



# THE MEDIATION ROLE OF PROBITY ON DISCIPLINE AND GOOD GOVERNANCE: ADOPTION OF QUALITATIVE AND QUANTITATIVE (MIXED METHOD) WITH TRIANGULATION AND CONVERGENT PARALLEL DESIGN



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## Abstract

The essence of this research paper is to partly accomplish the previous research recommendation by Adam, Conceptualization of Lack of Discipline and Probity as the main Cause towards Good Governance Practice. The main objective of this research was to practically and scientifically analyze findings in mixed methods mode in triangulation and convergent parallel design for scientific and descriptive analysis using quantitative and qualitative approaches. The aim is to provide research data analysis structures using Structural Equation Modeling to examine the relationship among variables, namely good governance, discipline, and probity. To ascertain the significance of reliability of the variables for this research, the following hypothesis has been developed to be tested. These are: H<sub>1</sub>: There is significant relationship between Discipline and Good Governance, H<sub>2</sub>: There is significant relationship between Discipline and Probity, H<sub>3</sub>: There is significant relationship between Probity and Good Governance, and H<sub>4</sub>: Probity mediates the relationship between Discipline and Good Governance. The research population and sample size were 187 and 126 respectively using Krejcie and Morgan 1970 formula. It tests the relationships between these variables and concludes on the mediation analysis. This research confirmed the following research findings: First, there is no relationship between Discipline and Good Governance. Secondly, there is relationship between Discipline and Probity. Thirdly, there is relationship between Probity and Good Governance. Fourthly, Probity partially mediates the relationship between Discipline and Good Governance. And fifthly, good governance practice does not totally inure benefits to the citizens of Ghana qualitatively. There was partial mediation of the path model of the variables tested. The total population was 187 and the sample size calculated was 126. Qualitatively, the participants indicated that unemployment is the most important problem that government should address permanently. This was followed by corruption as second most important problem that government must curb amicably.

**Keywords:** *Convergent Parallel Design; Discipline; Good Governance; Mixed Method; Probity; Structural Equation Model; Triangulation*

## Introduction

This paper is adopted from a recommendation by Adam et al. [1], proposed the concepts that are associated with good governance practice like discipline and probity and the methods used were the secondary sources of data findings which were analysed and proposed a model for future research. The recommendation was that “it shows that there is the need for future research to consider a clear mixed method (both quantitative and qualitative) study with a target population that has all the key functions and actors within governance circles. And by so adaptation, the research tested empirically the hypothesis identified in the model above where a typical data analysis or computerize

tool or software are used to determine the scientific significance of the model relationships and hypothesis confirmations or otherwise. Therefore, this research is to accomplish the quantitative aspect of its findings together with the qualitative data analysis to support previous recommendation. In implementing good governance by governments, there is the need to pay attention to the complaints made by the general public such as; practices are inefficient, lack of flexibility, red tape, poor performance and ineffective accountability, even though, the Anti-Corruption Agency in Ghana is the Security Services such as the Police, EOCO, BNI, Anti Money Laundering Organizations, and in Malaysia is the institution to deal with corrupt practices and other societal mismanagements [2, 3]. The following have been identified as the factors of good governance namely Strategic Alliance, Strategic Planning, Risk Management, Audit, Fraud Control, Quality Performance, Financial Resourcing, Human Resource Management, and Infrastructure and Facilities [3]. The findings showed that they practiced with different good governance factors but only 60% agreed on fraud control and 81% practiced risk management (probity) whereas discipline of financial resourcing and auditing scored very low [3]. Based on these preambles of literature, it is important to investigate technically and scientifically to deduce the facts and clarity for affirmation of these theories. This research is based on both basic and applied research methods and techniques. Building a culture, ethics, and values that underlie the development of professional behaviour is through the application of good governance in the public sector [4]. Rahayu et al. [5] research studied was grounded in agency theory, which is highly relevant to governance and fraud prevention, including control of corruption in institutions or organizations [6]. Therefore, Agency theory explains the relationship between stakeholders or principals, and the agents are authorized to manage the organizational or institutional resources.

## Research Questions

The following are the major research questions

- i. Is there relationship between Discipline and Good Governance?
- ii. Is there any relationship between Discipline and Probity?
- iii. Is there relationship between Probity and Good Governance?
- iv. Does Probity mediate the relationship between Discipline and Good Governance?
- v. How can good governance practice inure benefits to its citizens?

## Research Objectives

This research study examines the above relationships in the research question to justify the following objectives

- i. To establish the relationship between Discipline and Good Governance.
- ii. To analyse the relationship between Discipline and Probity.
- iii. To examine the influence of Probity on Good Governance.
- iv. To investigate the impact of Probity as Mediator in the relationship between Discipline and Good Governance.
- v. To identify the main factors of good governance that can inure benefits to the citizens.

## Summary of Hypothesis Developed

**H<sub>1</sub>:** There is significant relationship between Discipline and Good Governance

**H<sub>2</sub>:** There is significant relationship between Discipline and Probity

**H<sub>3</sub>:** There is significant relationship between Probity and Good Governance

**H<sub>4</sub>:** Probity mediates the relationship between Discipline and Good Governance

## Problem Statement

According to Bogyay [7], between, 2011-2015 Burkina Faso in their strategy and sustainability plans for accelerated growth plans place emphasis on governance culture and creative industries as their national priority towards the development of human capital. And despite all their national policy on governance culture, their progress of implementation and progress has not been impressive because of its slowness. When there are no incentives within an organization's policy for workers it gives chance for corruption to exist in the corporate affairs of the organization

[8], and the analysis of separation of ownership and control becomes more critical for the consequential costs when corruption is known to be a recurring issue [9]. Therefore, there is the need to investigate the cause of these failures to determine whether they stem from indiscipline.

The emergence of developed countries is because of effectiveness of their central bureaucracy characterized by centralized administration with strict recruitment procedures, which tend to produce less corruption and bribery cases. Ironically, many people in Ghana are employed based on the political party they belong to and not based on their qualification or competencies. Moreover, appointments of commissioners and board of directors are based on change in government which is partisan and does not inure long term benefits or contribute to the development of the country. Hence, this undermines good governance and necessitates further investigations to determine the outcomes through probity and discipline. Also, there is inadequate Statesmanship (citizenship) in Ghana, which is a deficit to good governance leadership in practice.

Feldman & Khademian [10], explored management practices and governance dilemmas. Their focus was on how to manage flexibility and accountability in the public sectors of an economy. They argued that it is the duty of managers to respond flexibly to the changing demands and expectations of public service to its people and in a manner that would also provide accountability to both the public and the government (i.e. lack of integrity or probity). The study of leadership as Management action is a dichotomy in the governance structural systems within which managers operate generating the need to find public management theory that aligns with good governance to address issues of indiscipline. Management must be able to attend to flexible leadership demands and structures of accountability. Research suggested an alternative theoretical framework that understands mutual actions and structures constitutionally, which creates attention for good governance to be in practice. It is said that the world of public managers today is significantly different from those of a decade ago and is often referred to as Nalbandian times [10].

Also, managers are faced with tremendous expectations to practice flexibility in the management of public programs to enhance good governance. It is more important to note that communities are increasingly heterogeneous today, with economies and communication systems becoming globally interconnected. Global connections between organizations, public and private policies are on the increase, which gives people chance to scrutinize the works of government and demand accountability through probity and discipline. These developments highlight challenges of good governance which require further research for scientific clarity. Strong governance structures mitigate some costs and transform Environmental, Social, and Governance (ESG) investments into value-enhancing activities. On the other hand, ESG engagement positively influences market performance, signalling long-term value to investors [11].

This paper examined and reviewed theoretical literature on leadership styles, which focused on servant leadership that reflects and promises to be a key approach to executing and enforcing effective good governance achievable policies, public administration, and sustainable public service delivery in Africa [12].

In addition to the concept of good governance, there is also an older concept known as good administration that was used much earlier since, these two concepts are often used interchangeably or as synonyms in foreign and domestic literature, they have essential differences because good governance is more comprehensive, i.e., it also includes good administration [13, 14].

## Literature Review

### Theoretical Concepts of the Variables

#### Good Governance

Martin stated that there is a complex kind of connection between good governance and democracy and the principles of democracy are transparency, accountability, and public participation. It is through these criteria that good governance and bad governance can be distinguished. This means that governments are to put transparency and

accountability measures in place to serve as a check on the work of civil servants and public officials thereby subjecting their actions to public scrutiny. Gender and Occupation are two indicators that can affect people perception and attitude towards public sector governance, and the fight against corruption and public service provision and by which research shows that, within the business sector females outnumber males by 25%.

### Discipline

According to Alfred [15], there are two main types of discipline in an organisation namely preventive and corrective. Preventive discipline refers to any action that is taken to encourage staff to follow and abide by the laid down procedures, standards, and rules to prevent deviations or perform contrary to the prohibited rules. Corrective discipline simply refers to actions taken against any wrongdoing or breaking of rules or standards of the organisation. This form of discipline attracts punishment and penalties such as fine, suspension or warnings, with reduced pay or without pay against the employee in question. Hence, the main objective of corrective discipline is to reform the offender, deter others from committing same, and becoming obedient employee. According to Alfred [15], the generalized procedures for disciplining offenders are informal warning, formal warning, final warning, disciplinary action, and dismissal and reinstatement or resumption at duty. Discipline is administered as tribute justice partly to the offender.

This research identifies discipline as an independent variable, with good governance as the outcome or dependent variable. So many literatures have been reviewed with their associated problems. Hence, from theories point of view, over the years many educators have made attempts to deal with discipline across the educational arena. The following are key theorists and models of discipline: Skinner [16], who developed the model of behaviour modification; Curwin & Mendler [17], proponents of the dignity model of discipline; Canter [18], who advanced the behavioural model of assertive discipline; Dreikurs [19], who introduced the goal-oriented model of discipline based on the concept of mistaken goals; Kounin [20], who proposed the stimulus-response model of classroom management; Jones [21], who developed the classroom management model; and Gordon [22], who designed the teacher effectiveness training model. From the above independent variable, Discipline is most associated with independent factors which affect Good Governance delivery to some extent [22].

### Probity

Whitton [23] explained that civil and public servants or officials are expected to take decisions in public interest and to act impartially and avoid issues of conflict with their personal interest. That public employment or appointment is public trust and therefore any improper use or abuse of public officers is regarded as a serious offence and a breach of duty and responsibilities.

Probity is the fundamental condition for governments to establish or create effective framework and trustworthiness for the social and economic lives of the citizens. Henceforth, the mechanisms for promoting probity by the institutions are generally considered as the basic components of good governance. To ensure probity means that the public servants' must behave according to the public purpose of establishing those institutions in which they work; must be reliable and provide good service operations for businesses; making sure that citizens are treated impartially on the basis of justice and legality; making sure that the public resources are used effectively and efficiently; and be transparent in their decision making procedures to the public and putting in the necessary measures for public scrutiny are redressed when the need arises. Lehtinen [24], described probity as trustworthiness or honesty in performing public official duties to prevent corruption.

### Theoretical Gap

Barton et al. [25] indicated that good governance is simply bridge between the government and those they govern. Graddy & Wang, [26] and Klijn et al. [27] argued that trust and social norms are the two main aspects of socialist capital, helping people to network with each other to enhance good governance. By this, a study by Waheduzzaman & Mphande [28] indicated that local government sectors and government officials in the public sector must uphold their values and participate in decision makings. This study shows that there is a governance culture gap particularly in areas related to trustworthiness, fairness, following responsibilities, and following procedures as components of

policy discipline. Stivers, [29] argued that if people network together by sharing their concerns and values it will give them transformational energy to always work together in harmony. It is recommended that civil societies and government agencies and private sectors always come together mutually to create norms and trust to build their social capital [25].

Research clearly showed in Waheduzzaman & Mphande [28] that there are gaps in the rural societies creating deficiencies and barriers for development of normative values such as governance culture, fairness, trustworthy, following procedures, and following responsibility which are lack of discipline by policies.

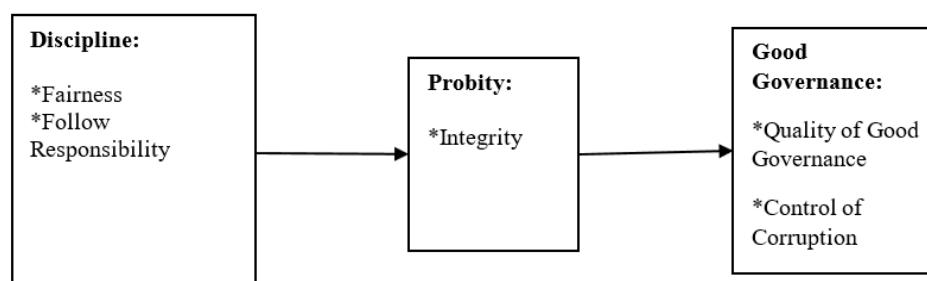
Research has concluded that good governance cannot be achieved in the developing countries until probity with integrity gap identified are properly researched effectively and decisively [28]. Based on the empirical reviews on previous theories, it is clear that there is a gap exists, a missing link between the theoretical perspectives and the reviewed studies since there is limited research on the issue of Probity, therefore, there is the need to research on the various aspects of Probity to ascertain its direct impact on the relationship between Discipline and Good Governance. In this case, this research is an attempt to identify, integrate, and classify further the role Probity theories play in Discipline and Good Governance. Probity is also termed as a procedural integrity because it is a concept that brings together integrity, moral excellence, honesty, conscientiousness, uprightness, and sincerity in any Governance processes.

The focus on previous Good Governance research has been on corruption and its preventive services. Even the 1992 constitution of Ghana has Probity enshrined as a clause for government and citizens to abide by but there is limited research examining its practical relevance and contribution to national development, social life and governance. There are several neglects on the implementation of Probity features in governance to achieve the states objectives. Therefore, this proposed research is intended to fill the theoretical gap and further examine how Discipline affects Good Governance through Probity as a mediating variable in this research. The novelty of this proposed research lies with the mediating role of Probity between Discipline and Good Governance. Ssonko made a presentation and called on governments to strengthen Probity in public sector institutions through ethics, transparency, integrity professionalism and accountability so that public resources are protected by the enhancement of public performance. This is a clear gap stated in a capacity building workshop for public sector human resource managers in Africa. Furthermore, The Institute of Internal Auditors—Australia [30], recommended that there is no specific Common Body of Knowledge (CBOK) on probity though in some countries it is termed as fairness and integrity monitoring. The study also indicated that there is limited information on probity within Australia as well as globally. They affirmed that there are limited professionals around discipline and probity as a component of risk management and control practice in governance.

### Research Framework Development (Theoretical)

The present study has demonstrated the influence of discipline and probity on discipline and good governance. In this empirical data of theories, discipline has total and direct relationship to the success of good governance; probity acts as a mediating variable that interacts with both independent variable (discipline) and the dependent variable (good governance) as depicted in Figure 1 below.

**Figure 1: Research Framework**



Source: Designed and Developed by the Authors

## Previous Empirical Research and Hypothesis Development

The importance of conducting this empirical research and survey analysis is to develop suitable hypothesis for the research questions, which form the basis of the ensuing findings. Through reviews of relevant literature, one would be able to identify the associations and influences of variables that are related to the study highlighting areas that need further research due to their weakness or strength or contradictory conclusions. In addition, recommendations by researchers and policy initiatives are essential for countries to advance. Therefore, the subsequent discussions are based on theoretical findings from inductive and deductive points of view.

### Discipline and Good Governance

The study of good governance and discipline is an embodiment of the governance and public administrative procedures that help organizations to work together harmoniously and achieve goals. In a study of good governance and discipline around financial budget, where Ramdany et al. [31], stated that government budgeting can only be undisciplined, influence not only by economic stability but also by other factors. The study showed that effectiveness of good governance, internal controls and quality information of accounting are the major factors affecting budgeting discipline. By this it means that there is a positive relationship between good governance and discipline since these are the major factors that bring effectiveness to financial budgeting. Though this study was based on case study, literature reviews and from the field observations, the recommendations were made after careful synthesis of all these sources.

Egbide & Agbude [32] recommended that strict adherence to budgetary rules must be followed and not compromised as it relates to discipline and enhances good governance. There are three (3) levels of discipline which are crucial for effective budget to work under good governance namely policy discipline, numerical discipline, and timing discipline. Discipline in budget is one of the solutions to corruption and other bad or poor practices in governance. The absence of discipline in governance is disaster to development since discipline is good ingredient to good governance [33, 34]. In recent years, some developing countries and their governments passed fiscal responsibility acts to strengthen their fiscal management. This will enhance transparency and accountability of the executive to the legislature and to the citizenry. Although there are currently no studies to assess the effects of these laws, it is anticipated that the new laws will strengthen fiscal discipline for good governance, World Bank [35]. According to a study Williams [36], based on discipline and governance of development within the banking industry, the researcher argued that the introduction of good governance by the World Bank is well understood through discipline. It is further asserted that good governance represents an interlocking disciplinary practice as society is disciplined by the state and vice versa. Below hypothesis is derived generally to cover the above findings gathered.

**H<sub>1</sub>:** There is significant relationship between Discipline and Good Governance

### Discipline and Probity

There are several schools of thoughts (theories) and studies about these two variables, that is, discipline and probity. These two variables are generally important in almost every sphere of life, be it at workplace, government, hospitals, homes, education and above all in the governance of a country. In view of this there are several studies into the relationship of discipline and probity in good governance perspective. Barnard et al. [37] empirical research on a conceptual framework in relation to integrity with discipline, in which construction of integrity of leaders of businesses was researched. The findings concluded that integrity development is fostered and associated with disciplined upbringing. Also, McDevitt et al. [38] researched police integrity and discipline in relation to their responsibilities, as it was a serious issue confronting the police profession in the country. The findings had multiple correlations between integrity and discipline. The findings stated that severe discipline must be given to any officer who breaches the law to improve probity and integrity at the same time. The results indicated that discipline is important as it is well correlated to probity and integrity since it improves morale and commitment towards achieving the goals of the organization. All in all, this research concluded that officers with high integrity; with a sense of responsibilities of their actions have confidence that others associate them with men of integrity and discipline. According to CGS [39] paper on the army leadership code, the introductory guide emphasizes that values of

leadership, discipline, integrity and probity are more than words but core principles that sets British Army apart from society. This clearly is an indication of strong relationship between discipline and probity.

It is stated that, there isn't enough or wide information on probity in Australia and therefore there has been limited chances for people to pursue development professionally in probity and discipline. This is how probity and discipline are associated in an international entity. There must be discipline and moral probity within schools in Ghana Education Service which must be the foundational basis for achieving quality education in the country. This conclusion emerged from an enquiry into the ability of the Junior Secondary School and Senior Secondary/High School systems and its ability to provide quality education to meet the global requirement and changing needs and demands. Hence, the educational system could not be perfect without the integration of discipline and moral probity which was the backbone of good education. These principles also represent the rudiments of good governance and an orderly society in this complex world the authors live in. The hypothesis is derived generally to cover the above relationships.

**H<sub>2</sub>:** There is significant relationship between Discipline and Probity

### Probity and Good Governance

These are other variables that are relevant to modern institutionalization and democratic practices towards sustaining human resources and human capital development. It has many more theories and research that depict good governance. According to Igboyi et al. [40], concluded in their research that there is no relationship between Probity and Governance towards recovering looted states funds through corruption. The research also confirmed that there is no relationship between the looted funds recovered by Government through Probity compared to the poor level of development in Nigeria. They, however, recommended that the governments must always check with Probity to improve integrity before appointing public political officers into offices. As defined in government, Probity is meant to ensure that all the public and political officers and appointees adopt laid down processes, good behaviours, and good practices to promote and enhance good values and national interest and that is Good Governance principle.

Said et al. [41], empirical research study was about the relationship between probity and good governance system. The findings indicated that among other factors, good governance has statistically significant positive relationships with probity as integrity in the public sector. More so, strategic alliance practices and control of fraud in the public sector of governance significantly contribute towards the determination of probity as integrity. Kaufman [42] studied on several objectives by Probity in Good Governance where it stated that Probity is to ensure accountability in governance, maintain integrity in public services, ensure that compliance with processes is met, raise and preserve public confidence in government processes and above all to avoid potential form of misconduct, corruption and fraud. According to Kragbe [43] affirmed in the research findings that fiscal Probity has a strong positive impact on public financial management towards good governance. In these findings through regression analysis, established the utilization of fiscal Probity by agencies, departments and ministries in government which resulted in economic development and growth, and reduced poverty and high unemployment. However, the research concluded on the importance of the utilization of fiscal Probity by government departments and ministries and agencies, if not they would have struggled with their organizational objectives as fiscal discipline otherwise they could have collapsed government structures.

Sharma & Kumar [44] argued on Probity and Good Governance that a wider consultation reform has indicated the major challenge to finding the links of Good Governance, civil society and civil service components that is affected by lack of Probity responsiveness. This means that society saw Probity as an important feature or factor for Good Governance, which facilitates any government to perform and act ethically on its duties and responsibilities [44]. According to Olynyk [45] they argued that there are great public awareness and concern about probity issues in governance. It is noted that the effective and efficient way to understand probity is to think of the principles of honesty, transparency and ethical conduct. And that there is clear connection between the concept of ethics and probity and this works at various levels such as individual to organizational and onto the 'watchdog'. Probity is the most important quality of good governance, and it helps governments to perform their responsibilities and duties with outmost respect and sincerity. It keeps strict view on governance to follow its mandated functions in accordance

with law to deliver public services. Good governance is the root of democracy in a country while good probity in governance can help people to achieve their democratic values through respect and patriotism towards the government operational policies. For government employees, departments and agencies to achieve probity, it involves more than simply trying to avoid corruption or dishonesty, rather it involves applying the values in the public sector such as impartiality, transparency, and accountability to achieve probity or integrity. Probity in governance ensures total development and prevents misuse and misapplication of authority and power in government. Again, from the above findings, good governance and probity interact for a common goal. The hypothesis below is derived generally to cover the above findings.

**H<sub>3</sub>:** There is significant relationship between Probity and Good Governance

#### Probity - Mediation Variable

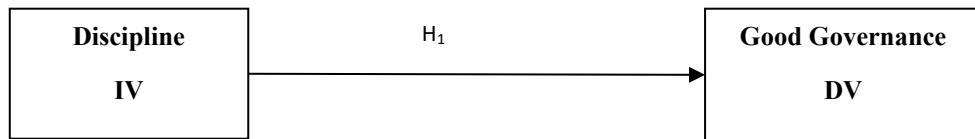
Discipline is inter-alia of public morality and honesty (probity) including the public for Good Governance practice. That a Westerner gets to top position and develops higher respect for rules of law, but it is opposite to the people in the developing countries. Simply because in the developing countries laws and regulations are easily ignored, this does not promote Good Governance due to the lack of probity and discipline measures for noncompliance. On the contrary, probity is regarded as expectation of society which the citizens can always demand from government of the state.

Through a descriptive survey designed on Civil Servants it was confirmed that the public perceived probity to be complete honesty, reliability, truthfulness, integrity, moral excellence, uprightness, rectitude, and conscientiousness of the people. This proved a positive impact on sustainable development which is all Good Governance values with disciplinary qualities. Below is the hypothesis derived from the above empirical findings discussed.

**H<sub>4</sub>:** Probity mediates the relationship between Discipline and Good Governance

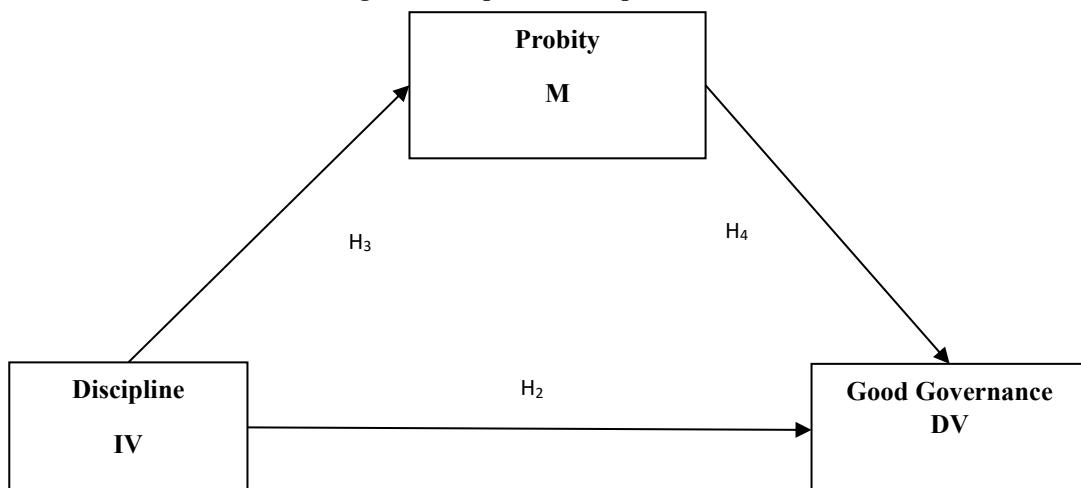
Below Figure 2 and 3 is a proposed conceptual Model and the hypothesis derived from the previous empirical findings as above.

**Figure 2: Total Effect Model**



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**Figure 3: Proposed Conceptual Model**



Source: Designed and Developed by the Authors (Not any Copyrighted or Proprietary Material)

## Methodology

### Research Design

In a way to explore the relationship between Good Governance, Discipline, and Probity, both qualitative and quantitative research approach are deemed as appropriate methods designed for this current study. The researcher adopted Sauro [46] a research design method as Convergent Parallel Design or also termed as Component design: this simply means collecting both qualitative and quantitative data simultaneously and independently and then combining the results finally for interpretation and conclusions. This approach is acceptable as it can answer research questions and test the hypothesis. More importantly, survey and interview techniques are designed to gather data at once to answer the research questions [47].

To achieve the research objectives, the researcher adopted Structural Equation Modelling research designs to allow the researcher to determine the degree and direction of the relationship of the paths between the variables. More importantly, the researcher also adopted a Triangulation meaning that, according to Denzin [48] developed this concept of triangulation to refer to any research that uses or combine both a mixture of different research studies and methods. Example of a particular triangulation considered is data triangulation, which simply refers to the use of variety of data sources and sets of data in a particular study where data may be both qualitative and quantitative using different methods or same method using different sources with different times. According to Graziano & Raulin [47], Correlation research design demands more constraint with the procedures used in measuring people behaviour and establishing the quantifiable strength of the relationship for two or more variables. Moreover, according to Hair et al. [49], Multivariate research design is a general term using statistical method to analyse various multiple variables simultaneously. Hence forth, with this study triangulation research design is adopted using multiple regression and hierarchical regression in SmartPLS 4.1.1.4 paths models together with Microsoft Excel 2019 version.

Gisselquist [50] has indicated many of the measures of governance in recent years in their use in policy making and research namely World Bank's Worldwide Governance Indicators and Country Policy and Institutional Assessment (CPIA), Freedom House's Freedom in the World, UNDP's Human Development Index (HDI), and Transparency International's Corruption Perceptions Index (CPI). These measures are combined to provide composite indicators or indexes to produce multiple facts or dimensions of complex and multidimensional concept which are the basis of analysing governance, building scientific knowledge, assessing development priorities and influencing the ruling elites, even though some are better tools than others depending upon the purpose [51]. These are example sources of Triangulation methods adopted.

### Qualitative Research Design Technique

It is a systematic and subjective approach that is used to describe life experiences and give them meaning. It is basically exploratory research which is used to gain an understanding of bear facts, reasons, motivations and opinions. It gives more detailed information into the problems and helps in developing ideas or hypothesis for potential quantitative research. Qualitative research can also be used to uncover opinion and thoughts in trends that go deep into the problem. Its data collection varies, such as using unstructured or semi-structured techniques. Some examples of qualitative research methods are focus groups discussion, individual interviews, and participation or observations. Vividly its sample size is usually small in nature and respondents are selected to fulfil a chosen quota. A descriptive statistical analysis would be used for qualitative data designed in contrast to the quantitative study technique.

### Quantitative Research Design Technique

It is a formal, objective, and systematic process for obtaining information. It is a method used to describe, test relationships and examine cause and effects of relationships. Quantitative research is used to quantify problems and generate numerical data that can be transformed into ideal statistics. It quantifies attitudes, opinions, behaviours and any other defined variables, and in a way generalizing results from a larger sample population. It uses measurable data to formulate facts that uncover patterns in research. Moreover, Quantitative methods of collecting data are highly structured than Qualitative method of collecting data. Quantitative methods of collecting data have various forms of surveys e.g. online surveys, paper surveys, and mobile surveys.

## Why Qualitative and Quantitative Data Research Combined

According to Trow [51], and Brewer & Hunter [52] argued that social sciences researchers should start their research with the business of tackling the problems with the widest array of conceptual and methodological ways available as situation demands. There are several previous studies or research which combine some elements of both qualitative and quantitative. These authors and theories are for example [53, 54, 55].

According to Bryman [53], the purpose of combining qualitative and quantitative approaches is that:

1. Qualitative research facilitates quantitative research and vice versa.
2. The interpretation of the relationship between variables is facilitated by qualitative research.
3. Qualitative research captures the process while quantitative research captures the structure.
4. Both qualitative and quantitative research bridges the gap between micro and macro levels.
5. Quantitative research is subjective to generalization.
6. Triangulation purposes – Verifying or rejecting results from qualitative data using quantitative data or vice versa.

Another purpose for combining qual and quan is that: Qualitative research enriches information or analysis on variables that quantitative survey cannot obtain. It examines the generation of hypothesis from qualitative work which is then tested through the quantitative approaches. The following theories have used or combined both approaches, that is quantitative and qualitative methods.

The following Table 1 is a summary of the research design by categorization and simplification.

*Table 1: Summary of Research design*

Sample	Strategy Design	Choice	Unit of Analysis	Time Dimension	Data Collection Method/Tools
Probability	Survey	Quantitative	Individual	Simple random	Questionnaire
Non-Probability	Interview	Qualitative	Individual	Convenience	Questionnaire

Source: Adopted from Saunders et al. [56]

## Triangulation and Convergent Parallel Design

In simple terms, Triangulation is the process that increases the validity and credibility of research by validating the results of the study [56, 57, 58]. Triangulation, however, sometimes uses mixed methods to assess research validation. In this case, validity of research is used to establish a particular approach how correctly it measures variables in question and compared to how findings are so close to actual values or the concepts that is been examined.

In social sciences Triangulation is defined as mixing of methods or data to have diverse standpoints or viewpoints regarding the research topic [59]. In other words, mixing methodologies such as the use of survey data with interviews is the best form of Triangulation. Moreso, in this research perspective, both SmartPLS 4.1.1.4 is used for path models in SEM and Microsoft Excel 2019 version for distributive and frequency analysis.

Convergent Parallel Design is a research strategy of mixed methods where both qualitative and quantitative data are collected simultaneously and analysed separately, and merging the findings to produce a more complete understanding of the research topic.

## Population and Sampling Technique

The target population for this research is University of Education, Winneba students. This is because it is believed that they can speak clearly without any bias on Ghana's democracy in terms of them been students and backbone of the economy. Hence, UEW HR Level 300 Students are chosen and classified in this research as the Well-Informed-Persons (WIP) group adopted from Court [60]. Any sample size larger than 30 samples but less than 500 samples are considered as appropriate for most research. The total population for UEW HR Level 300 Students is 187, a data that has been acquired from their register or attendance sheet, officially.

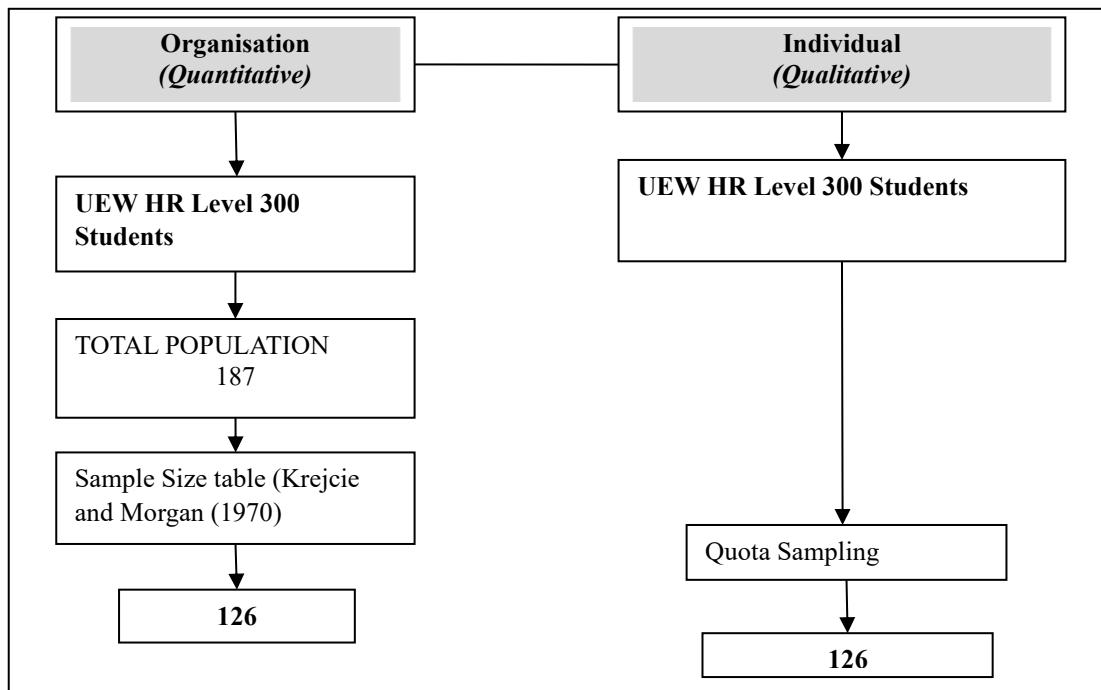
In determining the sample size for this research, an adequate sample size was adopted using Ahmad & Halim [61] formula. Therefore, the appropriate sample size is 126 as in table 2 below shows. Importantly, a pre-testing was conducted with 10 samples, and a further pilot test was also conducted with 55 samples to ascertain the accuracy, construct validity and reliability of the research methods and questions adopted for use. This is for the purpose of content and constructs validation and verification. Hence, simple random sampling method was considered. *Simple Random*: is a probability sampling procedure that ensures that each element in the population has an equal chance of being included in the sample. The researcher focusses on this methodology by using simple probability sampling technique because according to Cooper et al. [62] argued that using probability sampling technique has a high degree of precision and accuracy, since there is much similarity among the elements in a population that few of the cases represent characteristically. Qualitative research on the other hand, according to Creswell & Creswell [63] argued that qualitative research is to purposefully select participants who can best support the researcher to understand the problems pertaining to the objectives carried by the questions. In addition to this also, a non-probability sampling for qualitative data was adopted, hence, a quota sampling of 126 respondents was interviewed simultaneously by the same respondents of the survey. The non-probability sampling for the purpose of the qualitative data analysis is further divided into the following categories in Table 2 below, where their views and opinions were sorted. Sample targets for the survey and interview were the university students. Below Figure 3 is the sampling technique.

**Table 2: Non-Probability Sampling Frame for Qualitative Data**

Target Group	Why Select?	Whom to Interview	Quota Sample Size
UEW HR Level 300 Students	They are easily available and accessible	Using their class register or attendance sheet	126

Source: Krank & Wallbaum [64]

**Figure 4: Sampling Technique**



Source: Designed and Developed by the Authors (Not any Copyrighted or Proprietary Material)

The above Figure 4 is a sampling frame that defines the pictorial view of how the whole research is designed for methodology. In research, Sampling Technique refers to the methods for selecting a representative subset of a smaller number of individuals from the larger population of the study instead of investigating the total population or every member of the population.

**Figure 5: Sample Size**

Sample Size Estimations by different Authors					
<b>Krejcie and Morgan, (1970)</b>					
<b>Formula:</b>					
$s = \frac{X^2 NP(1-P)}{d^2(N-1)} + X^2 P(1-P)$					
where $s$ is the required sample size					
$X^2$ = the table value of chi-square for one degree of freedom at the desire confidence level					
where $X = 1.96$					
$N$ = the population size					
$P$ = the population proportion (assumed to be (.50) since this would provide the maximum sample size					
$d$ = the degree of accuracy expressed as a proportion (.05)					
Therefore: If $X = 1.96$					
$X^2 = 3.8416$ $N = 187$ $P = 0.5$ $d = 0.05$					
Hence: $s = \frac{179.5948}{1.4254}$					
$s = 126$ is the estimated Sample Size					

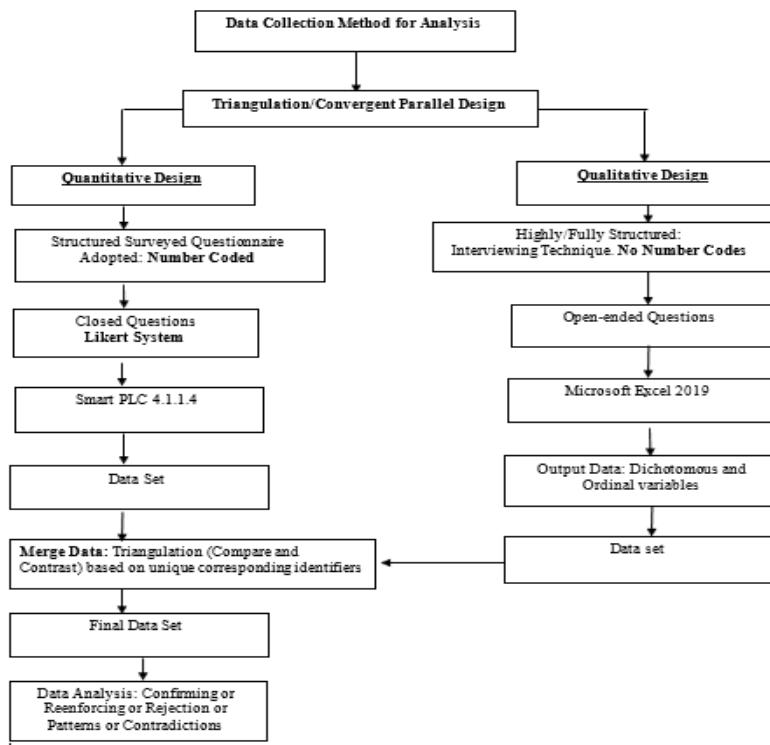
Source: Author Designed Excel Database for Castro et al. [65]

The above Figure 5 shows the calculation of sample size using Castro et al. [65] formula in excel format.

### Qualitative and Quantitative (Mixed Method) – Triangulation and Convergent Parallel Design

The Figure 6 below shows the mixed method of the research in form of qualitative and quantitative method using triangulation and convergent parallel designs.

**Figure 6: Mixed Method Structure for Data Collection**

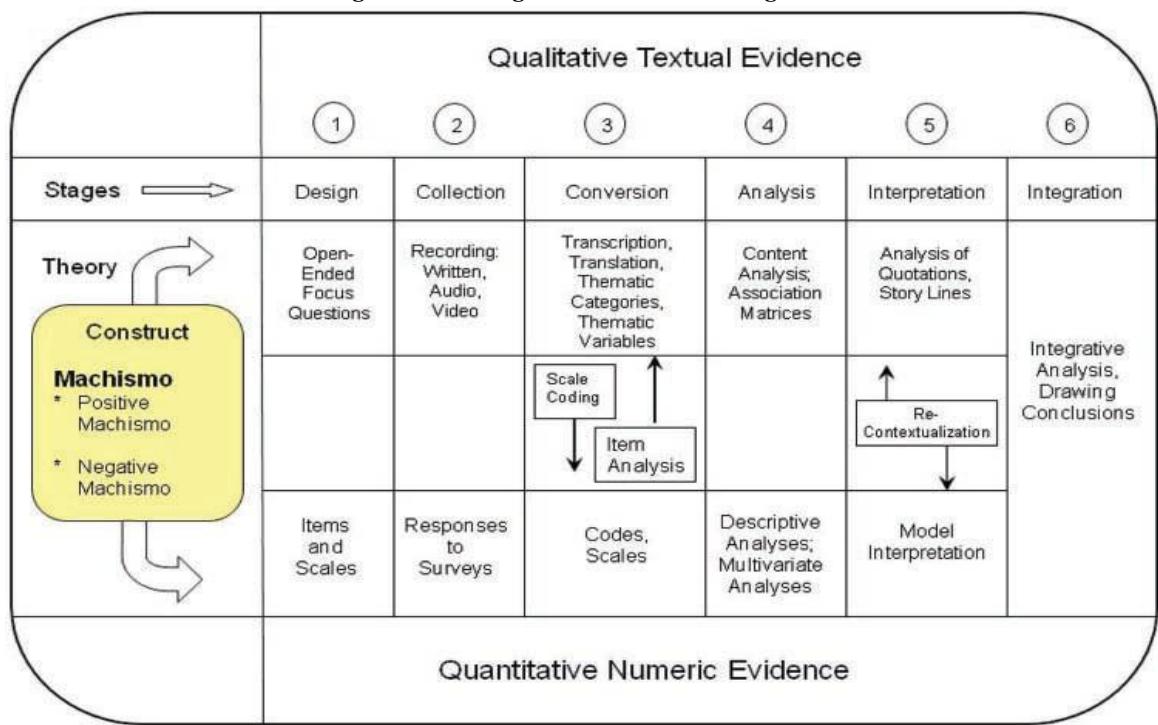


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### Paradigm For the Integrative Mixed Methods Research Approach

The below diagram is adopted from a theory a theory as a guide showing the paradigm of how mixed methods are conducted [65].

Figure 7: Paradigm Mixed Method Integrative



Source: Adopted from Castro et al. [65]

### Administration of the Survey and Interview Questionnaire Using Google Forms Designed

As showed in Figure 7 above, two sets of different questionnaires were designed. One specifically for the Quantitative survey and the other for the Qualitative interview. A google form was designed and a link was sent online to the level 300 students to gain access. They simultaneously responded and answered the questionnaires instantaneously. In view of this, due to the mixed method adopted, the research used the same sample size number calculated for the Quantitative survey for the same respondents to answer the interview questions for the Qualitative data for easy comparison and analyses results and findings.

### Technological Tools/Software to Run the Analysis

The research presentation and analysis were made possible using statistical analysis to examine relationships, differences and trends by the data type of SEM SmartPLS 4.1.1.4. and Microsoft Excel 2019. Combinations of this two software were used to run the data for analysis. Basically, SEM SmartPLS 4.1.1.4. was used to run the pilot test and the final test of the analysis for the Quantitative survey questionnaire constructs for content reliability, validity and other important analysis of the findings. Whereas the Microsoft Excel 2019 version was used to run the test designs and diagrams for Qualitative interview questionnaire for analysis. This means that two main types of Triangulations were adopted, these are, Methodological and Theoretical Triangulations. With Methodological Triangulation it means that using more than one method in collecting data that involves different approaches within a single method or distinct methodologies. Whereas Theoretical Triangulation simply refers to the use of more than one theoretical perspective or interpretative framework to analyse the same phenomenon that offers different ways of understanding the results.

### Reliability Test

This was for the purpose of testing for internal consistency of the instruments designed. SmartPLS 4 was used to generate this reliability analysis following the data derived under Cronbach Alpha coefficients. According to Hair et

al. [49] argued that a Cronbach alpha value of 0.6 and above means there is high reliability but below this value may be revised as appropriate. As the above Table 9 showed, among all the elements, only Follow Responsibilities seem to score low value below 0.6 but this may not change the final survey findings since it was only a construct.

### Content Validity

To determine the validity of the content, according to Jackson [66], stated that content validity determines whether the questionnaire covers the domain behaviours of the samples represented. First, the questionnaires were pre-tested and later presented to an expert for input. Hence, the questionnaire has gone through serious retrospective edition, and it was valid for the survey assessment and interview.

### Construct Validity

Brown [67] argued that a Confirmatory Factor Analysis (CFA) is often used to represent the first step towards the proposed measurement model in SEM. According to Hair et al. [49] argued that to assess accuracy of instrument design to measure theoretical construct or trait, then the rationale behind the theoretical measurement must be well understood. Therefore, SmartPLS 4.1.1.4 have been used to confirm the hypothesized structure of factors combined variables across groups. CFA validity is determined using the Goodness Fit Model as the below Table 3 shows the various theoretical decision levels for Model Fits.

**Table 3: CFA Validity for Goodness Fit Model Guide**

Author/Theory	Argument
Bakker et al. [68]	Normal Chi-Square ( $\chi^2/df$ ): If the value is $\leq 3.0$ it is considered good.
Browne & Cudeck [69]; Bakker et al. [68]	Root Mean Square Error of Approximation (RMSEA): If the value is $\leq 0.08$ it's considered as good index.
Bentler [70]	Comparative Fit Index (CFI): If it has a value $\geq 0.9$ and above that.
Hu & Bentler [71]	Root Mean Square Residual (RMSR): If it has value $\leq 0.08$

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### Data Analysis

The researcher used SmartPLS 4.1.1.4. statistical package to run the pilot data collected to ascertain the reliability and validity of the instrument designed. Since this research method is based on mixed method of analysis, descriptive, path models, and inferential statistics were calculated. This means that descriptive statistics are used to gain an understanding of the statistical test carried out on the hypothesis or data collected, whereas the inferential statistics were used for the purpose of generalization of the results that are obtained from the sample studied to the study population.

### Descriptive Analysis for the Qualitative Interview Data Collected

Hair et al. [49] stated that descriptive analysis is a calculation method using percentages, frequency distribution as well as mean score. And this is used to provide simple and basic information on the nature of the qualitative data collected purposefully. Especially, the descriptive analysis will be used for Integrity of Government policies. The calculation of means will be used to score the level of good governance and the general understanding of governance in perspective.

### Regression Analysis Explained

Hair et al. [49] stated that regression analysis is a method that allows the researcher to study the relationships between a dependent variable as against many other variables. Both Multiple and Hierarchical regressions are considered in this analysis.

- **Multiple Regressions**

This is used to determine various elements of independent variables influence on dependent variables and it uses regression estimation for predictions of values for variables. In this research analysis the  $R^2$  represents

multiple coefficients of determination as a proportion of variability in the dependent variable through various independent variables. Multiple regression ranges from 0.00 to +1.00.

- **Hierarchical Regression**

According to Barron & Kenny [72], they argued that mediation effects occur during previous significant effect of an independent variable on a dependent variable which totally diminishes because of adding a third variable known as mediator.

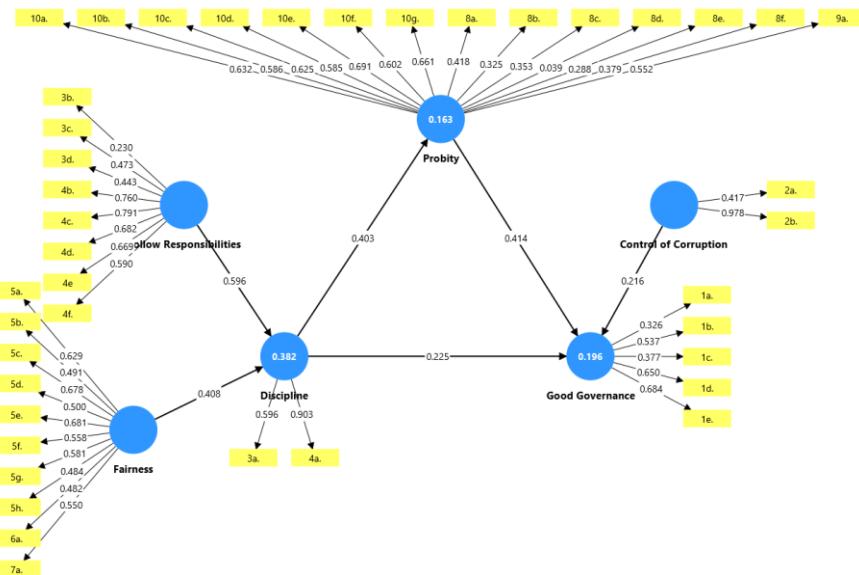
## Discussion

### Quantitative Data presentation

#### Algorithm Results in SmartPLS 4.1.1.4.

The below figure 8 shows the initial results of SmartPLS 4.1.1.4 and constructs strengths. In this context, no construction was deleted since all the constructions were considered viable and important to the research objectives [73].

**Figure 8: Algorithm Path Models Results**



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**Table 4: Path Coefficients**

Mean, STDEV, T values, p values	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	T statistics ( O/STDEV )	p values
Control of Corruption -> Good Governance	0.145	0.176	0.100	1.448	0.148
Discipline -> Good Governance	0.072	0.041	0.133	0.542	0.588
Discipline -> Probity	0.403	0.430	0.077	5.238	0.000
Fairness -> Discipline	0.183	0.207	0.080	2.283	0.022
Follow Responsibilities -> Discipline	0.516	0.518	0.065	7.910	0.000
Probity -> Good Governance	0.358	0.399	0.104	3.443	0.001

Source: Designed and Developed by the Authors (Not any Copyrighted or Proprietary Material)

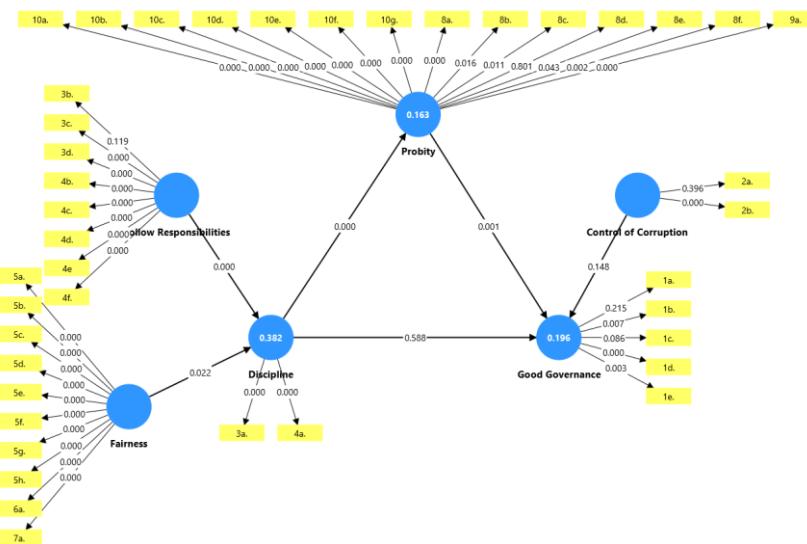
The above Table 4 shows that the path coefficient of the variables tested results in *t*-statistics and *p*-values. Path Coefficient measures the direct effect of a variable on another within a proposed model through and standardized regression weight. It quantifies how much one standard deviation changes in the independent variable associated with one standard deviation change in the dependent variable aside controlling for other variables within the proposed

model. The *t*-statistics are a value derived from hypothesis test that tells how the sample mean differs from the meaning of the population within the sample. In view of this clarity, the data results above indicate that the following variables are significant to each other with appropriate *p*-values. That is, Discipline to Probity has *t*-statistic value of 5.238 with *p*-value of 0.000 meaning they are significant. The *t*-statistics for Fairness and Discipline are 2.283 which has *p*-value of 0.022 and that is significant. Follow Responsibilities to Discipline is 7.910 with *p*-value of 0.000 meaning they are significant. Probity to Good Governance has a *t*-statistic value of 3.443 and a corresponding *p*-value of 0.001 which signifies that the two variables are significant. Ironically, Control of Corruption to Good Governance showed that it's of no significant meaning and there are not many effects between Control of Corruption to Good Governance. Also, Discipline to Good Governance is of no significance meaning that it does not have effect on the other variable.

### Path Model in Bootstrap

The following is a bootstrap result that shows the significance level of the variables and the construct factors (refer to Figure 9).

**Figure 9: Bootstrap Significance Results of the Variable and its Constructs or Factors**



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The above is the bootstrap run model for significance of the tested variables.

**Table 5: Total Indirect Effects**

Mean, STDEV, <i>t</i> -values, <i>p</i> -values					
	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	<i>T</i> statistics ( O/STDEV )	<i>p</i> values
Discipline -> Good Governance	0.144	0.170	0.050	2.871	0.004
Fairness -> Good Governance	0.040	0.046	0.035	1.115	0.265
Fairness -> Probity	0.074	0.091	0.042	1.757	0.079
Follow Responsibilities -> Good Governance	0.112	0.109	0.069	1.618	0.106
Follow Responsibilities -> Probity	0.208	0.223	0.050	4.122	0.000

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The above Table 5 showed Total Indirect effect of Discipline to Good Governance has a *t*-statistic value of 2.871 with *p*-value of 0.004 which is significant. Also, Follow Responsibility to Probity has 4.122 as its *t*-statistic with a corresponding *p*-value of 0.000 which depicts that they are significant. However, Fairness to Good Governance,

Fairness to Probity, and Follow Responsibilities to Good Governance are not significant between the variables since their *t*-statistics are below 2.000.

**Table 6: Specific Indirect Effects**

Mean, STDEV, <i>t</i> -values, <i>p</i> -values					
	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	<i>t</i> statistics ( O/STDEV )	<i>p</i> values
Fairness -> Discipline -> Probity -> Good Governance	0.026	0.035	0.018	1.460	0.144
Follow Responsibilities -> Discipline -> Probity -> Good Governance	0.074	0.088	0.030	2.493	0.013
Fairness -> Discipline -> Good Governance	0.013	0.011	0.030	0.442	0.659
Fairness -> Discipline -> Probity	0.074	0.091	0.042	1.757	0.079
Follow Responsibilities -> Discipline -> Good Governance	0.037	0.020	0.070	0.532	0.595
Follow Responsibilities -> Discipline -> Probity	0.208	0.223	0.050	4.122	0.000
Discipline -> Probity -> Good Governance	0.144	0.170	0.050	2.871	0.004

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From Table 6 above showed Specific Indirect Effect of the variables whereby Follow Responsibility to Discipline to Probity to Good Governance has *t*-statistics of 2.493 with *p*-value of 0.013 as significant. Also, Follow Responsibilities to Discipline to Probity has *t*-statistics of 4.122 with *p*-value of 0.000 show that they are significant. Whereas Discipline to probity to Good Governance has *t*-test value of 2.871 and *p*-value of 0.004 meaning they are significant. Meanwhile, Fairness to Discipline to Probity to Good Governance; Fairness to Discipline, to Good Governance; Fairness, Discipline, Probity; and follow Responsibilities to Discipline to Good Governance are not having effects on each other meaning they are not significant.

**Table 7: Total Effects**

Mean, STDEV, <i>t</i> values, <i>p</i> values					
	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	<i>t</i> statistics ( O/STDEV )	<i>p</i> values
Control of Corruption -> Good Governance	0.145	0.176	0.100	1.448	0.148
Discipline -> Good Governance	0.216	0.211	0.129	1.671	0.095
Discipline -> Probity	0.403	0.430	0.077	5.238	0.000
Fairness -> Discipline	0.183	0.207	0.080	2.283	0.022
Fairness -> Good Governance	0.040	0.046	0.035	1.115	0.265
Fairness -> Probity	0.074	0.091	0.042	1.757	0.079
Follow Responsibilities -> Discipline	0.516	0.518	0.065	7.910	0.000
Follow Responsibilities -> Good Governance	0.112	0.109	0.069	1.618	0.106
Follow Responsibilities -> Probity	0.208	0.223	0.050	4.122	0.000
Probity -> Good Governance	0.358	0.399	0.104	3.443	0.001

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The Table 7 above shows Total Effects of the variables where Discipline to Probity has  $t$ -test value of 5.238 with  $p$ -value of 0.000 meaning that they are significant. Fairness to Discipline has  $t$ -test value of 2.283 with  $p$ -value of 0.022 which shows that they are significant. Follow Responsibilities to Discipline has  $t$ -test value of 7.910 with  $p$ -value of 0.000 signifies that they are significant. Follow Responsibilities to Probity has  $t$ -test value of 4.122 with  $p$ -value of 0.000 meaning they are significant. And Probity to Good Governance has  $t$ -test value of 3.443 and a  $p$ -value of 0.001 shows that they are significant. Whereas. Control of Corruption to Good Governance; Discipline to Good Governance; Fairness to Good Governance; Fairness to Probity; and Follow Responsibilities to Good Governance are all not significant.

### Quality Criteria

*Table 8: R-square*

<u>Mean, STDEV, t values, p values</u>					
	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	$t$ statistics ( $ O/STDEV $ )	$p$ -values
Discipline	0.382	0.416	0.059	6.459	0.000
Good Governance	0.196	0.267	0.055	3.558	0.000
Probity	0.163	0.191	0.064	2.523	0.012

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The above Table 8 showed the  $R$  Square of the variables of the model which indicates that all are significant.

*Table 9: R-square adjusted*

<u>Mean, STDEV, t values, p values</u>					
	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	$t$ statistics ( $ O/STDEV $ )	$p$ values
Discipline	0.372	0.406	0.060	6.188	0.000
Good Governance	0.176	0.249	0.056	3.122	0.002
Probity	0.156	0.184	0.065	2.399	0.016

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The above Table 9 showed the  $R$  Square Adjusted of the variables of the model which indicates that all are significant.

*Table 10: f-square*

<u>Mean, STDEV, t values, p values</u>					
	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	$t$ statistics ( $ O/STDEV $ )	$p$ values
Control of Corruption -> Good Governance	0.025	0.053	0.047	0.535	0.593
Discipline -> Good Governance	0.005	0.021	0.032	0.171	0.864
Discipline -> Probity	0.194	0.244	0.103	1.893	0.058
Fairness -> Discipline	0.044	0.068	0.048	0.909	0.363
Follow Responsibilities -> Discipline	0.348	0.375	0.115	3.027	0.002
Probity -> Good Governance	0.129	0.184	0.094	1.369	0.171

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$f^2$  is another name for the  $R^2$  change effect which then explains how large a proportion of unexplained variance is accounted for by the  $R$  Square change [60]. According to Cohen [74] stated that 0.02 is noted as small  $f^2$  square, 0.15 is also noted as a medium  $f^2$  square effect, whereas 0.35 is noted as high  $f^2$  square effect size. The above Table 10 showed that only Follow Responsibilities to Discipline has  $t$ -distribution of 3.027 with  $p$ -value of 0.002 meaning their  $f^2$ -square is significant.

**Table 11: Average variance extracted (AVE)**

Mean, STDEV, $t$ -values, $p$ -values	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	$t$ -statistics ( $ O/STDEV $ )	$p$ - values
Control of Corruption	0.565	0.552	0.077	7.338	0.000
Discipline	0.585	0.585	0.042	14.035	0.000
Fairness	0.323	0.318	0.041	7.970	0.000
Follow Responsibilities	0.367	0.369	0.034	10.689	0.000
Good Governance	0.285	0.287	0.034	8.407	0.000
Probity	0.264	0.264	0.027	9.826	0.000

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This indicates a test for both convergent and divergent validity and it reflects the average communality for each factor in a reflective model. According to Chin [75], Hock & Ringle [76] argued that in an adequate model, the AVE should be greater than 0.50 and greater than the cross-loadings. This implies that the factors should be able to explain at least half of the variance of the indicators respectively. Table 11 above showed that the AVE's of the variables are all significant and qualified for the test.

**Table 12: Composite Reliability ( $\rho_c$ )**

Mean, STDEV, $t$ values, $p$ values	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	$t$ statistics ( $ O/STDEV $ )	$p$ values
Control of Corruption	0.691	0.602	0.220	3.138	0.002
Discipline	0.730	0.724	0.047	15.433	0.000
Fairness	0.824	0.813	0.038	21.826	0.000
Follow Responsibilities	0.809	0.804	0.031	26.143	0.000
Good Governance	0.649	0.600	0.113	5.757	0.000
Probity	0.815	0.805	0.031	26.401	0.000

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Composite reliability is noted to vary from 0 to 1 and 1 is being a perfect estimated reliability. According to Hock & Ringle [76]; Chin [75] argued that in an adequate model, composite reliabilities should be equal to or greater than 0.60 and that adequate model equal to or greater than 0.70 for confirmatory purposes [76]. And that when the composite reliabilities are equal to or greater than 0.80 is seen as good for confirmatory research [77]. Very high composite reliability is greater than 0.90. This means that Table 12 above showed that the Composite Reliability ( $\rho_c$ ) are all significant with true reliability.

**Table 13: Composite reliability (rho\_a)**

Mean, STDEV, t values, p values	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	t- statistics ( O/STDEV )	p-values
Control of Corruption	0.918	0.521	35.215	0.026	0.979
Discipline	0.398	0.409	0.246	1.617	0.106
Fairness	0.771	0.766	0.065	11.858	0.000
Follow Responsibilities	0.798	0.800	0.035	22.577	0.000
Good Governance	0.398	0.409	0.121	3.282	0.001
Probity	0.799	0.796	0.039	20.523	0.000

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From the above Table 13 indicates that Fairness, Follow Responsibilities, Good Governance, and Probity are all significant whereas Control of Corruption and Discipline is not significant in the model.

**Table 14: Cronbach's Alpha**

Mean, STDEV, t-values, p-values	Original sample (O)	Sample means (M)	Standard deviation (STDEV)	t-statistics ( O/STDEV )	p-values
Control of Corruption	0.359	0.344	0.138	2.600	0.009
Discipline	0.323	0.313	0.119	2.713	0.007
Fairness	0.764	0.758	0.043	17.865	0.000
Follow Responsibilities	0.742	0.738	0.040	18.458	0.000
Good Governance	0.372	0.361	0.101	3.681	0.000
Probity	0.768	0.765	0.030	25.590	0.000

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Cronbach's Alpha addresses the problem of indicators for variables that display convergent validity and reliability. The same cutoff applies such as equal to or greater than 0.80 is termed as good scale, 0.70 is termed as acceptable scale, and for exploratory purposes 0.60 is the preferred scale. Since Cronbach's Alpha is biased against short scales of two or three items, hence, this small discrepancy of falling short of the cutoff for an adequate confirmatory scale is usually ignored. From the above Table 14, all the variables are significant for the model.

**Table 15: Latent Variable Correlations**

Mean, STDEV, t-values, p-values	Original sample (O)	Sample means (M)	Standard Deviation (STDEV)	t-statistics ( O/STDEV )	p-values
Discipline <-> Control of Corruption	0.057	0.059	0.105	0.541	0.589
Fairness <-> Control of Corruption	0.164	0.150	0.132	1.246	0.213
Fairness <-> Discipline	0.408	0.441	0.077	5.317	0.000
Follow Responsibilities <-> Control of Corruption	0.064	0.067	0.126	0.512	0.609
Follow Responsibilities <-> Discipline	0.596	0.612	0.049	12.050	0.000
Follow Responsibilities <-> Fairness	0.438	0.452	0.076	5.752	0.000
Good Governance <-> Control of Corruption	0.216	0.256	0.106	2.040	0.041
Good Governance <-> Discipline	0.225	0.220	0.131	1.709	0.088
Good Governance <-> Fairness	0.399	0.378	0.109	3.656	0.000
Good Governance <-> Follow Responsibilities	0.155	0.163	0.126	1.234	0.217

Probity <-> Control of Corruption	0.188	0.193	0.118	1.590	0.112
Probity <-> Discipline	0.403	0.430	0.077	5.238	0.000
Probity <-> Fairness	0.469	0.478	0.089	5.260	0.000
Probity <-> Follow Responsibilities	0.462	0.470	0.080	5.739	0.000
Probity <-> Good Governance	0.414	0.453	0.089	4.658	0.000

Source: Designed and Developed by the Authors (Not any Copyrighted or Proprietary Material)

The above Table 15 showed that the variable paths that are correlated are between Fairness and Discipline, Follow Responsibility and Discipline, Follow Responsibilities and Fairness, Good Governance and Control of Corruption, Good Governance and Fairness, Probity and Discipline, Probity and Fairness, Probity and Follow Responsibilities, and Probity and Good Governance.

Ironically, the following are not correlated from the test. These are Discipline and Control of Corruption, Fairness and Control of Corruption, Follow Responsibilities and Control of Corruption, Good Governance and Discipline, Good Governance and Follow Responsibilities, and Probity and Control of Corruption.

**Table 16: Descriptive Analysis Table**

	Mean	Median	Observed min	Observed max	Standard deviation	Excess kurtosis	Skewness	Number of observations used	Cramér -von Mises test statistic	Cramér -von Mises p value
1a.	2.992	3.000	1.000	5.000	0.930	0.397	0.435	126.000	1.856	0.000
1b.	3.698	4.000	1.000	5.000	1.341	-0.768	-0.672	126.000	1.144	0.000
1c.	2.897	3.000	1.000	5.000	1.097	-0.312	0.426	126.000	1.109	0.000
1d.	2.817	3.000	1.000	5.000	1.218	-0.846	0.116	126.000	0.647	0.000
1e.	3.095	3.000	1.000	5.000	1.428	-1.310	-0.137	126.000	0.669	0.000
2a.	3.008	3.000	1.000	5.000	1.080	-0.576	-0.092	126.000	0.819	0.000
2b.	2.992	3.000	1.000	5.000	1.043	-0.353	0.059	126.000	0.974	0.000
3a.	2.675	3.000	1.000	5.000	1.147	-0.697	0.315	126.000	0.778	0.000
3b.	3.254	3.000	1.000	5.000	1.272	-1.026	-0.185	126.000	0.630	0.000
3c.	3.548	3.000	1.000	5.000	1.238	-1.091	-0.225	126.000	0.986	0.000
3d.	2.976	3.000	1.000	5.000	1.275	-1.036	0.161	126.000	0.665	0.000
4a.	3.675	4.000	1.000	5.000	1.284	-0.325	-0.805	126.000	1.040	0.000
4b.	4.024	5.000	1.000	5.000	1.306	-0.100	-1.105	126.000	2.372	0.000
4c.	3.492	4.000	1.000	5.000	1.200	-0.231	-0.720	126.000	1.058	0.000
4d.	3.516	4.000	1.000	5.000	1.582	-1.413	-0.455	126.000	1.626	0.000
4e.	3.563	4.000	1.000	5.000	1.300	-0.660	-0.591	126.000	0.836	0.000
4f.	3.429	3.000	1.000	5.000	1.231	-0.913	-0.273	126.000	0.694	0.000
5a.	3.579	4.000	1.000	5.000	1.519	-1.327	-0.511	126.000	1.605	0.000
5b.	2.802	3.000	1.000	5.000	1.077	-0.311	0.559	126.000	1.129	0.000
5c.	3.540	4.000	1.000	5.000	1.331	-0.917	-0.474	126.000	0.840	0.000
5d.	3.230	3.000	1.000	5.000	1.196	-0.787	-0.089	126.000	0.723	0.000
5e.	3.746	4.000	1.000	5.000	1.259	-0.697	-0.642	126.000	1.090	0.000
5f.	3.540	4.000	1.000	5.000	1.325	-0.882	-0.552	126.000	0.924	0.000
5g.	2.619	3.000	1.000	5.000	1.090	-0.278	0.435	126.000	0.898	0.000
5h.	3.143	3.000	1.000	5.000	1.213	-0.889	-0.089	126.000	0.633	0.000
6a.	3.222	3.000	1.000	4.000	0.916	0.154	-1.022	126.000	1.831	0.000
7a.	3.048	3.000	1.000	4.000	1.045	-0.751	-0.729	126.000	1.542	0.000

8a.	3.508	4.000	1.000	5.000	1.146	-0.497	-0.548	126.000	0.984	0.000
8b.	3.222	3.000	1.000	5.000	1.201	-0.801	-0.160	126.000	0.663	0.000
8c.	3.294	3.000	1.000	5.000	1.328	-1.089	-0.226	126.000	0.634	0.000
8d.	3.183	3.000	1.000	5.000	1.072	-0.495	0.176	126.000	1.128	0.000
8e.	3.341	3.000	1.000	5.000	1.242	-0.806	-0.348	126.000	0.680	0.000
8f.	3.286	3.000	1.000	5.000	1.284	-1.093	-0.186	126.000	0.664	0.000
9a.	2.730	3.000	1.000	4.000	1.011	-1.114	-0.181	126.000	0.969	0.000
10a.	3.286	4.000	1.000	5.000	1.452	-1.260	-0.338	126.000	0.816	0.000
10b.	3.548	4.000	1.000	5.000	1.219	-0.413	-0.644	126.000	0.887	0.000
10c.	3.389	4.000	1.000	5.000	1.368	-1.053	-0.394	126.000	0.732	0.000
10d.	3.698	4.000	1.000	5.000	1.274	-0.607	-0.697	126.000	1.044	0.000
10e.	3.778	4.000	1.000	5.000	1.194	-0.312	-0.720	126.000	1.017	0.000
10f.	3.817	4.000	1.000	5.000	1.353	-0.780	-0.751	126.000	1.643	0.000
10g.	3.659	4.000	1.000	5.000	1.310	-0.573	-0.759	126.000	1.185	0.000

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Table 16 above shows that all the constructs were significant through descriptive means of the variables tested.

**Table 17: Qualitative Data Presentation**

Quality of Governance (QoG)						
	Statements					
1a	No punishment for leaders of government who breaks the laws					
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	
	10	68	17	19	12	<b>126</b>
%	8%	54%	13%	15%	10%	<b>100%</b>
1b	Citizens don't influence government decisions					
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	
	13	18	26	54	15	<b>126</b>
%	10%	14%	21%	43%	12%	<b>100%</b>
1c	Government treats both Rich and poor people equally					
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	
	8	72	22	15	9	<b>126</b>
%	6%	57%	17%	12%	7%	<b>100%</b>
1d	From 1993 to date Governance systems in Ghana are on the right direction					
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	
	22	47	32	20	5	<b>126</b>
%	17%	37%	25%	16%	4%	<b>100%</b>
1e	From 1993 Governance systems in Ghana are in the wrong direction					
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree	
	25	18	29	33	20	<b>125</b>
%	20%	14%	23%	26%	16%	<b>100%</b>
<b>Control of Corruption</b>						
	Statements					
2a	The level of corruption and bribe-taking in local/municipal government sectors					

	Don't Know/Can't Say	Almost everyone is corrupt	Most officials are corrupt	Not a lot of officials are corrupt	Hardly anyone is involved		
	9	59	41	13	4	<b>126</b>	
%	7%	47%	33%	10%	3%	<b>100%</b>	
2b	The level of corruption and bribe-taking within the national government						
	Don't Know/Can't Say	Almost everyone is corrupt	Most officials are corrupt	Not a lot of officials are corrupt	Hardly anyone is involved		
	8	49	57	8	4	<b>126</b>	
%	6%	39%	45%	6%	3%	<b>100%</b>	
<b>Section B</b>	<b>Discipline</b>						
Follow Responsibilities - Satisfaction with government service							
3a	Government enables economy for businesses to flourish/grow.						
	Don't know	Not at all satisfied	A little satisfied	Somewhat satisfied	Completely satisfied		
	8	41	51	17	9	<b>126</b>	
%	6%	33%	40%	13%	7%	<b>100%</b>	
3b	Free Senior High School Scheme (newly introduced)						
	Don't know	Not at all satisfied	A little satisfied	Somewhat satisfied	Completely satisfied		
	5	32	37	29	23	<b>126</b>	
%	4%	25%	29%	23%	18%	<b>100%</b>	
3c	National Health Insurance Scheme (NHIS)						
	Don't know	Not at all satisfied	A little satisfied	Somewhat satisfied	Completely satisfied		
	4	16	41	28	37	<b>126</b>	
%	3%	13%	33%	22%	29%	<b>100%</b>	
3d	Local government Service						
	Don't know	Not at all satisfied	A little satisfied	Somewhat satisfied	Completely satisfied		
	7	14	43	39	22	<b>125</b>	
%	6%	11%	34%	31%	18%	<b>100%</b>	
4a	Wages, incomes and salaries						
	Don't know	Unimportant	Important	Very Important	Most Important		
	4	4	30	39	49	<b>126</b>	
%	3%	3%	24%	31%	39%	<b>100%</b>	
4b	Unemployment						
	Don't know	Unimportant	Important	Very Important	Most Important		
	4	5	26	24	67	<b>126</b>	
%	3%	4%	21%	19%	53%	<b>100%</b>	
4c	Transportation						
	Don't know	Unimportant	Important	Very Important	Most Important		
	3	6	40	41	36	<b>126</b>	
%	2%	5%	32%	33%	29%	<b>100%</b>	

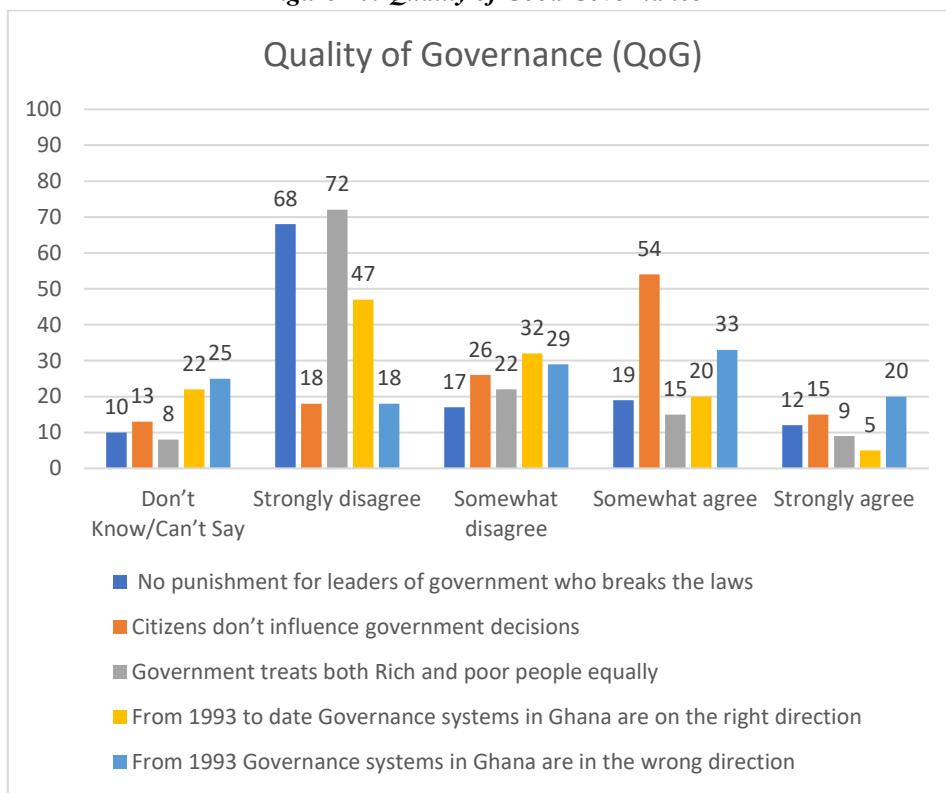
4d	Corruption						
	Don't know	Unimportant	Important	Very Important	Most Important		
	6	16	26	19	59	<b>126</b>	
%	5%	13%	21%	15%	47%	<b>100%</b>	
4e	National Database						
	Don't know	Unimportant	Important	Very Important	Most Important		
	8	3	45	44	25	<b>125</b>	
%	6%	2%	36%	35%	20%	<b>100%</b>	
4f	Proper addresses for houses and other locations						
	Don't know	Unimportant	Important	Very Important	Most Important		
	3	5	51	49	18	<b>126</b>	
%	2%	4%	40%	39%	14%	<b>100%</b>	
Fairness							
5a	People choose government leaders in free and fair election.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		
	3	14	29	38	42	<b>126</b>	
%	2%	11%	23%	30%	33%	<b>100%</b>	
5b	Government does not waste any public money.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		
	6	54	42	19	4	<b>125</b>	
%	5%	43%	34%	15%	3%	<b>100%</b>	
5c	People are free to organize political groups.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		
	4	19	26	33	42	<b>124</b>	
%	3%	15%	21%	27%	34%	<b>100%</b>	
5d	Government provides people with quality public services.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		
	8	38	35	28	17	<b>126</b>	
%	6%	30%	28%	22%	13%	<b>100%</b>	
5e	Government ensures law and order.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		
	3	16	16	55	36	<b>126</b>	
%	2%	13%	13%	44%	29%	<b>100%</b>	
5f	Media is free to criticize the things government does.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		
	18	10	19	31	47	<b>125</b>	
%	14%	8%	15%	25%	38%	<b>100%</b>	
5g	Politics is clean and free of corruption.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		

	8	66	29	9	14	<b>126</b>	
%	6%	52%	23%	7%	11%	<b>100%</b>	
5h	The court protects the ordinary people from the abuse of government power.						
	Don't Know/Can't Say	Strongly disagree	Somewhat disagree	Somewhat agree	Strongly agree		
	15	31	35	27	18	<b>126</b>	
%	12%	25%	28%	21%	14%	<b>100%</b>	
<b>Section C</b>	<b>Probity</b>						
	<b>Statements</b>						
6a	Officials who commit crimes go unpunished						
	Don't Know/Can't Say	Rarely	Sometimes	Most of the time	Always		
	14	24	48	34	5	<b>125</b>	
%	11%	19%	38%	27%	4%	<b>100%</b>	
6b	Government officials withholding important information from the public view						
	Don't Know/Can't Say	Rarely	Sometimes	Most of the time	Always		
	8	21	52	43	2	<b>126</b>	
%	6%	17%	41%	34%	2%	<b>100%</b>	
6c	Our elections offer the voters a real choice between different parties/candidates						
	Don't Know/Can't Say	Rarely	Sometimes	Most of the time	Always		
	7	14	53	25	26	<b>125</b>	
%	6%	11%	42%	20%	21%	<b>100%</b>	
6d	Government responds to what people want/national needs						
	Don't Know/Can't Say	Rarely	Sometimes	Most of the time	Always		
	8	21	69	18	10	<b>126</b>	
%	6%	17%	55%	14%	8%	<b>100%</b>	
6e	People voice their interests and concerns in local affairs within the local government service						
	Don't Know/Can't Say	Rarely	Sometimes	Most of the time	Always		
	4	15	42	44	21	<b>126</b>	
%	3%	12%	33%	35%	17%	<b>100%</b>	
6f	National elections' make the government of Ghana to pay attention to the plights or wishes of the people						
	Don't Know/Can't Say	Rarely	Sometimes	Most of the time	Always		
	3	15	46	33	29	<b>126</b>	
%	2%	12%	37%	26%	23%	<b>100%</b>	
7	The governments had worked and always working hard since 1993 to crack down on corruption and to also root out bribery						
	They have been doing its best about it	They have been doing something about it	They have not been doing much about it	They have been doing nothing about it			
	11	52	41	22	<b>126</b>		
%	9%	41%	33%	17%	<b>100%</b>		
Integrity in the Government Financial Sector for Projects and Investment							

	Challenges about government investment initiatives					
8a	Lack of involvement of private sector actors/firms					
	Don't Know/Can't Say	Not applicable	Is not a challenge	It is somewhat a challenge	It is a major challenge	
	24	10	10	19	41	<b>104</b>
%	23%	10%	10%	18%	39%	<b>100%</b>
8b	Lack of capacities at the sub-national level to implement investment projects					
	Don't Know/Can't Say	Not applicable	Is not a challenge	It is somewhat a challenge	It is a major challenge	
	13	7	19	45	42	<b>126</b>
%	10%	6%	15%	36%	33%	<b>100%</b>
8c	Weak long term strategic planning for public investment; a focus on short term priorities					
	Don't Know/Can't Say	Not applicable	Is not a challenge	It is somewhat a challenge	It is a major challenge	
	7	11	26	37	45	<b>126</b>
%	6%	9%	21%	29%	36%	<b>100%</b>
8d	Insufficient evidence-based investment policy (lack of economic research on regional needs)					
	Don't Know/Can't Say	Not applicable	Is not a challenge	It is somewhat a challenge	It is a major challenge	
	13	11	17	45	40	<b>126</b>
%	10%	9%	13%	36%	32%	<b>100%</b>
8e	Administrative obstacles and red tape or bureaucracy.					
	Don't Know/Can't Say	Not applicable	Is not a challenge	It is somewhat a challenge	It is a major challenge	
	14	8	14	34	56	<b>126</b>
%	11%	6%	11%	27%	44%	<b>100%</b>
8f	Fraud/corruption in public procurement.					
	Don't Know/Can't Say	Not applicable	Is not a challenge	It is somewhat a challenge	It is a major challenge	
	2	5	12	30	77	<b>126</b>
%	2%	4%	10%	24%	61%	<b>100%</b>
8g	Lack of fiscal discipline					
	Don't Know/Can't Say	Not applicable	Is not a challenge	It is somewhat a challenge	It is a major challenge	
	9	7	24	41	45	<b>126</b>
%	7%	6%	19%	33%	36%	<b>100%</b>

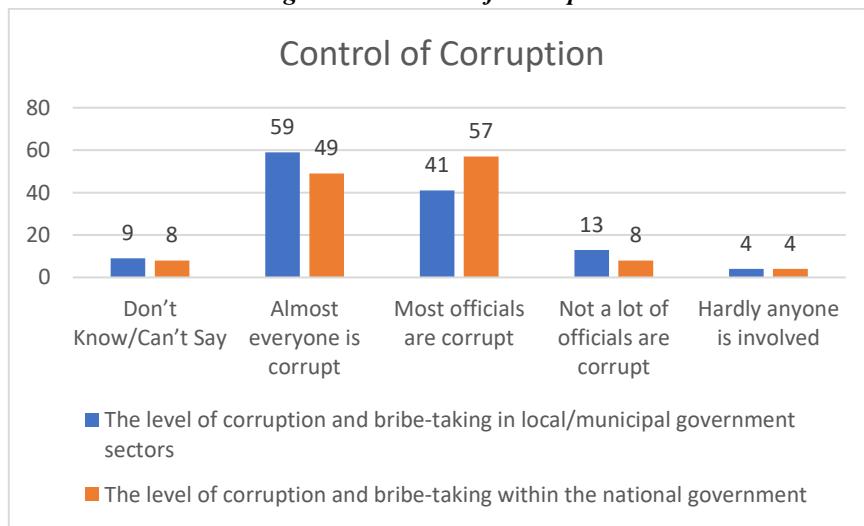
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The above Table 17 shows the frequencies and percentages of the variables and their constructs. While below figures depict all the graphical presentation of the data.

**Figure 10: Quality of Good Governance**

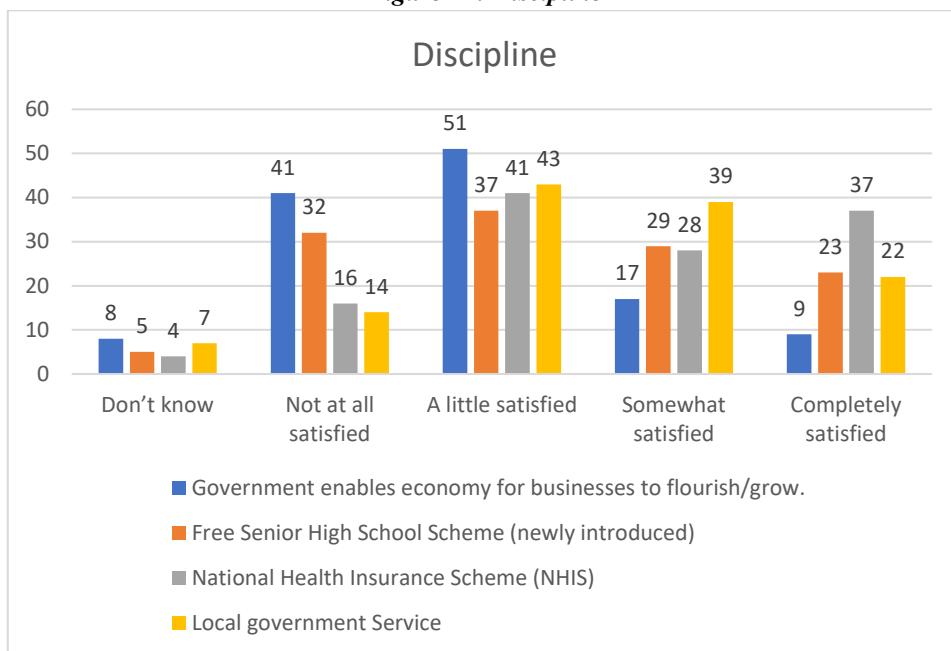
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The above Figure 10 graph shows that 72 respondents out of 126 expected participants representing 57% chose strongly to disagree with the fact that the quality of Good Governance is lacking tremendously since governments don't treat rich and poor people equally. However, chose somewhat to agree as the next option because citizens don't influence government decisions which has 54 responses with 43% as the second option. They ironically, strongly disagree with the fact that from 1993 to date governance systems in Ghana are on the right direction which scored as low as 4% for only 5 responses out of 126.

**Figure 11: Control of Corruption**

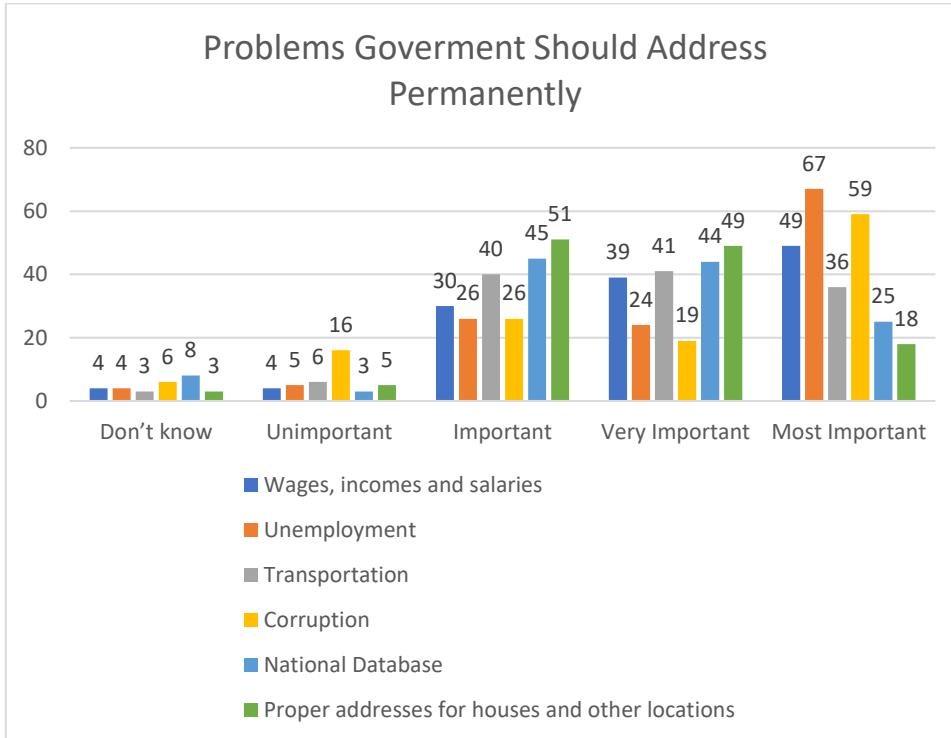
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From the graph above in Figure 11 shows that almost everyone is corrupt followed by most officials who are corrupt. These have responses of 59 and 57 representing 47% and 45% respectively. It also shows that hardly anyone is involved in corruption and bribes taking into the local/municipal government sector likewise within the national government. These have responses of 4 each represent 3% each of the responses.

**Figure 12: Discipline**

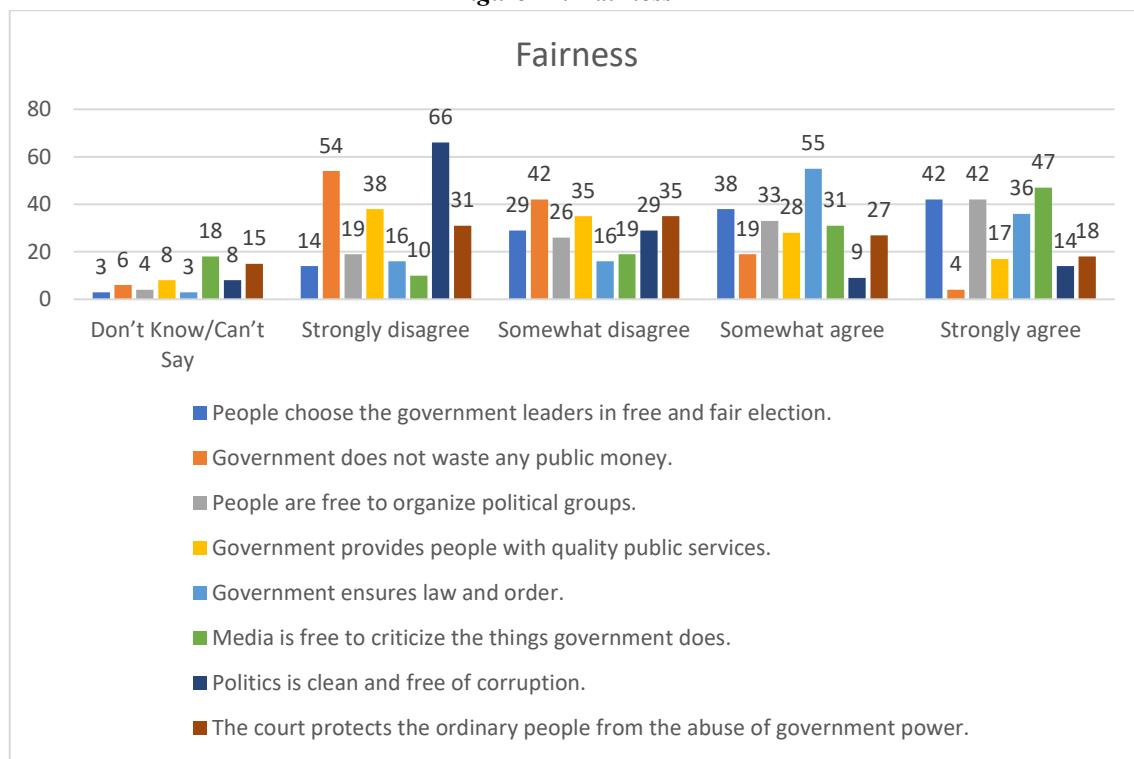
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From the Figure 12 above it indicates that 51 responses representing 40% chose a little satisfied towards government enabling economy for businesses to flourish or grow. The least choice was 3% which shows they don't know how government is doing to support businesses at the level of National Health Insurance Scheme (NHIS).

**Figure 13: Problems of Government**

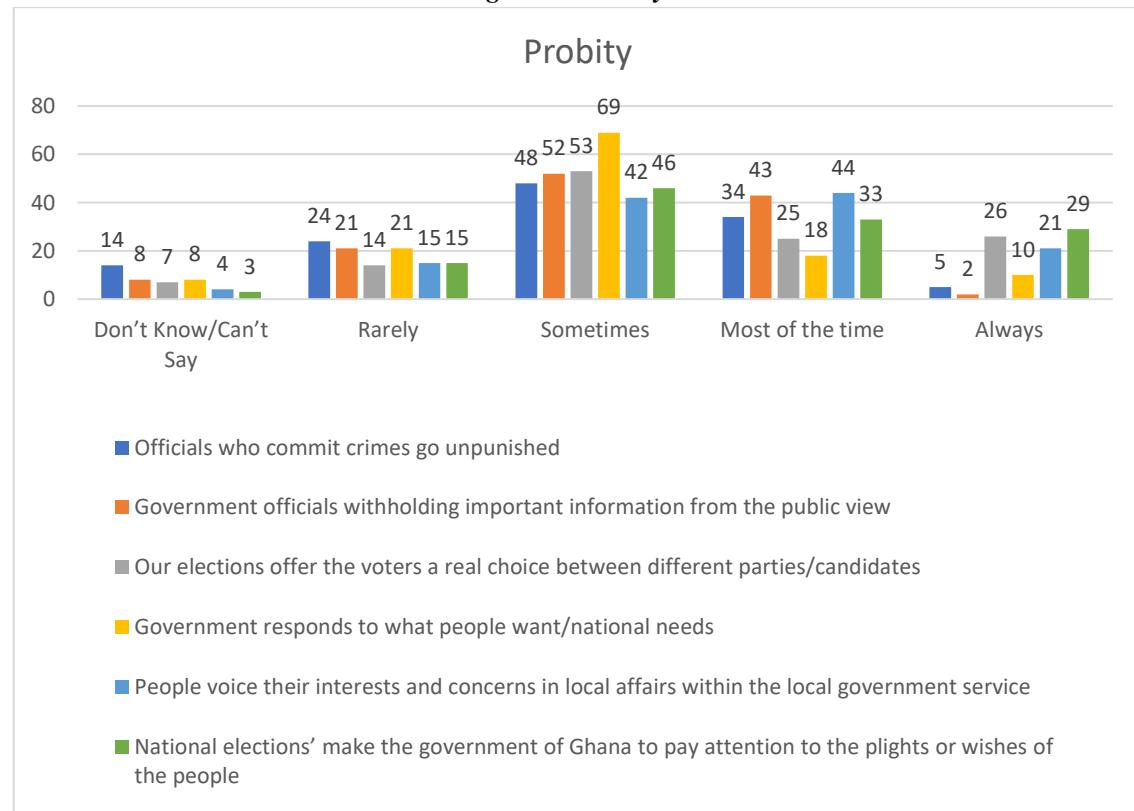
Source: Designed and Developed by the Authors (Not any Copyrighted or Proprietary Material)

The graph above in Figure 13 shows that the respondents chose unemployment as the most important problem that government must solve. It represents 53% of the responses whereas corruption was the second choice among the problems followed by wages, incomes and salaries. The participants, however, felt that national database is unimportant among government challenges.

**Figure 14: Fairness**

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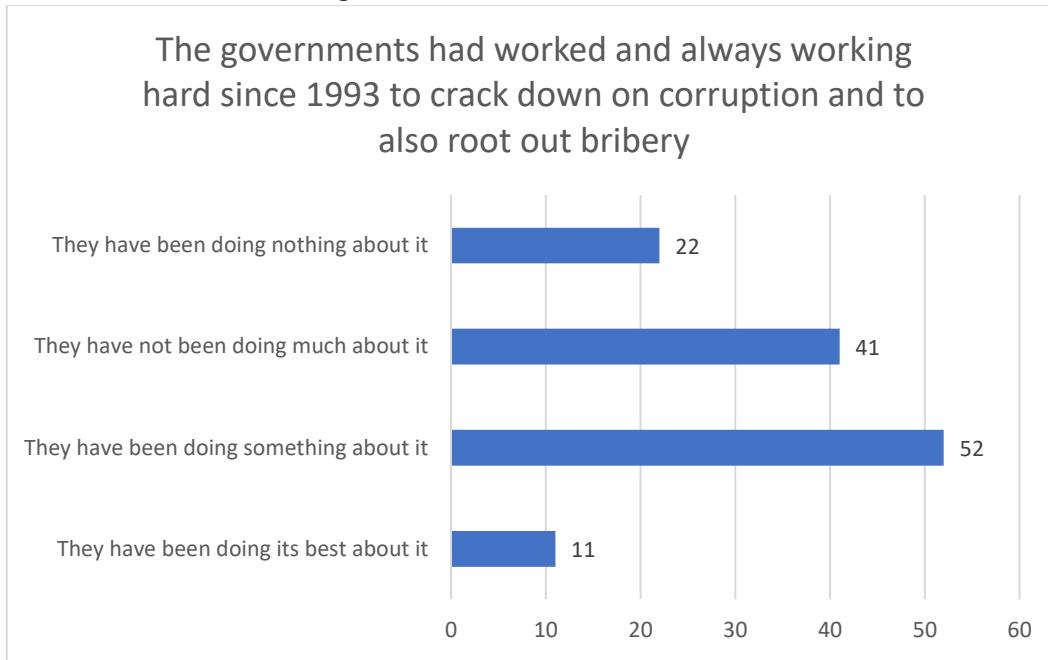
Figure 14 above shows the discipline by fairness where the 66 participants chose strongly to disagree for the simple reason that politics is not clean and free from corruption. This represented 52% of the total participants whereas the second choice is somewhat agreed because they believe government ensures law and order and this represents 44% of the total participants.

**Figure 15: Probity**

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The above graph in Figure 15 shows that 69 responses representing 55% indicated that sometimes they feel government responds to what people want or the national needs of the people. The second choice is still sometimes since they choose elections offer the voters a real choice between different parties or candidates. Followed by sometimes government officials withholds important information from the public view.

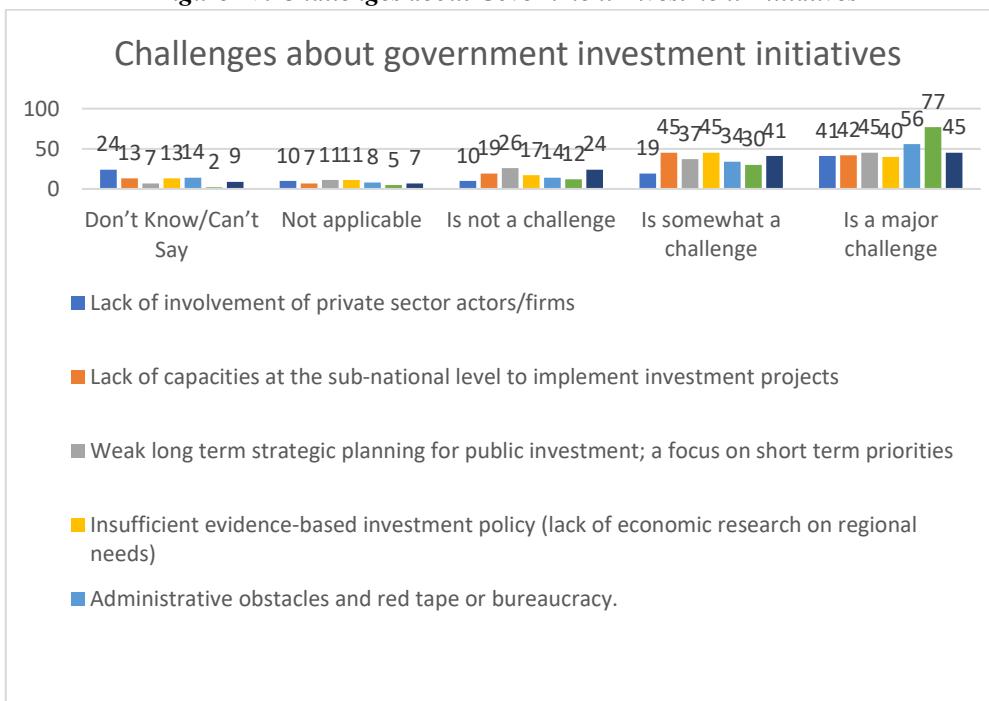
**Figure 16: Government Jobs since 1993**



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The graph above in Figure 16 shows that 52 responses representing 41% chose they have been doing something about it regarding the government's previous works and have always been working hard since 1993 to crack down on corruption and to also root out bribery. Even though the next choice by the participants is that government has not been doing much about corruption and bribes taking representing 33% of the total responses.

**Figure 17: Challenges about Government Investment Initiatives**



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Figure 17 above shows that fraud or corruption in public procurement is a major challenge to government. It has 77 responses representing 61% of the total responses. The next response is 56 representing 44% as administrative obstacles and red tape or bureaucracy to be the second major challenge.

### Merge Data: Triangulation (Compare and Contrast) based on Unique Corresponding Identifiers

#### Analysis

Quantitative Analysis	Qualitative Analysis
The total direct effects showed significance between Discipline and Good Governance, and between Follow Responsibilities and Probity.	The participants strongly disagree with Quality of Governance since government does not treat both rich and poor people equally.
The research indicates that the specific indirect effects were significance within the following variables and its constructs such as Follow Responsibilities to Discipline to Probity to Good Governance; Follow Responsibilities to Discipline to Good Governance; and Discipline to Probity to Good Governance.	It is clear and undisputable fact that participants indicated that almost everyone is corrupt likewise most officials are also corrupt since government fails to control corruption.
Total effects showed significance between Discipline and Probity, Fairness and Discipline, Follow Responsibilities and Discipline, Follow Responsibilities and Probity, and Probity and Good Governance.	It is believed that the participants were little satisfied at the pace by which government enables economy for businesses to flourish or grow since there is not much discipline in the governance systems.
The Outer Loadings of the variables that showed significance at each construct are Good Governance (1a, 1d, 1e, 2b); Discipline (3a, 3c, 3d, 4a, 4b, 4c, 4d, 4e, 4f, 5a, 5b, 5c, 5d, 5e, 5f, 5g, 5h, 6a, 7a); and Probity (8a, 8b, 8c, 8e, 8f, 9a, 10a, 10b, 10c, 10d, 10e, 10f, 10g).	The participants indicated that unemployment is the most important problem that government should address permanently. This was followed by corruption as second most important problem that government must curb amicably.
In terms of quality criteria of the data, R-square of the variables showed that all the variables were significant, that is, Discipline, Good Governance, and Probity. Moreso, the R-square Adjusted of the variables are all significant namely Discipline, Good Governance, and Probity. But with regards to the $f^2$ only Follow Responsibilities to Discipline is significant.	<p>The participants indicated that sometimes government responds to what people want or national needs since Probity is in practice. It is also shown that government has been doing something about corruption to root out bribery as well since 1993.</p> <p>Finally, the participants indicated that the major challenge about the government investment initiative is a major challenge to be solved.</p>

#### Discussion

##### Calculation for Mediation decision for the Model

Baron & Kenny [72]; James & Brett [79]; and Judd & Kenny [80] presented four steps in determining a mediation on independent and dependent variables. Below are the steps to follow:

**First Step:** A researcher must show that the independent variable is correlated to the dependent variable (that is, causal variable correlating to the outcome variable).

**Second Step:** A researcher must show that the independent variable is correlated with the mediator variable.

**Third Step:** A researcher must show that the mediator variable affects the dependent or outcome variable.

**Fourth Step:** For a researcher to conclude by establishing that there is a complete mediation between the independent and dependent variables, then the direct effect should be zero. Though the third and fourth step effects are estimated in the same equation. The formula for these steps is: total effect = direct effect + indirect effect  

$$a = b + cd$$

If all these four steps are met and satisfied from findings, then the data are consistent with the hypothesis where the mediating variable completely mediates the relationship between the independent and dependent variables. But if the first three steps are met and step four is not, then, the indication is that there is partial mediation.

### Using Baron & Kenny [72]; James & Brett [79]; and Judd & Kenny [80] Method

From the path model, the following have been deduced for the mediation to be decided according to the above theory.

**First Step:** There is no significant relationship between Discipline and Good Governance.

**Second Step:** There is significant relationship between Discipline and Probity.

**Third Step:** There is significant relationship between Probity and Good Governance.

**Fourth Step:** Total Effect = Direct Effect + Indirect Effect

$$a = b + cd$$

That is,  $a = 0.225 + (0.403 \times 0.414)$

$$a = 0.225 + 0.167 = \mathbf{0.392}$$

The direct effect is not zero therefore fourth step is not satisfied. Hence, there is **Partial Mediation** in this research study between Discipline and Good Governance, which partially mediated by Probity. In this instance, step one is not met but steps 2 and 3 are partially met.

### Confirmation of the Hypothesis

**H<sub>1</sub>:** There is significant relationship between Discipline and Good Governance (**not supported**)

**H<sub>2</sub>:** There is significant relationship between Discipline and Probity (**achieved/supported**)

**H<sub>3</sub>:** There is significant relationship between Probity and Good Governance (**achieved/supported**)

**H<sub>4</sub>:** Probity mediates the relationship between Discipline and Good Governance (**not supported**)

### New Knowledge of Findings has been Discovered

From the research findings and analysis of the path model, some of the constructs that were not original having relationship or correlations have shown in the results that they have some relationship between some of the constructs and the variables. This new knowledge is as follows from Table 15.

1. Fairness as a variable construct is correlated to its independent variable of Discipline.
2. Follow Responsibilities as a variable construct is correlated to its independent variable of Discipline.
3. Follow Responsibilities as a variable construct is correlated to a variable construct of Fairness to the independent variable of Discipline.
4. Good Governance as dependent variable is correlated to its variable construct of Control of Corruption.
5. Good Governance as dependent variable is correlated to the independent variable construct of Fairness of Discipline.
6. Probity as a mediator variable is correlated to the independent variable construct of Fairness of Discipline.
7. Probity as a mediator variable is correlated to independent variable construct of Follow Responsibilities of Discipline.

### The following where the opinions and solutions provided by the participants about governance systems in relation to discipline and probity practices towards achieving good governance.

- Promote digital governance
- Giving priority to private sector to operate
- Enforcing the laws and constitution
- Do something about the raise in corruption
- Lack of disciplining wrong doers
- Government and its workers must be loyal to the country
- Reducing unemployment to its minimum
- Making sure that exports exceed imports rate
- Governance must be aimed at serving the people
- Ensuring transparency in the country
- Lack of accountability are persistent issues

- Ghana's governance systems face challenges in maintaining discipline and probity practices.

Corruption, mismanagement, and lack of accountability are persistent issues. The country's ranking on the Corruption Perceptions Index (CPI) has fluctuated over the years, indicating a need for improvement. Discipline and probity are essential components of good governance.

**Accountability:** Leaders and public officials are held responsible for their actions.

**Transparency:** Decision-making processes and financial transactions are open and accessible.

**Efficient Resource Allocation\*:** Resources are utilized effectively, reducing waste and corruption.

**Public Trust:** Citizens have confidence in their government and institutions.

**Solutions:** If the authors were in authority, they would implement the following measures to improve good governance practices in Ghana.

**Strengthen Institutions:** Enhance the capacity and independence of institutions like the Auditor-General's Department, the Economic and Organized Crime Office (EOCO), and the Judicial Service.

**Implement Effective Anti-Corruption Measures:** Enact and enforce robust anti-corruption laws and establish a specialized anti-corruption agency.

**Promote Transparency and Accountability:** Ensure timely publication of financial reports, budgets, and procurement information. Implement a robust asset declaration regime for public officials.

**Foster a Culture of Integrity:** Introduce integrity education in schools and promote a culture of transparency and accountability among public officials and citizens.

**Encourage Citizen Participation:** Strengthen civic engagement and participation in governance through regular town hall meetings, citizen budgeting, and other inclusive mechanisms.

**Leverage Technology:** Utilize technology to enhance transparency, accountability, and efficiency in governance, such as online procurement platforms and budget tracking systems.

**Provide Incentives for Whistleblowers:** Offer protection and incentives for whistleblowers to report corruption and misconduct.

**Conduct Regular Performance Audits:** Regularly assess the performance of public officials and institutions to ensure accountability and efficiency.

**Corruption:** Corruption remains a major obstacle to good governance, with Ghana ranking 80th out of 180 countries in Transparency International's 2020 Corruption Perceptions Index.

**Lack of accountability:** Inadequate accountability mechanisms and institutions have contributed to impunity and poor governance.

**Inefficient public services:** Inefficient public services, such as healthcare and education, hinder the country's development.

### **Discipline and Probity Practices:**

Discipline and probity practices are essential for good governance. They involve:

- **Adherence to rules and regulations:** Ensuring that public officials and institutions comply with laws, policies, and procedures.
- **Transparency and accountability:** Promoting openness, transparency, and accountability in government decision-making and actions.

- **Integrity and ethics:** Upholding high standards of integrity, ethics, and moral principles in public life.

### Significance of Discipline and Probity Practices:

Effective discipline and probity practices are crucial for:

- **Preventing corruption:** Reducing opportunities for corruption and ensuring that public resources are used efficiently.
- **Promoting accountability:** Holding public officials and institutions accountable for their actions and decisions.
- **Building trust:** Fostering trust in government and public institutions, which is essential for social cohesion and economic development.

### Solutions for Improving Good Governance in Ghana:

If the authors were in authority, they would:

- **Strengthen institutions:** Enhance the capacity and independence of institutions such as the Auditor-General's Department, the Office of the Special Prosecutor, and the Judiciary.
- **Implement robust accountability mechanisms:** Establish effective mechanisms for tracking and punishing corruption, including asset declaration and conflict of interest laws.
- **The Significance of Discipline and Probity to Good Governance:** Both discipline and probity are foundational pillars of good governance, which is characterized by accountability, transparency, rule of law, responsiveness, and equity.

Here's how they relate:

Discipline ensures that rules and ethical standards are enforced consistently. Probity promotes trust and confidence in leadership. Together, they foster accountability, integrity, and justice, all of which are prerequisites for good governance. A disciplined public sector devoid of corruption and guided by probity is more likely to make decisions that reflect the true needs of the population.

### What the authors would do if they were in Authority?

If given the authority to improve governance in Ghana, the authors would pursue reforms in these five strategic areas:

- Strengthen Independent Oversight Institutions  
Provide full financial and operational autonomy to institutions like the Auditor-General, EOCO, and CHRAJ.
- Enforce real-time audit and prosecution powers without political interference.  
Institutionalize Performance and Integrity Metrics  
Mandate annual public integrity reviews for civil servants and political appointees.

Link promotions and rewards in public service to discipline records and ethical behaviour.

### Conclusion

It is evident from the research findings and analysis that adopting mixed methods with quantitative and qualitative approaches using Triangulation and Convergent Parallel Design is not easy to interpret. Consequently, the use of two methods means two aspects of decision making. This study is distinct in its attempt to broaden the scope of research knowledge in methodology applications. Notwithstanding, the quantitative analysis showed the total effects was not significant between the construction of Control of Corruption and Good Governance which implies that in the qualitative analysis participants strongly disagree with Quality of Governance since government does not treat both rich and poor equally. Also, the total effect of Discipline and Good Governance was not significant as participants also indicated that almost everyone is corrupt likewise most officials are also corrupt since government fails to control corruption.

The total effect of the construct of Fairness of Discipline to the dependent variable of Good Governance was not significant under the quantitative analysis which resulted in the qualitative analysis as the participants were a little satisfied at the pace at which government enables economy for business to flourish or grow since there is not much discipline in the governance systems. Again, fairness as a construct variable of Discipline to Probity is not significant under the quantitative analysis because the participants under the qualitative analysis strongly disagree that politics is clean and free of corruption since fairness is the watch word in the practice and they also strongly disagree that government does not waste public money. Follow Responsibilities as a construct of Discipline to Good Governance under the quantitative analysis was not significant which implies in the qualitative analysis that the participants indicated that the major challenge about the government investment initiative is a major challenge to be solved.

In view of this study, the model developed identified probity as partially mediating between Discipline and Good Governance. New knowledge of findings was discovered after the test. Unsupported quantitative results obtained from SmartPLS 4.1.1.4 agree with the qualitative results that explain the relationship between the variables.

### Conflict of Interest

The authors declare that they have no conflict of interest.

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### References

1. Adam AK. Conceptualisation of lack of discipline and probity as the main cause towards good governance practice. *International Journal of Public Policy and Administration Research*. 2019 Jan 1. <https://doi.org/10.18488/journal.74.2019.61.12.22>
2. Alam Siddiquee N. Public management reform in Malaysia: Recent initiatives and experiences. *International Journal of Public Sector Management*. 2006 Jun 1;19(4):339-58. <https://doi.org/10.1108/09513550610669185>
3. Khalid M, Alam MM, Said J. Empirical assessment of good governance in the public sector of Malaysia. Maizatul, AK, Alam, MM, and Said, J. 2016:289-304. <https://doi.org/10.31219/osf.io/84ewh>
4. Oktari V, Zirman Z. The role of good governance mediation in the relationship of management efficiency and accountability. *New Applied Studies in Management, Economics & Accounting*. 2022 Mar 1;5(1):16-33. <https://doi.org/10.22034/nasmea.2022.176186>
5. Rahayu S, Yudi, Sofyan, Rahayu, Jumaili S. Enhancing good governance and fraud prevention for school performance. *Cogent Business & Management*. 2025 Dec 12;12(1):2534097. <https://doi.org/10.1080/23311975.2025.2534097>
6. Al-Faryan MA. Agency theory, corporate governance and corruption: an integrative literature review approach. *Cogent Social Sciences*. 2024 Dec 31;10(1):2337893. <https://doi.org/10.1080/23311886.2024.2337893>
7. Bogyay K. Culture: key to sustainable development. Closing speech by H.E. Ms Katalin Bogyay, President of the General Conference. The Hangzhou International Congress; 2013 May 14-17; Hangzhou, China. UNESCO; 2013. Retrieved from: <https://unesdoc.unesco.org/ark:/48223/pf0000221040>
8. Al-Faryan MA. Agency theory, corporate governance and corruption: an integrative literature review approach. *Cogent Social Sciences*. 2024 Dec 31;10(1):2337893. <https://doi.org/10.1080/23311886.2024.2337893>

9. Wawrosz P. How corruption is and should be investigated by economic theory. *Economies*. 2022 Dec 18;10(12):326. <https://doi.org/10.3390/economies10120326>
10. Feldman MS, Khademian AM. Principles for public management practice: From dichotomies to interdependence. *Governance*. 2001 Jul;14(3):339-61. <https://doi.org/10.1111/0952-1895.00164>
11. Demiraj R, Demiraj E, Dsouza S. The Moderating Role of Worldwide Governance Indicators on ESG–Firm Performance Relationship: Evidence from Europe. *Journal of Risk and Financial Management*. 2025 Apr 14;18(4):213. <https://doi.org/10.3390/jrfm18040213>
12. Pillay SS, Kikasu ET. Servant leadership style: a key to effective good governance and sustainable public service delivery in Africa. *Open Journal of Political Science*. 2024 Jan 18;14(1):52-80. <https://doi.org/10.4236/ojps.2024.141004>
13. Radojičić ZV, Vučetić D. Profesionalizacija javne uprave v Srbiji. Kriminalističko-poličijski univerzitet; 2021.
14. Andđelković J. Good governance in public administration. *BizInfo Blace*. 2023 Dec 29;14(2):121-6. <https://doi.org/10.5937/bizinfo2302121A>
15. Alfred KJ. Determinants of Employees' Violation of Disciplinary Rules in Public Sectors in Tanzania: A Case of National Insurance Corporation (NIC) Tanzania Limited (Doctoral dissertation, The Open University of Tanzania). Retrieved from: <http://repository.out.ac.tz/1021/>
16. Skinner BF. *Science and human behavior*. Simon and Schuster; 1965.
17. Curwin RL, Mendler AN. " Discipline with dignity": Beyond obedience. *The Education Digest*. 1997 Dec 1;63(4):11.
18. Canter L. *Assertive discipline: positive behavior management for today's classroom..* Los Angeles, CA: Canter & Associates.
19. Dreikurs R, Cassel P, Kehoe D. *Discipline without tears. (No Title)*. 1974.
20. Kounin J. *Discipline and group management*. Nova Iorque: RE Krieger Publishing. 1977.
21. Jones GR. Socialization tactics, self-efficacy, and newcomers' adjustments to organizations. *Academy of Management journal*. 1986 Jun 1;29(2):262-79. <https://doi.org/10.5465/256188>
22. Gordon T. *Teacher effectiveness training*. New York: Peter H. Wyden.
23. Whitton H. Implementing effective ethics standards in government and the civil service. *Transparency International*. 2001 Feb;2:2001.
24. Lehtinen A. The welfare consequences of strategic behaviour under approval and plurality voting. *European Journal of Political Economy*. 2008 Sep 1;24(3):688-704. <https://doi.org/10.1016/j.ejpoleco.2008.03.002>

25. Barton JJ, Press DZ, Keenan JP, O'Connor M. Lesions of the fusiform face area impair perception of facial configuration in prosopagnosia. *Neurology*. 2002 Jan 8;58(1):71-8. <https://doi.org/10.1212/WNL.58.1.71>
26. Graddy E, Wang L. Community foundation development and social capital. *Nonprofit and voluntary sector quarterly*. 2009 Jun;38(3):392-412. <https://doi.org/10.1177/0899764008318609>
27. Klijn EH, Edelenbos J, Steijn B. Trust in governance networks: Its impacts on outcomes. *Administration & society*. 2010 Apr;42(2):193-221. <https://doi.org/10.1177/0095399710362716>
28. Waheduzzaman, Mphande CH. Gaps in pursuing participatory good governance: Bangladesh context. *Administration & Society*. 2014 Jan;46(1):37-69. <https://doi.org/10.1177/0095399712451891>
29. Stivers C. The ontology of public space: Grounding governance in social reality. *American behavioral scientist*. 2009 Mar;52(7):1095-108. <https://doi.org/10.1177/0002764208327677>
30. Institute of Internal Auditors—Australia. Factsheet – Procurement Integrity (Probity) [Internet]. 2017 [cited 2024 Dec 30]. Retrieved from: <https://www.iiia.org.au/member-resources/factsheets/factsheet-procurement-integrity>
31. Ramdany WY, Suharman H, Kandi PS. Effectiveness of Internal Control, Good Governance and Accounting Information Quality on Budgetary Discipline. *International Journal of Business, Economics and Law*. 2017 Apr;1(1).
32. Egbide BC, Agbude G. Good budgeting and good governance: A comparative discourse. Available at SSRN 2478725. 2014 Aug 11.
33. Assembly UG. United Nations declaration on the rights of indigenous peoples. *Un Wash*. 2007 Oct 2;12:1-8.
34. Kaufmann D, Kraay A. Governance and growth: causality which way? Evidence for the world, in brief. *World Bank*, February. 2003 Feb.
35. Dethier JJ. World Bank policy research: a historical overview. *World Bank Policy Research Working Paper*. 2009 Jul 1(5000).
36. Williams DG. Governance and the discipline of development. *The European Journal of Development Research*. 1996 Dec 1;8(2):157-77. <https://doi.org/10.1080/09578819608426670>
37. Barnard A, Schurink W, De Beer M. A conceptual framework of integrity: empirical research. *SA Journal of Industrial Psychology*. 2008 Jan 1;34(2):40-9.
38. McDevitt J, Posick C, Zschoche R, Rosenbaum DP, Buslik M, Fridell L. Police integrity, responsibility, and discipline. *National Police Research Platform*. 2011 Feb 1.
39. CGS (2015), The Army Leadership Code- An Introductory Guide, First Edition, UK
40. Igboyi LS, Nweze AU, Enekwe CI, Nze D. Effect of probity and accountability on the development in Nigeria. *Research Journal of Finance and Accounting*. 2016;7(18):1-3.

41. Said AB, Shahzad MK, Zamai E, Hubac S, Tollenaere M. Towards proactive maintenance actions scheduling in the Semiconductor Industry (SI) using Bayesian approach. IFAC-PapersOnLine. 2016 Jan 1;49(12):544-9. <https://doi.org/10.1016/j.ifacol.2016.07.692>
42. Kaufmann D. Myths and realities of governance and corruption. Available at SSRN 829244. 2005 Nov.
43. Kragbe DG. *The Impact of Fiscal Probity on Public Financial Management in Liberia* (Doctoral dissertation, University of Nairobi).
44. Sharma RN, Kumar SB. C&AG of India: An instrument to enhance accountability, probity and good governance. Indian Journal of Public Administration. 2018 Sep;64(3):454-72. <https://doi.org/10.1177/0019556118780111>
45. Olynyk M. Probity, ethics and good governance in the public sector. Maddocks. 2014 Dec 8. Retrieved from: <https://www.maddocks.com.au/insights/probity-ethics-good-governance-public-sector>
46. Sauro J. MeasuringU: 5 types of qualitative methods. MeasuringU. 2015 Oct 13. Retrieved from: <https://measuringu.com/qual-methods/>
47. Graziano AM, Raulin ML. Research methods: A process of inquiry. HarperCollins College Publishers; 1993.
48. Denzin NK. The research act: A theoretical introduction to sociological methods. Routledge; 2017 Jul 12. <https://doi.org/10.4324/9781315134543>
49. Hair JF, Money AH, Samouel P, Page M. Research methods for business. Education+ Training. 2007 Jun 5;49(4):336-7. <https://doi.org/10.1108/et.2007.49.4.336.2>
50. Gisselquist RM. Developing and evaluating governance indexes: 10 questions. Policy Studies. 2014 Sep 3;35(5):513-31. <https://doi.org/10.1080/01442872.2014.946484>
51. Trow M. Comment on “participant observation and interviewing: A comparison”. Human organization. 1957 Sep 1;16(3):33-5. <https://doi.org/10.17730/humo.16.3.cx277m417x00w647>
52. Brewer J, Hunter A. Multimethod research: A synthesis of styles. Sage Publications, Inc; 1989.
53. Bryman A. Quantity and quality in social research. Routledge; 2003 Sep 1. <https://doi.org/10.4324/9780203410028>
54. Datta LE. Paradigm wars: A basis for peaceful coexistence and beyond. New directions for program evaluation. 1994 Mar;1994(61):53-70. <https://doi.org/10.1002/ev.1668>
55. Greene JC, Caracelli VJ, Graham WF. Toward a conceptual framework for mixed-method evaluation designs. Educational evaluation and policy analysis. 1989 Sep;11(3):255-74. <https://doi.org/10.3102/01623737011003255>
56. Saunders M, Lewis P, Thornhill A. Research methods for business students. Pearson education; 2009.
57. Bans-Akutey A, Tiimub BM. Triangulation in research. Academia Letters. 2021 Aug 31;2(3392):1-7.

58. Noble H, Heale R. Triangulation in research, with examples. *Evidence-based nursing*. 2019 Jul 1;22(3):67-8. <https://doi.org/10.1136/ebnurs-2019-103145>

59. Olsen WK, Haralambos M, Holborn M. *Triangulation in social research: qualitative and quantitative methods can really be mixed*. In: *Developments in sociology* 2004. Causeway Press Ltd.

60. Court J., (2001), Assessing and Analysing Governance in India: Evidence from a New Survey, World Governance Survey, “Governance and Development: Sorting Out the Basics”, United Nations University, World Governance Assessment Project Working Paper No. 1

61. Ahmad H, Halim H. Determining sample size for research activities: the case of organizational research. *Selangor Business Review*. 2017 Dec 1:20-34.

62. Cooper H, Robinson JC, Patall EA. Does homework improve academic achievement? A synthesis of research, 1987–2003. *Review of educational research*. 2006 Mar;76(1):1-62. <https://doi.org/10.3102/00346543076001001>

63. Creswell JW, Creswell JD. *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications; 2017 Dec 12.

64. Krank S, Wallbaum H. Lessons from seven sustainability indicator programs in developing countries of Asia. *Ecological Indicators*. 2011 Sep 1;11(5):1385-95. <https://doi.org/10.1016/j.ecolind.2011.02.017>

65. Castro FG, Kellison JG, Boyd SJ, Kopak A. A methodology for conducting integrative mixed methods research and data analyses. *Journal of mixed methods research*. 2010 Oct;4(4):342-60. <https://doi.org/10.1177/1558689810382916>

66. Jackson S. *Research methods and statistics: a critical thinking approach*. 4th ed. International ed. Wadsworth Publishing; 2011 Mar 1.

67. Brown TA. *Confirmatory factor analysis for applied research*. Guilford publications; 2015 Jan 7.

68. Bakker AB, Hakanen JJ, Demerouti E, Xanthopoulou D. Job resources boost work engagement, particularly when job demands are high. *Journal of educational psychology*. 2007 May;99(2):274. <https://doi.org/10.1037/0022-0663.99.2.274>

69. Browne MW, Cudeck R, Bollen KA, Long JS. Alternative ways of assessing model fit. *Testing structural equation models*. 1993 Feb 1;154(4):136-62.

70. Bentler PM. Comparative fit indexes in structural models. *Psychological bulletin*. 1990 Mar;107(2):238.

71. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural equation modeling: a multidisciplinary journal*. 1999 Jan 1;6(1):1-55. <https://doi.org/10.1080/10705519909540118>

72. Baron RM, Kenny DA. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*. 1986 Dec;51(6):1173. <https://doi.org/10.1037/0022-3514.51.6.1173>

73. Ringle CM, Wende S, Becker J. SmartPLS 4. Bönningstedt: SmartPLS. http s [Internet]. 2024
74. Cohen J. Statistical power analysis for the behavioral sciences. routledge; 2013 May 13. <https://doi.org/10.4324/9780203771587>
75. Chin WW. The partial least squares approach to structural equation modeling. InModern methods for business research 1998 Mar 1 (pp. 295-336). Psychology Press.
76. Hock M, Ringle CM. Local strategic networks in the software industry: An empirical analysis of the value continuum. International Journal of Knowledge Management Studies. 2010 Jan 1;4(2):132-51. <https://doi.org/10.1504/IJKMS.2010.030789>
77. Henseler J, Ringle CM, Sarstedt M. Using partial least squares path modeling in advertising research: basic concepts and recent issues. InHandbook of research on international advertising 2012 Feb 29. Edward Elgar Publishing. <https://doi.org/10.4337/9781781001042.00023>
78. Daskalakis S, Katharaki M, Mantas J. The use of data envelopment analysis to measure the efficiency and interoperability of information technology in Greek public healthcare organisations. Journal on Information Technology in Healthcare. 2008;6(3):188-96.
79. James LR, Brett JM. Mediators, moderators, and tests for mediation. Journal of applied psychology. 1984 May;69(2):307. <https://doi.org/10.1037/0021-9010.69.2.307>
80. Judd CM, Kenny DA. Process analysis: Estimating mediation in treatment evaluations. Evaluation review. 1981 Oct;5(5):602-19. <https://doi.org/10.1177/0193841X8100500502>