NIGERIA'S ACHIEVEMENT OF UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS: THE ROLE OF THE PROFESSIONAL ACCOUNTANT

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Abstract

This study investigates the pivotal role of professional accountants in achieving the United Nations Sustainable Development Goals (UNSDGs) in Nigeria by 2030. Employing a cross-sectional survey design, data were gathered from 1,672 professional accountants—members of the Financial Reporting Council of Nigeria and ICAN-registered firms—via questionnaire. The research hypothesis was tested using Structural Equation Modelling (SEM). SEM results reveal that professional accountants' role in economic growth positively impacts UNSDG achievement (Z = 3.31, p = 0.00). Conversely, their role in social inclusion shows a negative impact (Z = -0.07, p = 0.06). Individual indicators confirm positive effects for SDGs 4, 5, and 16 (coefficients: 0.351, 0.133, 0.60; p-values: 0.02, 0.216, 0.47 respectively). The role in environmental protection exhibits negative, non-significant impact (Z = -0.29, p = 0.77), though individual indicators (SDGs 13, 14, 15) suggest otherwise. Findings emphasize deploying professional accountants for SDG 4 (Quality Education) to meet Nigeria's 2030 Agenda. These results provide practical implications for policymakers and corporate leaders, underscoring the need to integrate professional accountants' roles, particularly in SDG 4 linked to economic growth into core business strategies for UNSDG success.

Keywords: Professional accountant, sustainable development goals, economic growth, social inclusion, environmental protection, United Nations

Introduction

In the last two decades, there has been call by countries under the United Nations Organization (UNO) to make this world a better place to live in. This is because countries are facing poverty, disease, environmental degradation amongst others. As a way to addressing these challenges, the United Nations Millennium Development Goals (MDGs) was introduced in year 2000. Unfortunately, the MDGs were jettisoned in 2015, for Sustainable Development Goals (SDGs), because MDGs were considered goals for only developing countries coupled with disinterest from economic actors in affected countries (Caballero, 2016).

These economic actors, in the United Nations Member States, include the global accounting profession. According to Guthrie (2018), the global accounting profession is vital in achieving the SDGs. In same vein, Betty et al. (2025) and Dobre (2025) opined that the accounting profession is undergoing a sovereignty update, and there is a significant relationship between accounting practices and achievement of the UNSDGs. According to Bexell and Jonsson (2017) in the UN 2030 agenda on SDGs, there are three main dimensions of responsibility. These are causal, obligation, and accountability. Elimination of poverty and tackling of environmental hazards is addressed by the causal sense of responsibility, while national causes is addressed by the obligation sense of responsibility. The accountability sense of responsibility delves on issues bothering on human rights amongst others. However, each state maintains its autonomy with regards to these responsibilities as contained in the United Nations SDG (UNSDGs) official record.

The way responsibility is framed in UNSDGs document calls for concern as to the role professional accountants must play in achieving the United Nations SDGs. Guthrie (2018) opines that 8 of the 17 UNSDGs are indirectly supported by the works of professional accountants. This submission by Guthrie (2018) is supported by the discussion of the International Federation of Accountants (IFAC) PAIB Committee and the input of the IFAC Professional Accounting Organisations (PAOs) Development Committee that professional accountants can contribute to SDGs 4 (quality education), SDG5 (gender equality), SDG8 (decent work and economic growth), SDG9 (industry, innovation, infrastructure), SDG12 (responsible consumption and production), SDG13 (climate action), SDG16 (peace and justice and strong institutions), and SDG17 (partnership for the goals). However, in this study, SDG1 & 3 were also covered. The reason for this is because Nigeria finds these SDGs as relevant in the quest of the nation's achievement of the United Nation's 2030 agenda.

According to Firmansyah (2019), it is desirable to conduct a study to identify the part professional accountants have to play in achieving the UNSDGs. In this light, the results of this study presented role of professional accountants in achieving the United Nations sustainable development agenda 2030 in Nigeria. In this study the professional accountant is taken as accounting practitioner in professional organization. The reason for focusing on only accounting practitioners in professional organizations (firm of chartered accountants under the Institute of Chartered Accountants of Nigeria -ICAN - and Financial Reporting Council of Nigeria - FRCN) is to make for clear focus and depth in the study.

Besides the above justification for the study, a motivation for the study is that, in Africa, several studies (Tauringana, 2021; Uwuigbe, et al., 2018) have been conducted on sustainability reporting but none to the best of our knowledge has examined the issue of SDG reporting. Though there are some studies (Bebbington & Unerman, 2018; Roche et al., 2019) on SDG reporting in developed climes, there is the need to examine this study within the context of developing countries. Furthermore, prior studies (Adams, 2020; Molinari & Carungu, 2019) opined that while external reporting is rising, the internalization of SDGs into accounting remains under researched. This observation is

supported by Erin et al. (2024) by emphasizing that institutional pressures and regulatory frameworks differ vastly in developing nations, resulting in a significant shortage of empirical data regarding the role of accountants in achievement of the UN SDGs in developing nations.

Using a large sample of three hundred and twenty-three respondents from accounting firms, ICAN and FRCN, we investigated the role professional accountants have to play in achieving the UN 2030 agenda on sustainable development. Based on this, the main objective of the study was to ascertain what the professional accountant should do to ensure the achievement of the UNSDGs in Nigeria by 2030. More specifically, the objectives of this study are to (i) ascertain the role of professional accountants in achieving the UN sustainable development goal of economic growth in Nigeria; (ii) find out the role of professional accountants in achieving the UN sustainable development goal of social inclusion in Nigeria; and (iii) investigate the role of professional accountants in achieving the UN sustainable development goal of environmental protection in Nigeria.

The Sustainable Development Theory (Khalili, 2011; Shi et al., 2019) underpins this study given that a country will achieve practical sustainable development after an integrated approach to long-term environmental, economic and social sustainability. The remainder of the study is organized as follows: section 2 briefly reviewed extant literature about the role of professional accountants in achieving sustainable development agenda 2030. Section 3 addressed the methodology adopted in the study, while section 4 contained results of the study after presentation and analysis of data. Section 5 concludes the study.

1. Literature and Hypotheses Development

The Professional Accountant and Economic Growth

Research has established that the role of the professional accountant impacts economic growth (Love, 2003; Wurgler, 2000). However, Wang et al. (2025) opined that even if accountants by way of regulation force companies to spend money, it doesn't necessarily make them 'green'. In a study by ACCA (2012) on the impact of the accounting function on the economy, they addressed the question on whether the accountancy profession is one of the institutions that contributes to economic growth. They observed that collaboration among professional accounting bodies like IFAC and IASB, and between PAOs, can make the accounting profession popular in relation to economic growth among members of the public. Makarenko and Piastun (2017) further posits that the professional accountant also has a role to play with respect to SDG8 and in ensuring social inclusiveness. This the professional accountant achieves by ascertaining the proportion of workers along the value chain that are on permanent and pensionable appointment or workers with disability.

In a study on the enabling role for accounting research in achieving the UNSDGs, Babbington and Unerman (2018) opined that in putting in place good infrastructure, sustainable industrialisation and innovation as contained in SDG9, the professional accounting firm is in a position to ensure a percentage of its fund and that of its clients is committed to research and development. On the other hand, in ensuring achievement of

SDG12, the professional accountant should support their clients in developing strategic plans towards achieving the SDGs in their daily operations; and include sustainable issues in their financial reports among others.

One commonly used indicator of economic growth within a country is stock market growth. Growth in the stock market is in tandem with the sustainable development 2030 agenda of the UN. Growth in the stock market within a country, ensures efficient capital allocation and utilisation which will invariably translate to economic growth (Bekaert et al., 2005). Frost et al. (2006) opined that the level of development of the stock exchange disclosure requirements is significantly associated with stock market growth. While Frost et al. (2006) do not directly address the involvement of the professional accountant in the level of economic growth, their proxies include role of accountants in achievement of higher levels of economic productivity through provision of reliable accounting information.

Francis et al. (2003) provide evidence that the accounting function is associated with economic growth. This evidence is consistent with the expected professional accountant's role in ensuring achievement of higher levels of economic productivity, sustainable improvement in global resource efficiency in consumption and production, strengthen the capacity of domestic financial institutions, ensuring sustainable access of small-scale enterprises to affordable credit, and commissioning researches towards economic development.

Huang and Tsang (2016) developed a proxy for the part accounting professionals play in economic growth also using data from the IFAC member body compliance program. The authors find that the role of professional accountants is positively associated with economic growth. This finding supports the importance of professional accountants to economic growth. Finally, Huang and Tsang (2016) examine channels through which the esteemed role of professional accountants could be associated with economic growth. They assert that a well-developed accounting profession promotes the production of quality information, which in turn facilitates economic growth.

However, the role of the professional accountant in economic growth is not directly observable, researchers, who wish to examine the association between the accounting function and economic growth, must construct proxies of accounting professional development or related constructs. For example, Brown et al. (2014) developing a country-level proxy of the auditing of financial statements produced by professional accountants to observed their measure of accountancy role. Thus, it is hypothesized that:

H1 Professional accountants have no significant role to play in achieving the UN sustainable development goal of economic growth in Nigeria.

The Professional Accountant and Social Inclusion

The foremost body of professional accountants in Nigeria, ICAN, in achieving quality education (SDG4) and gender equality (SDG5), has seven faculties serving as centres of

excellence for members' capacity building and support for specialization in seven distinct areas of accountancy viz: audit, investigations and forensic accounting; consultancy and information technology; corporate finance management; financial reporting; insolvency and corporate re-engineering; public finance management; and taxation and fiscal policy management (Omotoso, 2011). This is in line with global conditions regarding UNSDGs. In furtherance to these global conditions, ICAN collaborates with the National Universities Commission (NUC) and the National Board for Technical Education (NBTE) in ensuring the education curriculum adapt to the UNSDGs, by taking into cognisance issues bothering on disruptive technologies in the accounting curriculum; and commissioning researches on UNSDGs.

Crowther and Aras (2009) opined that in the course of social accounting, accountants report firms' activities which stresses the need for the identification of socially relevant behaviour. It encompasses environmental accounting which accounts for an organisation's impact on the natural environment. In the same vein, Bakker (2012) found in their study that accountants are very important in the world. They create integrated, environmental, social and corporate governance reporting.

Professional accountants will ensure actualisation of UNSDG 4, 5, 16 and 17 which addresses issues bothering on social inclusion. For example, by ensuring that children have access to quality education, gender equality in the profession, end domestic resource mobilisation through improved domestic capacity for tax and other revenue collection. The professional accountant also has the responsibility of developing digital platforms to allow its clients who are farmers share information with each other for sustainable practices (AICPA, 2018; Makarenko & Piastun, 2017).

However, Milne and Gray (2013) offer a paradoxical idea that in a state of lack of social inclusion or isolation 'triple bottom line' concept and business participation in sustainable development, accounting initiatives could lead to greater levels of un-sustainability. This submission by Milne and Gray is corroborated by findings by Bebbington and Larrinaga (2014) that there is lack of progress in social and environmental accounting in achieving sustainable development and prospects of social inclusion in the society. Thus, the following hypothesis is proposed:

H2: Professional accountants have no significant role to play in achieving the UN sustainable development goal of social inclusion in Nigeria.

The Professional Accountant and Environmental Protection

According to Mead (2018), the expertise of the professional accountants in overseeing risk control, financial analysis and interpretation of financial statements for informed business decisions places the accountancy profession at the forefront of implementing the UN SDGs. Augustia (2015) is of the view that the professional accountant also plays a role in sustainable development through presenting environmental pollution cost data

for informed decision taking by stakeholders. This assertion by Augustia (2015) seems acceptable given that Environmental management accounting involves the process of taking into cognisance costs incurred in obtaining relevant approvals and licenses to protect the environment from business activities that might be hazardous to the environment (Vasile & Man, 2012).

Sudana (2017) in their study on sustainable development and accounting opines that it is desirable for professional accountants to be able to report and address issues on climate change in the course of their business. They should provide information about carbon pricing, ensure climate change measures are integrated into national policies, strategies and planning, and support their clients in disclosure and reporting of climate-related issues like carbon emissions. This submission by Sudana is in tandem with the results of a study on accounting for carbon credits by Lovell and MacKenzie (2011), where they observed that PAOs are positioning themselves as leading on climate change.

The observation from above studies is that they indicate positive relationship between the accounting function and combating of climate change. However, some researches (Jacobs et al., 2010; Plumlee et al., 2010) found no statistically significant association between environmental performance disclosures by professional accountants and economic growth. To reach to better and more consistent results. The final hypothesis, therefore, is:

H3: Professional accountants have no significant role to play in achieving the UN sustainable development goal of environmental protection in Nigeria.

Theoretical Framework

In addressing the objective of this study, which is to ascertain the extent of achievement of the UNSDGs in Nigeria, and the role professional accountants play in achieving the goals, the study relies on the Sustainable Development Theory (Khalili, 2011; Shi, et al., 2019).

The choice of the sustainable development theory is anchored on Khalili (2011) submission that, the sustainable development theory presents the core thrust of environment, economic, and social sustainability which support the concept of practical sustainability defined as an integrated approach to long-term environmental, economic and social sustainability. Proponents of sustainable development (Babbington & Unerman, 2018; Makarenko & Piastun, 2017; Shi et al., 2019; United Nations, 2016; WHO, 2019) also identified some frameworks within which actualisation of the SDGs by a country can be accessed. These thematic areas are institutional, partnerships, human resources, communications, financing, policy and legal frameworks. Based on the above submissions, the extent of achievement of the UNSDGs in Nigeria, and the role professional accountants play, can therefore, be analyzed as the sustainable development on the part of Nigeria, in achieving development that meets the needs of

the present, without compromising the ability of future generations of Nigerians to meet their own needs.

Relating the sustainable development theory to economic growth, social inclusion and environmental protection, Shi et al. (2019) opined that the achievement of sustainable development in human society, depend on social inclusion, economic growth and environmental protection and their relationships within a certain period. The understanding of the relationships has an important impact on how to interpret and evaluate sustainability (Wu et al., 2014). Currently, there are three different types of sustainability (weak, strong and absurdly strong sustainability).

Wilson and Wu (2017) opined that the weak sustainability (social inclusion) is a human-centred social view that natural capital can be replaced by human capital in the manufacturing process for sustainability towards ensuring healthy lives and wellbeing for all at all ages(SDG3);quality education (SDG4); gender equality (SDG5); sustainable water management (SDG6); modern energy (SDG9); reduction of inequality (SDG10); sustainable human settlements (SDG11); peaceful societies (SDG16); partnership for goals (SDG17). Looking at strong sustainability (economic growth), Wu (2013) submitted that development within a country transcends amount of capital, but also require the rationality of capital structures. The United Nations (2019) encapsulated economic growth in SDGs 1, 2, 8, 9, and 12.

Absurdly strong sustainability with respect to combating climate change supports the elimination of the exploitation of ecosystems for sustainable development through taking urgent action to combat climate change (SDG13); conserve oceans, seas and marine resources (SDG14); and protect the terrestrial ecosystems (SDG15). The above views are in tandem with that of Khalili (2011) who also opined that the environment has the potential to change according to external and internal forces. Khalili linked economic growth to observed environmental change and further submits that the rate of the change, is dependent on the social - economic condition and the intensity with which resources and energy are used and industrial pollutants are discharged to the environment.

Based on the above submissions, in this present study, we based our investigation of the role professional accountants can play in Nigeria's achievement of the 2030 UNSDGs on the principle of "*sustainable development*". The sustainable development theory implies that a country will achieve practical sustainable development after an integrated approach to environmental, economic and social sustainability. Therefore, achieving the United Nations sustainable development agenda of 2030 by Nigeria, is a function of the role of professional accountants with respect to economic growth, social inclusion and environmental protection in Nigeria.

2. **Methodology**

Research design - The survey research design was adopted in this study. The reason is that the researchers want to reach to a proportion of Nigeria population, through the use

of questionnaire to collect data on ascertaining role of professional accountants in achieving the UN sustainable development agenda of 2030 in Nigeria. Data were collected at a particular point in time; therefore, the researchers were involved in a cross-sectional survey research design.

Population and sampling - The population of study is made up 1,674. This includes the 1,672 accounting firms registered by the Institute of Chartered Accountants of Nigeria (ICAN) in Nigeria, ICAN and Financial Reporting council of Nigeria. A survey of the sampled population was carried out. The sample size is 323. The sample was arrived at by using the Yamane formula, since the population size is known, as follows: According to Yamane (1967),

$$n = N / 1 + N(e)^2$$

Where; n = sample size sought; N = population; e = error limit (0.05 on the basis of 95% c.l.) The sample size is therefore: $n = 1674/ 1 + 1674(0.05)^2$ $n = 1674/1 + 4.185 = 323$

The cluster sampling technique was adopted in this study. This was complemented with the simple random sampling technique. The reason for the choice of the cluster sampling technique is that the population of study is distributed in six clusters/regions. Cluster sampling technique will therefore make for proportional selection of samples such that the number of subjects selected from each region will represent its share of the entire population. For each individual in a given cluster/region to have equal chance of being selected, the simple random sampling technique was then introduced. After which, a computer package (Excel) was programmed to select 323 random numbers within the specified ranges in proportion to the cluster's share of the total population. The numbers thus generated were used to choose the individuals included in the study sample.

Data gathering method - The sources of data, the instrument of data collection, validity and reliability of the instrument utilised are discussed extensively under the data gathering method.

Sources of data - The primary data were employed in this study. The primary method was utilised because there are no established secondary data for this study in Nigeria. The variables of interest in this study are achievement of UNSDGs and the role of professional accountants in achieving the UNSDGs viewed from the perspective of the three pillars of sustainable development (economic growth, social inclusion, environmental protection). To measure or arrive at the score for achievement of an SDG in Nigeria, the variable (achievement of SDG) shall be taken as a dummy variable. This is because it is categorical and was coded to be a quantitative dummy variable. Therefore, if Nigeria is yet to achieve an SDG as reported in the 2020 VNR, it was scored zero (0) and One (1) otherwise. With respect to the role of the professional accountants, the researchers administered questionnaires on the Financial Reporting Council of Nigeria (FRCN), ICAN, ANAN and accounting firms in Nigeria. The focus in the questionnaire was on the eight (8) UNSDGs identified by IFAC PAIB Committee as relevant for the global accounting profession to contribute to the UNSDGs.

Research instrument - The purpose of this study was to investigate the role of the professional accountant in achieving the UNSDGs in Nigeria by 2030. The closed-

ended questionnaire was used in this study. In developing some of the questions asked, the researchers referred to the United Nations metadata on SDGs first published in 2019. The questionnaire was preceded with a cover letter, stating the research objective and assuring the respondents of anonymity. Section A of the questionnaire is on demographics of the organisation and those of the respondents, while section B is on role of the professional accountants. The questions addressed the objectives of the study. Response to each of the question in the questionnaire was based on the five-point likert scale.

Validity and Reliability of Research Instrument - The study engaged the use of content validity in evaluating the research instrument. This was achieved by relying on the knowledge of individuals and professionals who are familiar with the field of sustainable development. The questionnaire was drafted and sent to the Institute of Chartered Accountants of Nigeria (ICAN) and the Financial Reporting Council of Nigeria for their input, criticism and contributions. The knowledge gained from the criticism was effected in the final questionnaire before they were administered to respondents of the study.

In order to curtail researchers' prejudice that could taint the study, the questionnaire was subjected to a pre-test; to determine the aptness and relevance of the questions. The pre-test was administered on professional accountants in accounting firms and academics in Nigerian university system. The results of the Cronbach alpha coefficient are provided in the Table 1 below. The reliability results shows that all the constructs had Cronbach alpha ranging from 0.771 to 0.939. This was greater than the specified 0.7 criteria for reliability. Hence, the questionnaire is reliable.

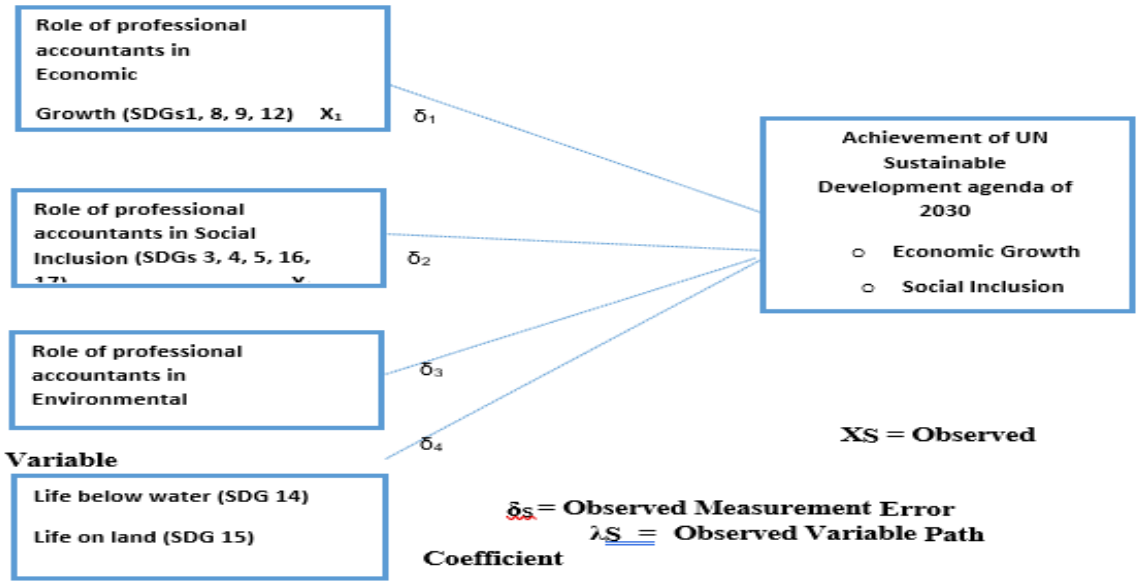
Table 1: *The results of the Cronbach alpha coefficient*

Measurement of Construct's Constructs	Reliability No. of Items	Cronbach Alpha	Cronbach's Alpha Criteria	Alpha Coefficient Remark
Achievement of United Nations SDGs	17	0.771	0.7	Reliable
Economic Growth (SDGs1,8,9,12)	20	0.771	0.7	Reliable
Social Inclusion (SDGs3,4,5,16,17)	36	0.939	0.7	Reliable
Environmental Protection (SDGs13,14,15)	12	0.845	0.7	Reliable

Method of data analysis - The analytical technique that was used in testing the hypotheses and making an inference on the role of the professional accountant in achieving the United Nations sustainable development goals in Nigeria was the Partial Least Square variant of Structural Equation Model (SEM). SEM is preferred because it estimates the multiple and interrelated dependence in a single analysis. As found in James (2019) there are some initial prerequisites in the use of SEM. This include ensuring normality and linearity in the data distribution, adequate sample size, absence of self-missing values, and proper model specification. The diagrammatical model

specification of the SEM, on role of professional accountants in achieving the UN sustainable development agenda 2030 in Nigeria, is depicted in the Figure1 below.

Figure 1: Diagrammatic SEM specification on role of professional accountants in achieving the UN SDGs



3. **Results**

Hypotheses Testing

Hypothesis 1: *Professional accountants have no significant role to play in achieving the UN sustainable development goal of economic growth in Nigeria.*

From Table 6 (see appendix section), it was observed that the role of the professional accountant as regards economic growth has a positive impact on the achievement of the United Nations sustainable development goals, as revealed by the Z value of 3.31 with an associated probability value of 0.00. This therefore led to the rejection of the Null hypothesis and acceptance of the alternate hypothesis. However, from the result in Table 8 these variables (SDG1, 8, 9, 12) was not found to be statistically significant when tested on an individual basis.

Hypothesis 2: *Professional accountants have no significant role to play in achieving the UN sustainable development goal of social inclusion in Nigeria.*

From Table 6, it was observed that the role of the professional accountant, as regards social inclusion, has a negative impact on the achievement of the United Nations sustainable development goals. This is evident by the Z-value of -0.07 with a Z-prob value of 0.06. This led to the acceptance of the null hypothesis and rejection of the alternate hypothesis. Furthermore, an examination of the individual indicators (see Table 9) revealed that SDG 3 has a negative impact on the achievement of the United Nations sustainable development goals as revealed by the negative coefficient value of -0.186. It was also found to be statistically significant. This therefore implies that on the average

the role of the professional accountant as regards SDG3 exclusively might not result in the achievement of the United Nations sustainable development goals.

The next indicator in Table 9, which is SDG4, was found to have a positive and significant impact on the achievement of the United Nations sustainable development goals, as revealed by the coefficient value of 0.351, with an associated probability value of 0.02. The next indicator which is SDG5 was found to have a positive but non-significant impact on the achievement of UNs goals as revealed by the positive coefficient value of 0.133 and an associated probability value of 0.216 (see Table 9). The last indicator which is SDG16 was also found to be positive but not statistically significant when tested at 5% level of significance as revealed by the coefficient value which stood at 0.60, with an associated probability value of 0.47 (see Table 9).

Hypothesis 3: *Professional accountants have no significant role to play in achieving the UN sustainable development goal of environmental protection in Nigeria.*

From Table 6, it was also observed that the role of the professional accountant as regards environmental protection has a non-significant impact on the achievement of the United Nations sustainable development goals, given the Z value of -0.29 and probability value of 0.77. This led to the acceptance of the null hypothesis and rejection of the alternate hypothesis. Furthermore, an examination of the individual indicators in Table 10 showed that SDG 13 was found to have a positive but not significant impact on the achievement of the United Nations sustainable development goals, going by the positive coefficient value of 0.82 and probability value of 0.186. This also support the rejection of the alternate hypothesis in favour of the null hypothesis.

The next indicator, which is SDG14, was found to have a positive and non-significant impact on the achievement of the United Nations goals as revealed by the coefficient value of 0.002, with an associated probability value of 0.03 (see Table 10). The last indicator which is SDG15 was also found to be negative and also not statistically significant when tested at 5% level of significance, as revealed by the coefficient value which stood at -0.042 with an associated probability value of 0.45 (see Table 10).

Discussion

Firstly, this study established that the role of the professional accountant impacts economic growth positively. This presupposes that the professional accountant has a role to play in ensuring no poverty (SDG 1), decent work (SDG 8), industry, innovation, infrastructure (SDG 9), responsible consumption and production (SDG 12) in the economy. However, when the role of the professional accountant was examined against achievement of each of the SDGs (1, 8, 9, 12), it was found not to be significant. This finding is in tandem with that of Love, 2003; Huang & Tsang, 2016) on the impact of the accounting function on the economy, where they also observed that the role of professional accounting bodies like IFAC and IASB, and between PAOs like ICAN, is positively associated with economic growth through production of quality information, which in turn facilitates economic growth. While

Francis et al. (2003) and Frost et al. (2006) do not directly address the involvement of the professional accountant in the level of economic growth, their proxies include role of accountants in achievement of higher levels of economic productivity through provision of reliable accounting information, which is also in tandem with the result of this study.

Taking SDGs 1, 8, 9, and 12 individually, prior studies (Babbington & Unerman, 2018; Makarenko & Piastun, 2017) posits that by ascertaining the proportion of workers along the value chain that are on permanent and pensionable appointment or workers with disability the professional accountant has a role to play with respect to achievement of SDG8. Also, in putting in place good infrastructure, sustainable industrialisation and innovation, the professional accountant has a role to play in achievement of SDG 9. With respect to achievement of SDG 12, the professional accountant was seen as supportive of their clients in developing strategic plans towards ensuring responsible production. However, while the results from these prior studies are in consonance with the results of this study, that the professional accountant has a role to play in achievement of SDGs 8, 9, and 12, this study differs in finding out that the role of the professional accountant in achievement of SDGs 8, 9 and 12 is not significant when addressed individually by the professional accountant.

Secondly, this study established that the role of the professional accountant impacts social inclusion negatively, though not statistically significant at 5% level of significance. However, it was further observed that taking each of the SDGs (3, 4, 5, 16, 17) that has bearing on social inclusion; achievement of good health and well-being of the citizenry (SDG 3) is not positively associated with the role of the professional accountant, while achievement of quality education (SDG 4), gender equality (SDG 5) and strong institutions (SDG 16) was found to be positively associated with the role of the professional accountant. Though only the role of the professional accountant in achievement of SDG 4 was found to be significant.

The result of this study is in tandem with that of prior studies (AICPA, 2018; Makarenko & Piastun, 2017) where it was observed that professional accountants ensure children have access to quality education, gender equality in the profession, end domestic resource mobilisation through improved domestic capacity for tax and other revenue collection, and create integrated, environmental, social and corporate governance reporting.

However, studies by Bebbington and Larrinaga, 2014 and Milne and Gray, 2013 is not in tandem with the findings in this study. They found that there is lack of progress in social and environmental accounting in achieving sustainable development and prospects of social inclusion in the society. The reason for the disparity may be attributed to this study being limited to the United Nations metrics and targets on sustainable development.

Finally, this study established that the role of the professional accountant impacts environmental protection negatively. Though not statistically significant at 5% level of significance. This finding is in tandem with that of Jacobs et al., 2010; Plumlee et al., 2010 who also found no statistically significant association between environmental performance disclosures by professional accountants and sustainable development. The result of this study is at variance with that of Augustia, 2015, Sudana, 2017 where it was found out that there is a positive relationship between the accounting function and combating of climate change. This presupposes that the professional accountant plays a role in sustainable development through presenting information on carbon pricing and environmental pollution cost data for informed decision taking by stakeholders.

4. Conclusions

The observed model tested in this study validated the sustainable development theory based on Khalili (2011) submission that, the achievement of sustainable development in human society, depend on social inclusion, economic growth and environmental protection. However, of the three parameters in the observed model, which consisted of three predictors of achievement of United Nations sustainable development goals, the role of the professional accountant when examined against achievement of each of the SDGs, i.e. individually, in relation to economic growth (SDGs 1, 8, 9, 12), it was found to be positive but not significant. In relation to environmental protection, SDGs 13 and 14 were found to be positive but not significant, while SDG 15 was negative and not significant. In relation to social inclusion, only the role of the professional accountant in achievement of SDG 4 was found to be positive and significant. As such, this study's application of the sustainable development theory, was only minimally supported.

This finding suggests that sample size might have been a factor in the failure of all the parameters in the model to reach statistical significance. Minimal sample sizes of 100 have been recommended for evaluating statistical models using structural equation modelling (e.g. Hair et al., 2009). This sample size for this study was 125, which places it within the minimum recommended number of cases. However, samples of 200 or as many as 400 have been recommended in order to obtain precise parameter estimates and standard errors (Loehlin, 2004), to preserve statistical power, and to obtain more precise results and greater accuracy (Schumacker & Lomax, 2010).

In conclusion, the minimal statistically significance between the predictor variables and dependent variable may be explained both empirically and theoretically. Small sample size for using structural equation modelling may have resulted in a lack of sufficient statistical power. In addition, the failure of most of the parameters in the model to reach statistical significance could also be attributed to some measurement issues which might have resulted in unreliable coefficients. However, the small to moderate correlations among the latent variables point to a possible mediating effect of economic, social and environmental factors on achievement of the United Nations sustainable development goals.

Recommendations for Practice

The following possible recommendations for practice have been drawn from the study:

1. Professional accountants should be made to be aware that they have a role to play in achievement of economic growth. This presupposes that the professional accountant has a role to play in ensuring no poverty (SDG 1), decent work (SDG 8), industry, innovation, infrastructure (SDG 9), responsible consumption and production (SDG 12) in the economy. However, when the role of the professional accountant was examined against achievement of each of the SDGs (1, 8, 9, 12) separately, it was found not to be significant. It therefore means that, for professional accountant to achieve the United Nations sustainable development goals with respect to economic growth, they must meet all the goals jointly so as to have a significant impact on its achievement. In this wise, with respect to supporting economic growth in Nigeria, professional accountants should focus on:
   (i) Promoting entrepreneurship.
   (ii) Development and adoption of globally accepted standards for corporate reporting for public good.
   (iii) Making their clients to be aware of the SDGs and the opportunities they create for business growth.
   (iv) Contributing to integrated reporting to rebalance decision making in the economy in favour of long-term value creation.
   (v) Drive sound corporate governance and financial management in the economy.
   (vi) Ensure efficient use of natural resources through provision of costs data in financial reports.
   (vii) Ensure their clients adopt sustainable practices and integrate sustainability information into their reporting cycle; and
   (viii) Promote public procurement practices that are sustainable, in accordance with national policies and priorities.
2. This study established that the role of the professional accountant impacts social inclusion negatively, though not statistically significant at 5% level of significance. However, it was further observed that taking each of the SDGs (3, 4, 5, 16, 17) that has bearing on social inclusion; achievement of good health and well-being of the citizenry (SDG 3) is not positively associated with the role of the professional accountant, while achievement of quality education (SDG 4), gender equality (SDG 5) and strong institutions (SDG 16) was found to be positively associated with the role of the professional accountant. Though only the role of the professional accountant in achievement of SDG 4 was found to be significant. This therefore suggest that for professional accountants to play a positive and significant role in achievement of the United Nations sustainable goals with respect to social inclusion, they should focus more on SDG4 which seeks to achieve quality education, while also considering addressing SDG4, 5 and 16 jointly. In this wise, with respect to supporting social inclusion in Nigeria, professional accountants should focus on:
   (i) Provision of relevant technical and vocational skills to youth and adults.
   (ii) Elimination of inequality in women and men coming into the profession.
   (iii) Building and upgrading accounting education facilities in tertiary institutions that

are gender sensitive.

(iv) Substantially expanding the number of scholarships available to students undertaking accounting training; and

(v) provision of forensic audit to support litigation and check corrupt practices.

3. This study established that the role of the professional accountant impacts environmental protection negatively. Though not statistically significant at 5% level of significance. However, when the role of the professional accountant in achievement of each of the SDGs 13, 14 and 15 on environmental protection was examined separately, it was observed that there is a positive but not significant association between the role of the professional accountant and achievement of climate action (SDG 13) and good life below water (SDG 14), while that of achievement of peace, justice and strong institutions (SDG 15) was found to be negative and also not statistically significant. The implication of this finding is that the professional accountant has little or no role to play in achievement of the United Nations development goals of promoting and restoring the use of terrestrial ecosystem, managing forest as well as reverse land degradation in support of the needs of the present.

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APPENDIX

4.2 Response Rate

Figure 2: Response rate

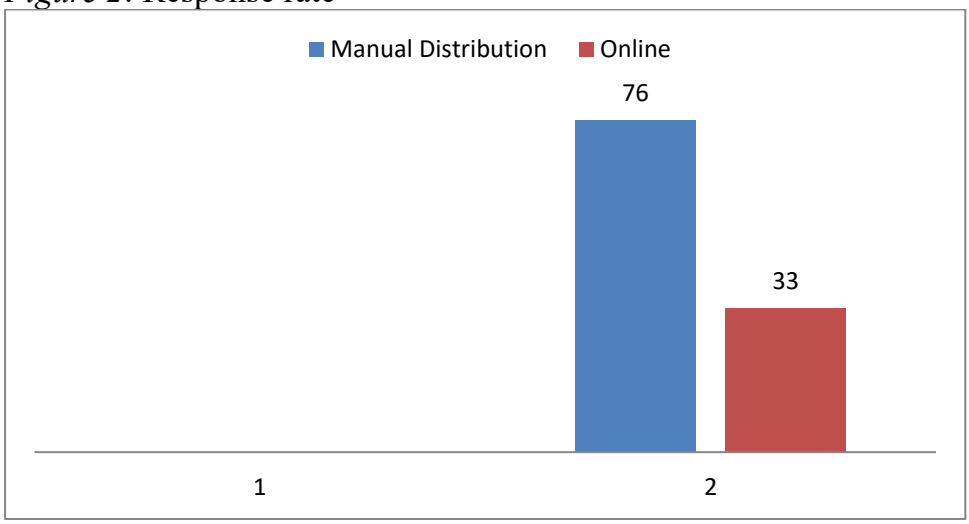


Table 2
Total response based on questionnaires administered

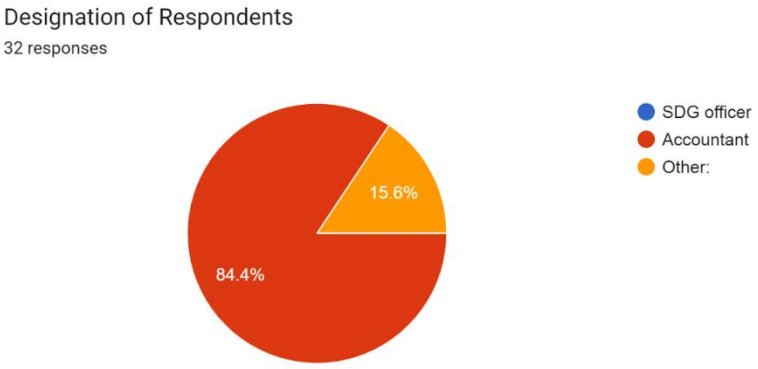
Questionnaire distribution	Total	Retrieved	Comment
Manual distribution	100	76	24 misplaced
Online	223	33	190 no response
Total response rate		109	

Source: Researchers compilation, 2022

Table 3
Response from organizations sampled

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Financial Reporting Council of Nigeria	33	30.3	30.3	30.3
	Institute of Chartered Accountants of Nigeria	54	49.5	49.5	79.8
	ICAN Registered Accounting Firm in Nigeria	22	20.2	20.2	100.0
	Total	109	100.0	100.0	

Source: SPSS 24.0



The pie chart above shows the result of the respondents as regards their designation.

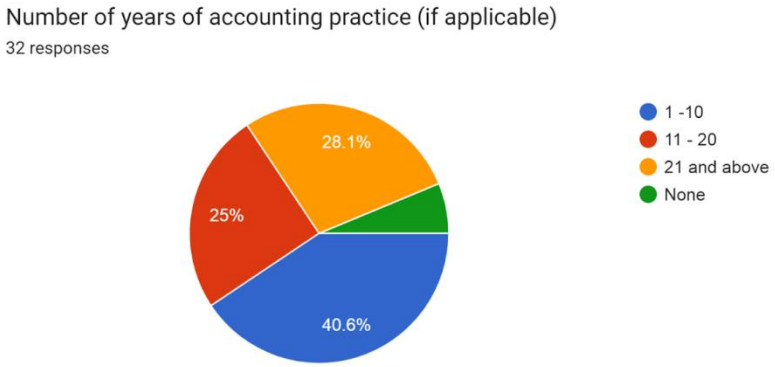


Table 4: Descriptive statistics on the response and predictor variables.

Variable	Measures	Mean	Std. Dev.	Min	Max
Achievement	Acv1	3.155556	1.235351	1	5
	Acv2	3.666667	1.067795	1	5
	Acv3	3.657407	1.033658	1	5
	Acv4	3.490741	1.036668	1	5
	Acv5	3.675926	1.003067	1	5
	Acv6	3.761468	0.989754	1	5
	Acv7	3.601852	1.049609	1	5
	Acv8	3.642202	1.041037	1	5
	Acv9	3.509259	1.114856	1	5
	Acv10	3.509259	1.147898	1	5
	Acv11	3.509259	1.211282	1	5
	Acv12	3.611111	1.03971	1	5
Economic Growth	SDG1	3.477064	1.159473	1	5
	SDG8	3.53211	1.110295	1	5
	SDG9	3.574074	1.177703	1	5
	SDG12	3.633028	1.094266	1	5
Social	SDG3	2.891089	1.173891	1	5

	SDG4	2.990826	1.265609	1	5
	SDG5	3.091743	1.213667	1	5
	SDG16	3.027778	1.155712	1	5
	SDG17	3.231481	1.188783	1	5
Environmental	SDG13	3.440367	1.250416	1	5
	SDG14	3.220183	1.36326	1	5
	SDG15	3.155963	1.408797	1	5

Source: Researchers compilation

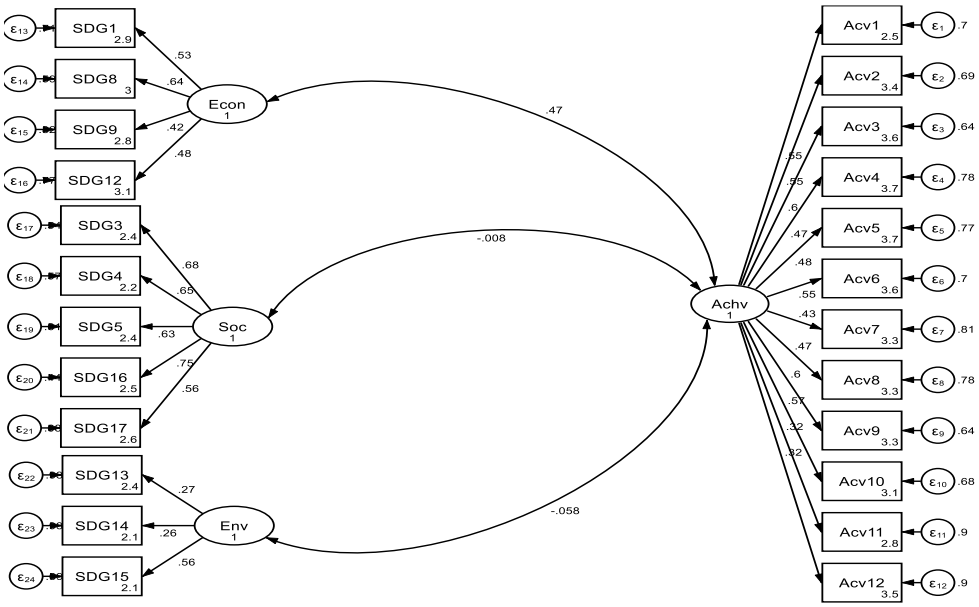


Figure 3. The figure above show the path analysis with respect to confirmatory factor analysis that was first conducted to ascertain the interrelationship that exists amongst the latent constructs and the observed variables.

Table 5

Summary table: Confirmatory factor analysis

Standardized	Coef.	Std. Err.	Z	P>z	[95% Conf.	Interval]
Measurement						
Achievement						
Acv1						
Achv	0.548408	0.091172	6.02	0	0.369715	0.727102
_cons	2.543132	0.224577	11.32	0	2.10297	2.983295
Acv2						
Achv	0.554858	0.092252	6.01	0	0.374046	0.735669
_cons	3.366673	0.281837	11.95	0	2.814282	3.919063
Acv3						

Achv	0.603244	0.085318	7.07	0	0.436024	0.770465
_cons	3.597647	0.298399	12.06	0	3.012796	4.182498
Acv4						
Achv	0.468136	0.099988	4.68	0	0.272164	0.664108
_cons	3.655593	0.302466	12.09	0	3.062771	4.248415
Acv5						
Achv	0.48395	0.098247	4.93	0	0.291389	0.67651
_cons	3.652162	0.302227	12.08	0	3.059808	4.244516
Acv6						
Achv	0.548628	0.092022	5.96	0	0.368268	0.728987
_cons	3.64664	0.301873	12.08	0	3.05498	4.238299
Acv7						
Achv	0.434718	0.102263	4.25	0	0.234285	0.63515
_cons	3.292055	0.276472	11.91	0	2.750179	3.833931
Acv8						
Achv	0.46581	0.099004	4.7	0	0.271765	0.659855
_cons	3.291103	0.276417	11.91	0	2.749335	3.83287
Acv9						
Achv	0.599163	0.085205	7.03	0	0.432166	0.766161
_cons	3.339206	0.27992	11.93	0	2.790573	3.88784
Acv10						
Achv	0.566197	0.089807	6.3	0	0.390178	0.742215
_cons	3.128999	0.265026	11.81	0	2.609558	3.64844
Acv11						
Achv	0.320062	0.112133	2.85	0.004	0.100286	0.539838
_cons	2.796642	0.241795	11.57	0	2.322732	3.270551
Acv12						
Achv	0.321482	0.112543	2.86	0.004	0.100903	0.542062
_cons	3.503595	0.291513	12.02	0	2.932241	4.074949
Role of the professional accountant						
Economic growth						
SDG1						
Econ	0.53485	0.127475	4.2	0	0.285003	0.784697
_cons	2.853638	0.245716	11.61	0	2.372043	3.335234
SDG8						
Econ	0.638786	0.128991	4.95	0	0.385968	0.891603
_cons	2.984353	0.254792	11.71	0	2.48497	3.483735
SDG9						
Econ	0.423296	0.137479	3.08	0.002	0.153843	0.69275
_cons	2.844051	0.245054	11.61	0	2.363754	3.324348
SDG12						
Econ	0.480432	0.135145	3.55	0	0.215553	0.745311
_cons	3.073017	0.26099	11.77	0	2.561487	3.584548

Social inclusion						
SDG3						
Soc	0.679088	0.079611	8.53	0	0.523052	0.835123
_cons	2.402288	0.215072	11.17	0	1.980755	2.823821
SDG4						
Soc	0.654846	0.086354	7.58	0	0.485595	0.824097
_cons	2.240512	0.204414	10.96	0	1.839868	2.641156
SDG5						
Soc	0.627584	0.08375	7.49	0	0.463437	0.791732
_cons	2.374804	0.213247	11.14	0	1.956847	2.79276
SDG16						
Soc	0.747345	0.074701	10	0	0.600934	0.893757
_cons	2.51861	0.222852	11.3	0	2.081828	2.955392
SDG17						
Soc	0.564222	0.091415	6.17	0	0.385053	0.743391
_cons	2.6371	0.230867	11.42	0	2.18461	3.089591
Environmental protection						
SDG13						
Env	0.270792	0.240684	1.13	0.261	-0.20094	0.742524
_cons	2.441287	0.217662	11.22	0	2.014678	2.867896
SDG14						
Env	0.260898	0.249204	1.05	0.295	-0.22753	0.749328
_cons	2.146222	0.1983	10.82	0	1.757562	2.534883
SDG15						
Env	0.558079	0.467218	1.19	0.232	-0.35765	1.473809
_cons	2.057341	0.192609	10.68	0	1.679834	2.434849

Source: Researchers compilation, 2022

Figure 4: Path Coefficients for the Structural Model

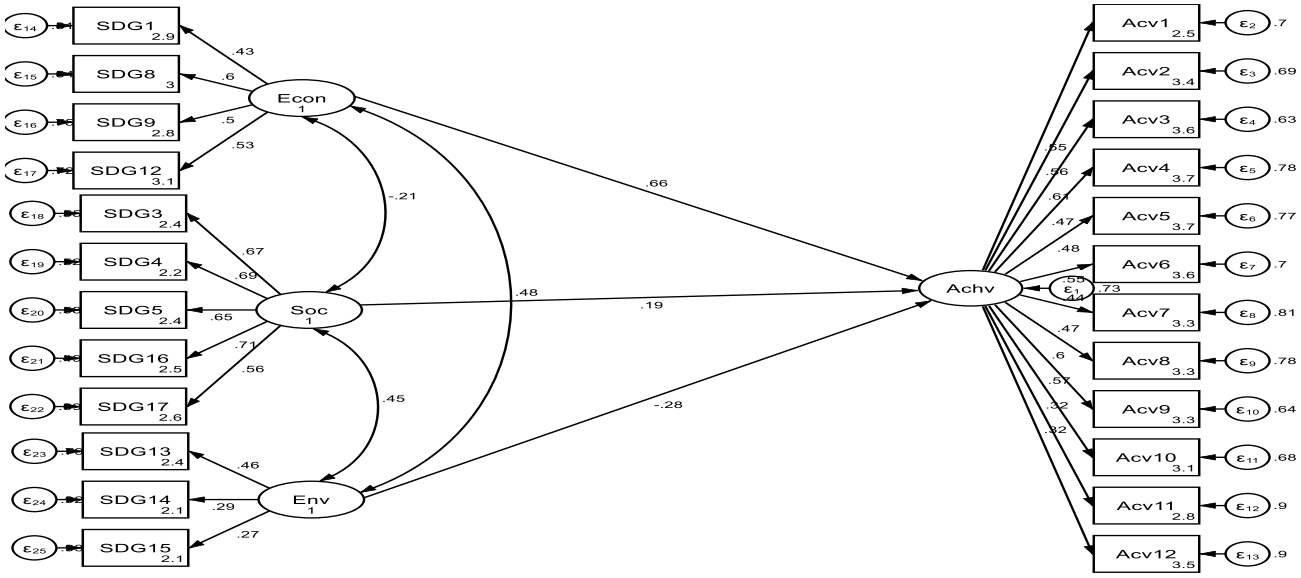


Table 6: Standardized - SEM

```
Structural equation model                       Number of obs     =         84
Estimation method  = ml
Log likelihood     = -3001.8197

 ( 1)  [Acv1]Achv = 1
 ( 2)  [SDG1]Econ = 1
 ( 3)  [SDG3]Soc = 1
 ( 4)  [SDG13]Env = 1
```

Standardized	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
Achv						
Econ	.4729277	.1429688	3.31	0.001	.192714	.7531414
Soc	-.0079774	.1357144	-0.06	0.953	-.2739727	.2580179
Env	-.0580827	.1985911	-0.29	0.770	-.4473142	.3311488

Source: STATA 16.0

Table 7: Goodness of fit result

	Definition	Annotation	Reference	Values
	Exact Fit Index			
	Chi-Square, degrees of freedom P-value	x2, pvalue	No Significance	447.966, p=0.00
Approximate Fit Index				

Absolute Fit Index	Root mean Square Error of Approximation	RMSEA	0.05 to 0.08	0.098
Incremental Fit Index	Comparative Fit Index	CFI	≥.9	0.588
	Tucker Lewis index	TL	≥.9	0.543
Absolute Fit Index	Standardized Root Mean Square Residual	SRMR	0.05 to 0.10	0.105

Source: Researchers compilation, 2022

Table 8: Structural Equation Analysis: Economic Growth

```
Structural equation model                       Number of obs     =         86
Estimation method  = ml
Log likelihood     = -1966.5409

 ( 1)  [Acv1]Achv = 1
```

Standardized	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural Achv						
SDG1	.1712394	.1295002	1.32	0.186	-.0825764	.4250552
SDG8	.0942835	.1316453	0.72	0.474	-.1637366	.3523035
SDG9	.1485804	.1203729	1.23	0.217	-.0873463	.384507
SDG12	.1804865	.1234448	1.46	0.144	-.0614607	.4224338

Source: STATA 16.0

Table 9: Structural Equation Analysis: Social Inclusion

```
Structural equation model                       Number of obs     =        108
Estimation method  = ml
Log likelihood     = -2414.9554

 ( 1)  [Achv1]Achv = 1
```

	Coef.	OIM Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural Achv						
SDG3	-.1867374	.091129	-2.05	0.040	-.3653469	-.0081278
SDG4	.3510065	.1121312	3.13	0.002	.1312334	.5707796
SDG5	.1337023	.1079708	1.24	0.216	-.0779165	.3453212
SDG16	.0607131	.0843841	0.72	0.472	-.1046767	.2261029

Table 10: Structural Equation Analysis: Environmental Protection

Structural equation model Number of obs = 86
Estimation method = ml
Log likelihood = -1899.1538

(1) [Acv1]Achv = 1

	OIM Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
Structural						
Achv						
SDG13	.0828116	.0625735	1.32	0.186	-.0398301	.2054533
SDG14	.0015323	.0567732	0.03	0.978	-.1097411	.1128056
SDG15	-.0422855	.0555776	-0.76	0.447	-.1512156	.0666446