activities of business clusters, SMEs are increasingly gaining the required knowledge to be competitive in the international market, a benefit of the knowledge flow and the increasing level of innovative activities (Kozhuharov, 2015: Jankowiak, 2018). The innovation environment in a business cluster have a positive direct effect on the SMEs innovation performance (Li *et al*., 2019) and this tends to be high in agro-industrial clusters (Shamin *et al*., 2019). Ai et al. (2020) disclosed that, deliberately formed business clusters result into a globally linked firm that positively influence cooperation and collaboration which in turn leads to exploitative and explorative innovation.

Conceptual Framework and Hypothesis

Liu *et al*. (2013) investigated why the entrepreneurial activities are concentrated in a cluster and the role of government agencies to create a conducive environment of Wenzhou, China. It was established that initial capital, access to human resources and technological support from government agencies promote entrepreneurial innovation. In supporting this conclusion, Dorzhieva and Dugina (2015) explored the formation of agro-food clusters in Siberia in enhancing the competitiveness and sustainability of the region. The study of Agro-industrial complex's features, nature and its economic content was carried out while defining the prerequisite and principles of cluster formation. The study noted that collaboration and corporation of firms (SMEs and multinationals) within the agricultural cluster is effective and enhances innovative activities. We note that the specific role government policy need to play is not defined in this research. Therefore, we will like to hypothesis as follows:

H1: Cluster initial capital have positive effect on entrepreneurial innovation

H2: Human capital have positive effect on entrepreneurial innovation

H3: Technological support positive effect on entrepreneurial innovation

Steiner and Ali (2011) analyzed the government support for cooperation and regional cluster growth in the food sector of Alberta, Canada. The study identifies five characteristics of a food cluster, and they are: (1) trust; (2) sharing of information and knowledge through the networks; (3) availability and access to skilled labour; (4) access to finance or capital for food innovation (venture capital or government aid); and (5) collaboration efforts among all stakeholders. The Authors suggested that government intervention should be to the established or organic cluster in the form of reinforcement, as creating a new cluster can be associated to efficiency losses. Previous research indicated that policy makers should operationalize cluster development as a platform for creative innovation sources (Njøs and Jakobsen, 2016), and should be accessible by all stakeholder in a cluster (Paul *et al*., 2017). Therefore, we would like to make the hypothesis as follow:

H4: Government agencies has a moderating effect to cluster and entrepreneurial innovation. H4-1: and H4-2 respectively:

government formed, support services have moderating effect to cluster and entrepreneurial innovation

Islam (2010) explained that agglomeration of agro businesses has created a conducive environment for SMEs to benefit from the raised innovative activities leading productivity growth of Textile Industry of Faisalabad, Pakistan. Dhewanto *et al*. (2012) analyzed the benefits from clustering according to demand and supply. Clusters create a strong local market with easy access to customers on the demand angle. While supply side, cluster create an environment for pool of skilled labour related to the cluster industry. High number of firms located in a cluster enhance the innovation flow potentials inherent in collaboration (Ivanova *et al*., 2017). Bund *et al.* (2013) noted knowledge, financial resources, entrepreneurial activity and, collaboration and networks as part of the dimension of innovation metrics. From these findings, we propose the below hypothesis:

H5: Cluster have a positive relationship with entrepreneurial innovation.

H5-1, H5-2, H5-3 and H5-4 respectively: Cluster have a positive relationship with knowledge, financial resources, entrepreneurial activity and collaboration and network.

The conceptual framework is described in Figure 2 below:

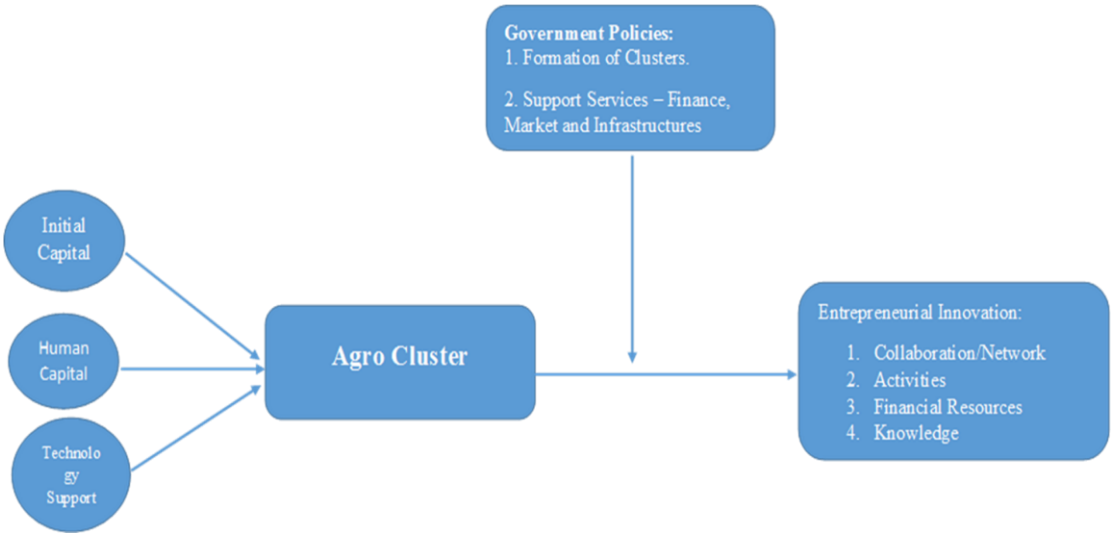

Figure 2: Conceptual framework

Future Research Area

Porter's research and interest in clusters and their economic benefits has subsequently spawned a wide range of interest from other researchers. Porter's concept of new economics of competition provides the fundamental theoretical foundation for the continued analysis of business clustering, especially when viewed from the perspective of productivity, innovation and growth of small and medium sized enterprises. Thus opening more area of interest and solution seeking issues on some areas. For example, how was the formation of initial business cluster? (Trippl *et al.*, 2015; Gordon and Kourtit, 2020); Why do businesses choose to locate in the same certain area? (Sæther, 2014;
Brakman *et al*., 2016). The difference between the physical presence/proximity of business clusters (Geldes et al., 2017). Other areas of questions are impact of social and business interactions on firms and its uses by the policy makers in economic growth (Carlino and Kerr 2015; Vernay et al., 2018). They considered the inherent opportunities and the cluster formation by the government as against the organic formation noted by Porter.

Business Cluster seems to be a platform for the African Union to achieve some of the general objectives of the establishing African Continental Free Trade Area (AfCFTA) commencing activities this year. Specifically, the following objectives may be realized as a cluster:

a) Create a single market for goods, services facilitated movement of persons in order to deepen economic integration.
b) contribute to the movement of capital and natural persons and facilitate investments building on the initiatives and developments in the State Parties and RECs;
c) enhance the competitiveness of the economies of State Parties within the continent and the global market.
d) promote industrial development through diversification and regional value chain development, agricultural development and food security.

The conceptual framework described in this study needs to be tested empirically to ascertain the hypotheses results. From our view, this

preliminary work is necessary before field survey on Agro clusters SMEs in Africa using the principles laid out in the AfCFTA agreement.

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