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Factors Effecting Afforestation Program in Nigeria: Building a Conceptual Framework

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Abstract

The world has long been struggling with environmental issues. The depletion of the ozone layer, the greenhouse effect, and water pollution are just a few of the many problems the earth is facing. Despite the many efforts to try to improve the environment, it seems that the situation is only getting worse. One of the most pressing issues the world is currently facing is deforestation. Nigeria is among the countries that face this challenge and is making an effort to arrest the situation by introducing afforestation programs in different regions of the country. Thus, this study tries to develop a conceptual framework for factors affecting the afforestation program in Nigeria. The paper will develop a research framework and suggest propositions that will be empirically tested.

Keywords: Afforestation, Deforestation, Framework, Environment, Nigeria

Introduction

As the consequences of climate change continue to be felt worldwide, the global issues of afforestation are becoming more and more apparent (Scholes, 2016). Afforestation, or planting trees where there are no woods, is one of the most efficient strategies to mitigate climate change (Forster et al., 2021; Law et al., 2018). In addition to helping to remove carbon dioxide from the atmosphere, this method helps protect the ecosystem by halting soil erosion and providing wildlife with a habitat. When working on afforestation initiatives, a few obstacles must be taken into account (Mansuy et al., 2013). These expenses, the possibility of confrontation with other land users, and the requirement to make sure the trees are the appropriate species for the local area are just a few. Reforestation is the most sustainable, cleanest, and effective way to sequester carbon.

One of Africa's most significant obstacles to afforestation is a lack of available land (Bishaw, 2001). Numerous African nations are experiencing fast population growth, straining their land resources (Boissiere et al., 2021). This is particularly true in Nigeria, where the population is projected to quadruple by 2050 (Duguma et al., 2020). Lack of water is another problem. Cultivating trees in many dry or semiarid regions that make up African nations is challenging. In addition, many areas of Africa have impoverished soils, which makes it difficult for trees to establish themselves (Nketia et al., 2022). The instability of the governments in many African nations makes it challenging to put afforestation plans into action.

Many governments in the past were forced to buy land from farmers, which frequently resulted in violence (Ajibo et al., 2018). Lack of technical competence has been another

problem. As a result, trees that are inappropriate for the soil and climate in the area have been planted. Many of these trees have now died. As a result, it contributes to additional deforestation (Bhatia & Priya, 2018). Finding an area that can be set aside for tree planting in Africa is challenging due to the continent's enormous population. Additionally, the weather is frequently hot and dry, making growing trees challenging. Additionally, political unrest plagues several African nations, making it challenging to win the authorities' backing.

Afforestation in Nigeria has a long history. Previously, the government planted trees to serve as a source of energy and to utilise the country's plentiful water resources (Ajibola et al., 2020). The government has just started planting trees to lessen the nation's reliance on foreign oil. The disastrous repercussions of climate change have increased awareness of Nigerian deforestation in recent years (Raimi et al., 2019). Large areas of agriculture have been damaged by droughts and floods, forcing millions of people to flee their homes. This has increased the demand for food and put many people's livelihoods in peril.

Nigerians are talking more about deforestation as the planet confronts several problems (Kopnina et al., 2022). By generating oxygen and reducing the rate of climate change, forests are essential for maintaining a stable global climate. They assist with the management of water resources, the eradication of pests, and the growth of crops and trees. Despite their importance, forests are being destroyed at a startling rate (Babanyaya et al., 2021). Nigeria holds the dubious distinction of losing more forests than any other nation in the world. Thus, this study aims to develop a framework of the factor that affects the afforestation program in Nigeria.

Literature Review
Afforestation Program in Nigeria
Establishing a forest or tree stand where there previously was none is known as afforestation (Alizoti et al., 2022). Afforestation is essential for increasing tourism, avoiding soil erosion, and giving residents work (Xu et al., 2022). Policymakers favour afforestation initiatives because, in most cases, participants are paid directly to plant trees. Afforestation is one of the most efficient strategies to mitigate climate change. In places without woods, trees are planted as part of afforestation (Wang et al., 2022). In addition to helping to remove carbon dioxide from the atmosphere, this method helps protect the ecosystem by halting soil erosion and creating a habitat for animals.

The Nigerian government is spending money to plant trees in eleven northern states to combat drought and improve the lives of rural citizens (Eneji et al., 2020). Yobe, a frontline state in north-eastern Nigeria, has had several challenges with the ambitious afforestation project. Ever since the Nigerian component of the Great Green Wall project was launched, a 1,500KM long belt has been established. The endeavour focuses on the worst-affected states, which include Adamawa, Borno, Yobe, Bauchi, and Gombe in the northeast and Kano, Katsina, Kebbi, Jigawa, Sokoto, and Zamfara in the northwest.

The Boko Haram insurgency is one of the obstacles to reforestation in north-eastern Nigeria, where the north-eastern section of the country suffered the most from it. Since 2009, the terrorist organisation has been at odds with the Nigerian government to create an Islamic state (Little, 2018). Millions of people have been forced to relocate, and infrastructure has been destroyed. Furthermore, due to the Boko Haram conflict, the government has found it challenging to carry out its afforestation plans. Another issue is a lack of technical knowledge, which has resulted in planting trees that are inappropriate for the soil and climate of the area

(Pojani, 2021). Many of these trees have now died, as a result, contributing to additional deforestation.

Factors Affecting Afforestation Program in Nigeria
Participation
Participation is one of the main elements in community development, which has become a hot topic in all areas of human socio-economic activity, management, and politics (Voukelatou et al., 2021). The equitable and active involvement of all stakeholders in developing development policies and sharing control over their own means of subsistence, decision-making, and resource management, which has an impact on their lives, is called participation (Cronkleton et al., 2021). This means that participation includes including the community in the analysis, planning, and execution of the project's benefits, sharing those benefits, and evaluating the development activities that will impact their life.

Participation included social interaction, civic involvement, and informal participation (Aroogh & Shahboulaghi, 2020). According to Gao et al (2018), the ability to take the initiative in developing a particular community is participation. Similarly, participation is considered a concerted effort inside institutions and organisations to improve community access to and control resources and decision-making relevant to sustainable livelihoods (Suebvises, 2018). Additionally, it is seen as an interactive process that involves readjusting the relationships between various community stakeholders in order to increase stakeholder control and influence over development efforts that have an impact on their lives.

The term "participation" refers to a community's involvement in the decision-making, implementation, and benefit-sharing phases of the development process and their participation in the endeavour to assess such progress (Li et al., 2020). According to this definition, participation is an active process in which participants take the initiative and perform acts motivated by their own ideas and considerations and over which they have real influence. Participation is a driving force behind development theory and practice because, as development agencies stressed, sustainable development cannot be achieved without community involvement in development programmes.

Participation is a tool for improving development. However, it's important to underline the importance of other factors in community development (Abbas, 2020). Community initiatives are believed to have a greater probability of success if the community is involved in the idea, formulation, and execution processes. Community involvement at the grassroots level is crucial to accomplish the development programmes' goals. In this instance, participation is a long-term answer to how to empower people and communities by acquiring information, experience, and skills through their involvement in development projects. Upon all the importance of participation, researchers established that Nigerian people, especially from the northeast, do not fully participate in afforestation programs; this can bring down government efforts in curtailing afforestation issues.

Perception
Perception is what we focus on while looking at an object and what we believe the object to be (Wilson et al., 2019). Our perception of an object can be drastically different from someone else's view of the same thing. This difference is because each person has a different way of perceiving the world around them based on their personal experiences (Khattak et al., 2019). Perception is a process of understanding the world around us. It is the ability to take in information through our senses and interpret it in a meaningful way. Perception is a highly

complex process that involves both our physical and mental abilities. Our perceptual system is constantly working to make sense of the information that we are bombarded with every day.

Perception is a sensory process that involves recognising environmental stimuli and responding to them based on information about their qualities and the surrounding environment (De Luca & Botelho, 2021). Several variables can affect how something is perceived, including the stimulus's intensity and physical dimensions, the sense organs' activities, the effects of earlier stimulation, the subject's experience, attentional variables like motivation and stimulus readiness, and the subject's emotional state (Tsai et al., 2022).

People must first interpret and organise their senses to have a meaningful experience of the world (Ballard, 2018). On the other hand, perception is the whole experience of the environment and generally entails more processing of sensory information (Han, 2020). Since they are a part of a continuous process, it isn't easy to distinguish between sensory and perceptions in practice (Walsh et al., 2020). The process by which sensory stimuli is converted into structured experience is sometimes called perception. Proprioception is a collection of senses engaged in the cognitive process necessary to process information, such as recognition and detection. Perception also comprises the five senses of touch, taste, smell, and sight (Kovecses, 2019).

Our perception of the world around us creates our realities. In other words, we see and interpret things based on our individual biases, experiences, and preconceptions. This is what is known as a subjective reality. It is different from an objective reality, which would be the way things are without any human interpretation or bias. Based on the assumption above, the northeast people perceived the afforestation programme differently from the government's perspectives.

Methodology
The study intends to investigate the factors affecting the afforestation program in Nigeria. The target population for this study is the six states from northeast Nigeria. The number of populations is about 24 million. For this study, proportional stratified sampling is considered the best strategy for assuring enough representation. The respondents will be divided into strata for each of the six states to meet this study project's objectives. The number of respondents from each stratum will then be determined to reflect the entire population after the respondents have been divided into six strata. Because the North East region of Nigeria is the most severely affected by deforestation, the research selects six of these states as its unit of analysis. The questionnaire items used for this study are adopted from previous research (Doelman et al., 2020; Liu et al., 2022; Zethof et al., 2019). The items are adapted with some modifications to suit the current study. However, the items will be measured using a 10-point Likert interval scale.

Pilot Test and Pre-test
The academic and industrial experts' opinions on the instruments that will be used for this study have established their content validity. Before delivering the instruments to them, subject-matter experts in the appropriate field of research were carefully chosen, and their opinions were requested. Prior to the actual data collection, a pilot test will be given to 100 respondents who are not a part of the study population to ensure construct validity as recommended by (Malmqvist et al., 2019). Because of its more extensive coverage, Cronbach's alpha will be used to determine if all the test items are measuring the same.

Statistical Analysis

Statistical Package for Social Science (SPSS) is used in the study for descriptive and inferential statistics. The data from the pilot test, which will then be utilised for the main research, will also be subjected to exploratory factor analysis (EFA) using SPSS to determine the underlying factor structure of the data and to assess the reliability of the research instrument as suggested by (Nasidi et al., 2022; Garba et al., 2022). Structural Equation Modeling (SEM-AMOS) will be utilised for the confirmatory factor analysis to evaluate the constructs' validity, reliability, fitness indices, and normality.

Building Conceptual Framework

The research has shown that perception, participation, and afforestation programmes are significantly related. The following framework was therefore suggested in this paper:
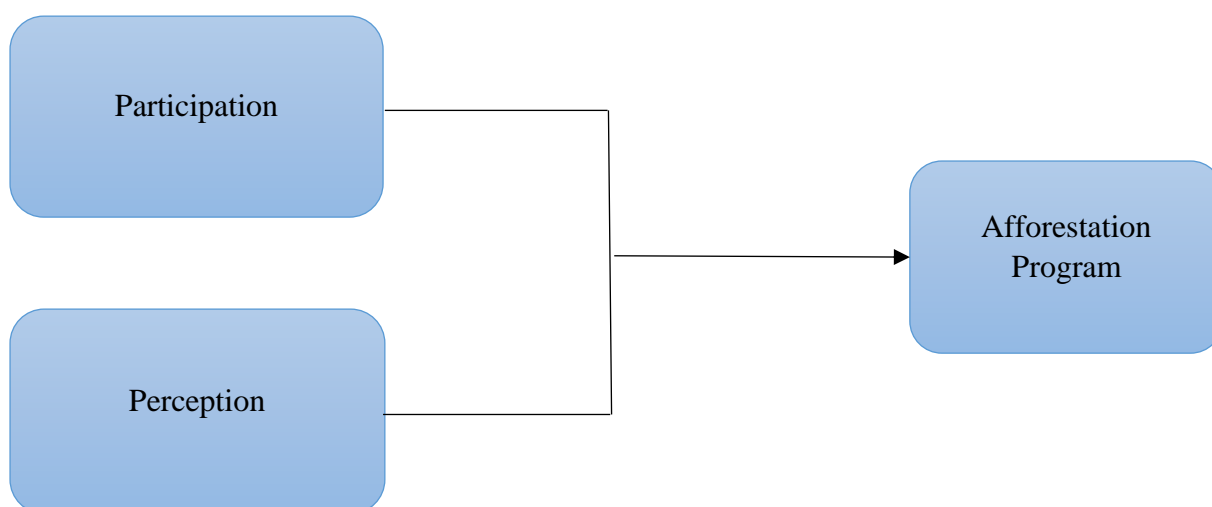

Figure 1: Proposed Research Framework

Conclusion

This research proposed a framework for the factors affecting afforestation programs in Nigeria. The conceptual research will provide a clear explanation of the impact of afforestation, and its original findings will considerably advance the field's understanding of the topic theoretically and practically. The theoretical research will provide a clear explanation of the impact of afforestation. Its original results will make a substantial theoretical and practical contribution to existing literature. This study will be very important practically by giving the afforestation sector organisations and other related parastatal/agencies some practical advice on how to increase participation and competence from the current situation and move toward increased effectiveness and efficiency in implementing governmental policies and programs. Similarly to this, the results of the present study will be helpful to policymakers, experts, and other connected sectors as a guide and method.

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