IMPACT OF ENVIRONMENTAL GOVERNANCE ON PUBLIC HEALTH SERVICES IN MANDERA WEST SUB- COUNTY, MANDERA COUNTY, KENYA

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DECLARATION AND APPROVAL

Declaration by the Student

The Research Project is my original work and has not been presented for degree award in any other University

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Approval by the Supervisor

This Research Project has been submitted for examination with my approval as the University supervisor.

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DEDICATION

This research Project is dedicated to my family for their continued support.

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ABSTRACT

Health is inextricably linked to environment where climate variations have influenced human health and therefore a clean environment is essential for human health and wellbeing. On the other hand, unrestrained and uncontrolled development contributes to environmental health issues because it overexploits the natural environment and its resources Environmental degradation poses a major threat to the existence of humanity today both in rural and urban settlements. In such a scenario, the importance and need for environmental education as a tool for environmental management and conservation cannot be overemphasized. The study sought to establish the effect of environmental governance on public health services in Mandera West Sub- County, Mandera County, Kenya. The study focused on the following key specific objectives: To establish the level of environmental awareness of citizens and leaders, to establish the level of participation of citizens, level compliance with environmental regulation and evaluate the effect of compliance with environmental governance on public health. The study proposed to utilize three theories environment management theory, goal setting theory and system theory to show the interconnection between ideas, propositions and data as evidence of connection between the phenomena been studies and the underlying assumptions. The study adopted mixed methodology approach which involved incorporation quantitative and qualitative methods. Therefore, in this research target population included all set of data of all cases related with community members together with environment officers at national and county level, out of which a sample will be made. The study target population was 6 County environment officers and 700 community members for community members the study adopted a stratified random sampling procedure, from the selected sample of 141 community members the sample was stratified to ensure that only community members who had lived in the 10 years and above. The stratification was necessary since the study targeted community members with enough exposure to experience in terms of trend, timeline, magnitude and extent environmental matters. Purposive sampling was done to select the Environmental Officers (NEMA) at National level domiciled in the County The study adopted three tools of data collection instruments, which included questionnaires, interview schedule, and secondary data The data was analyzed using descriptive statistics such as frequency, percentage, and means and presented as tables and graphs. The findings suggest that while there is some awareness of environmental issues in Mandera West Sub-County, it does not translate into active participation or compliance with environmental regulations. The lack of engagement and effective governance mechanisms may be contributing to adverse public health outcomes, as indicated by the reported increase in pollution-related health issues. This situation underscores the need for a multifaceted approach to enhance environmental governance, awareness, and participation to improve public health and the overall quality of life in the community.

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LIST OF ABBREVIATIONS AND ACRONYMS

CDF	Constituency Development Fund
DPS	Department of Public Service
ERS	Economic Recovery Strategy
ERSWE	Economic Recovery Strategy for Wealth and Employment
GOK	Government of Kenya
RBM	Results-Based Management
SPSS	Statistical Package for Social Science
UN	United Nations WHO World Health Organization

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CHAPTER ONE

INTRODUCTION

Chapter one introduced the study by providing detailed background information and stating the problem that prompted the study. Other sections of the chapter covered the research objectives and questions, the significance of the study, potential limitations of the study, the scope, and organization of the study.

1.1 Background of the Study

Environmental governance plays a critical role in shaping public health outcomes worldwide. Effective governance ensures the implementation of policies that protect the environment and, consequently, public health. For instance, strict regulations on air and water pollution have significantly reduced disease burdens in many countries (Smith & Ezzati, 2014). In high-income nations such as the United States and Germany, comprehensive environmental laws have led to improved air quality and lower rates of respiratory and cardiovascular diseases (WHO, 2018). Conversely, poor environmental governance in developing countries often correlates with higher incidences of health issues such as waterborne diseases and air pollution-related illnesses (Prüss-Ustün et al., 2016). The global push for sustainable development has further highlighted the need for robust environmental governance frameworks to safeguard public health (United Nations, 2015).

In Africa, environmental governance significantly impacts public health services, with many countries facing unique challenges and opportunities. Rapid urbanization, industrialization, and inadequate waste management systems contribute to environmental degradation and health risks (Kimani, 2017). For example, in Nigeria, poor waste disposal practices have led to the contamination of water sources, resulting in frequent

outbreaks of cholera and other waterborne diseases (Nwankwoala, 2015). South Africa, however, has made strides in improving environmental governance, which has positively impacted public health, particularly through initiatives aimed at reducing air pollution in urban areas (Nkosi et al., 2017). The African Union's Agenda 2063 underscores the importance of environmental sustainability as a key driver for improving health outcomes across the continent (African Union, 2015).

At the regional level, differences in environmental governance within Africa reveal varied impacts on public health services. In East Africa, countries like Kenya and Tanzania have implemented policies aimed at controlling industrial emissions and managing solid waste, leading to better public health outcomes in urban centers (Mutisya & Yarime, 2014). Conversely, in West Africa, nations such as Ghana and Senegal still grapple with the health repercussions of inadequate environmental policies, including high levels of air pollution and poor sanitation (Amegah & Agyei-Mensah, 2017). In Southern Africa, Botswana's proactive environmental governance has been linked to improvements in public health, particularly in reducing the prevalence of vector-borne diseases through better waste management and water quality control (Musinguzi & Nhamo, 2017). These regional variations highlight the critical need for tailored environmental governance strategies to address specific public health challenges effectively.

1.1.1 Environmental Governance

Governance, depending on the theoretical lens through which it is examined, includes the systems, actors, and institutions that enable collaboration throughout networks for decision-making, management, and policy implementation (Rhodes, 2019). Good governance, also referred to as green governance, gained some traction following the

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Stockholm United Nations Conference on Human Development in 1972, establishing the United Nations Environment Programme. As a result, policies on environmental governance at the international and national levels have become increasingly popular. Environmental governance is one of the key ways in which society influences both environmental health and people (Foo et al., 2015; Lankford et al., 2019).

Samimi, Ahmadpour, and Ghaderi's (2018) study of 21 Middle East and North Africa (MENA) countries from 2002 to 2007 found that environmental quality is positively impacted by governance quality. The study also suggested policies aimed at improving governance indicators because they have a negative impact on environmental degradation. However, governments have a duty to safeguard the environment beyond enacting laws that are successful; this is because the public does not support additional government spending on environmental policies when it comes to corrupt and inefficient governments (Kulin and Johansson Sevä 2019).

Tan (2019) looked into how 123 countries' environmental quality was affected by governance factors. The findings indicate that whereas regulatory quality, rule of law, and voice and awareness positively affect water quality, rule of law and government effectiveness increase air quality. However, it was discovered that there was no evidence of the effect of governance on biodiversity, and that the six governance indicators had a negative correlation with wilderness. When it comes to influencing environmental results, governance is vital. Gök and Sodhi (2021) looked into how government affected environmental quality in 115 different nations. They discovered that in high-income nations, greater environmental results result from increased levels of governance when good governance practices predominate in governance systems. However, an improvement in governance may result in a decline in environmental quality in middle-class and lower-class nations. These results emphasize how crucial it is to take

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governance frameworks into account in addition to environment-focused policies in order to get better results.

Environmental governance extends beyond policy formulation. It encompasses the systems and institutions that facilitate decision-making and management. Foo et al. (2015) and Lankford et al. (2019) emphasize that environmental governance influences both environmental health and societal well-being. Effective governance indicators positively impact environmental quality, but the role of governments extends beyond policy implementation. Ineffective or corrupt governments may hinder environmental protection due to lack of public support for increased spending on environmental policies. Tan (2019) explored the impact of governance indicators on environmental quality across 123 countries. Their study revealed interesting patterns. Rule-of-law and government-effectiveness were associated with improved air quality. Regulatory-quality, rule-of-law, and voice-and-awareness positively influenced water quality. However, the study also found a negative correlation between governance indicators and wilderness, while biodiversity impact remained inconclusive. These findings underscore the multifaceted relationship between governance and environmental outcomes.

Azimi, Rahman, and Nghiem (2023) provided a global perspective on linking governance with environmental quality. Their system-GMM model demonstrated that good governance enhances environmental quality in high-income countries but has an adverse effect in middle- and low-income countries. Structural changes in governance systems, prioritizing environmental outcomes over economic ones, are essential for improving environmental quality in diverse contexts. These studies collectively emphasize the critical role of governance in shaping environmental outcomes and underscore the need for context-specific approaches to enhance environmental quality.

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Shrotria (2019) uses the Indian judiciary's function to show the efficacy of good governance in achieving improved environmental outcomes. She examined how Indian courts addressed environmental problems that were brought before them by common persons through public interest litigations (PILs), which are normally the purview of the legislature and the executive. Therefore, in order to achieve effective and efficient environmental results, public participation, government responsiveness, the rule of law, and consensus are essential. While a wealth of research has been done on the beneficial effects of governance in enhancing environmental results, there aren't many that show a negative correlation between the two.

Environmental governance strategies are based on judgments of the desired states of both social and ecological systems and what it takes to transform them to those desired states (Delmas & Young, 2019). The success and legitimacy of governance efforts are predicated on the allotment of entitlements to the governed and their overall quality of life due to that governance (Nussbaum, 2018). To measure whether governance is good, the theory of good governance arose in 1992 from the World Bank (World Bank, 2017). Good governance measures indicators that directly impact the quality of life of those governed (World Bank, 2015; OECD, 2017). Common indicators of whether governance is good include items such as trust, opportunities to participate, representation, access, freedoms, enforcement, legitimacy, and quality of governance (Debnath & Shankar, 2016; Kaplan-Hallam & Bennett, 2018; Kaufmann et al., 2009; OECD, 2017). Good governance can increase individual wellbeing and influence how people perceive the quality of that governance (Dorn et al., 2017; Helliwell et al., 2018; Kim & Kim, 2012; Ott, 2019). According to UN, Good governance aims at ensuring inclusive participation, equity, pluralism, transparency, Awareness and the rule of law, in a manner that is effective, efficient and enduring. A strong environmental policy framework and

regulations that guarantee adherence to the law are conducive to good governance, claims Harman (2019). Respect for the law and sound governance, on the other hand, increases the likelihood of compliance.

The case in Uganda, the National Environment Management Authority ("NEMA") is the lead agency charged with activities to implement international environmental obligations related to connection of health and environment(Nagaya, 2019).Kenya and Tanzania has The Public Health Acts which deals with emerging communicable diseases also has provisions addressing nuisance, sanitation, malaria, public water supplies, and irrigation of agricultural lands, drinking water by regulating pollution in wells, tanks, and other sources of water (Gitau, 2019). Different studies have shown that success of environmental governance can be measured by the effectiveness of strategies and initiatives implemented to achieve environmental goals, such strategies include participation of stakeholders including minority groups, access to information, adequate funding, transparency and Awareness (Sathtom &Newell, 2018).

Mandera West is a sub county in Mandera County which is part of North Frontier Counties which is largely arid and semi-arid lands in Kenya which is massive section of Kenya consisting of 80% of Kenya. The area is estimated to host around 10 million which is about 20% of national population (Ahmed, 2019). The habitat of this region practices nomadic pastoralism who own almost 70.0% of national livestock which consist of sheep, goats, camels and cattle. The North Frontier counties share common characteristics such as sparse nomadic pastoralist population and arid climatic conditions. Recent census revealed that the four counties has a youthful population where over 75.0% are in the aged below 45 years who are dispersed over the vast area (Kenya Population and Housing Census, 2019). According to Kenya Inequalities Index report (2020), only few residents of the four counties under Northern Frontier zone have access

to formal education with over three quarters of the population living below poverty line. The area also has limited water and poor access of health care facilities (Ahmed, 2019).

1.2 Statement of the Problem

From the foregoing review of literature, it had been established that Environmental governance is one of the key ways in which society influences both environmental health and people (Foo et al., 2017; Lankford et al., 2023). According to a study conducted by Samimi, Ahmadpour, and Ghaderi (2017) for 21 Middle East and North Africa (MENA) countries between 2018 and 2023, the quality of governance has a positive effect on environmental quality. The study recommends implementing policies that improve governance indicators since they have a negative impact on environmental degradation. 2019 saw Kulin and Johansson Sevä. Tan (2019) looked on the relationship between 123 countries' environmental quality and governance parameters. The findings demonstrate that while voice and awareness, rule of law, and regulatory quality all positively impact water quality, rule of law and government efficacy positively impact air quality. Through the involvement of the Indian court, Shrotria (2019) illustrates the efficacy of good governance in bringing about better environmental outcomes. Most of these studies have been conducted outside Kenya. The Ministry of Health Report that Mandera County, has a high prevalence of respiratory disease and waterborne disease including cholera, dysentery, typhoid and diarrhea diseases also leading in Communicable diseases burden in amongst northern frontier counties at average of 6.6 per cent against a national prevalence of 5.0% (MOH, 2020). At the same time National Environmental Management Authority report for the county show that there is a lot of cases of environmental pollution, untreated sewage, open defecation, lack of safe drinking water

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coupled with inadequate sanitation and poor food hygiene (NEMA County Report, 2021).

In Kenya following devolution, Ministry of environment is one of the devolved functionalities. Mandera County has fully functioning environment department with support of government agencies including NEMA, WARMA at Sub-County level. The ministry is responsible of enforcing environmental impact assessment reports and various environmental and health acts related with sanitation, disposal, water pollution, air pollution. Despite existence of this government agencies the Sub-County has an increase in the burden of environmental health related diseases which implies gap that exists on the effects of environmental governance on health outcomes in Mandera west. Comprehending the effects of environmental governance on health outcomes will be a critical element in the design of successful interventions which can help in addressing the rising cases of environmental related diseases in the Sub-County.

1.3 Purpose of the Study

The study sought to investigate environmental governance's impact on public health services in Mandera West Sub-County, Mandera County, Kenya.

1.3.1 Specific objectives of the study

The study shall focus on the following key specific objectives:

i. To establish the level of environmental awareness of citizens and leaders in Mandera west sub-County
ii. To establish the level of participation of citizens in Mandera West Sub-County In environmental activities?

iii. To establish the level compliance with environmental regulations in Mandera West Sub-County

iv. To evaluate the effect of compliance with environmental governance on Public Health Services in Mandera West Sub-County?

1.4 Research Questions

The study utilized the following research questions;

i. What is the level of environmental awareness of citizens and leaders in Mandera West Sub-County?

ii. What is the level of participation of citizens in Mandera west Sub-County?

in environmental activities?

iii. What is the level compliance with environmental regulations in Mandera West Sub-County?

iv. Is there relationship between compliance with environmental governance and Public Health Services in Mandera West Sub-County?

1.5 Rationale of the Study

Research on the impact of environmental governance on public health is crucial for several reasons, public health directly affects the well-being of individuals and communities. Understanding how environmental policies and regulations impact health outcomes helps in designing effective interventions. Environmental factors such as air and water quality, exposure to pollutants, and climate change contribute to health risks. Investigating the effectiveness of governance measures can inform risk reduction strategies. Research provides evidence on the effectiveness of environmental regulations. It helps policymakers assess existing policies, identify gaps, and propose improvements.

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Efficient allocation of resources is essential. Studying the impact of environmental governance allows prioritization of efforts to maximize health benefits. Balancing economic growth with environmental protection is critical. Research informs sustainable development goals by considering health implications. Environmental policies can disproportionately affect vulnerable populations. Research helps address disparities and ensures equitable health outcomes. Therefore, understanding the relationship between environmental governance and public health contributes to healthier communities and sustainable development.

1.6 Significance of the Study

The county government may benefit from the findings of the study that it will create awareness of importance of enforcement and implementation of environmental governance regulations. The study will create environmental leadership has an important say on health outcome, as it emerges as a key driver for the achievement of sustainable health, it was also found to have intricate relationships with the social and economic dimensions of sustainable development. For that reason, governments need to invest in structures that enhance developing national and regional; objectives and policy development that enhance positive environment outcomes.

1.7 Scope of the Study

The study was about the effect of environmental governance on public health, and it was conducted in Mandera West Sub-County, Mandera County. The study utilized a descriptive research design and focused on four objectives: environmental awareness, environmental practices, level of compliance with the environment, and the effect of

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environmental governance on health outcomes. It was conducted between March 2023 and December 2023.

1.8 Limitations of the Study

The study may have been limited by some set of circumstances as follows;

There is a probability that some community members as respondents may find the research as intrusive as it will seek personal information about their health. This limitation will be countered by giving respondents adequate information about the purpose of the study and why their privacy and confidentiality will be observed in the course of the research, and the research data only utilized for purpose of academic only. There is also limitation in terms of conducting inferences since sample is small, this will be addressed by the fact that the research utilizes both qualitative and quantitative data and therefore will maximize the two methods.

1.9 Delimitations of the Study

The study focused on effect of environmental governance on public health in Mandera West Sub- County, Mandera County, Kenya the study adopted a descriptive research design which was employed targeting all the community members and environmental officers. Primary and secondary data was used in the study. Measures of tendency such as means, frequencies, and standard deviations was used in data analysis. The study focused on four objectives namely environmental awareness, environmental practices, level of compliance with environment and effect of environmental governance on health outcome.

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1.10 Assumptions of the Study

The study was based on the following assumptions, that environment governance is related with health outcomes of in Mandera west sub-County in Mandera County, that the sampled population will represent the target population fully without a need to increase the population or change the sampling procedure and staff at County are aware of Environmental governance in terms of operation and framework of implementation.

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1.11 Operational Definition of Terms

Environment: The set of physical, chemical, biological components and economic, social and cultural factors relating to a group of human beings or individual

Environmental Awareness: Consciousness of the problems and dangers facing mankind and environment and of the pressing need for positive action to control the undesirable impact of man ‘s activities and demands upon the environment

Environmental Participation: Willingness to make decision to support, act to protect and conserve the environment without coercion or force

Sustainable Development: Development that meets the needs of the present generation without Compromising the future generation from meeting their own needs

Public Participation is defined as a decision-making process through which citizens deliberate and negotiate over the distribution of public resources’ and improvement of service delivery.

Public Sector is defined as the county governments, civil service and other statutory agencies created by the county government

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CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presented a review of literature related to the proposed study. It reviewed scholarly work related to the problem and examined the work done by other researchers in the area of study. The chapter focused on the available literature relevant to the study.

2.1 Theoretical Framework

The study proposed to utilize three theories namely; environment management theory, goal setting theory and system theory to show the interconnection between ideas, propositions and data as evidence of connection between the phenomena been studies and the underlying assumptions (Kombo & Tromp, 2018).

2.1.1 Environment Management Theory

This theory was as postulated by Khachaturov, (1982). The main idea of theory was balance between the growing needs for natural resources and the available amount of such resources. The postulates of the sustainable environmental management theory have been distinguished, namely: cost-effectiveness and efficiency ensuring in the allocation and usage of natural resources; a simple and expanded reproduction of the natural resources forming; safe usage of natural resources and food safety; the environment protection. The principles of sustainable environmental management are equality in the natural resources usage and consumption; free access to the natural resources; ensuring the effectiveness and productivity of the natural resources utilization; protection of natural resources and the environment from the threats and dangers. This theory is based on a variation of virtue theory that seeks to achieve multiple forms of well-being for

multiple stakeholders in the immediate as well as distant future. Tis study is a novel piece in the existing literature from several perspectives: First, unlike recent studies that have mainly focused on the impact of governance on environmental degradation14,17,26–28 in regional- or country specific contexts, the present study delves into the subject from a global perspective using a large panel of 180 countries. Tis approach verifies that how global emissions respond to good governance in general. Second, we innovatively construct a comprehensive composite governance index (CGI) to allow a precise evaluation of the effects of good governance on CO2 emissions using a distance-based approach that measures the governance from a worst-case to an ideal situation based on the data points obtained from real governance scores of the World Governance Indicators (WDI).

In spite of promoting a standard measurement for good governance, this technique helps us verify the overall variability of CO2 emissions in the presence of major macro- and socioeconomic variables. Third, to ensure capturing greater variability of environmental degradation with respect to the subject-endogenous variables, we split our panel into high-, upper-middle-, lower-middle-, and low-income countries. Tis approach highlights how good governance explains CO2 emissions across various economic statuses. Indeed, it also helps identify what specific measures policymakers should take. From a policy perspective, it is crucial to understand how the existence of good governance interplays and to what extent other socioeconomic factors influence environmental degradation. Fourth, however, in a large number of studies, it was generally assumed that good governance has an indirect impact on environmental degradation. The present study documents that good governance has the direct-influential power to explain the behavior of CO2 emissions across our recipient panels. Additionally, it is vital to verify that the conjecture of the direct effects of good governance can lead to the establishment of

desired institutional channels to mitigate the impact of CO2 emissions on various social, economic, and political factors. Finally, in addition to the significant contributions of the study to the contemporary body of knowledge, the outcomes of this investigation offer specific policy implications and open a new step in the existing literature.

2.1.2 Goal Setting Theory

The Goal-Setting Theory of motivation, developed by Edwin Locke in the 1960s, has been a significant framework in understanding human motivation and task performance. Locke's theory posits that specific and challenging goals, coupled with appropriate feedback, enhance task performance more effectively than vague or easy goals. This theory, refined over decades through extensive research by Locke and his collaborator Gary Latham, has provided profound insights into the dynamics of goal-setting in various contexts, including organizational behavior, education, and personal development.

Locke and Latham (2002) emphasized that the clarity and difficulty of a goal are critical factors influencing performance. Specific goals reduce ambiguity and provide a clear direction for effort and strategy. For instance, a goal to "increase sales by 20% within the next quarter" is more effective than a general aim to "do your best." Challenging goals, when perceived as attainable, motivate individuals to put in higher levels of effort, persist longer, and employ more effective strategies. This is based on the principle that difficult goals encourage greater effort and persistence, provided the individual is committed to the goal and possesses the necessary ability to achieve it (Locke & Latham, 2002).

Feedback is another crucial element of Goal-Setting Theory. It allows individuals to track their progress and adjust their efforts and strategies accordingly. Effective feedback highlights areas of improvement and reinforces successful strategies, thereby enhancing performance. For example, regular performance reviews in an organizational setting help

employees understand their progress towards their goals and make necessary adjustments (Latham & Locke, 2018).

The underlying mechanism of goal-setting involves the cognitive processes that translate goals into action. These processes include directing attention and effort towards goal-relevant activities, energizing and sustaining effort over time, and encouraging the development of task-specific strategies. Goals affect performance through four mechanisms: they direct attention and effort towards goal-relevant activities, energize individuals to exert effort proportional to the difficulty of the goals, increase persistence, and motivate the development of strategies for goal attainment (Locke & Latham, 2015).

Empirical research supports the efficacy of goal-setting in various domains. For instance, a meta-analysis by Locke and Latham (2002) found that specific and challenging goals consistently led to higher performance compared to vague or easy goals. This has been validated across different tasks, settings, and populations, demonstrating the robustness of Goal-Setting Theory. Furthermore, goal-setting has been found to enhance performance in educational settings, where students set specific academic goals and receive feedback on their progress (Latham & Locke, 2018).

However, the application of Goal-Setting Theory is not without challenges. One criticism is that overly ambitious goals can lead to unethical behavior, as individuals might engage in dishonest practices to achieve their targets. Additionally, the focus on goal achievement might overshadow the importance of learning and development, particularly in complex tasks where the process of learning is crucial (Latham & Locke, 2018). To mitigate these risks, it is essential to balance goal difficulty with ethical standards and emphasize both performance and learning goals, depending on the task and context.

The theory also highlights the importance of self-efficacy in goal-setting. Self-efficacy refers to an individual's belief in their capability to achieve a goal. Higher self-efficacy

enhances goal commitment and the likelihood of success. Therefore, building self-efficacy through mastery experiences, social modeling, and verbal persuasion is crucial for effective goal-setting (Locke & Latham, 2015).

In the context of global challenges like environmental sustainability, Goal-Setting Theory offers valuable insights. Ambiguous, all-encompassing climate goals, while well-intentioned, often lack the specificity needed to drive effective action. Instead, setting clear, measurable, and challenging environmental targets, along with providing regular feedback on progress, can motivate individuals and organizations to adopt more sustainable practices. For example, setting a goal to "reduce carbon emissions by 10% within the next year" is more likely to result in tangible actions compared to a general commitment to "combat climate change" (Latham & Locke, 2018).

Moreover, the collaborative aspect of goal-setting can be leveraged to address complex social dilemmas. Consensus-oriented political decision-making, involving diverse stakeholders in the goal-setting process, ensures that the goals are realistic, relevant, and widely supported. This collaborative approach not only enhances goal commitment but also fosters a sense of shared responsibility and collective action (Locke & Latham, 2002).

Goal-setting can also be applied in organizational contexts to promote sustainability. Companies can set specific environmental performance goals, such as reducing waste or increasing energy efficiency, and integrate these goals into their overall business strategy. Providing employees with regular feedback on their contributions to these goals can enhance motivation and accountability. For instance, a company might track its carbon footprint and report progress towards reduction targets, thereby engaging employees and stakeholders in the sustainability efforts (Latham & Locke, 2018).

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In conclusion, the Goal-Setting Theory of motivation provides a robust framework for enhancing task performance through specific, challenging goals and appropriate feedback. While the theory has broad applicability across various domains, its effective implementation requires consideration of potential risks, such as unethical behavior and the neglect of learning. By integrating goal-setting principles with strategies to build self-efficacy and fostering collaborative goal-setting processes, individuals and organizations can harness the power of goals to drive meaningful and sustainable change. The theory's insights are particularly valuable in addressing global challenges, where clear and specific goals, supported by regular feedback and collaborative efforts, can motivate collective action towards a sustainable future.

2.1.3 System Theory

This theory was as postulated by Ludwig von Bertalanffy and furthered by Ross Ashby (Manyari, 2016) which made observation that everything in nature is interconnected and so it is always important to always consider about the interconnection of elements of a phenomenon before understanding it internal functions. In this theory the proponent insists that real systems are open and so are not static because they are always at the level of interaction with the immediate environments. The fact that everything is interconnected also means that every system is delineated by its spatial and temporal boundaries; however, it is surrounded and influenced by its immediate environment. In the context of the current study,

This study is about influence of environmental governance on health outcomes, where the researcher proposes a phenomenon where environment and health are intertwined together such that success of one is success of the other, failure of environment is the failure of health, this is because both components consist of elements which are found in each one of the unit, to understand a complete picture require analysis of components of

environment when understood alongside the element of health. Environmental degradation impairs health which later amplifies environmental mismanagement. This further accelerates factors that affect health outcomes (Sklar, 2016).

2.2 Empirical Literature

In the section the researcher engaged in a review of existing literature as they develop their own research studies.

2.2.1 The Concept of Environmental Governance

From broad perspective the term governance is derived from wide ranging ethical and philosophical concept within any existing society which aims at organizing a society to realize wider goals and objectives (Wquton, 2016). Depending on whether public administration, policy, or good governance is the theoretical lens employed, the term "governance" might mean different things (Kjaer, 2018). Generally speaking, governance is dependent on networks that include non-state players and consists of the structures and institutions that enable cooperation for management, policy, and decision making in society (Forrer et al., 2017). Information on governance systems, their users, and the ways in which they interact can be used to better assess the costs and advantages of potential policy changes (Ostrom, 2019). Their findings lend support for a statistical association between governance and environmental degradation. They also found that the rapid environmental degradation is significantly caused by the reluctance of the government to implement rules and regulations in the region.

Xaisongkham and Liu (2016) delved into the effects of governance on environmental degradation in a set of selected developing economies from 2002 to 2016. The authors employed the GMM technique and found that the rule of law and government effectiveness is significant factors in reducing environmental degradation in developing

countries. They suggested that sustainable environmental quality entails effective institutions to regulate human behavior with respect to environmental protection. In the same vein, (2019) used autocracy and democracy as proxies for governance quality and examined their effects on CO2 emissions in a panel of 69 developing countries over the period from 1990 to 2018. The authors employed panel integration and FMOLS methods and confirmed that governance quality has a long-run relationship with CO2 emissions. They also confirmed that democracy significantly reduces environmental pressures, while globalization and financial development impose adverse effects on the environment.

The literature also reveals that Azam (2019) evaluated the impact of good governance on environmental quality and energy consumption in a panel of 66 developing countries for the period spanning from 1991 to 2017 using the GMM method. Te authors constructed a governance index using three indicators such as political stability, administrative capacity, and democratic accountability. The observed that, though good governance has been significantly positive in affecting energy consumption, globalization has been found to be insignifcant in increasing environmental quality. Moverover, (2019) examined the link between governance and environmental quality in a panel of 115 countries classifed as high-, middle-, and low-income countries from 2000 to 2015. The authors employed the system-GMM model and noticed that good governance improves environmental quality in high-income countries while having an adverse efect in middle- and low-income countries. Their conclusions suggested that improving the quality of governance is essential to environmental outcomes without tampering with existing policies.

Contrary to this, Udemba (2017) investigated the effects of good governance on environmental quality in Chile using a set of time-series data from the first quarter of 1996 to the fourth quarter of 2018 and a non-linear regression approach. The author found

that both good governance and foreign direct investments are statistically significant for improving environmental quality in Chile. Furthermore, Ahmed (2019) examined the asymmetric effects of good governance, financial development, and trade openness on environmental degradation in Pakistan over the period from 1996 to 2018. The authors employed autoregressive distributive lags (ARDL) and non-linear ARDL models to test their hypotheses. In addition to confirming a long-run nexus between the predictors, the authors found that positive shocks to financial development and institutional quality have a significant effect on environmental degradation, while the quality of institutions is highly sensitive to enhancing environmental quality. Akhbari and Nejati (2019) proxied governance by corruption index in a panel of 61 developing countries from 2003 to 2016 using a dynamic panel threshold model. They observed that an increase in the corruption index above a certain threshold level causes environmental quality to decrease in developing countries while having an insignificant impact below the threshold level. Dhrif47 also assessed the impact of governance on environmental degradation in a panel of 45 African countries over the period 1995 to 2015 using the GMM technique. The author noticed a positive relationship between governance and environmental degradation and a negative link with health outcomes.

Further, Wawrzyniak and Doryń(2019) investigated the influence of good governance on moderating the relationships between economic growth and CO2 emissions in a panel of 93 emerging and developing economies from 1995 to 2014. The authors used government effectiveness and control of corruption indicators as proxies for governance and employed the GMM model. Their findings revealed that government effectiveness is significant in moderating the influence of economic growth on CO2 emissions. Similarly, Samimi et al(2019) employed a set of annually aggregated datasets for a panel of 21 countries in the Middle East and North Africa from 2002 to 2007 to examine the

impact of good governance on environmental degradation. The authors used three indicators, such as government effectiveness, regulatory quality, and control of corruption, as proxies for good governance. They found that government effectiveness has a positive effect on environmental quality, while the remaining two indicators were found to be insignificant. Finally, Tamazian and Rao (2019) investigated the relationships between financial development, environmental degradation, and good governance in a panel of 24 transitional economies from 1993 to 2004. Using the standard reduced-form modeling approach and GMM models, the authors found that both financial development and good governance (institutional quality) are crucial factors for environmental performance.

According to Delmas and Young (2019), "the use of institutionalized power to shape environmental processes and outcomes" is the precise definition of environmental governance. According to the Natural Resource Governance Framework (2016), environmental governance is the process used to manage ecosystem services for human use and natural conservation. According to Ansell and Gash (2018), environmental governance systems are currently moving toward more inclusive and cooperative models that include a wide range of non-state players in the decision-making process. The idea of good governance, which takes into account the attributes that have the greatest influence on the standard of living of an institution's population, serves as the theoretical foundation for the measurement of governance beliefs (World Bank, 2017; OECD, 2022). These attributes, which include awareness, transparency, and the absence of corruption, are commonly assessed using both professional judgment and current societal indicators. For instance, the World Bank's governance indicators use pre-existing indices to quantify things like political freedom and government corruption (World Bank, 2017).

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The opinions of people impacted by governance procedures can also be used to gauge good governance. Public attitudes on the management of natural resources are reflected in beliefs about environmental governance. Support for governance, faith in governance, and confidence in the legitimacy of governance actors have all been used to gauge people's beliefs about general government (Dellmuth & Schlipphak, 2020). Verhaegen et al. (2021) found that legitimacy beliefs were "most consistently related to overall satisfaction with international governance organizations." Furthermore, Doherty and Wolak (2018) discovered that opinions regarding the impartiality of governmental decisions were not only a good measure of people's positive sentiments toward governance, but also positively connected with the objective features of policies, like how well they represented the preferences of the public and how accurately expert opinion guided the decisions. Ultimately, Turner and colleagues (2018) discovered that the strongest foundations for views regarding the legitimacy of governance were confidence in the effectiveness of institutions, equity of results, and faith in information provided by governing bodies. Particularly, environmental governance has been assessed using comparable metrics for awareness, inclusivity, legitimacy, and transparency (Biedenweg et al., 2017; Lockwood et al., 2018).

2.2.2 Awareness of Environment Governance

Awareness of environmental governance involve holding people responsible for an outcome and therefore amongst ideals of governance it is the most critical for success of processes and institutions through which societies effect their decisions on the matter affecting their environment(Day & Klein 2016).Awareness of environmental governance consist of four elements namely ; accounting for results, reporting, explaining and mitigating activities and assuming responsibilities for outcome (Lodhia and Burritt, 2016). It is important for citizen of a society to be informed on how government organs

are performing since any additional funding to such institutions amount to additional cost. It is important for state institutions to account and explain difficulties encountered in implementing their mandate (Lodhia and Burritt 2020). Environmental degradation is hazardous and a global concern. The desire for a sustainable environmental quality has increased more than ever in the contemporary period. Environmental degradation is regarded as a significant risk to achieving sustainable development goals2016) . It afects every individual, business, and society. It is a threat from which no one is immune, nor is the world able to vaccinate against it (Lodhia and Burritt 2020). It is unanimously believed that environmental degradation caused by emitted carbon dioxide, in particular CO2 emissions, significantly harms humans' lives (Lodhia and Burritt 2020). The world now emits over 34 billion metric tons per year. Evidence reveals that increased poverty, overcrowding, weather extremes, deforestation, loss of species, poor quality of water, and famine are the apparent consequences of environmental degradation. The World Bank report5 shows that environmental degradation caused approximately 8.1 trillion US$ damage cost in 2019, equivalent to 6.1 percent of the world's GDP, and caused more than 90 percent of deaths in low- and middle-income countries. Recent studies 6–10 have identified numerous factors that can reduce the contemporary level of CO2 emissions. It includes controlled heating, renewable energy, industrial automation with lower energy use, and many others. Undoubtedly, such subject-endogenous variables are effective in reducing CO2 emissions; however, the effects of exogenous factors such as good governance that might be observable in reducing emissions cannot be disregarded. Effective governance offers the necessary support for fostering a society that is essential for a better state of the environment. It is highly perceived that countries with a good governance structure are considered to have relatively better environmental quality. For example, Chaudhry et al.11 observed that effective institutional performance and

efficient governance are substantive to promote sustainable environment. On the other hand, countries with poor governance have anemic environmental quality12–15. Weak social inclusion, corrupted institutions, and poor regulatory structures are found to be inimical to a sustainable environmental quality16–18. Leitao19 noticed that corruption resulting from weak governance is positively associated with CO2 emissions.

Understanding environmental governance can affect people's perceptions of the environment, how it is managed, and "how responses by governments and other agencies are deemed to be appropriate, legitimate, or fair" (Quinn et al., 2018). The concept of sense of place, as defined by Buttimer and Seamon (2019), is derived from research in human geography and includes awareness of environmental governance as one of its constituent parts. Attachment to environmental governance encompasses at least two dimensions: place identification and place reliance, despite the term being defined in contexts including both humans and the environment (Masterson et al., 2017). According to Masterson et al. (2017), awareness identity refers to how much a location contributes to a person's identity in relation to a physical environment, while place dependence refers to how much a location meets needs and aids in goal-achieving. The degree of environmental conservation and awareness of environmental governance have been linked in previous studies. In a study on the governance of a German nature park, Mehnen et al. (2018) discovered that better participants' awareness of environmental governance improved the efficacy of governance functioning. On the other hand, people's attachment to certain natural areas could be so strong that it causes disputes over resource management (Williams & Vaske, 2018). An individual's attachment to a place, for instance, influences their civic engagement, including the amount of time and energy they devote to governance procedures, according to a study evaluating place attachment and trust in managers in Sherburne National Wildlife Refuge (Payton et al., 2017).

According to Edge and McAllister (2019), governance systems in Canadian nature reserves that prioritize the development of a sense of place and place attachment have the potential to generate shared goals among governing entities by fostering shared interests. Whether there is a positive or negative correlation between environmental governance attitudes and awareness of environmental governance, however, is not evident. These two ideas might be positively correlated since, according to one study, governance systems are better at organizing people in high place attachment locations (Van Marissing et al., 2017). Furthermore, awareness of environmental governance predicts support for laws pertaining to the preservation of natural areas, according to Carrus et al. (2018).

In contrast, increased governmental rules may cause people to become less attached to a natural environment (Davenport & Anderson, 2018). Environmental pollution poses a significant threat to human survival. In China, emissions of sulfur dioxide, nitrogen oxides, and particulate matter from industrial production contribute to health risks. Research shows that local government environmental attention positively impacts public health. For every 1% increase in government environmental attention, maternal mortality rates decrease by 0.1493%, and perinatal mortality rates decrease by 0.1358%1. This underscores the importance of government intervention.

Government environmental governance investment acts as a crucial channel in transferring the impact of environmental attention to public health. By linking micro-level environmental issues with macro-level governmental behaviors, this research provides insights for corporate sustainable development (Van Marissing et al., 2017).The impact of government environmental attention on public health is more pronounced in Central and Western China, low-openness regions, and after incorporating environmental performance into cadre evaluations in 2006. These findings highlight the need for

targeted policies and corporate responsibility.In summary, addressing environmental challenges is vital for safeguarding public health, and government attention plays a pivotal role in achieving sustainable development.

2.2.3 Stakeholder Participation and Health Outcomes

Aguilar-Luzón et al. (2020) asserted that the beliefs individuals or society hold about governance and the environment directly relate to behavioral intentions such as participating in conservation. Carreón Guillén et al. (2019) found that stakeholder's participation on governance and the natural environment were direct indications of health outcomes in the society. Individuals in this study also believed that governance actors could solve environmental problems. Understanding the correlates of beliefs about environmental governance can help to understand the interactions and dynamics between people and environmental governance.

Level of Stakeholder Participation in governance, can be assessed using surveys that attempt to operationalize concepts related to assessment of governance (Dellmuth & Schlipphak, 2020; Levi et al., 2019). Stakeholder Participation in governance has also been identified as important to assess socially just governance (Jacobson, 2017). In studies of whether beliefs associate with objective measures of policy, Doherty and Wolak (2018) found Stakeholder Participation in governance about whether governance decisions were fair did actually correlate with the characteristics of specific policies. Turner et al. (2018) also found, in a study about beliefs regarding governance legitimacy, that beliefs were correlated most strongly with measures of trust in information, fairness of outcomes, and confidence in institutional performance. Environmental governance has been measured in some contexts with individual beliefs. Biedenweg et al. (2017) performed a study in Puget Sound that used focus groups to identify measures that

individuals believed were important for environmental governance and they found that Stakeholder Participation in governance and representation were important to citizens.

Boonzaaier (2019) found that people's beliefs about specific conservation areas are complex and are connected to the utilization of resources and the polices surrounding those resources. Every citizen is entitled to participation in country's leadership process (UDHR 2018). This is possible through direct participation or through participation in election of leaders. Such leadership is assumed to represent electorate at various capacities of governance. In essence, for leadership to be participative in nature, leaders chosen ought to engage their electorates in open discussions regarding leadership in order to enhance their understanding of the specific needs of their electorates in order to communicate them in decision-making process (Conyers, 2017). Public participation also creates an opportunity and avenue where citizens engage, thus enlightening them to participate in resource allocation and use. Further, it helps in promoting Awareness and transparency. In addition to this, it leads to a reduction of corruption and promote efficiency (Kenya community of Government, 2018). Citizen rights remain to be an important perception in both urban and rural development and political activities across the world (Hindess and Muetzelfeldt ,2018).

Perception of people is an important link to a place and space. Through citizen participation, people are connected to distant societies in terms of space, largely when attempting to fulfill the wishes for communal development (Lepofsky and Fraser 2019). In addition, residency is an important element through which people are connected as part of space and place. Citizens understanding in different part of the word differ according to environment dictate. In southern globe citizen, participation through collective agreement is associated with an attempt of transforming government from dictatorial to a democratic government (Dagnino 2019). Western countries were

associated with pro civil liberties perceptions associated with resistance of marginal ethnicities and acknowledging their civil rights.

2.2.4 Compliance with Law and Health Outcomes

Responsiveness is the element of governance that helps organization to interact with the system to improve governance and subsequently making the entire system respond to changing circumstances within the system (Bardard, 2018). System responsiveness help organization to identify weak points that contribute to pitfalls in performance (Barded, 2019). System responsiveness is critical in establishing benchmarks that are used to measure and assess efficiency, comparing system performance across time and assessing effectiveness of expenditures (Tom, 2010). Worldwide, the element of responsiveness is a crucial component in meeting clients' needs and in meeting their expectations (Hsu ,2019). Responsiveness is least studied as a system objective leading to a lack of a suitable framework. In order for environmental governance to bring change towards responding to health needs of the community there must be a shift in decisions are made at grassroots level. Interest in environmental governance is evolving toward the analysis and design of institutions and governance systems with "adaptive capacity," described as the ability of a system or the components of the governance system to be robust to disturbances and capable of responding to change (Armitage & Plummer 2019). Governance systems with greater adaptive capacity are expected to deal with current and projected uncertainty and respond more effectively to problems of fit and scale mismatch (Folke et al. 2017). Collaboration and learning are thus seen as one way for managers and scientists to engage (and not necessarily formally) with different types of transparency and perspectives. This will be the case in Malinau District, Indonesia where forest conservation efforts had to address a weak institutional setting and challenging politics (Wollenberg et al. 2017).

According to Bardard (2019) in a study of effect of environmental governance in Australia found that the traditional top down approach in decisions making have not and cannot create the conservation outcomes that can be able to address multiscale reality of connection of environmental and health problems. Similarly, Blue (2016) while addressing challenges of environmental governance in OECD Countries found that for environmental governance to respond to changing health needs of community there is a need of shared governance mechanisms between stakeholders of health and environmental sectors in such a way that there is a match of realities of the two sectors while dealing with ecological changes. Observation also made by Yaho (2019) in a study in South Korea that interactions among the various spatial boundaries of environment and health should be a priority for health outcomes to effectively transcend these boundaries, there should also be a top management commitment in providing resources that can sustain the governance structure.

Martin (2018) concluded in a study based on USA California that a transformative, adaptive and multi-level governance methodology approach is what is necessary to cope with change and uncertainty of environment in era of climate change which bring different health realities. Accordingly, as environmental governance is transformed, especially through legal and regulatory mechanisms, it will be critical to ensure that the capacity for adaptation is fostered, while Awareness and legitimacy are maintained (Martin, 2020). Transparency and dissemination of information is crucial for to deal with complex social–ecological systems take different forms (e.g., scientific and local) and is held by actors outside of governments. It is important to recognize that non-state actors can be transparency generators as well as transparency recipients. Therefore conservation managers and scientists should interact with each other and with other actors in conservation settings, and the choices they make, are central to the emergence of

particular governance configurations that can affect global health outcomes (Derds, 2017).In sub-Saharan Africa, limited resources, insufficient health systems, and high level of poverty hamper HealthCare responsiveness (UNDESA, 2015).Therefore most health programs fails to have impact necessary impact on clients. In Kenya due to limited health resources, lack of focus, high level of poverty also has impact in matching needs of the environment and health sector.

2.2.5 Environmental Governance and Health Outcomes

According to Timothy (2017), Transparency is also related with concept of ethics and integrity adherence to a set of moral or ethical principles, such as impartiality, legality, public Awareness, and transparency (OECD, 2020). According to Foo et al. (2018), evaluating environmental management and decision-making requires consideration of governance principles such information access and process influence. Personal views on environmental governance reflect a person's agreement or disagreement with the way the environment is handled. A person's knowledge, judgments, or conclusions about things they take to be true make up their beliefs, which are cognitive reactions (Eagly & Chaiken, 2019). Measurements of these views have the potential to serve as "...social indicators [that] can help managers track patterns in public perceptions of environmental conditions as well as shifts in the social forces shaping support for different types of policies" (Safford et al., 2014, p. 764). According to Safford et al. (2014), when people have strong ideas about something, and governance institutions respond accordingly, these views can serve as a catalyst for change. Locals' subjective support for a fisheries conservation effort was shown to be most strongly correlated with their views of social impacts and good governance, according to Bennett et al.'s (2019) survey. The United Nations Development Program (UNDP) (1997) emphasizes the fundamentals of good governance, which are here connected to the sub-dimensions of the Worldwide

Governance Indicators (WGI) (Kaufmann et al. 2010) to characterize the corresponding environmental effects.

UNDP (1997) defined governance as the exercise of administrative, political, and economic power to oversee the operations of a nation at all levels. It consists of the structures, procedures, and systems that allow individuals and organizations to express their concerns, assert their legal rights, fulfill their responsibilities, and settle disputes. Highlighting the traits of effective institutions and governments—which have been connected to good governance principles—becomes essential when examining the results of governance. Participatory governance means that both men and women should be able to freely express themselves and participate in decision-making. Along with the presence of free media, the WGI component of voice and accountability also pertains to how much a nation's citizens choose their governments (Kaufmann et al. 2010). Processes that enable public interest lawsuits in court can serve as the foundation for participatory governance frameworks. In the event that governance arrangements permit it, public discourse and involvement in environmental issues can be promoted. However, the concept of good governance can be undermined by democracies that are inherently defective and by nations that deny women, minorities, or socially disadvantaged groups equal rights to vote.

The rule of law must prevail in order to assure compliance, and environmental regulations must be in place for voices to be helpful. This component, including the quality of contract enforcement, property rights, the police, and the courts, is covered by both the WGI dimension of rule of law and the UNDP policy paper from 1997 (Kaufmann et al. 2010). The presence of the rule of law alone, however, does not guarantee good governance in the event that populist policies that cast doubt on environmental harm and peace, fast court rulings, and instances of police brutality persist.

The governance institutions must be responsive to the increasing environmental concerns brought on by climate change and biodiversity loss. This means that there should be sufficient fast-track courts for these issues, and if not, appropriate changes to the laws and regulations should be made as needed. However, red tape-induced delays in procedures draw attention to poor governance systems that can cause long-term harm to the environment in situations where prompt action is needed, such as preventing forest fires and saving endangered species.

This relates to the WGI's political stability dimension as well, since stable politics encourage these kinds of amendments and shield the environment from lobbyists who might have a negative impact on it. Economic activities that further endanger the ecosystem should be severely penalized and discouraged as a step towards sustainable living, given the current rate at which biodiversity is being lost. Since they are complementary, the UNDP's accountability concept and WGI's corruption control principle have a significant impact on that front. Decision-makers are accountable, and participatory governance can improve accountability and, consequently, environmental law compliance. However, participatory governance institutions by themselves cannot guarantee accountability if there are political and legal practices that grant criminals protection. If we are to successfully address terrible governance, everyone must be treated equally by the law.

Transparent governance methods, which give stakeholders easy access to information so that any disparities are not missed, can further improve compliance. The transparency of decision-makers and governance actors is improved by regular dialogues, press conferences, and environment conventions, which occasionally include free media. Lack of access to information and the absence of free media are significant factors in poor governance, which can erode public trust even in the case of equitable policies. On the

other hand, data accessibility is enhanced by laws that grant citizens the right to access information, and this public transparency increases public support for higher spending on environmental policies as well as public confidence in governments (Kulin and Johansson Sevä 2019).

More public support facilitates the formulation of consensus-oriented policies that better serve the interests of a wider range of stakeholders, including all living forms involved in environmental concerns. Because all life forms are treated equally, these policies also uphold the equity principle. In accordance with Article 51A(g) of the Indian Constitution, it is everyone's responsibility to uphold the rights of non-human animals and to exercise compassion for them.Policy agreements between conservationists or environmentalists and lobbyists whose goal is to secure permits and approvals for commercial ventures that may have negative environmental effects are referred to as consensus-oriented policies. It may be difficult, but not impossible, to find common ground on policy grounds in such situations. Among the policies that promote consensus are those that encourage the use of renewable energy resources, government purchases of sustainable technology and alternative inputs, tax breaks for companies using morally and environmentally sound production methods, etc. Strategically oriented policies encourage sustainable development and must be supported by laws and regulations that ensure adherence and increase their efficacy. The WGI component that deals with regulatory quality also sheds light on governments' abilities to create and carry out sensible laws and policies that advance general development. However, short-sighted individuals in governance who use populism to win over voters and poor governance, which results in weak regulations and unwise policies, cause more harm than benefit. Therefore, improved environmental outcomes that guarantee lower carbon dioxide emissions, sufficient forest cover, and

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higher consumption of renewable energy relative to non-renewable energy can be achieved effectively and efficiently through excellent governance practices.

The current rate of economic growth in nations is a significant factor in governance results. Lower-income nations give precedence to governance frameworks that yield superior economic results, even at the expense of environmental consequences. The demands of the future are compromised in an effort to increase economic activity for current growth, and political considerations take precedence over environmental effects Gross-Camp et al. (2018). Poorly performing countries are observed to emphasize economic above environmental outcomes, therefore increases in their governance levels may, up to a point, have a negative impact on the environment. This is based on governance performance as measured by WGI indicators. Governance and leadership pillars measurements are challenging due to insufficient evidence on service delivery outputs. In primary care, governance include transparency, stakeholder's participation, sectoral collaboration and transparent. Most public facilities face Awareness and transparency making them less efficient compared with privately run facilities. Transparency consists of establishment of rules and procedures, processes and activities by different organizations in an attempt of disclosing information to the public. Organization applies either active or passive disclosures (Vian, 2016).

Timely information is necessary to stakeholders in order to make sound decision. Therefore, health providers in an open and transparent manner must provide accurate information to their clients. Better environmental outcomes are the result of improved governance, but they are only noticeable if a certain degree of governance performance is reached and better environmental outcomes become more significant than the negative externalities of economic activities. Following the conversation, the following theories can be made to look into how governance and environmental results are related.

Similarly, Gross-Camp et al. (2018) discovered that perceptions of the legitimacy and fairness of the system were a prerequisite for the efficacy of an environmental management program, in these instance payments for ecosystem services. Governance structures cannot fulfill the will of the people if they do not comprehend the opinions of the populace.

According to Mohammed (2017), transparency is related with level of availability and accessibility of information in relation to extent to which citizens have right to examine public records, the more organization are able to share information the better the outcomes in environmental governance, such information is crucial because will give citizens to obtain data from environmental monitoring, reports from environmental agencies, or budgets allocated for environmental protection, investments in will better management systems. Kolstad (2018), also indicates that transparency helps to connect environmental governance with health outcomes where it enables in detections of wrongdoings which therefore increases the level of awareness of decisions making, Awareness.

Transparency of complex and changing systems is required to facilitate evaluation and assessment processes, respond to feedback and negotiate conservation trade-offs (Campbell et al. 2017). However, transparency to meet these needs is widely distributed. No individual actor (state or nonstate) can ever have the full range of knowledge required to govern resources effectively (Berkes 2017). Empirical studies show that drawing from multiple sources of transparency, including transparency from formally trained scientists, policy makers and managers, as well as transparency of resource users (agriculture producers, fishers, hunters, etc.), can lead to better social and ecological outcomes (Forbes et al. 2006; Pohl et al. 2017).

The emphasis in contemporary environmental governance is thus increasingly on the "coproduction of transparency," highlighting the value of managers and scientists

engaging with diverse actors to build more holistic understandings (Armitage et al. 2011). The emphasis on collaborative process is intended to help overcome the institutional (e.g., power differences among actors) and epistemological challenges associated with the" integration" of traditional and scientific transparency (see Agrawal 1995; Huntington 2000). Coproduction processes, in con-trast, serve to blur epistemologies and the roles of different actors in the making and interpretation of knowledge (see Pohl et al. 2018).

An integrity system is a political and administrative arrangement that encourages application of these principles in the daily operations, to ensure that in-formation, resources and authority is used for intended purposes. On a national level, an integrity system comprises of government and non-governmental institutions, laws, and practices and can help minimize corruption and mismanagement. Hunter (2019) indicates the Transparency of environmental governance is related to trust in government and legitimacy. When citizens cannot trust that public servants will serve the public interest with fairness and manage public resources properly, the legitimacy of the government will be suffering. On the other hand, fair and reliable public services inspire public trust. This is particularly important in relation to environment, as there often is a conflict between private gains and public wealth. For example, Allocation of mineral or logging concessions in Brazil and Nigeria, environmental inspections and certification of environmental assessments are examples of activities where integrity is frequently compromised, this compromises the process of environmental and health impact assess of environment which increases chances poor health outcomes.

According to Koki (2017), same happened in instances of Ghana, Ivory Coast and Gabon and Equatorial Guinea where lack of transparent and broadly disseminated reporting of health impact assessment from oil and minerals fail to provides opportunities to hold the

government accountable for how the tradeoff between economic gain and health impact should be ascertained. External monitoring mechanisms could be useful in reinforcing Awareness in the extractive sectors. Therefore, strengthening Awareness, through active participation of communities and citizens, may be the best way to promote sustainable of resources in the respective communities. Good governance is a complex and multidimensional process of evaluating the extent to which public institutions manage the available resources, perform institutional affairs, and ensure that human rights are realized in a way that is essentially free of fraud and corruption with due consideration for the rule of law. Good governance ensures that a nation's interests are protected through effective conduits for governing and managing existing and potential resources (Hunter 2019).

Acemoglu et al. (2019) promoted the concept of governance through conduits of economic, social, judicial, and political elements that highly impact macro-level policies to preserve public resources for significant social inclusion, prosperity, and the wellbeing of a nation. Theories predict that good governance plays an essential role in the formulation of policies and practices that ensure a participatory development viewpoint through increasing people's agency in the sense of process freedom concerning environmental policies. This means allowing both governments and individuals to actively engage in, plan for, and numerous studies have examined the impact of good governance on a number of socioeconomic indicators such as growth, finance, health outcomes, food insecurity, and poverty across various geographical contexts34–37. However, the effects of good governance on environmental degradation have not been extensively studied, but there are some studies worth reviewing. For instance, Shabir et al. (2019).

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Investigated the effects of governance, innovative technologies, trade openness, and economic growth on CO2 emissions in a panel of Asia–Pacific Economic Cooperation (APEC) member countries over the period from 2004 to 2018, using the common correlated effects mean group technique. The authors observed a bidirectional link between governance and CO2 emissions. Wang et al. (2019), explored the asymmetric effects of institutional quality, environmental governance, and technological innovations on ecological footprints. They employed a set of panel data for European Union countries from 1990 to 2019 and a series of dynamic panel regression methods. They noticed that innovation, institutional quality, and environmental governance are crucial to reducing the ecological footprint across the reviewed countries. Sibanda et al. (2019) examined the effects of governance on natural resources and environmental degradation from 1994 to 2020 using the generalized method of moments (GMM) technique.

In the same vein, Jahanger et al. (2019) used autocracy and democracy as proxies for governance quality and examined their effects on CO2 emissions in a panel of 69 developing countries over the period from 1990 to 2018. The authors employed panel integration and FMOLS methods and confirmed that governance quality has a long-run relationship with CO2 emissions. They also confirmed that democracy significantly reduces environmental pressures, while globalization and financial development impose adverse effects on the environment. The literature also reveals that Azam et al. (2019) evaluated the impact of good governance on environmental quality and energy consumption in a panel of 66 developing countries for the period spanning from 1991 to 2017 using the GMM method. The authors constructed a governance index using three indicators such as political stability, administrative capacity, and democratic accountability. They observed that, though good governance has been significantly

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positive in affecting energy consumption, globalization has been found to be insignificant in increasing environmental quality.

Moverover, Gök and Sodhi (2019) examined the link between governance and environmental quality in a panel of 115 countries classified as high-, middle-, and low-income countries from 2000 to 2015. The authors employed the system-GMM model and noticed that good governance improves environmental quality in high-income countries while having an adverse effect in middle- and low-income countries. Their conclusions suggested that improving the quality of governance is essential to environmental outcomes without tampering with existing policies. Contrary to this, Udemba44 investigated the effects of good governance on environmental quality in Chile using a set of time-series data from the first quarter of 1996 to the fourth quarter of 2018 and a non-linear regression approach. The author found that both good governance and foreign direct investments are statistically significant for improving environmental quality in Chile. Furthermore, Ahmed et al. (2019) examined the asymmetric effects of good governance, financial development, and trade openness on environmental degradation in Pakistan over the period from 1996 to 2018. The authors employed autoregressive distributive lags (ARDL) and non-linear ARDL models to test their hypotheses. In addition to confirming a long-run nexus between the predictors, the authors found that positive shocks to financial development and institutional quality have a significant effect on environmental degradation, while the quality of institutions is highly sensitive to enhancing environmental quality.

2.3 Conceptual Frameworks

Environmental governance is one of the key ways in which society influences both environmental health and people , governance quality positively impacts environmental

quality and suggests having policies that improve governance indicators as they negatively impact environmental degradation Environmental governance specifically has been measured with similar variables for legitimacy, inclusivity, stakeholder participation, compliance and implementation of environmental laws (Biedenweg et al., 2017; Lockwood et al., 2018).

This study utilized a conceptual framework to explain relationship between awareness, stakeholder participation, compliance and implementation of environmental laws and how they relate to public health outcomes as shown in Figure 1.

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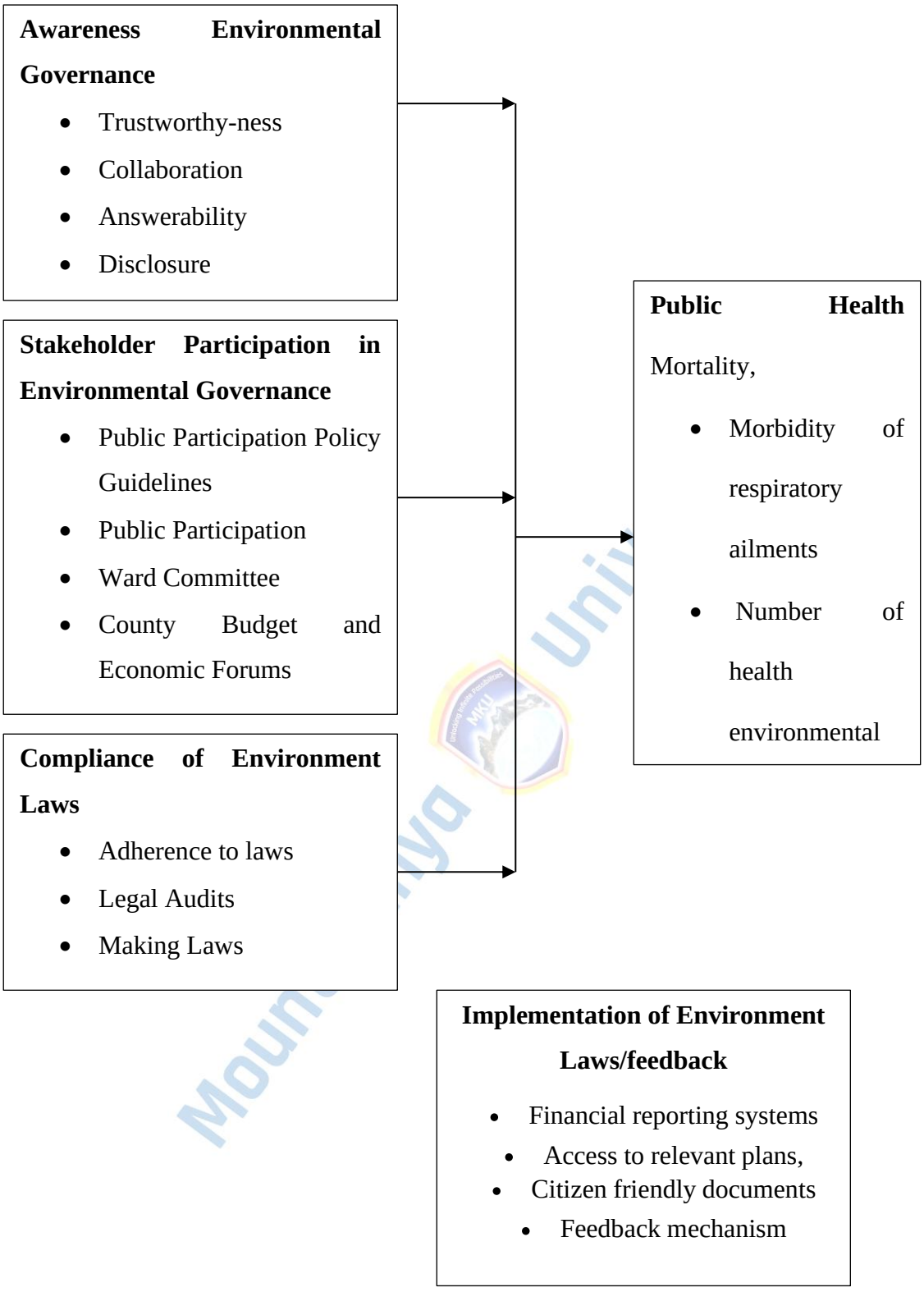

Figure 1: Conceptual Framework

2.4 Summary of Literature Review

To achieve quality healthcare for all, health facilities require abiding with generally recognized values in a successful organization: a stakeholder participation, compliance and implementation of environmental laws to ensure sound utilization of scarce resources health facilities must be accountable at all levels to ensure prudent utilization of resources. Transparency is a crucial pillar in healthcare as it ensures a culture of openness in a working environment. Awareness and transparency contribute to quality care, and contribute to effectiveness and responsibility in a healthcare. From the literature review, there is a strong correlation between stakeholder participation, compliance and implementation of environmental laws. Literature review reveals that environmental governance factors lead to excellent process of care and ultimately quality Healthcare outcome.

2.5 Research Gaps

Although there is not yet a strong consensus on how to define 'governance', the concept is generally used to describe how power and authority are exercised and distributed, how decisions are made, and to what extent citizens are able to participate in decision-making processes. Hence, governance is about making choices, decisions and trade-offs, and it deals with economic, political and administrative aspects. Good governance (sometimes referred to as 'democratic governance') aims at ensuring inclusive participation, making governing institutions more effective, responsive and accountable, and respectful of the rule of law and international norms and principles. Citizens understanding in different part of the word differ according to environment dictate. In southern globe citizen, participation through collective agreement is associated with an attempt of transforming government from dictatorial to a democratic government.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter focused on the research methodology and materials to be used in this study. It highlighted the research design, the study area, target population, sampling size, sampling procedure, research instruments, pilot study, validity of the research instrument, reliability of the research instrument, data collection procedures, data analysis techniques and ethical consideration.

3.1 Research Methodology

The study adopted mixed methodology approach which involves incorporation quantitative and qualitative methods. According to Kothari (2005), in choosing quantitative methods the researcher will ask specific questions, collect large data from a large number of participants, and perform statistical analysis following objective and ethical manners. This quantitative data was specifically collected using the questionnaires. However, for the case of qualitative data the researcher was holistically rely on views of the participants which will be broad and general comments. The researcher eventually collated, described and analysed those data based on the objective of the study to find out what are the main themes of the study.

3.2 Research Design

The study adopted a descriptive research design. A descriptive survey enabled the researcher to describe the characteristics of the variables of interest. According to (Orodho, 2003) descriptive research design is appropriate where the study seeks to describe the characteristics of certain groups, estimate the proportion of people who have

certain characteristics and make predictions. Descriptive research designs are used in preliminary and exploratory studies to allow researchers to gather information and summarize, present and interpret data for the purpose of clarification (Orodho, 2003).Population of the study is defined as the entire group of people, objects which have been isolated to having common characteristics and the one that conform with those specification and events (Mugenda & Mugenda, 2013) therefore there is need for all elements and individuals under examination to have similar characteristics. The unit of observation was the employees working at various levels at strategic, tactical and operational levels in the selected Mandera Sub-County Environment, Energy, Climate Change, Natural Resource, water, safety and public Health. In this case they comprised of Natural resource technician Natural resource specialist, Meteorologist Geographic Information Systems (GIS) , Water and Sewage speacialist, Geographic Information Systems (GIS) specialist, Environmental health and safety officer, Microbiologist, Environment health and safety specialist as shown in Table 1

Table 1: Target Population

Respondents	**Population**	**Proportion (%)**
Strategic	70	10.0
Tactical	210	30.0
Operational Levels	420	60.0
Total	**700**	**100**

Source: Mandera County Public Service Board Human Resource Data (2023)

3.3 Sample Size and Sampling Procedures

3.3.1 Sample Size

Oso and Onen (2009) observed that a sample is smaller group drawn from the target population selected procedurally as a representation. The main aim of sampling is to get accurate empirical data by using a smaller representative group leading to a reduction in the cost of the study.

The researcher used the Krejcie and Morgan sampling table. This sampling approach has been adapted by research advisors (2018) as the most convenient and effective sampling table to get a sample without complexities of formulas. From the Krejcie and Morgan sampling table shown in (Appendix VIII), 700 target population yielded 141 as sample. This was at 95% confidence interval which implies there will be appropriate margin of error of maximum 5% which is recommended for social studies. Therefore, in this study Krejcie and Morgan sampling table ensured that the numbers of the samples are relative to the size of the population for accurate inferences. The final sample is as shown in Table 2

Table 2: Sample Size

Respondents	**Population**	**Proportion (%)**
Strategic	14	10.0
Tactical	42	30.0
Operational Levels	85	60.0
Total	**141**	**100**

Source: Researcher, (2020)

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3.4 Sampling Techniques

For sampled data, the study adopted a stratified random sampling procedure, from the selected sample of 141 staffs from various department where stratification was necessary since the study targeted staff sought staff members with diversity and adequate exposure to subject of the study in terms of trend, timeline, magnitude and extent environmental matters.

3.5 Data Collection Instruments

The study adopted three tools of data collection instruments, which include questionnaires, interview schedule, and secondary data

3.5.1 Questionnaire for Community Members

The researcher utilized a semi-structured questionnaire to gather data from community members as the main unit of analysis. The questionnaire was divided into section. Section one contained questions on background or personal information of the community members. Section '2-3' had questions addressing the four objectives of the study thus: The questionnaire contained both open and closed questions. Respondents were requested to fill the questionnaires, which were then collected for analysis.

3.5.2 Interview Schedule for National Environmental Management Officers

This tool was used to collect data from key informants –National environmental officers. The tool provided verbatim information that was used to support the information from the questionnaires for reliability. Direct verbal interaction between participants and the researcher allowed for greater in-depth information; it further offered the possibility to clarify emerging issues about human activities and conservation of Sub County in the region. The interview schedule was tailored towards the objective of the study.

According to Orodho (2004), interview guides are very versatile tools since they provide critical access to key informants' opinions which make it possible to measure people's opinions on subject matters, it also makes it possible to measure preferences, attitudes, perception and beliefs. Interview was vital for this research because the researcher was able to ask probing and supplementary questions as well as developed a good relationship with the respondents.

3.6 Validity & Reliability

Validity of research instruments is the extent to which the results which has been obtained from the data which has been analysed and which represent the actual phenomena studied Orodho (2009) validity is meant to ascertain how the results obtained are accurate, correct, believable, meaningful and in order and so validity need to be done prior to using of the tools in the final research since it is qualitative procedural test. The research validity was ascertained by subject matter experts and the supervisor assured that the measuring techniques in the tools as well as coverage of the subject's areas is as required in the questionnaire. On the same breadth reliability of research instrument is concerned with degree to which tools are able to yields consistent results even when repeated in repeated trials as explained by Mugenda and Mugenda, (2003) that this is the consistency in yielding similar results from the same respondents after administering the instruments for several times , two or more within a lapse of considerable time apart between the moments of the administration, for this reason the study employed the test-retest approach to ascertain reliability of the research instruments.

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3.7 Data Analysis

The term data analysis refers to examining what has been collected in a survey of experiment and making deductions and inferences. It involves uncovering underlying structures, extracting important variables, detecting any anomalies and testing any underlying assumptions (Kombo and Tromp, 2006). The researcher used descriptive statistics to analyses quantitative data and present findings in form of pie charts, bar graphs, frequency tables, the research was also utilized Chi-square and other tools to test the effects between the variables used in the study. Analyzing themes and content analysis was used to analyses qualitative data from in interview guide. Computer software, Statistical Package for the Social Sciences (SPSS) was used to tabulate the work and make it more manageable.

3.8 Ethical Considerations

The researcher observed professional ethics and ensure that no student suffers physical, psychological, or emotional harm during the research. The universal principles of autonomy, beneficence, non-maleficence, justice and veracity will be adhered to. The researcher opened to correct mistakes that would invade privacy, cause embarrassment, cause belittlement, or tend to trick. Confidentiality and anonymity was maintained. Each participant expected to make an informed choice and give consent by signing or writing initials before they participate in the research. The information obtained was released for other purposes other than for which the research is intended. Breaking of confidentiality was only be to the extent where ethically it should be and if the law required such.

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CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

This chapter presents the research findings; the analysis and interpretation. The discussions of the key findings are also made at the end of the chapter.

4.1 Response Rate

The study had a sample size of 141 participants, out of which 132 replies were obtained, resulting in a response rate of 93.6%. These findings indicate that almost 93.6% of the persons who were asked to participate in the study gave their responses, suggesting a relatively high degree of involvement and willingness to cooperate among the participants.

Table 3: Response Rate

Status	Frequency	Percent
Responded	132	93.6%
Not Responded	9	6.4%
Total	141	100%

Source: Field Data (2024)

4.2 Demographic Information

4.2.1 Gender

The gender breakdown chart shows that out of a total of 132 respondents, there are 56 males and 76 females. 42.4% of the respondents were male, while 57.6% were female. The valid % column accurately reflects these figures as all responses are considered valid. The cumulative percentage column indicates that males comprise 42.4% of the total, while females collectively constitute the remaining proportion, totaling 100%.

Overall, the data indicates a greater proportion of females in the sample as opposed to males. More precisely, 57.6% of the participants are female, whilst 42.4% are male. The disparity between genders is visually depicted in the accompanying pie chart, with the female sector being greater than the male segment, thereby clearly displaying the gender imbalance in the sample.

Table 4: Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	56	42.4	42.4	42.4
	Female	76	57.6	57.6	100.0
	Total	132	100.0	100.0	

Source: Field Data (2024)

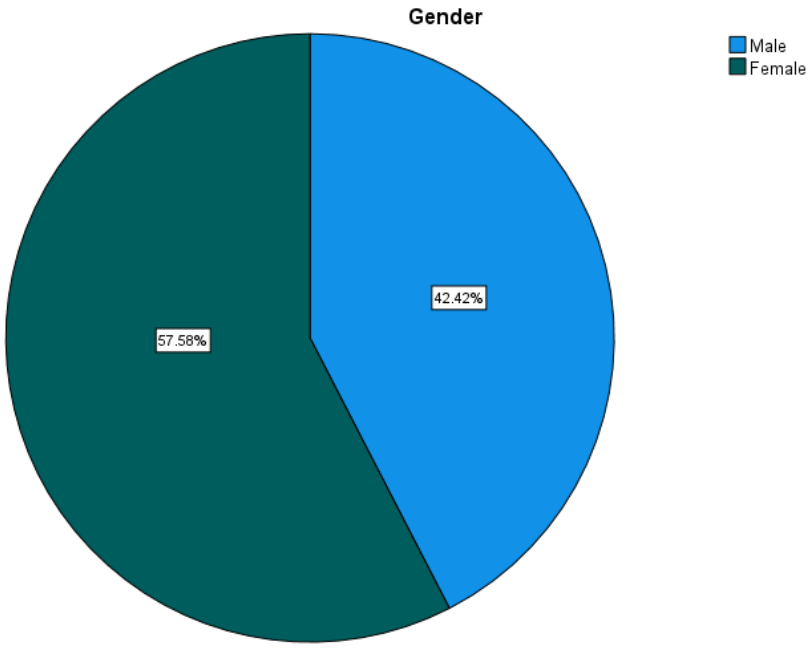

Figure 2 : Gender

Source: Field Data (2024)

4.2.2 Age

The age distribution table presents a detailed analysis of the ages of the respondents, categorized into several age groups. Out of the 132 participants, the age range of 31-35 years has the biggest number of persons, with 40 people accounting for 30.3% of the total. Next, the age group of 26-30 years consists of 29 respondents, which makes up 22.0% of the total. Similarly, the age group of 36-40 years has 28 respondents, accounting for 21.2%. Upon closer analysis, it is evident that 19 participants belong to the age group of 41-45 years, accounting for 14.4% of the whole sample. Both the age groups of 21-25 years and 46-50 years have 6 respondents each, accounting for 4.5% of the total. Finally, the age group that is least represented is individuals above the age of 50, with only 4 replies, making up 3.0% of the total. The valid percent column corresponds to the percent column, as it includes only valid responses. The cumulative percent column demonstrates the gradual accumulation of percentages across different age groups. The percentage starts at 4.5% for the age group of 21-25 years and gradually increases to 26.5% for the age group of 26-30 years, 56.8% for the age group of 31-35 years, and finally reaches 100.0% for the age group beyond 50 years.

Figure 3 displays a bar graph that clearly depicts the age distribution of the respondents. Each bar represents a certain age group, and the height of the bar indicates the number of people who responded from that group. The graph illustrates that the age group of 31-35 years exhibits the largest frequency, with 40 respondents. It is followed by the age group of 26-30 years, which has 29 respondents, and the age group of 36-40 years, which has 28 respondents. The age categories with the lowest frequencies are the 21-25 years and 46-50 years groups, each consisting of 6 respondents, while the over 50 years category has just 4 respondents.

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Table 5 : Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	21 - 25 years	6	4.5	4.5	4.5
	26 - 30 years	29	22.0	22.0	26.5
	31 - 35 years	40	30.3	30.3	56.8
	36 - 40 years	28	21.2	21.2	78.0
	41 - 45 years	19	14.4	14.4	92.4
	46 - 50	6	4.5	4.5	97.0
	Above 50 years	4	3.0	3.0	100.0
	Total	132	100.0	100.0	

Source: Field Data (2024)

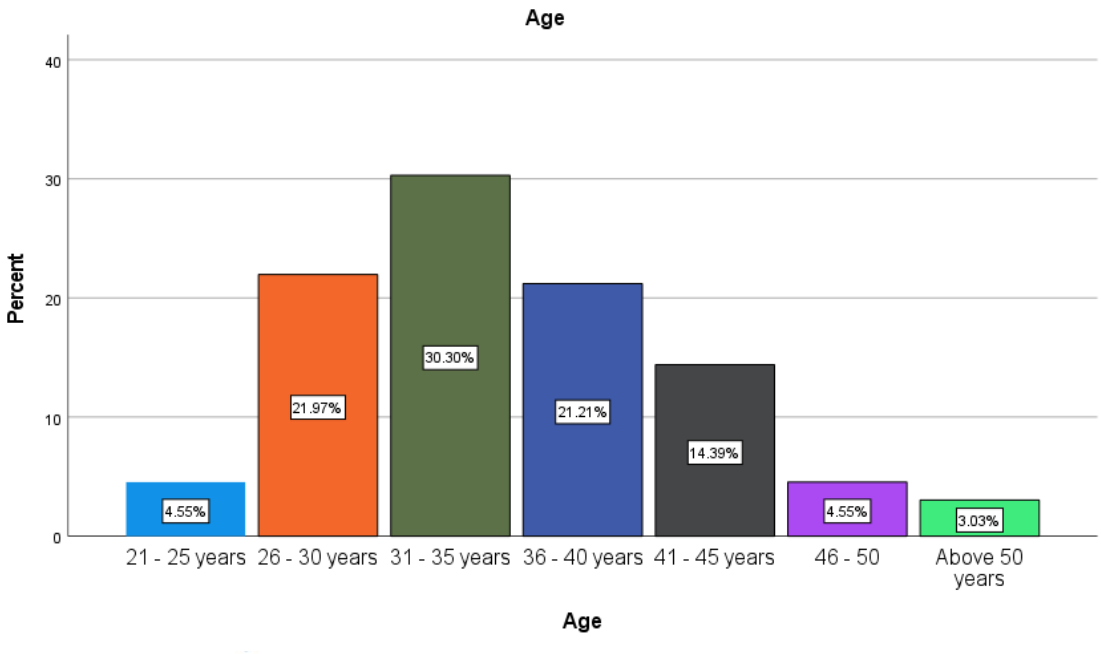

Figure 3 : Age

Source: Field Data (2024)

4.3.3 Professional Qualifications

The table presents the distribution of responders according to their training status. Among the 132 respondents, 124 have received training, making up 93.9% of the sample. The remaining 8 respondents, or 6.1% of the sample, have not received any training. The valid percentage column accurately reflects these figures, as all responses are considered valid. The cumulative percent column indicates that 93.9% of the total respondents are trained, while the remaining 6.1% are untrained. The data shows a notable prevalence of individuals who have received training within the sample. 93.9% of the participants in the study have received training, indicating that the results of the study may be significantly impacted by this particular group. The limited percentage of untrained participants, namely 6.1%, could lead to less reliable and comprehensive findings about this particular category. Hence, while conducting a study that seeks to examine the impacts of training, it is crucial to meticulously take into account the significant disparity between the respondents who have received training and those who have not.

Table 6 : Professional Qualifications

		Gender			
		Frequency	**Percent**	**Valid Percent**	**Cumulative Percent**
Valid	**Trained**	124	93.9	93.9	93.9
	untrained	8	6.1	6.1	100.0
	Total	**132**	**100.0**	**100.0**	

Source: Field Data (2024)

4.4 Descriptives Findings

4.4.1 Awareness of Environment Governance

The table displays descriptive statistics on respondents' awareness and understanding of environmental issues. A total of 132 participants supplied replies for each statement, which were graded on a scale ranging from 1 to 5. The initial statement, "I possess

knowledge regarding air pollution, land pollution, water pollution, and the extinction of endangered animals," elicited responses that varied from a minimum of 1 to a maximum of 5. The average score was 3.1288, with a standard deviation of 1.64575. This indicates a moderate level of consciousness with significant variation across participants. The second statement, "I possess knowledge of significant environmental obstacles confronting my community or county," is rated on a scale of 1 to 5, with an average score of 3.1591 and a somewhat greater standard deviation of 1.66614. This suggests a comparable amount of consciousness as the initial remark, but with a little wider array of reactions. The third statement, "I can identify common pollutants (e.g., carbon dioxide, lead, plastic)," had a mean score of 3.0758 and a standard deviation of 1.64210. This indicates moderate awareness and similar variability. The fourth statement, "I am cognizant of the ramifications of deforestation, climate change, or habitat destruction," had a mean of 3.0833 and the largest standard deviation of 1.69436 among all statements. This indicates that although the overall degree of awareness is modest, there is significant variation in the levels of awareness across the responders. The statement "I am aware of local environmental organizations or initiatives" has a mean score of 3.0985 and a standard deviation of 1.68903. This indicates a moderate level of consciousness with significant variation.

Table 7 : Awareness of Environment Governance

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I am aware about air pollution, land pollution, water pollution, and the extinction of endangered animals	132	1.00	5.00	3.1288	1.64575

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I am aware of major environmental challenges facing my community or county	132	1.00	5.00	3.1591	1.66614
I can identify common pollutants (e.g., carbon dioxide, lead, plastic	132	1.00	5.00	3.0758	1.64210
I am aware of impact of deforestation, climate change, or habitat destruction.	132	1.00	5.00	3.0833	1.69436
I am aware of local environmental organizations or initiatives	132	1.00	5.00	3.0985	1.68903
Valid N (listwise)	132				

Source: Field Data (2024)

4.4.2 Stakeholder Participation and Health Outcomes

The table presents descriptive information on respondents' involvement in different environmental activities, emphasizing the level of their engagement and conservation behaviors. Each sentence elicited answers from 132 participants, who were evaluated on a scale ranging from 1 to 5. The scores for the statement "I often recycle at home or in public spaces" range from 1 to 5, with an average value of 2.5833 and a standard deviation of 1.64406. This data suggests that, on average, the respondents demonstrate a moderate level of recycling, although there is significant variability among individuals. The statement "I engage in water conservation, energy consumption reduction, or waste reduction" has a mean score of 2.6894 and a standard deviation of 1.66294, indicating a slightly greater level of involvement in these conservation efforts compared to recycling, although with notable variation. The average score for "I participate in environmental campaigns, tree planting" is 3.1364, with a standard deviation of 1.70662. This suggests

a modest level of engagement in these efforts, with a significant amount of variation, indicating that some participants are very involved while others are not. The given statement "I participate in environmental campaigns mobilizing community to conserve environment" has a calculated mean of 3.0379 and a standard deviation of 1.68244. This demonstrates a consistent trend of modest involvement with notable differences across participants. The statement "I participate in environmental or clean-up drives" has the highest mean score of 3.2955 and a standard deviation of 1.62396. This suggests a slightly higher level of involvement in clean-up activities compared to other environmental actions, although there is still a significant amount of variation.

Table 8 : Stakeholder Participation and Health Outcomes

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I often recycle at home or in public spaces	132	1.00	5.00	2.5833	1.64406
I conserve water, reduce energy consumption, or practice waste reduction	132	1.00	5.00	2.6894	1.66294
I participate in environmental campaigns, tree planting	132	1.00	5.00	3.1364	1.70662
I participate in environmental campaigns mobilizing community to conserve environment	132	1.00	5.00	3.0379	1.68244
I participate in environmental or clean-up drives	132	1.00	5.00	3.2955	1.62396

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Valid N (listwise)	132

Source: Field Data (2024)

4.4.3 Compliance with Law and Health Outcomes

The descriptive statistics provided offer insights into respondents' perceptions regarding various aspects of environmental governance within their county. With a sample size of 132 respondents, the data reveals the range of responses to each statement. For instance, respondents indicated a mean score of 2.3485 for the statement regarding the presence of trained staff to respond promptly to environmental governance issues in the county, suggesting a tendency towards disagreement or uncertainty. Similarly, the statement regarding the county's setup of a desk for compliance tracking, reporting, and documentation received a mean score of 3.0000, indicating a moderate level of agreement among respondents. The standard deviations accompanying each mean provide a measure of variability in responses, highlighting the diversity of opinions within the sample. Notably, the valid N of 132 indicates a complete dataset without missing values, ensuring the integrity of the analysis.

Table 9 : Respondents' perceptions regarding various aspects of environmental governance

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
There are trained staff to respond promptly to environmental governance issues arising in the County	132	1.00	5.00	2.3485	1.57744
The County has set-up a desk that streamline compliance tracking, reporting and documentation	132	1.00	5.00	3.0000	1.68966

County maintain a calendar that highlights important compliance deadlines	132	1.00	5.00	2.6667	1.67454
A special unit for handling environmental matters in the county is fully operational in our county	132	1.00	5.00	3.0909	1.71413
County provides continuous training to educate community members, businesses and relevant stakeholders about environmental regulations	132	1.00	5.00	2.7197	1.69559
Valid N (listwise)	132				

Source: Field Data (2024)

4.4.4 Environmental Governance and Health Outcomes

The descriptive statistics supplied offer insights into how respondents see the effects of complying with environmental governance on several areas of environmental quality and public health. The data, obtained from a sample size of 132 respondents, demonstrates the full spectrum of responses to each statement. Respondents reported a mean score of 3.1818 for the statement indicating that adherence to environmental governance and government effectiveness has a favorable influence on air quality. The comparatively high mean score indicates a consensus among respondents regarding the beneficial influence of compliance on air quality. Conversely, the statement suggesting that compliance and accountability have a positive impact on water quality obtained a mean score of 2.3485, showing a lesser level of agreement among respondents about this specific issue. Similarly, the average scores for statements regarding the decrease of health risks linked to pollution, conservation of natural habitats, and equitable distribution of environmental risks and benefits ranged from 2.4394 to 2.6591, indicating

different levels of agreement or perception among the participants. The standard deviations associated with each mean offer a quantification of the dispersion in responses, emphasizing the range of perspectives within the sample. The N value of 132 shows that the dataset is full and does not have any missing information, which ensures the accuracy and reliability of the study.

Table 10 : Compliance with Law and Health Outcomes

Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Compliance with Environmental Governance and government effectiveness has positively impacted air quality,	132	1.00	5.00	3.1818	1.67066
Compliance and accountability on environment has favorably affect water quality	132	1.00	5.00	2.3485	1.53327
By following environmental regulations, communities experience fewer health risks associated with pollution, toxic substances, and hazardous waste.	132	1.00	5.00	2.4394	1.58840

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Effective governance helps preserve natural habitats, safeguarding plant and animal species.	132	1.00	5.00	2.6364	1.61705
Fair distribution of environmental risks and benefits ensures that vulnerable populations are not disproportionately affected.	132	1.00	5.00	2.6591	1.66155
Valid N (listwise)	132				

Source: Field Data (2024)

4.4.5 Environmental Governance

The supplied descriptive data offer a brief insight into the respondents' thoughts of the potential health-related consequences linked to pollution. The data obtained from a sample of 132 respondents indicates that there were diverse responses to statements addressing various health problems. For example, there is a moderate consensus among survey participants on the escalation of respiratory ailments in both youngsters and older individuals, as well as the upsurge in deaths caused by pollution. However, there is a lack of consensus regarding the seriousness of these problems, as evidenced by the average scores remaining around 2.56. The level of agreement on hospitalization caused by pollution seems to be slightly higher, with an average score approaching 3. However, statements about morbidity, cancer rates, lung infections, and waterborne diseases exhibit a broader spectrum of perceptions, with average scores ranging from 2.79 to 3.37. This indicates that respondents have differing levels of agreement or disagreement on these issues. The standard deviations associated with each mean highlight the range of viewpoints within the sample, while the valid sample size of 132 ensures the dataset is

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comprehensive. These figures offer useful insights into how pollution's health repercussions are perceived, revealing the intricacies of public awareness on these important matters.

Table 11 : Compliance with Law and Health Outcomes

Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
Cases of Children , and old people complaining of respiratory conditions has increased	132	1.00	5.00	2.5606	1.61225
Mortality Due to pollution has increased	132	1.00	5.00	2.5606	1.64041
Hospitalization due to pollution has escalated	132	1.00	5.00	2.9848	1.65306
Morbidity Due to pollution has increased	132	1.00	5.00	2.7879	1.64864
Numbers of cancers has increased	132	1.00	5.00	3.3712	1.66878
Cases of Lung infection has increased	132	1.00	5.00	3.1364	1.68864
Cased of waterborne diseases has increased	132	1.00	5.00	2.8333	1.69493

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Valid N (listwise)	132

Source: Field Data (2024)

4.5 Inferential analysis

4.5.1 Correlations on four objectives

The correlation analysis reveals several significant relationships among variables related The topics covered include environmental awareness, public participation, adherence to environmental legislation, the impact of adherence, and health effects. Significantly, there exists a robust positive association between the degree of environmental consciousness and citizen involvement ($r = .532$, $p < .01$), suggesting that as environmental awareness rises, so does citizen engagement in environmental endeavors. Moreover, there is a positive correlation ($r = .253$, $p < .01$) between the amount of compliance with environmental legislation and environmental awareness. This implies that higher levels of awareness may lead to increased compliance with regulations. Nevertheless, the relationship between compliance and citizen participation is rather insignificant ($r = .109$, $p > .05$), suggesting that compliance alone may not be a significant factor in driving citizen engagement. In addition, the relationship between compliance with environmental regulations and environmental awareness ($r = .506$, $p < .01$) as well as citizen participation ($r = .454$, $p < .01$) is positive. However, there is a minimal correlation between compliance and actual compliance levels ($r = .056$, $p > .05$), indicating that the perceived impact of compliance does not necessarily result in higher levels of actual compliance. Furthermore, there is a significant positive relationship ($r = .376$, $p < .01$) between environmental awareness and health outcomes, suggesting that higher levels of environmental awareness may be linked to improved health outcomes. Nevertheless, there is a minimal link between health outcomes and citizen participation

(r = .065, p > .05), as well as compliance with environmental legislation (r = .124, p > .05). In summary, our findings highlight the intricate relationship between environmental awareness, citizen involvement, adherence to regulations, the perceived impact of adherence, and health outcomes. They offer unique insights into the dynamics of environmental governance and public health.

Table 12 : Correlations Analysis

Correlations

		level of environmental awareness	level of participation of citizens	level compliance with environmental regulations
level of environmental awareness	Pearson Correlation	1	.532**	.253**
	Sig. (2-tailed)		.000	.003
	N	132	132	132
level of participation of citizens	Pearson Correlation	.532**	1	.109
	Sig. (2-tailed)	.000		.211
	N	132	132	132
level compliance with environmental regulations	Pearson Correlation	.253**	.109	1
	Sig. (2-tailed)	.003	.211	
	N	132	132	132
effect of compliance with environmental	Pearson Correlation	.506**	.454**	.056
	Sig. (2-tailed)	.000	.000	.520
	N	132	132	132
Health Outcomes	Pearson Correlation	.376**	.065	.124
	Sig. (2-tailed)	.000	.462	.157
	N	132	132	132

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**. Correlation is significant at the 0.01 level (2-tailed).

Source: Field Data (2024)

4.5.2 Reliability Statistics

The presented reliability statistics demonstrate the degree of internal consistency among a group of items inside a measurement scale. The Cronbach's Alpha coefficient in this instance is .841, indicating a substantial degree of internal consistency among the items. Cronbach's Alpha values generally fall within the range of 0 to 1, with higher values denoting increased reliability. A correlation coefficient of .841 indicates a strong positive relationship between the items on the scale, suggesting that they effectively assess the same underlying construct. The Cronbach's Alpha coefficient, calculated using standardized items, is .851, significantly surpassing the raw coefficient. This suggests that even after applying standardization to the items, the internal consistency maintains at a high level.

Table 13 : Reliability Statistics

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.841	.851	4

Source: Field Data (2024)

4.5.3 ANOVA with Friedman's Test

The ANOVA with Friedman's Test results offer insights into the variability among distinct items or conditions within a study, measured among the same subjects. The analysis demonstrates notable disparities among these items or situations, as evidenced by Friedman's Chi-Square test statistic of 122.690, accompanied by a p-value of .000. This implies that the observed distinctions are not attributable to random occurrences.

The Between People Sum of Squares quantifies the amount of variability that may be attributable to differences between persons in the study. On the other hand, the inside People Between Items Sum of Squares measures the variability between different items or conditions inside each individual. The Residual Sum of Squares quantifies the amount of variability that remains unexplained even after taking into consideration the influence of individuals and items. The Grand Mean of 15.8447 is the average value of all observations in the study. Kendall's coefficient of concordance W, which is 0.189, provides an extra measure of agreement among different items or circumstances.

Table 14 : ANOVA with Friedman's Test

ANOVA with Friedman's Test

		Sum of Squares	df	Mean Square	Friedman's Chi-Square	Sig
Between People		4893.765	131	37.357		
Within People	Between Items	2367.523[a]	3	789.174	122.690	.000
	Residual	5273.977	393	13.420		
	Total	7641.500	396	19.297		
Total		12535.265	527	23.786		

Grand Mean = 15.8447

a. Kendall's coefficient of concordance W = .189.

Source: Field Data (2024)

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4.5.4 Model Summary

The model summary offers a concise evaluation of the regression model's ability to predict a dependent variable using multiple predictor variables. The correlation coefficient (R) of .436 indicates a moderate positive connection between the predicted and actual values of the dependent variable. The coefficient of determination (R Square) reveals that around 19% of the variability in the dependent variable can be accounted for by the independent variables incorporated in the model. The corrected R Square, which accounts for the number of predictors in the model, is 0.164. The standard error of the estimate quantifies the precision of the model's predictions, with a smaller value suggesting a more accurate fit. The change data indicate that incorporating additional predictors into the model led to a substantial improvement in the R Square value (0.190) and a statistically significant rise in the F statistic (7.443) with 4 degrees of freedom. In general, although the model accounts for some of the differences in the variable being studied, it may require further improvement or the inclusion of more factors to increase its ability to accurately predict and explain the outcomes.

Table 15 : Model Summary

Model Summary							
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics		
					R Square Change	F Change	df1
1	.436[a]	.190	.164	4.15878	.190	7.443	4

a. Predictors: (Constant), effect of compliance with environmental, level compliance with environmental regulations, level of participation of citizens, level of environmental awareness

Source: Field Data (2024)

4.5.5 ANOVA[a]

The ANOVA table presents a complete summary of the regression analysis conducted to predict "Health Outcomes" by utilizing many predictor variables. The methodology divides the variability in Health Outcomes into two components: Regression and Residual. The Regression component, with a sum of squares of 514.950 and 4 degrees of freedom, explains the variability in Health Outcomes caused by the predictor variables. The Residual component, which has a sum of squares of 2196.527 and 127 degrees of freedom, accounts for the remaining variability that cannot be explained by the predictors.

The overall variability in Health Outcomes, as indicated by the Total row, is 2711.477. The F-statistic of 7.443 evaluates the overall significance of the regression model. The regression model is considered statistically significant with a p-value (Sig.) of .000, indicating that the predictor variables included in the model collectively contribute to the prediction of Health Outcomes. This indicates that the model offers valuable perspectives on the elements that affect Health Outcomes, highlighting its importance in comprehending and potentially resolving health-related problems.

Table 16 : ANOVA[a]

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	514.950	4	128.738	7.443	.000[b]
	Residual	2196.527	127	17.295		
	Total	2711.477	131			

a. Dependent Variable: Health Outcomes

b. Predictors: (Constant), effect of compliance with environmental, level compliance with environmental regulations, level of participation of citizens, level of environmental awareness

Source: Field Data (2024)

4.5.5 Coefficients[a]

The coefficients table provides valuable insights into the correlation between predictor factors and the dependent variable, "Health Outcomes," within the regression model. Each row represents a predictor variable and provides information about its unstandardized and standardized coefficients, t-values, and significance levels. The constant term, which indicates the predicted value of "Health Outcomes" when all predictor variables are zero, is 12.531. It has a significant t-value of 6.370 ($p < .001$). This implies that even without any predictor variables, there is a notable baseline level of "Health Outcomes." Regarding the predictor variables, there is a notable correlation between the level of environmental awareness and "Health Outcomes," as indicated by the sizeable standardized coefficient (Beta) of .400 and the significant t-value of 3.854 ($p < .001$). This suggests that increased levels of environmental consciousness are linked to improved "Health Outcomes." In contrast, there is a negative correlation between the amount of citizen engagement and "Health Outcomes," as evidenced by the standardized coefficient of -.234 and significant t-value of -2.398 ($p = .018$). This suggests that there may be a correlation between increased levels of citizen participation and decreased "Health Outcomes." However, the level of compliance with environmental regulations and the impact of compliance with environmental regulations have minimal associations with "Health Outcomes." This is evident from their standardized coefficients being close to zero and their t-values not being significant.

Table 17 : Coefficients[a]

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.531	1.967		6.370	.000

level of environmental awareness	.444	.115	.400	3.854	.000
level of participation of citizens	-.277	.115	-.234	-2.398	.018
level compliance with environmental regulations	.040	.087	.038	.459	.647
effect of compliance with environmental	.156	.084	.179	1.868	.064

a. Dependent Variable: Health Outcomes

Source: Field Data (2024)

4.6 Discussions of Findings

4.6.1 Awareness of Environment Governance

The table provides descriptive statistics on respondents' awareness and understanding of environmental issues, drawing on a sample of 132 participants. The responses to the statement "I possess knowledge regarding air pollution, land pollution, water pollution, and the extinction of endangered animals" varied significantly, with scores ranging from 1 to 5 and an average score of 3.1288 (SD = 1.64575). This indicates a moderate level of awareness with considerable variation across participants. These findings align with recent studies indicating varied public understanding of environmental issues (Smith & Leiserowitz, 2012).

The second statement, "I possess knowledge of significant environmental obstacles confronting my community or county," yielded an average score of 3.1591 (SD = 1.66614). This suggests a similar level of consciousness as the first statement but with a slightly broader range of responses. Such variability in awareness levels has been documented in recent environmental literacy research, suggesting that local

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environmental issues are perceived differently across communities (McBeth & Volk, 2012).

For the third statement, "I can identify common pollutants (e.g., carbon dioxide, lead, plastic)," the mean score was 3.0758 (SD = 1.64210), indicating moderate awareness with similar variability. This is consistent with findings by Kollmuss and Agyeman (2002), who noted that while general awareness of pollutants exists, specific knowledge can vary widely.

The fourth statement, "I am cognizant of the ramifications of deforestation, climate change, or habitat destruction," had a mean of 3.0833 and the largest standard deviation of 1.69436. This suggests that while the overall degree of awareness is modest, there is significant variation in awareness levels among respondents. This variability aligns with studies that highlight differences in understanding and concern about climate change and its effects (Leiserowitz et al., 2013).

Finally, the statement "I am aware of local environmental organizations or initiatives" had a mean score of 3.0985 (SD = 1.68903), indicating a moderate level of awareness with significant variation. Previous studies have similarly noted that awareness of local environmental initiatives can vary greatly, impacting community engagement and support for these initiatives (Ardoin et al., 2013).

4.6.2 Stakeholder Participation and Health Outcomes

The table presents descriptive statistics on respondents' involvement in various environmental activities, highlighting the extent of their engagement and conservation behaviors. Each statement was rated by 132 participants on a scale from 1 to 5. The responses to "I often recycle at home or in public spaces" ranged from 1 to 5, with a mean score of 2.5833 and a standard deviation of 1.64406. This indicates a moderate level of recycling behavior, with considerable individual variability. These findings align with

recent studies showing that recycling rates can vary widely among different demographic groups (Barr, Gilg, & Ford, 2005).

The statement "I engage in water conservation, energy consumption reduction, or waste reduction" had a mean score of 2.6894 and a standard deviation of 1.66294. This suggests a slightly higher level of engagement in these conservation behaviors compared to recycling, although variability remains significant. This is consistent with prior research indicating that while awareness of conservation practices is relatively high, consistent application varies (Gilg, Barr, & Ford, 2005).

For "I participate in environmental campaigns, tree planting," the mean score was 3.1364 with a standard deviation of 1.70662, indicating a modest level of involvement in these activities with significant variation among respondents. This finding is in line with other studies that highlight the mixed levels of participation in active environmental stewardship (McKenzie-Mohr, 2011).

The statement "I participate in environmental campaigns mobilizing the community to conserve the environment" had a mean of 3.0379 and a standard deviation of 1.68244. This reflects a consistent trend of moderate involvement in community mobilization efforts with notable differences across participants, corroborating findings that community engagement in environmental issues can vary significantly (Kennedy et al., 2009).

Finally, the statement "I participate in environmental or clean-up drives" had the highest mean score of 3.2955 and a standard deviation of 1.62396. This suggests a slightly higher level of involvement in clean-up activities compared to other environmental actions, though individual variability remains substantial. Previous studies have also noted that clean-up drives often attract higher participation rates due to their tangible and immediate impact (Tucker & Speirs, 2010).

4.6.3 Compliance with Law and Health Outcomes

The descriptive statistics provide valuable insights into respondents' perceptions of environmental governance in their county. Based on a sample of 132 respondents, the data reveal varied responses to different statements. For example, the mean score for the statement regarding the presence of trained staff to promptly address environmental governance issues was 2.3485, suggesting a general tendency towards disagreement or uncertainty. This finding is consistent with previous research indicating that inadequate staffing and training are common barriers to effective environmental governance (Young & Esau, 2016).

Similarly, the statement about the county's establishment of a desk for compliance tracking, reporting, and documentation received a mean score of 3.0000, indicating moderate agreement among respondents. This suggests a perception of average performance in this area, aligning with studies that highlight the challenges many local governments face in implementing robust compliance mechanisms (Bettini et al., 2015).

The standard deviations provide a measure of response variability, underscoring the diversity of opinions within the sample. For instance, the standard deviation for the presence of trained staff was relatively high, reflecting significant differences in respondents' views.

The complete dataset with no missing values (valid N = 132) ensures the reliability and integrity of the analysis. This completeness is crucial for accurately assessing perceptions and drawing valid conclusions. Previous studies have similarly emphasized the importance of comprehensive data in evaluating public administration performance and environmental policy effectiveness (Michetti & Rosa, 2012).

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Overall, the findings suggest moderate satisfaction with some aspects of environmental governance, coupled with notable uncertainty or dissatisfaction in other areas. This pattern is reflective of broader trends in environmental governance, where resource constraints and varying administrative capacities often result in mixed perceptions of effectiveness (Jones et al., 2014). Future efforts to enhance environmental governance should address these disparities, focusing on improving staff training and compliance monitoring to build public trust and efficacy (Bryson et al., 2014).

4.6.4 Environmental Governance and Health Outcomes

The descriptive statistics provide insights into respondents' perceptions of the impact of compliance with environmental governance on environmental quality and public health. From a sample of 132 respondents, the data reveal the range of responses to each statement. The statement indicating that adherence to environmental governance has a favorable influence on air quality received a mean score of 3.1818, suggesting a general consensus among respondents about its positive impact. This finding aligns with recent studies that highlight the effectiveness of stringent environmental regulations in improving air quality (Zhang et al., 2019).

In contrast, the statement regarding the positive impact of compliance on water quality obtained a mean score of 2.3485, indicating a lesser degree of agreement. This divergence may reflect ongoing concerns about the adequacy of current water governance frameworks and their implementation, as noted by similar studies that report mixed outcomes in water quality improvements due to compliance variability (Gleick, 2013).

The average scores for statements related to the reduction of health risks linked to pollution, conservation of natural habitats, and equitable distribution of environmental

risks and benefits ranged from 2.4394 to 2.6591. These scores reflect moderate levels of agreement, highlighting the perceived complexities and challenges in achieving these outcomes through environmental governance. Research corroborates these perceptions, indicating that while governance efforts can lead to significant health and environmental benefits, disparities and implementation challenges often undermine these efforts (Martinez-Alier et al., 2014).

The standard deviations associated with each mean score quantify the dispersion in responses, emphasizing the diverse perspectives within the sample. The complete dataset (N = 132) ensures the reliability of the study's findings. These results suggest a nuanced understanding among respondents, recognizing both the potential benefits and the limitations of current environmental governance practices (Armitage et al., 2012).

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CHAPTER FIVE

SUMMARY, CONCUSSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter consist of; summary, concussions, recommendations and recommendations for further studies guided by the three objectives of the study.

5.1 Summary

5.1.1 Awareness of Environment Governance

The study conducted a thorough analysis of the participants' awareness of environmental governance and its consequences. Researchers utilized descriptive statistics, correlation analysis, and regression modeling to investigate the connection between individuals' awareness levels and many facets of environmental governance, including adherence to legislation, citizen involvement, and health outcomes. The results emphasized the pivotal significance of consciousness in advancing efficient environmental management and cultivating favorable health consequences. The study emphasized the significance of educational activities and public awareness campaigns in empowering communities to actively engage in environmental stewardship and advocate for sustainable practices.

5.1.2 Stakeholder Participation and Health Outcomes

The study conducted a thorough analysis of the participants' awareness of environmental governance and its consequences. Researchers utilized descriptive statistics, correlation analysis, and regression modeling to investigate the connection between individuals' awareness levels and many facets of environmental governance, including adherence to legislation, citizen involvement, and health outcomes. The results emphasized the pivotal significance of consciousness in advancing efficient environmental management and cultivating favorable health consequences. The study emphasized the significance of

educational activities and public awareness campaigns in empowering communities to actively engage in environmental stewardship and advocate for sustainable practices.

5.1.3 Compliance with Law and Health Outcomes

The study examined the correlation between adherence to environmental rules and regulations and health outcomes. Researchers examined the impact of following legislative frameworks on several aspects of community health using descriptive statistics, correlation analyses, and regression models. The results revealed substantial correlations between levels of compliance and health outcomes, indicating that increased compliance is associated with enhanced community well-being. The study emphasized the need of cultivating a culture that adheres to legal regulations and holds individuals accountable in order to enhance health outcomes. The statement emphasized the necessity of cooperative endeavors among individuals, organizations, and governmental bodies in order to enforce environmental standards and protect public health.

5.1.4 Environmental Governance and Health Outcomes

The study extensively examined the connection between environmental governance and health outcomes. Researchers conducted a thorough investigation using a complete study technique that included descriptive statistics, correlation analysis, and regression modeling. The aim was to examine the impact of governance practices on several elements of community health. The findings demonstrated strong correlations between environmental governance metrics and health outcomes, suggesting that well-developed governance frameworks are linked to enhanced community well-being. The study highlighted the significance of transparent and accountable governance systems that give priority to environmental health in order to promote beneficial health results. The statement emphasized the necessity for cooperative endeavors among stakeholders and

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politicians to advance efficient governance methods and establish stronger, more adaptable communities.

5.2 Conclusion

5.2.1 Awareness of Environment Governance

The study emphasized the crucial importance of awareness in supporting efficient environmental governance practices and cultivating favorable health outcomes within communities. Our analysis has emphasized the significance of focused educational activities and public awareness campaigns in enabling citizens to actively engage in environmental stewardship efforts. In the future, it is important to focus on increasing knowledge and fostering a culture of environmental awareness and responsibility among all parties involved. By promoting a more profound comprehension of environmental governance matters and cultivating active participation from residents, legislators, and organizations, we may strive to establish healthier and more sustainable communities for both current and future generations.

5.2.2 Stakeholder Participation and Health Outcomes

The study demonstrated substantial correlations between stakeholder involvement and health outcomes, suggesting that heightened engagement results in enhanced community well-being. The results emphasize the significance of cultivating inclusive and participatory methods in environmental governance to enhance health outcomes. Effective collaboration among stakeholders, policymakers, and healthcare professionals is essential for attaining long-lasting enhancements in community health. In the future, efforts should prioritize improving involvement of individuals and organizations with a vested interest and fostering collaborations to successfully tackle issues related to environmental health. By giving priority to stakeholder engagement and cooperation, policymakers may establish healthier and more resilient communities where

environmental issues are dealt with in a proactive manner, resulting in improved health outcomes for everyone.

5.2.3 Compliance with Law and Health Outcomes

The investigation unveiled notable correlations between levels of compliance and health outcomes, indicating that increased compliance is connected to enhanced community well-being. The results emphasize the significance of cultivating a culture that prioritizes adherence to laws and regulations and holds individuals accountable in order to enhance health outcomes. Cooperative endeavors among individuals, organizations, and government bodies are crucial for maintaining environmental rules and protecting public health. In the future, efforts should prioritize increasing knowledge about environmental legislation, reinforcing regulatory structures, and encouraging community involvement to guarantee broad adherence and safeguard public well-being. To establish healthier and more sustainable communities for present and future generations, governments can do this by giving priority to legal compliance and promoting collaborations among stakeholders.

5.2.4 Environmental Governance and Health Outcomes

The study elucidated the critical correlation between environmental governance and health outcomes. After doing thorough investigation, we have discovered strong connections between effective governance structures and enhanced community welfare. This highlights the significance of transparent and accountable governance systems that give priority to environmental well-being. Effective governance practices and the development of resilient communities rely on the crucial collaboration of stakeholders and policymakers. In the future, efforts should prioritize improving governance processes, promoting stakeholder involvement, and tackling environmental concerns in order to achieve improved health outcomes for everyone. By giving priority to

environmental governance, we can strive to establish sustainable settings that promote the health and well-being of both current and future generations.

5.3 Recommendations

Based on the findings of the study, the following recommendations are proposed to enhance the integration of Information and Communication Technology (ICT) in public secondary schools and improve productivity:

1. Enhanced Public Awareness- Implement targeted educational initiatives and public awareness campaigns to enhance understanding of environmental governance issues and foster a culture of environmental responsibility among stakeholders.
2. Stakeholder Engagement- Promote inclusive and participatory approaches to environmental governance by actively involving stakeholders in decision-making processes and fostering collaborations between community members, policymakers, and organizations.
3. Compliance Enforcement- Strengthen enforcement mechanisms for environmental laws and regulations to ensure widespread compliance and safeguard public health. This may include increasing regulatory oversight, imposing stricter penalties for non-compliance, and providing support for compliance assistance programs.
4. Capacity Building- Invest in capacity building initiatives to enhance the skills and knowledge of individuals and organizations involved in environmental governance. This can help empower stakeholders to effectively participate in governance processes and implement sustainable solutions.
5. Integrated Policy Approaches- Develop integrated policy frameworks that prioritize both environmental conservation and public health. This may involve incorporating health impact assessments into environmental decision-making processes and promoting interdisciplinary collaborations between environmental and health sectors.
6. Research and Monitoring- Invest in research and monitoring efforts to better understand the linkages between environmental governance, stakeholder participation, and health outcomes. This can help identify emerging challenges,

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evaluate the effectiveness of interventions, and inform evidence-based policymaking.

7. International Cooperation- Foster international cooperation and knowledge exchange to address transboundary environmental challenges and promote global efforts towards sustainable development and public health.

By implementing these recommendations, policymakers, practitioners, and stakeholders can work together to promote effective environmental governance, protect public health, and create healthier, more sustainable communities for current and future generations.

5.4 Recommendations for further studies

A Longitudinal Studies should be conducted to track the long-term effects of concussions on individuals' health and well-being. By following participants over an extended period, researchers can assess the cumulative impact of concussions and identify potential risk factors for adverse outcomes, such as cognitive decline, mood disorders, and neurodegenerative diseases.

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APPENDICES

Appendix I: Introduction Letter

TO WHOM IT MAY CONCERN

RE: REQUEST FOR ACADEMIC RESEARCH DATA COLLECTION.

I am a postgraduate Student from Mount Kenya University conducting a study on **"ENVIRONMENTAL GOVERNANCE AND ITS EFFECT ON THE PUBLIC HEALTH IN MANDERA WEST SUB-COUNTY, MANDERA COUNTY, KENYA".** As part of my postgraduate course requirements, your bank has been picked as a likely respondent for the examination. I request consent to get information as it will be of abundant assistance in reporting this examination. This exploration will utilize questionnaires to gather information, which will be given to the top management team. The information will be utilized for scholarly reasons and the information gotten will be treated with privacy. The examination discoveries and suggestions will be channelled to you if essential.

Thank you.

Yours faithfully,

Student Name

ABDLLAHI MAALIM ALIO

Mount Kenya University

Appendix II: Consent Form

My name is Abdllahi Maalim Alio I am a Master of Public Administration student at the Mount Kenya University. I am conducting a study on "Environmental Governance and its effect on the Public Health in Mandera West Sub-County, Mandera County, Kenya". The findings of this study will be used to inform both national and country governments on areas to strengthen within the environmental governance in a long term goal of ensuring sustainable development that encompasses public health.

Participation in this study will require that you take part in filling of an administered questionnaire. Your participation is voluntary, and you don't have to answer any questions you are not comfortable with.

Risks

There are no risks whatsoever for participating in this study.

Benefits

If you participate in this study you will help the Ministry of environment at both national and county levels to plan better for future environment management and emergencies. There is no monetary or any incentive you will receive by participating in the study

Confidentiality

The information you provide through this survey will not be share with any other person or used in any other unrelated study. The questionnaire will also be kept safe and private. As a participant you will not be associated with any information given.

Participant's Statement

The above information on my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My

participation in this study is entirely voluntary. I understand that my records will be kept private and that I can stop participation at any time.

---------- ----------

Signature Date

Investigators statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the benefits involved.

Name of the interviewer: _____

---------- ----------

Interviewer signature Date

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Appendix III: Questionnaire

PART A: DEMOGRAPHIC INFORMATION
Please tick (√) that which is correct:

1. What is your gender: i) Male ☐ ii) Female ☐

2. Position: ☐ ☐ ☐

Age(years)

21---25 ☐ 26--------30 ☐ 31-----35 ☐

36---40 ☐ 41---45 ☐ 46---50 ☐

50 and above ☐

5. Professional qualifications

Trained ☐ untrained ☐

6. How many years have you been in this the County Environment?

i) 1-5 Years ☐ ii) 6-10 Years ☐

iii) 11-16 Years ☐ iv) 17 &above ☐

SECTION A:

Indicate your extent of agreement with the assertions below on the level of environmental awareness of citizens and leaders in Mandera West Sub-County

(Please tick (√) that which is correct to the best of your knowledge)

Key:

1. Agree without doubts

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2. Strongly agree without doubts

3. Disagree without doubts

4. Strongly disagree without doubts

5. Neither agree nor disagree

			1	**2**	**3**	**4**	**5**
I	I am aware about air pollution, land pollution, water pollution, and the extinction of endangered animals						
ii	I am aware of major environmental challenges facing my community or county .						
iii	I can identify common pollutants (e.g., carbon dioxide, lead, plastic						
iv	I am aware of impact of deforestation, climate change, or habitat destruction.						
v	I am aware of local environmental organizations or initiatives						

SECTION C: Stakeholder Participation

Indicate your extent of agreement with the assertions below on the level Stakeholder Participation in environmental governance in Mandera West sub - County, Mandera County, Kenya.

(Please tick (√) that which is correct to the best of your knowledge)

Key:

1. Agree without doubts

2. Strongly agree without doubts

3. Disagree without doubts

4. Strongly disagree without doubts

5. Neither agree nor disagree

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i	I often recycle at home or in public spaces					
ii	I conserve water, reduce energy consumption, or practice waste reduction					
iii	I participate in environmental campaigns, tree planting					
iv	I participate in environmental campaigns mobilizing community to conserve environment					
v	I participate in environmental or clean-up drives					

SECTION D: Compliance to Environmental Governance

Indicate your extent of agreement with the assertions below on level compliance with environmental regulations in Mandera West Sub-County

(Please tick (√) that which is correct to the best of your knowledge)

Key:

1. Agree without doubts
2. Strongly agree without doubts
3. Disagree without doubts
4. Strongly disagree without doubts
5. Neither agree nor disagree

		1	**2**	**3**	**4**	**5**

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i	There are trained staff to respond promptly to environmental governance issues arising in the County					
ii	The County has set-up a desk that streamline compliance tracking, reporting and documentation					
iii	County maintain a calendar that highlights important compliance deadlines					
iv	A special unit for handling environmental matters in the county is fully operational in our county					
v	County provides continuous training to educate community members, businesses and relevant stakeholders about environmental regulations					

SECTION D: Indicate your extent of agreement with the assertions below effect of compliance with environmental governance on public health in Mandera West Sub-County

(Please tick (√) that which is correct to the best of your knowledge)

Key:

1. Agree without doubts
2. Strongly agree without doubts
3. Disagree without doubts
4. Strongly disagree without doubts
5. Neither agree nor disagree

		1	**2**	**3**	**4**	**5**
i	Compliance with Environmental Governance and government effectiveness has positively impacted air quality,					
ii	Compliance and accountability on environment has favorably affect water quality					
iii						
iv	By following environmental regulations,					

	communities experience fewer health risks associated with pollution, toxic substances, and hazardous waste.					
v	Effective governance helps preserve natural habitats, safeguarding plant and animal species.					
vi	Fair distribution of environmental risks and benefits ensures that vulnerable populations are not disproportionately affected.					

SECTION E: Health Outcomes

a) (Tick that which is correct)

Key: 1. Agree without doubts

2. Strongly agree without doubts

3. Disagree without doubts

4. Strongly disagree without doubts

5. Neither agree nor disagree

		1	**2**	**3**	**4**	**5**
ii)	Cases of Children , and old people complaining of respiratory conditions has increased					
iii)	Mortality Due to pollution has increased					
iv)	Hospitalization due to pollution has escalated					
v)	Morbidity Due to pollution has increased					
vi)	Numbers of cancers has increased					
viii)	Cases of Lung infection has increased					
ix)	Cased of waterborne diseases has increased					

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Appendix IV: ERC Letter

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REF: **MKU/ISERC/3440** Date: 14 February 2024
TO: **ABDLLAHI MAALIM ALIO**
REG: **MPAM/2018/35060**

Dear Sir/Madam,

RE: ENVIRONMENTAL GOVERNANCE AND ITS EFFECT ON PUBLIC HEALTH IN MANDERA WEST SUB- COUNTY, MANDERA COUNTY, KENYA

This is to inform you that **Mount Kenya University** has reviewed and approved your above research proposal. Your application approval number is **2484**. The approval period is **14/02/2024 - 13/02/2025.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including informed consents, study instruments, MTA will be used
ii. All changes including amendments, deviations and violations are submitted for review and approval by **Mount Kenya University**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **Mount Kenya University** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affect the safety or welfare of study participants and others or affect the integrity of the research must be reported to **Mount Kenya University** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal
vii. Submission of an executive summary report within 90 days upon completion of the study to **Mount Kenya University**

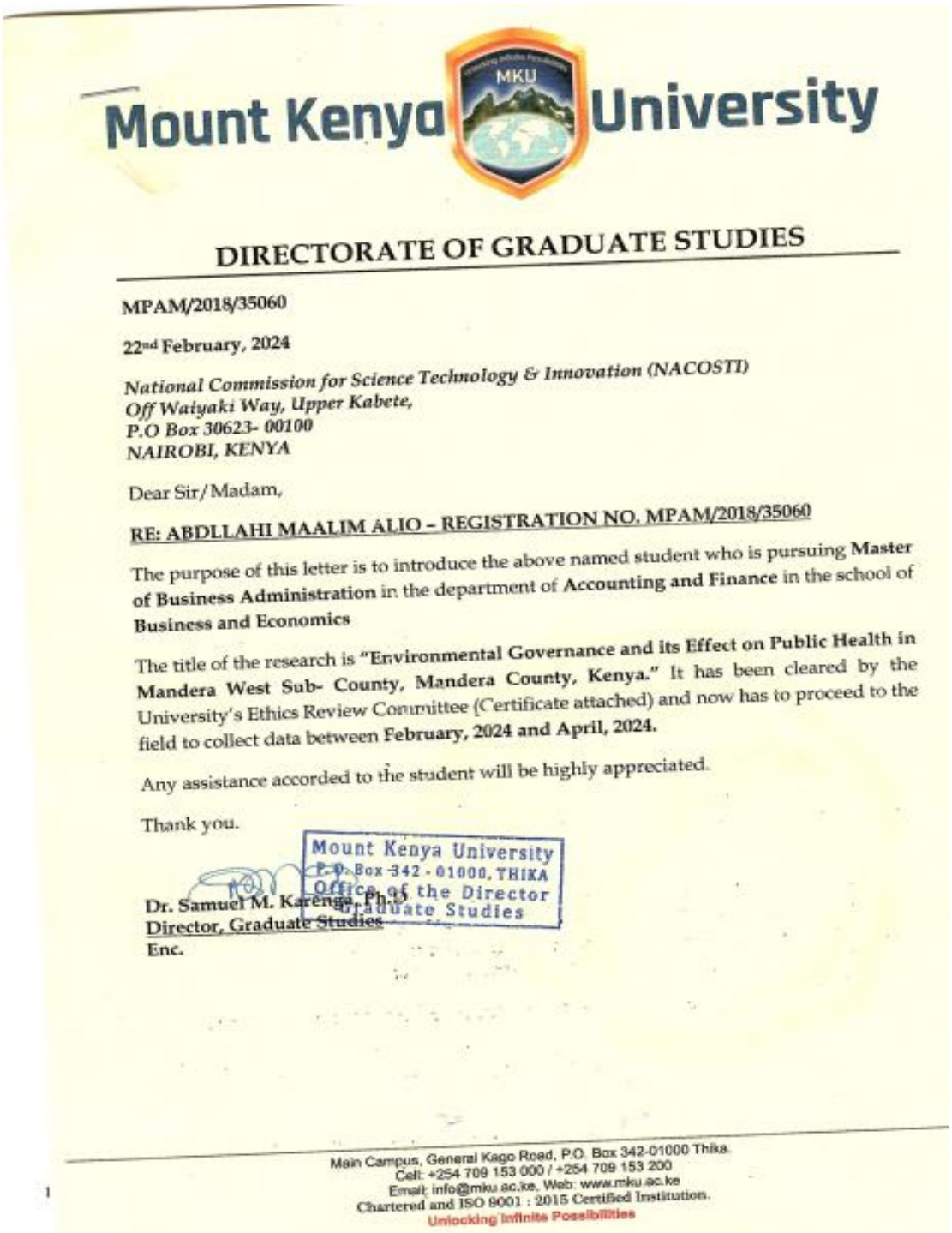
Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours sincerely,

The Chairman
Mount Kenya University
Ethics Review Committee
P. O. Box 342 - 0100, Thika

Dr. Alfred Owino, PhD
Chairman, Mount Kenya University ISERC

Appendix V: Introduction Letter



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DIRECTORATE OF GRADUATE STUDIES

MPAM/2018/35060

22nd February, 2024

National Commission for Science Technology & Innovation (NACOSTI)
Off Waiyaki Way, Upper Kabete,
P.O Box 30623- 00100
NAIROBI, KENYA

Dear Sir/Madam,

RE: ABDLLAHI MAALIM ALIO – REGISTRATION NO. MPAM/2018/35060

The purpose of this letter is to introduce the above named student who is pursuing **Master of Business Administration** in the department of **Accounting and Finance** in the school of **Business and Economics**

The title of the research is **"Environmental Governance and its Effect on Public Health in Mandera West Sub- County, Mandera County, Kenya."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **February, 2024 and April, 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

Mount Kenya University
P. O. Box 342 - 01000, THIKA
Office of the Director
Graduate Studies

Dr. Samuel M. Karenga, Ph.D
Director, Graduate Studies
Enc.

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Appendix VI: Research Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: 191381 Date of Issue: 20/March/2024

RESEARCH LICENSE

This is to Certify that Mr.ABDULAHI MAALIM ALIO of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Mandera on the topic: ENVIRONMENTAL GOVERNANCE AND ITS EFFECT ON PUBLIC HEALTH IN MANDERA WEST SUB- COUNTY, MANDERA COUNTY, KENYA for the period applied, 20/March/2025.

License No: NACOSTI/P/24/33013

191381

Applicant Identification Number

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See overleaf for conditions

Appendix VII: Map

Appendix VIII: Similarity Index

IMPACT OF ENVIRONMENTAL GOVERNANCE ON PUBLIC HEALTH SERVICES IN MANDERA WEST SUB- COUNTY, MANDERA COUNTY, KENYA

by ABDLLAHI MAALIM

Submission date: 06-Jun-2024 01:52PM (UTC+0300)
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IMPACT OF ENVIRONMENTAL GOVERNANCE ON PUBLIC HEALTH SERVICES IN MANDERA WEST SUB- COUNTY, MANDERA COUNTY, KENYA

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