



ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND ECONOMICS SCHOOL OF COMMERCE

The effect of leadership style in prevention of Antimicrobial Resistance in Ethiopia

A Project Work submitted to Addis Ababa University School of Commerce in partial fulfillment of the requirements for the degree of Masters of Arts in Business Leadership

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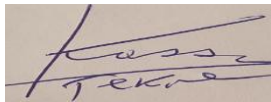
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STATEMENT OF DECLARATION

I, the undersigned, Kassaye Tekie Desta hereby declare that this research project entitled, “**The effect of leadership Style in Prevention of Antimicrobial Resistance in Ethiopia**” is submitted by me with the follow up and support of my advisor, for the award of Master of Arts Degree in Business Leadership is my original work. All parties involved in support of this project are fully acknowledged and the project has not been presented for the award of any other degrees, diploma, fellowship or any other similar titles of any other university or institutions.

Kassaye Tekie Desta

Signature _____

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STATEMENT OF CERTIFICATION

This is to certify that Kassaye Tekie Desta carried out this research project work on the topic entitled “**The effect of leadership Style in Prevention of Antimicrobial Resistance in Ethiopia**”. Under my supervision. This work is original in nature and it is sufficient for submission for the partial fulfillment for the award of Degree of Master of Arts in Business Leadership.

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The undersigned have examined the thesis entitled Examining **the effect of leadership Style in Prevention of Antimicrobial Resistance in Ethiopia** presented by Kassaye Tekie Desta , a candidate for the degree of Master of Art in Business Leadership and hereby certify that it is worthy of acceptance.

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List of Acronyms

AMR	Antimicrobial Resistance
ECA	Environmental Control Authority
FAO	Food and Agricultural Organization
LMICs	Lower and Middle Income Countries
MOA	Ministry of Agriculture
MOH	Ministry of Health
WHO	World Health Organization

ABSTRACT

The research paper explores the effect of the leadership style on the performance of Antimicrobial Resistance (AMR) prevention in Ethiopia. Both qualitative and quantitative research approaches were used to understand the effect of leadership style on AMR prevention in Ethiopia.

The Pearson correlation analysis revealed a moderate and statistically significant positive correlation between transformational leadership and AMR prevention performance, with $r(42) = 0.399$, $p = 0.009$. Like the transformational leadership, participative leadership demonstrated the strongest influence on AMR prevention performance, with a Pearson correlation of $r(42) = 0.414$, $p = 0.006$. In the regression analysis, participatory leadership emerged as significant predictor of AMR performance with a standardized beta coefficient of $\beta = 0.468$ followed by transformational leadership and transactional leadership with a standardized beta coefficient of $\beta = 0.411$ and $\beta = 0.18$ respectively. The autocratic and laissez-faire leadership styles have no positive and significant relationship with the AMR prevention performances. The regression model revealed that leadership styles explains 40.3 % of the AMR prevention performance. These values indicate transformational and participative leadership styles play a significant role in driving AMR prevention in Ethiopia. These findings provide valuable insights for policymakers and stakeholders in Ethiopia, emphasizing the need for adaptive leadership to combat AMR effectively.

Key words: Antimicrobial resistance, Transformational leadership, Autocratic Leadership, laissez-faire leadership, Transactional leadership, and Participative Leadership

CHAPTER ONE

INTRODUCTION

The research addresses the overall background of the topic, the research objectives, and the gaps it would fill under chapter one. This chapter also outlines the background of the research, the problem statement, an over view of the ministries and the institute the research was conducted, research questions and hypothesis to address the problem in context, the aims or objectives of the study alongside its significance, scope, limitation, structure, and the meaning of keywords.

1.1 Background of the Study

Antibiotics, and more broadly, antimicrobials, have served as a cornerstone of modern medicine for decades, being used to treat a range of diseases and to support numerous modern medical procedures (Martin& Frode, 2024). Antimicrobial resistance (AMR) occurs when microbes mutate or adapt over time in ways that enable them to withstand antimicrobials, rendering treatments ineffective. This makes infections difficult to treat, aggravate risk of disease leading to severe illness and death. The over-use and misuse of antimicrobials, including irrational use of antibiotics, in people and animals are the main reasons for development of AMR. AMR occurs naturally over time, usually through genetic changes. Antimicrobial resistant organisms are found in people, animals, food, plants and the environment (in water, soil and air). They can spread from person to person or between people and animals, including from food of animal origin. The main drivers of antimicrobial resistance include the misuse and overuse of antimicrobials; lack of access to clean water, sanitation and hygiene for both humans and animals; poor infection and disease prevention and control in health-care facilities and farms; poor access to quality, affordable medicines, vaccines and diagnostics; lack of awareness and knowledge; and lack of enforcement of legislation.

According to the World Health Organization, AMR is one of the major threats to global health (WHO, 2022). AMR is one of the top global public health and development threats. It is estimated that bacterial AMR was directly responsible for 1.27 million global deaths in 2019 and contributed to 4.95 million deaths according to Antimicrobial Resistance Collaborators 2022.

According to the 2017 World Bank Group projections of the impact of AMR on the world economy, annual global GDP would fall from 1.1% to 3.8% in 20250 and push 28 million people

into poverty. The same projection indicated global increases in healthcare costs from \$300 billion to \$1 trillion per year by 2050 and the decline in global livestock production could range from a low of 2.6% to a high of 7.5% per year. Developing countries like Ethiopia will be disproportionately vulnerable. In 2019, drug-resistant infections were a significant contributor to mortality, with around 5 million people losing their lives due to such infections. Out of these deaths, almost 1.3 million were directly attributable to AMR.

AMR is a complex problem that requires a united multi-sectoral approach of governance and leadership. Multi-sectorial coordination brings together multiple sectors and stakeholders engaged in human, terrestrial and aquatic animal and plant health, food and feed production and the environment to communicate and work together in the design and implementation of program, policies, legislation and research to attain better AMR prevention outcomes. Only cross-cutting involvement of diverse stakeholders across sectors and levels of organization and governance has a chance of succeeding in combatting AMR. AMR is spreading in alarming rate worldwide. If mitigation strategies are not put in place, AMR will cause unpredicted devastating consequences for humans, animals and the environment. AMR has no sectorial and territorial boundaries. It will continue as a potential threat to the globe.

Even though the impact of AMR in Ethiopia is not well studied, reports generated from different health facilities and agriculture sector indicate its high burden to the health and economy of the country. The governance of AMR in Ethiopia is very fragmented and its level of implementation varies along the health sector, the animal sector and the environmental sector with the health sector being relatively in better performance. An effective leadership and multispectral coordination are very crucial to prevention of AMR in Ethiopia.

Leadership can be seen as an attempt at influencing the activities of followers through effective communication process and towards the attainment of a common goal. Leadership theories explain the rational of management action during an outbreak. The participative leadership theory, contingency theory and transformational leadership theory are identified as the prominent leadership theories in effective management of diseases outbreak including AMR (Arifah et.al 2018). Effective leadership plays a significant role in AMR management to ensure successfulness of control and prevention program. Excellent public health leaders use their leadership skills during the management of any outbreak and make the difference in effectively curving the disease

outbreak. Effective decision-making, building good partnership with stakeholders, good communication with stakeholders and external parties, ability to assure the public, active advocacy, effective delegation and effective coordination of resources and response are the major leadership skills that are needed for management of AMR.

This research is aimed at analyzing the governance structure, policies and the leadership roles of relevant sectors in combating AMR in Ethiopia. The findings of the research will help policy makers and stakeholders supporting the combat of AMR to clearly understand the leadership role in prevention of AMR, governance structure gaps, the coordination challenges and provides recommendations based on the outcome of the study.

1.2 Background of the Ministries and the Authority

The Federal Ministry of Health (MOH) was established in 1948 followed by Proclamation issued in 1946. FMOH is the Ethiopian government department responsible for public health concerns in the country. The Ministry of Agriculture was established on 23 August 1995 with the adoption of Proclamation 4-1995 which also established the other 14 original Ministries of the Federal Democratic Republic of Ethiopia. The Ministry of Agriculture (MOA) is the Ethiopian government department which oversees the agricultural and rural development policies of Ethiopia on a federal level. The Ethiopian Environmental Protection Authority (EEPA) is the Federal institution for managing the Environment of Ethiopia. EEPA was established in 1995 by proclamation 9/1995 and it has been responsible to ensure the realization of the environmental rights, goals, objectives and basic principles enshrined in the Constitution. As well as the Environment Policy of Ethiopia through coordinating appropriate measures, establishing systems, developing programs and mechanisms for the welfare of humans and the safety of the environment.

Ethiopia embraced the One Health approach to overcome antimicrobial resistance through concerted, collaborative and integrated efforts across the human, animal, plant health, food, and feed and environment sectors. The two ministries and the EEPA are jointly combating AMR under one health governance structure as indicated by the 2020 developed five years strategic plan for containment and control of AMR in Ethiopia. The efficiency of the leadership of the three stakeholders in coordination, collaboration, continuous engagement in combating AMR in Ethiopia has not been assessed yet. Knowing the leadership styles of the respective leaders of these stakeholders at different level is very important in combating AMR.

1.3 Statement of the Problem

Effective leadership is the corner stone in preventing AMR. The world has learnt a lot from the covid-19 pandemic. The catastrophic consequences of Covid-19 pandemic has created an opportunity to prepare for such future pandemics across sectors, national borders and at different level of governance. AMR is will be the next pandemic of the alarming threats are not averted using effective multi-sectorial and multi-national governance and leadership. This will help to resolve the complex nature of pandemics with clear set of potential solutions, policies and guidelines (Laxminarayan, 2022).

AMR is a major and emergent threat to global health and economy. Animals and humans share a common environment in which they live, so bacteria, viruses, fungi and parasites powerfully affect both, 60% of all human disease comes from animals. What that means is that when microbes develop drug resistance in animals, they readily can end up affecting humans, making it difficult to treat the people who get sick from these diseases and infections. Antimicrobial agents are often used for both humans and food-producing animals. The food chain is also a major vehicle for disease transmission. This underscores that no one sector alone can tackle the rising problem of AMR, and effective leadership and coordinated actions are urgently needed to effectively combat AMR. Mitigating AMR requires coordinated intervention both vertically across levels of governance and horizontally, across policy sectors (WHO 2022 and WHO 2023).

Effective governance of AMR requires One Health approach. One health approach is system of coordinating action across sectors of public health, animal health and environment health to achieve the best possible health outcomes for all. It is based on the principle of multidisciplinary collaborative efforts across different sectors for effective governance and leadership of AMR.to achieve the best health outcomes for people and animals. Africa has the highest AMR mortality rate in the world. Ethiopia is among the high AMR burden developing countries. Poor AMR governance is the main challenge in tackling AMR in Ethiopia. Lack of effective governance is the critical gap in combating AMR in Ethiopia. Poor infection prevention and control practices compounded with weak surveillance are among the factors that are aggravating the AMR burden in Ethiopia.

AMR is an important public health threat in Ethiopia. It has significant negative impact agricultural food production, health care sector and the environmental sector (Gemedo et al, 2021). Studies conducted on AMR prevalence have highlighted alarmingly high levels of AMR in food-producing animals, food handlers, and environmental samples, with a prevalence of 20% in bacteria from live animals, notably elevated in milk and meat (Beyene et al, 2023).

As part of its AMR combating effort, Ethiopia has developed national AMR action plan under one health governance that involves the health, animal and environmental sector in 2016. The implementation of the AMR action plan was not effective and little progress has been achieved in the last 9 years. The AMR implementation was not well coordinated and there has been very fragmented effort across sectors. There has been lack of governance of the AMR implementation. In response to this, Ethiopia has developed the third one health five years (2021-2025) strategic plan on AMR prevention and containment in 2021. The strategic plan was endorsed by the ministers from the MOH and MOA as well as EEPA. In addition to the challenges in effective governance of AMR, irrational use of antibiotic and the emergence of multidrug-resistant strains have become bottle necks in combating AMR in Ethiopia (Beyene et al, 2023 and Tesema and Birhanu 2024).

The relationship between leadership approaches and organizational performance is evident through the pandemic's lens. Effective decision-making and empathetic management of resources have proven essential for maintaining financial stability during turbulent times. In Ethiopia, role of effective leadership style among the participative leadership style, autocratic leadership style, transformational leadership style, transactional leadership style, laissez-faire leadership style have not been evaluated in relation to AMR prevention. Despite this, many studies have been conducted in evaluating the role of leadership styles on organizations performances. Finding of the many studies revealed that participative, transformational and transactional leadership styles had strong influence on organizational performance while laissez faire leadership style and autocratic leadership style had low role in influencing organizational performance. Leaders who embraced innovative solutions adapted swiftly to changing market demands, and efficiently allocated resources demonstrated resilience and ensured organizational sustainability. Tackling AMR in Ethiopia requires comprehensive evaluation of current AMR leadership styles, identification of gaps, and development of effective multi-sectorial AMR governance system. There are no

researches conducted on the effect of leadership styles on AMR prevention performance in Ethiopia.

1.4 Research Questions

A research question and hypothesis was used to guide this study. The study offered causal explanations for specific leadership styles. Research questions and objectives guided the study (Vos, 2005). The following research questions are derived from the problem statement. The researcher therefore used the following questions to guide the study.

- What is the effect of transformational leadership style in AMR prevention performance in Ethiopia?
- What is the effect of laissez-faire leadership style in AMR prevention performance in Ethiopia?
- What is the effect of transactional leadership style in AMR prevention performance in Ethiopia?
- What is the effect of participative leadership in AMR prevention performance in Ethiopia?
- What is the effect of autocratic leadership style in AMR prevention performance in Ethiopia?

1.5 Objectives of the Study

1.5.1 General Objective of the Study

This study's primary goal was to examine the effects of leadership styles on AMR prevention performance in Ethiopia.

1.5.2. Specific Objectives of the Study

- To examine the effect of autocratic leadership style on AMR prevention performance in Ethiopia.
- To examine the effect of participative leadership style on AMR prevention performance in Ethiopia.

- To examine the effect of laissez-faire leadership style on AMR prevention performance in Ethiopia.
- To examine the effect of transactional leadership style on AMR prevention performance in Ethiopia.
- To examine the effect of transformational leadership style on AMR prevention performance in Ethiopia.

1.6 Research Hypothesis

The following hypothesis will be used to guide this study. The study will offer causal explanations for specific leadership styles on AMR performance.

- H1: Transformational leadership styles have statically significance effect on AMR prevention performance in Ethiopia.
- H2: Transactional leadership styles have statically significance effect on AMR prevention performance in Ethiopia.
- H3: Laissez faire leadership styles have statically significance effect on AMR prevention performance in Ethiopia.
- H4: Authoritarian leadership styles have statically significance effect on AMR prevention performance in Ethiopia.
- H5: Participative leadership styles have statically significance effect on AMR prevention performance in Ethiopia.

1.7 Study Variables

The study variables include dependent and independent variables. The dependent variable is AMR prevention performance. The independent variables include sociodemographic variables such as age, sex, educational qualifications, years of service, marital status, and current job level. Variables transformational leadership style, transactional leadership style, laissez-faire, leadership style, authoritarian leadership style and participatory leadership style are the independent variables

1.8 Operational Definition

The following are the operational definitions of the dependent variable of the study

Leadership styles: Leadership styles will be assessed on the basis of employees' perceptions; hence, their perceptions of the five types of leadership style will be measured and defined using indicators under each style. Accordingly, the behavioral elements of participatory leadership style, laissez-faire leadership style, authoritarian leadership style transformational and transactional leadership styles will be assessed using six indicators for each behavioral element, measured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The responses for each behavioral element will be then added independently to create an overall score. Based on the overall scores, employee perceptions will operationally be divided into two categories using the median score. First, the overall scores will be arranged in ascending order and their median values will be determined. Accordingly, employees whose overall perception scores are below the median value will be grouped together and rated as “unfavored” leadership style and those above the median value will be grouped together and rated as “favored” to the specified leadership style.

1.9 Scope of the Study

Conceptually this study is limited to only five leadership styles. These are autocratic, participative, laissez-faire, transactional & transformational and their effects on prevention of AMR performance in Ethiopia. Methodologically the study was conducted with small sample size and purposive sampling as result of the nature of the study. However, the inclusion of key stakeholders on the qualitative study from multiple sectors enhanced credibility of the study findings using rigorous thematic analysis and triangulation. Additionally, the study focused on leadership styles as predictors of AMR performance, but other factors, such as resource availability and staff training, may also influence outcomes. Mixed-methods approaches, combining quantitative data with qualitative insights from healthcare workers, could provide a deeper understanding of leadership's role in AMR prevention.

1.10 Significance of the Study

The study is the first of its type to assess the role of leadership style on prevention of AMR performance in Ethiopia. The study will help the MOH, MOA and the Ethiopia EEPA to understand the most effective leadership style that helps to combat AMR in Ethiopia. This study will contribute firstly in helping forthcoming academics, educators, and academicians to fully understand the impact and influence of various leadership styles in prevention of AMR. It can

also be helpful for individuals who want to conduct further studies in related topics elsewhere. The last but not the least, the study will be helpful for the student researcher to get adequate knowledge on how to conduct research and also can get much knowledge on the topic of the role of leadership styles on prevention of AMR in Ethiopia.

1.11 Definition of Keywords

The definition of the following key words is included.

- Leadership: refers to the process of influencing and guiding others towards the achievement of a common goal or vision (Northouse, 2018).
- Leadership style: is a pattern of behavior that represents or reflects a leader. Leadership styles are a pattern that a leader uses to affect the conduct and direct his subordinates in encouraging them to achieve set forth goals (Celestine, 2015).

AMR prevention performance: it can broadly be defined as an organization's ability to achieve its goals of AMR prevention. It comprises the actual output or results of an organization as measured against its intended outputs (Moumin, 2024).

1.12 Organization and duration of the study

The research is divided into five chapters. The background of the organization, the problem statement, the research question, the study's aims, and its importance, scope, and limitations are all included in the first chapter. The review of related literature is the second chapter. The third chapter covered the study's methodology. The findings and discussions were presented in the fourth chapter. The fifth chapter covered conclusions and recommendations.

CHAPTER TWO

REVIEW OF RELATED LITERATURES

2.1 Theoretical related literatures review

2.1.1 Definition of Leadership

The Leadership style a leader chooses to use plays a crucial role in determining the effectiveness and outcomes of their leadership. A leadership style is a leader's method of providing direction, implementing plans, and motivating people. Leadership refers to the process of influencing and guiding others towards the achievement of a common goal or vision (Northouse, 2018). Leadership is the ability to inspire, motivate, and empower individuals or groups to work collaboratively and effectively. Nizarudin (2017), stated that leadership encompasses a wide range of skills, traits, and behaviors, including decision-making, communication, strategic thinking, empathy, and vision setting – which are quite key for every leader.

Different definitions of leadership exist; however, one aspect that has usually been found in all definitions of leadership is that it has to do with the capability of an individual to influence the actions of other individuals, who can be portrayed as followers (Ebrahim, 2018). Leaders, despite their position within the organizational management, could affect organizational performance positively or negatively, depending on their styles of leading. They also noted leadership is necessary for organizational success in the present and future. The purpose creates the need to understand and develop leadership competent of pushing the organization and its employees to the highest potential (Moges, 2015). From an organizational perspective, (Chen & Sriphon, 2021) believed that leading is a technique for motivating and persuading others to work hard in order to achieve and support corporate objectives., while Hersey (2001) believed that leadership influences individuals' behavior based on both individuals' and organizational goals. He also characterized leadership as the capacity of a person to impact the conduct of a gathering to accomplish organizational objectives.

2.1.2. Leadership Styles

A leadership style is a leader's method of providing direction, implementing plans, and motivating people. Various authors have proposed identifying many different leadership styles

(Legood, 2021). Lussier and Achua (2010) define a leader's leadership style as a collection of the characteristics, abilities, and behaviors they employ when interacting with followers. More or less, there is a similarity in these three definitions all definitions agreed that leadership style is way of interacting and influencing followers. One of the key reasons why certain leadership styles are blocked with positive outcomes for employees and organizations is the extent to which they build follower trust in leaders. Trust in the leader has been linked to a range of leadership styles and evidence suggests that when followers trust their leaders, they are more willing and able to go the extra mile to help their colleagues and organization (Legood, 2021).

Performance of the health system including performance of AMR is greatly influenced by the leadership style of the organization. The method a leader uses to persuade and inspire their followers is referred to as their leadership style. Autocratic, democratic, transformational, and servant leadership are among the various leadership philosophies. While democratic leadership entails the engagement of followers in decision-making, autocratic leadership is characterized by a leader who makes choices without involving their followers. While servant leadership focuses on meeting followers' needs, transformational leadership entails inspiring and motivating followers to achieve a common goal.

As indicated by (Irfanullh, 2016) the traits of leaders, the attributes of subordinates, and the organizational environment are the three factors that determine the type of leadership style. This environment includes authority structures, a hierarchical workplace, and work force management. Different leader use different leadership styles for different situations. Because a leader may have the information and talents to respond effectively in one situation but not in another, no leadership style is perfect for every situation.

2.1.2.1 Autocratic Leadership Style

The autocratic leadership style is characterized by individual control over all decisions and little input from group members. Autocratic leaders typically make choices based on their ideas and judgments and rarely accept advice from followers. This leadership style involves clear direction, unilateral decision-making, and strict control over organizational activities. While it can lead to quick decision-making, it may discourage creative collaboration and employee morale (Akor, 2014). When making swift choices and exercising extreme control, such as in an emergency or during a crisis, autocratic leadership is suitable. Positively, authoritarian leaders can accomplish corporate goals more quickly since they act without delay and without consulting others.

Autocratic leadership style on the other hand, may result in low job satisfaction and employee morale as a result of employees feeling excluded and disempowered. Furthermore, because employees may believe that their contributions are not valued, authoritarian leadership can result in high staff turnover and low retention rates. Laborers develop the practice of contacting their supervisor on a regular basis, demanding advice or directions. People strive to avoid being held accountable by wanting to be led. Most importantly, they desire safety. Orders from above are seen either indifferently or with unfavorable concerns by employees. They are sometimes pleased with the boss's mistakes, seeing them as further validation of their hostile feelings against him or her (Basit, 2017).

2.1.2.2. Participative Leadership Style

Participative leadership, also known as democratic leadership, is a style where leaders involve team members in decision-making processes, value their input, and encourage open communication. This approach fosters higher engagement, promotes collaboration, and can lead to more creative solutions. Participative leadership style, it is a style including employees or subordinates in the decision-making process but with the leader making the final decision after communication with the group (Hassan, 2017). Positively, democratic leaders can increase worker motivation and happiness by making them feel as though their contributions are recognized. Additionally, democratic leadership can result in higher retention rates and reduced turnover rates since workers feel invested in the success of the company. However, democratic leadership has a downside in that it may result in slower decision-making because the leader must confer with the team or group before making a choice.

2.1.2.3 Laissez-Faire Leadership Style

Laissez-faire leadership is characterized by a hands-off approach, where leaders provide minimal guidance or direction to subordinates. Laissez faire leadership approach is not based on performance or people but on the assumption that people are uncontrollable and unpredictable and so why spend time trying to understand these habits. This leader keeps a low profile, stays away from disruption and relies on a few loyal employees to complete the task or get the job done. The laissez faire leader works with whatever structure is in place and only enforces goals when required. It is no surprise to learn that development amongst employees is not of concern of the

laissez faire leader (Friez, 2017). A laissez-faire leader takes no accountability, defers choices, and makes no effort to understand and meet the requirements of his or her followers (Nongo, 2015). Furthermore, it demonstrates a non-value-based leadership style in which there is no on-time and swift decision-making, action is delayed, administrative tasks are completely ignored, and power is exploited. This is a leader that is cruel to the success of his or her supporters at work. Administration shirking or non-attendance is well-known.

2.1.2.4 Transactional leadership

Transactional leadership is a type of leadership style that focuses on the exchange of skills, knowledge, resources, or effort between leaders and their subordinates. This leadership style prioritizes individual interests and extrinsic motivation as means to obtain a desired outcome. It relies on a system of penalties and rewards to achieve short-term goals (Lynch, 2016). According to (Mohammed & Wang, 2018) Transactional leaders focus on leadership-follower interactions and include task fulfillment and assignment, as well as rewards and punishments as outcomes. This leadership style is based on the organization's bureaucratic authority and authenticity. It emphasizes work rules, assignments, and achieving certain goals. It focuses on project completion and worker consistency, and it relies on authoritative rewards and disciplines to influence staff performance.

2.1.2.5 Transformational Leadership

Transformational leadership is a leadership style that empowers people to accomplish positive change through big vision, inspiration, and a call to action. A leader that practices transformational leadership encourages and motivates their team or organization to reach their maximum potential. The leader promotes innovation and creativity while fostering a healthy work atmosphere. Transformational leadership this is a leadership style that motivates employees by engaging higher goals and good values which can move employees to perform past desires and change both people and organizations (Bakani, 2016). Employees can without much of a stretch share their insight among them when organization utilized transformational leadership style. Individualized consideration, intellectual stimulation and inspirational motivation are the kind of transformational leadership. Transformational elicits strong emotions from followers, as well as visible confirmation of and imitation of the leader, who serves as a solid role model (Wong & Giessner, 2018).

2.1.3. Performance and Leadership

Performance is one indicator of an organization's success and that it may be defined in a variety of ways. They also have pointed out that the measures for organizational performance depend on the purpose for measuring it and which questions were raised in measuring it and so the definition changes as the purpose or the use of it changes (Abeh, 2016).

According to (Sebastian, 2017) the success of an organization is reliant on the leader's ability to optimize human resources. A good leader understands the importance of employees in achieving the goals of the organization, and that motivating these employees is of paramount importance in achieving these goals. To have an effective organization the people within the organization need to be inspired to invest themselves in the organization's mission- the employees need to be stimulated so that they can be effective; hence effective organizations require effective leadership. In order for an organization to perform, an individual must set aside his personal goals, at least in part, to strive for the collective goals of the organization. (Celestine & Onyango, 2015) Indicates that the need of firms to flourish in the world of escalating competitiveness, of technological advances, of altering government regulations and of changing employee attitudes, requires an advanced level of leadership more than ever before. His views further demonstrate the importance of leadership in the business arena. According to (Mwombeki, 2017) in the modern business environment much research has proved that leaders make a difference in their subordinates' performance, and also make a difference as to whether their organizations succeed or fail. (Nongo, 2015) Argues for the ever-increasing importance of leadership in organizations, because of significant shifts in the business environments, such as the change in competitive intensity and the need for more participation of the total workforce.

2.2. Empirical Review of the Study

Antimicrobials have played crucial role in medicine for decades, being used to treat a range of diseases and to support numerous modern medical procedures (Antimicrobial Resistance Collaborators, 2022). Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death. As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become

increasingly difficult or impossible to treat. Antimicrobial resistant organisms are found in people, animals, food, plants and the environment. They can spread from person to person or between people and animals, including from food of animal origin. The main drivers of antimicrobial resistance include the misuse and overuse of antimicrobials; lack of access to clean water, sanitation and hygiene for both humans and animals; poor infection and disease prevention and control in health-care facilities and farms; poor access to quality, affordable medicines, vaccines and diagnostics; lack of awareness and knowledge; and lack of enforcement of legislation (Antimicrobial Resistance Collaborators, 2022 and World bank, 2017).

AMR is a complex problem that requires a united multispectral approach and effective governance. Multi-sectorial coordination under one health approach brings together multiple sectors and stakeholders engaged in human, terrestrial and aquatic animal and plant health, food and feed production and the environment to communicate and work together in the design and implementation of program, policies, legislation and research to attain better public health outcomes. The One Health approach is defined as a joint effort of various disciplines that come together to provide solutions for human, animal, and environmental health (WHO, 2014).

Only effective governance and multi- sectorial involvement of diverse stakeholders across sectors and levels of organization and governance in accordance with the One Health approach has a chance of succeeding in combatting AMR. Antimicrobial agents are often used for both humans and food-producing animals. This indicates that no single sector has the capacity to solve the growing problem of antimicrobial resistance alone and that collective action is needed to make progress. Globally, antimicrobial resistance causes an estimated 700 000 deaths every year. Failing to tackle antimicrobial resistance could, by 2050, cause an estimated 10 million deaths a year and cost up to \$100 trillion. The highest impact likely will be in Asia and Africa, which likely will account for an estimated 4.7 million and 4.2 million deaths, respectively (WHO, 2014).

In Ethiopia currently, misuse of antimicrobials is common among human and animal health care providers, unskilled and animal husbandry practitioners and drug users. Various studies reflect an alarming rate of antimicrobial resistance. Major drivers of AMR in Ethiopia include incorrect and inappropriate use of antimicrobials by healthcare providers and unskilled practitioners, as well as inadequate surveillance. According to a recent study, AMR is causing around 196,000 treatment

failures each year in the country, leading to 3,000 child deaths annually. The World Health Organization (WHO) launched the Global Antimicrobial Resistance Surveillance System (GLASS) in 2015. GLASS is a collaborative effort to standardize AMR surveillance with the aim to inform policies and infection prevention strategies (WHO, 2014).

The Government of Ethiopia has joined the global community in seeking to better understand and curb antimicrobial resistance. In 2006, the Government established the National Antimicrobial Resistance Advisory Committee, followed by the first national strategy framework in 2011 (Fujita et al, 2022 and Chen et al, 2019).

In Ethiopia, the Ethiopian Food, Medicines, and Healthcare Administration and Control Authority developed the Five years strategy for the Prevention and Containment of Antimicrobial Resistance in 2015 (MOH Ethiopia, 2015). This was the first strategic plan that was developed under one health umbrella from 2016-2020. In 2017, Ethiopia also launched the Ethiopian Antimicrobial Resistance Surveillance System, a standardized, laboratory-based surveillance system and one of the first national efforts to combat AMR (MOH Ethiopia, 2020). In 2020, the first strategic plan was revised with particular attention to a One Health platform (MOH Ethiopia, 2021). Since the implementation of Ethiopia's AMR surveillance system, substantial achievements have been made, including an expanded surveillance network, collation of AMR surveillance data, and increased laboratory capacity. However, national AMR surveillance in Ethiopia is currently primarily focused on humans, and there remains a knowledge gap of AMR trends across animals and the environment. Despite the development of the guidelines and strategic documents indicated above, the governance of AMR under one health approach is not coordinated across the three sectors. While the health sector has showed progress, the animal sector and the environmental sectors engagement is lagging behind. This will have a significant negative impact in the fight against AMR in Ethiopia. Consensus across the human, animal and environmental health sectors on how to institutionalize and operationalize One Health AMR governance has proved difficult in most developing countries and some developed countries as well. There is huge challenge in connecting relevant sectors through a variety of AMR governance mechanisms to effectively tackle AMR (Martin & Frode, 2024).

Strong leadership is essential in combating global AMR for several reasons. Leaders play a crucial role in raising awareness about the problem and its potential consequences. Leadership was tested during the

COVID-19 pandemic (World Health Organization, 2020) an unprecedented global crisis, thrust leaders into uncharted territories, demanding innovative approaches to navigate the challenges.

By effectively communicating the risks associated with AMR to the public, healthcare professionals, policymakers, and other stakeholders, leaders can mobilize support and create a sense of urgency. This awareness is vital in garnering the necessary resources and political will to tackle AMR effectively. Leadership plays a significant role in AMR management to ensure successfulness of control and prevention program. Leadership theories explain the rational of management action during an outbreak. The participative leadership theory, contingency theory and transformational leadership theory are identified as the prominent leadership theories in effective management of diseases outbreak including AMR (Arifah et.al, 2018). An excellent public health leader use their leadership skills during the management of any outbreak and make the difference in effectively curving the disease outbreak. Effective decision-making, building good partnership with stakeholders, good communication with stakeholders and external parties, ability to assure the public, active advocacy, effective delegation and effective coordination of resources and response are the major leadership skills that are needed for management of AMR. Leading with care, sharing the vision, engaging the team, influencing for results, evaluating information inspiring shared purpose, connecting our service, developing capability and holding to account are the keys for skills of effective public health leader. Flexible leadership suggested by Yukl (2008) normally happens when unusual events happen, and this invites the ability of leaders to adapt their leadership style according to the evolving needs of the organization and its employees (Benzel, 2005). During the pandemic, organizations faced uncertainties, making it crucial for leaders to adopt flexible approaches. A study by Arif and Akram (2018) found that transformational leadership, characterized by inspirational motivation, intellectual stimulation, individualized consideration, and idealized influence, positively influenced organizational performance metrics such as productivity, innovation, and employee satisfaction. In the same study, leaders who exhibit a combination of transformational and transactional leadership styles significantly impacted organizational effectiveness, leading to improved financial performance and employee engagement during COVID-19 pandemic.

Ali (2016) researched the influence of leadership styles on organizational performance and concluded that the autocratic leadership style has a negative relationship and was the least effective

as it might demotivate employees and reduce productivity and performance. (Amin, 2019) Research studying the impact of leadership styles on organizational performance in a Nigerian private company concluded that autocratic leadership was significant and had a negative relationship with organizational performance. He stated that the autocratic leadership style can be used in situations where the deadline is tight and when employees aren't well skilled to direct themselves in contributing to the goals of the organization. (Ahmad, 2018) Studied the impact of leadership styles on organizational performance and state that participative leadership is significant and positively connected to organizational performance. (Velui, 2017) investigated a study on the effect of styles of leadership on organizational performance to examine two Nigerian universities' leadership styles and found that laissez-faire had a negative relationship with organizational performance compared to the style of participative leadership which had a positive impact. In addition, he stated that this technique is suited when employees understand their responsibilities well and have strong analytical skills, as well as when leaders have a high degree of trust in the staff and do not blame each other for errors in any situation Research made on the influence of leadership style on organizational performance in Ghana concluded that laissez-faire and autocratic leadership style have a negative and significant relationship with organizational performance. In addition, they also concluded that each leadership style is suited to attain a set of specific goals in different circumstances or situations (Aboshaiqah, 2015).

The research study done by (Ahmad, 2018) had attempted to identify the impact of leadership style on the organizational performance in case of Malaysian Small and Medium Scale Enterprise. The study tested a casual modeling, examining the various relationships among leadership behaviors organizational performance and based on the test, the result of the study revealed that the behavior that associated with transactional leadership seem to have more impact on organizational performance than transformational leadership. The transactional leadership, which focuses on providing direction and motivates employees in the way of instituting goals by clarifying and task requirements, has seen a significant leadership behavior to promote organizational growth in the study.

Dube (2019) has investigated the effects of leadership style on organizational performance in the case of Ethiopian Banks. The main objective of the study was to investigate the effect of both transactional and transformational leadership styles on banks performance in the Ethiopian

context. The result showed that both transformational and transactional leadership styles had significant positive effect on the performance of banks in Ethiopian context. The study concluded that both transformational and transactional leadership styles were more appropriate in inducing performance in banks and, therefore, recommended to practice the combination of both transformational and transactional leadership styles according to the work situation.

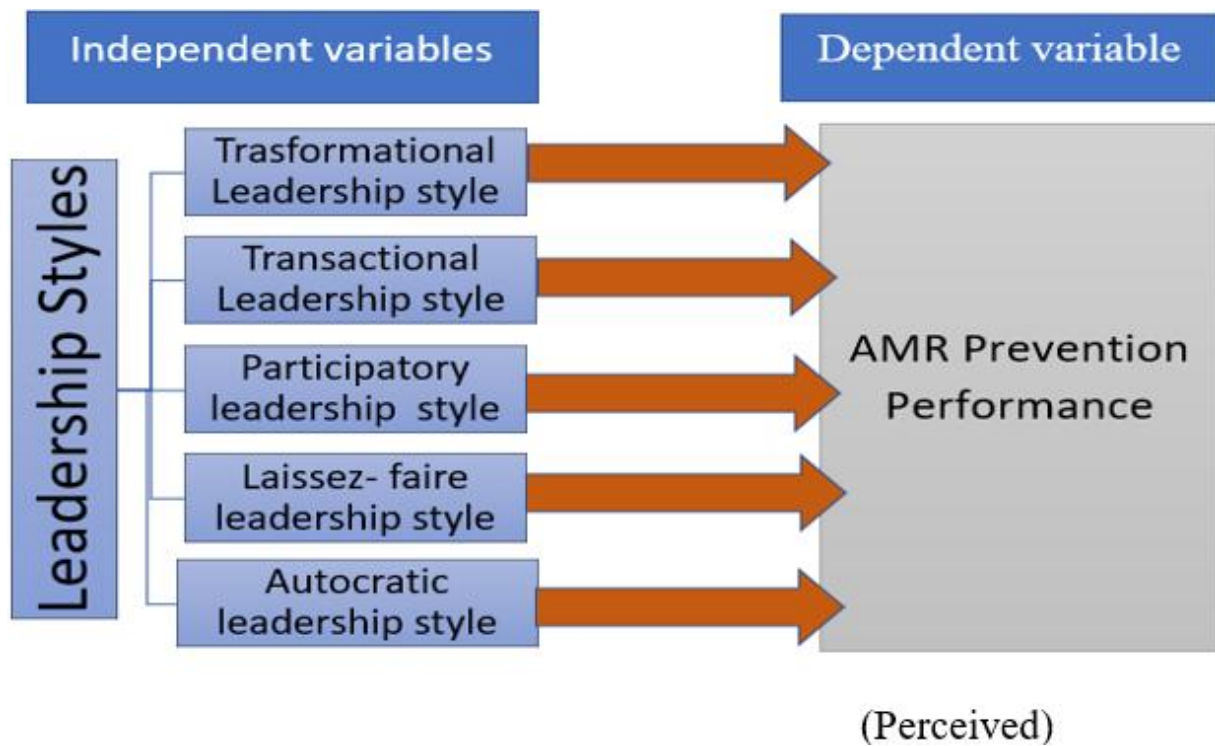
A study conducted in Ethiopia on level of leadership effectiveness (Surafel, 2023) revealed that 30% healthcare managers had exercised effective healthcare leadership, particularly with respect to the creation of vision, implementation of their vision, and development of followership. Accordingly, 47.5%, 46.3% and 50% of managers had better leadership practices on the creation of vision, implementation of their vision, and development of followership, respectively. Responsibility and accountability, resolving problems and conflicts, use resources in the right way were positively associated with effective healthcare leadership. A similar study conducted on leadership performance in health care setting in Ethiopia (Zelege, 2024) regression analysis indicated that performance in healthcare settings was significantly and positively influenced by transformational and laissez-faire leadership styles. Transformational leaders providing idealized influence and intellectual stimulation significantly influence organization performance. Similarly, organization performance was influenced by leaders who are frequently fulfilling organizational requirements, exerting extra effort in motivating staff, heightening their aspirations to succeed, and increasing employee enthusiasm. In contrast, the other components of transformational leadership, including inspirational motivation and individual consideration, were not significantly associated with organization performance. Moreover, transactional leadership style did not have a significant relationship with organization performance. The result of the regression analysis indicated that effective kind of leadership style has a positive relationship with organizational performance that shows organizational performance is predicted and explained by the five type of leadership styles.

2.3. Conceptual Framework

A conceptual framework is a representation of the relationships that are expected between the dependent and independent variables, or the characteristics or properties that the researcher want to study. It can be used as a tool to properly explain the study's emphasis and factors (Rowley and Slack, 2004) A Conceptual framework may aid in the creation of a full understanding of the research issue and can be used as tools to properly explain the study's emphasis and factors. It is generally developed based on a literature review of existing studies about the topic. Based on the

above theoretical and empirical literature review the conceptual framework is developed. In this study, the five leadership styles (autocratic, participative, laissez-faire, transactional and transformational) are the independent variables and the AMR prevention organization performance is a dependent variable.

Figure 2.1: Conceptual Frame work



CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

This chapter presents and discusses the research-design and methodologies that were used by the researcher. It comprises research approach adopted, research design, population and sampling-design, data collection & analysis methods. Research instrument's reliability and validity and ethical consideration were discussed.

3.1 Research Design

Research design is the framework that guides the collection, measurement, and analysis of data in a study. It provides a structured approach to answering research questions, ensuring that the study's goals are met in an organized, reliable, and valid manner. The function of research design is to provide for the collection of relevant evidence with minimal expenditure of effort, time and money (Khotari, 2004). In this research, descriptive and explanatory research designs were used. Descriptive research design were used to examine and describe the type of leadership styles practiced in prevention of AMR. An explanatory design is conducted for a problem that is not well researched before and demands priorities generates operational definitions and provides a better-researched model. It is actually a type of research design that focuses on explaining the aspects of the study in a detailed manner. An explorative research design will help to provide arguments on leadership style role is important for the evaluation of leadership style in AMR prevention performance.

3.2 Research Approach

There are 3 types of research approaches namely; qualitative, quantitative, and mixed approach (Creswell, 2014). In this study mixed research approach that involves quantitative and qualitative research approach was employed to assess the relationship between dependent-variable AMR prevention performance and independent variables of the five leadership styles (transformational leadership style, transactional leadership style and autocratic leadership style, of laissez-faire leadership style and of participative leadership style) of the research study. The relationship between these variables was measured and analyzed using statistical procedures.

The quantitative research approach helped to test hypothesis by testing the relationship between variables from data collected using a customized survey questionnaires. It examined the connection between leadership style and AMR prevention performance in which the relationship

between the independent and dependent variables was empirically tested. The above five leadership styles were taken as independent variable whereas AMR prevention performance was taken as a dependent variable (Creswell, 2014). All the five independent variables were operationalized by items that asks questions that reflects the type and nature of leadership. The dependent variable, AMR prevention performance was operationalized by asking items that reflects AMR prevention performance in an organization (Annexure 1). The qualitative approach helped to identify the existing theories, frameworks, and models related to leadership style and AMR prevention performance. This was obtained by interviewing key informants using semi structured opened questionnaire (Annexure 2).

3.3 Population and Sampling.

In this study purposive non-probability sampling was employed. The target populations were both directors and employees of the Ministry of Health (MOH), the Ministry of agriculture (MOA) and the Environmental control Authority of Ethiopia who have the prime role in AMR prevention and control in the country. The information from the three institutions indicates that 42 staff have been directly supporting AMR prevention activities for more than one year. All the 42 staff were included in the quantitative study. Accordingly, the total population of 42 were used as sample size for the quantitative study. Mugenda (2009) proposed that a sample size of 30 to 500 is appropriate for most academic researches. Moreover, sample generated by different sampling methods is not sufficient to provide statistical power for the analysis and also the population by itself is not that much large. So, the full population of the organizations were used for the study. Employees with less than a year of experience were excluded from the study due to their lack of enough experience about the workplace leadership dynamics and AMR prevention performance. The information from the three institutions also further indicated that 10 program leads and directorate directors are in charge of the management and coordination of AMR activities at national level. These 10 program leads and directors were considered for the qualitative part of the study as key informants. They were interviewed using open ended questionnaire for the qualitative study (Annexure 2).

3.4 Data source and Types

Both primary and secondary data sources were used in this study. The primary data were obtained by the questionnaire developed for the study for the quantitative and qualitative study. Secondary data were used to supplement the qualitative research data of this study. The secondary data included annual report, strategy documents and policies. To get data from staff members and directors standardized questionnaires were used.

3.5. Sampling design

Purposive sampling was conducted through an in-person interview using a structured questionnaire. 42 study participants from the Ministry of Health, Ministry of Agricultural and from Environmental Control Authority were included. The target respondents were program staffs, program directors and department heads of the Ministry of Health, Ministry of Agriculture and the Environmental Control Authority.

3.6. Data Collection instrument

Data collection questionnaire were prepared based on a literature review of similar studies conducted in different parts of the world with some modifications in the questions based on common practice of public sector leadership of AMR. The study data collection tools were pre-tested and validated in the local context to ensure the instrument possessed good internal consistency and reliability. The research instrument were pre-tested before the main study commenced. This helped to estimate the time that was taken to interview each respondent. Issues like clarity, ease, ambiguities, and difficult wording were solved. For the quantitative design of the study, a questionnaire surveys with a Likert scale were used to gather the necessary information as well as for measuring both the dependent and independent variables (Annexure 1). The survey questionnaire have questions about general information, questions to measure the leadership style and questions to measure the dependent variable AMR leadership performance. The Likert scale is a preferred data collection instrument for this study as it allows for measuring attitudes and opinions, allow respondents to indicate their level of agreement or disagreement with specific statements. Five Likert scale was applied: 1 stands for “Strongly Disagree”, 2 for “Disagree”, 3 for “Neutral”, 4 for “Agree” and 5 stands for “Strongly Agree” (Annexure 2).

For the qualitative study design, a questionnaire was used to assess the AMR prevention performance of Ministry of Health, Ministry of agriculture and the Ethiopian Environmental control Authority. The researcher conducted an interview with the 10 AMR leaders and directors of the three institutions (Annexure 2).

3.7. Reliability of Research Instruments

Cronbach's alpha reliability coefficient was used to calculate and estimate the reliability of the data by piloting the questionnaire. Cronbach's alpha reliability result of this study was 0.85. Therefore, the Cronbach's alpha value of the study is in reliable category (Kothari, 2004). So, the researcher accepts the validity of the questionnaires (Avolio and Bass, 2004).

3.8. Data Analysis

Both descriptive and inferential statistics were used for data analysis of the quantitative research design. The completed questionnaire were verified and subsequently analyzed using the statistical package for social science (SPSS) version 27. The data obtained was evaluated by calculating each response percentage among all the participants. Descriptive statistics used on variables, including gender, participants' professional categories, sectors and education levels. The survey questionnaire responses were analyzed using descriptive statistics, including measures such as mean, standard deviation, and frequency distributions. To investigate the cause and effect relationship between leadership style and AMR prevention performance, inferential statistics, specifically correlation analysis and linear regression were employed.

For the qualitative study, a qualitative questionnaire was administered to 10 key informants involved in Ethiopia's AMR prevention programs. The interviews explored leadership styles, governance structures, coordination mechanisms and perceived performance of the national AMR program. Thematic analysis, as outlined by Braun and Clarke (2006), was used to code and categorize responses into themes. Verbatim quotes were used to support findings, and triangulation was achieved by comparing perspectives across the three institutions.

3.9 Ethical considerations

Ethical principles form the foundations for decision making within the many stages of a research process. Basic ethical principles to the conduct of research are respect for study participants, beneficence and justice (LoBiondo-Wood & Haber 2005:291). Each participant was given the choice to participate or not to participate in the study. Participation was voluntary. Participants were free to ask questions if there were issues they didn't not understand. Verbal informed consent was obtained from all participants.

CHAPTER FOUR

DATA PRESENTATION ANALYSIS AND INTERPRETATION

4.1 Introduction

Both qualitative and quantitative data analysis were used. This chapter presents and analyses the data collected from the participants. The findings about the relationships and effects of leadership style with organizational performance relevant statistical analysis to answer the research questions will also be presented and analyzed.

4.2 Qualitative Data analysis

A qualitative questionnaire was administered to 10 key informants involved in Ethiopia's AMR prevention efforts. The interviews explored governance structures, coordination mechanisms, leadership styles, and perceived performance of the national AMR program. Thematic analysis, as outlined by Braun and Clarke (2006), was used to code and categorize responses into themes. Verbatim quotes were used to support findings, and triangulation was achieved by comparing perspectives across the three institutions. Ethical considerations included ensuring anonymity and informed consent of participants.

4.2.1 Preferred Leadership Styles for AMR performance

Five informants endorsed transformational leadership as highly effective for AMR program performance, citing its emphasis on vision, inspiration, and collaboration. Four supported participatory leadership, valuing stakeholder engagement and inclusivity. These findings align with literature suggesting that transformational and participatory leadership foster innovation and cooperation in complex health programs (Gilson & Agyepong, 2018). Transformational and participatory leadership styles are well-suited for multi-sectoral AMR programs, as they promote shared goals and stakeholder buy-in, critical for One Health initiatives (WHO, 2019). Five informants identified laissez-faire leadership as detrimental to AMR performance due to its lack of direction and accountability. The other five cited autocratic leadership as ineffective, noting its potential to compromise collaboration and innovation. These findings are supported by leadership studies in public health, which highlight the limitations of passive or overly controlling leadership

in complex, multi-stakeholder settings (Koh et al., 2020). Laissez-faire and autocratic leadership styles are ill-suited for AMR programs, which require active coordination and stakeholder engagement (O'Neill, 2016).

4.2.2 Perceived AMR prevention performance

Seven informants strongly agreed that Ethiopia's national AMR performance is very good, while two disagreed, and one agreed. The majority's positive perception may reflect progress in policy implementation and coordination, as noted earlier. However, dissenting views suggest potential disparities in program effectiveness across sectors or regions, warranting further investigation. The predominantly positive perception aligns with Ethiopia's reported progress in AMR surveillance and stewardship programs (Ethiopia MOH, 2022). Disagreements may indicate uneven implementation or awareness, a common issue in multi-sectoral initiatives (Charani et al, 2021).

4.2.3 AMR Governance and Policy Framework

All 10 informants unanimously agreed that Ethiopia has a clearly defined One Health AMR governance structure, supported by a One Health AMR guideline. The One Health approach, which integrates human, animal, and environmental health, is a globally recognized framework for addressing AMR (WHO, 2015; FAO, 2019). The informants highlighted that the AMR secretariat, comprising representatives from the MOH, MOA, and EEPA, leads policy development, stakeholder coordination, and governance structures. The establishment of a multi-sectorial AMR secretariat aligns with global recommendations for effective AMR governance (WHO, 2020). The One Health guideline provides a structured framework, ensuring coherence across sectors, which is critical for addressing complex challenges like AMR (OIE, 2016).

4.2.4 Achievements of Coordination Mechanisms

Informants emphasized significant achievements under the current coordination mechanism, including the development and implementation of a One Health AMR National Action Plan, the formation of a technical committee, and regular follow-up mechanisms. These findings resonate with global evidence that multi-sectoral coordination is essential for effective national antimicrobial prevention national action plan implementation (Mendelson et al., 2018). The key

informants further explained that the NAP's development and operationalization reflect Ethiopia's commitment to the Global Action Plan on AMR. They indicated that regular follow-up by the AMR secretariat ensures accountability, a critical factor for sustained progress. Four out of 10 informants identified a gap in multi-sectoral coordination for mobilizing sustainable resources, particularly highlighting over-reliance on donor funding. This challenge is consistent with findings from other low- and middle-income countries (LMICs), where financial constraints limit AMR program sustainability (Anderson et al., 2019). Dependency on external funding undermines long-term AMR prevention efforts. Sustainable financing models, such as public-private partnerships, could address this gap, as suggested by global health scholars (Bloom et al., 2020).

The findings underscore Ethiopia's progress in establishing a robust One Health governance framework for AMR prevention, driven by a multi-sectoral secretariat and a national action plan. However, challenges in sustainable resource mobilization highlight a critical area for improvement. The preference for transformational and participatory leadership styles reflects the need for collaborative and visionary approaches to address AMR's complexity. The rejection of laissez-faire and autocratic styles further emphasizes the importance of active, inclusive leadership. These results align with global AMR literature, which emphasizes multi-sectoral coordination, sustainable financing, and adaptive leadership as key drivers of effective AMR programs (WHO, 2020; FAO, 2021). Ethiopia's experience offers lessons for other LMICs, particularly in operationalizing One Health frameworks. However, the identified resource mobilization gap suggests a need for innovative financing strategies, such as those proposed by Bloom et al (2020).

4.3 Quantitative Study Data analysis

The questionnaire was distributed to 42 respondents and all the 42 responded. It implies that the response rate was 100%. For the data analysis the statistical software version 27.0 was used to input the collected data and to find out the output information. In this chapter demography of respondents, descriptive analysis, inferential analysis such as diagnosis of data, correlation and regression of data, will be conducted.

4.3.1 Characteristics of Respondents

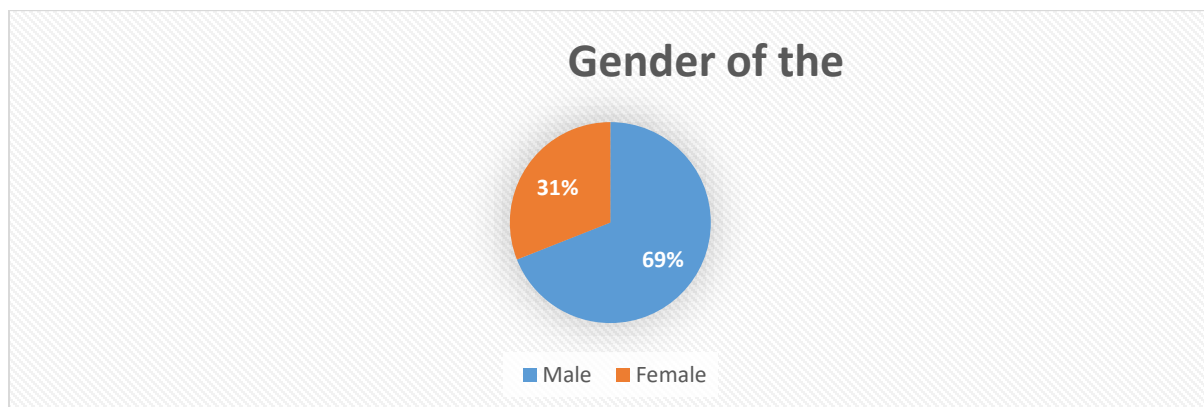
The demographic characteristics of respondents' included gender, age, educational level and years of experience in their respective ministries and authority were included.

4.3.2 Gender

The study involved sex distribution of respondents in order to answer the questionnaires provided as shown on the following figure 4.1.

The pie chart figure below shows the proportion of male and female participated in the study. Out of 42 respondents 69% were male while 31 % were females. This indicates that the proportions of respondents with regard to sex were unbalanced. The representation of female in departments in the Ministry of Health, Ministry of Agriculture and in the Environmental Control Authority AMR prevention activities is much lower than those of male in the same departments.

Figure 4.1 Gender Distribution of Respondents

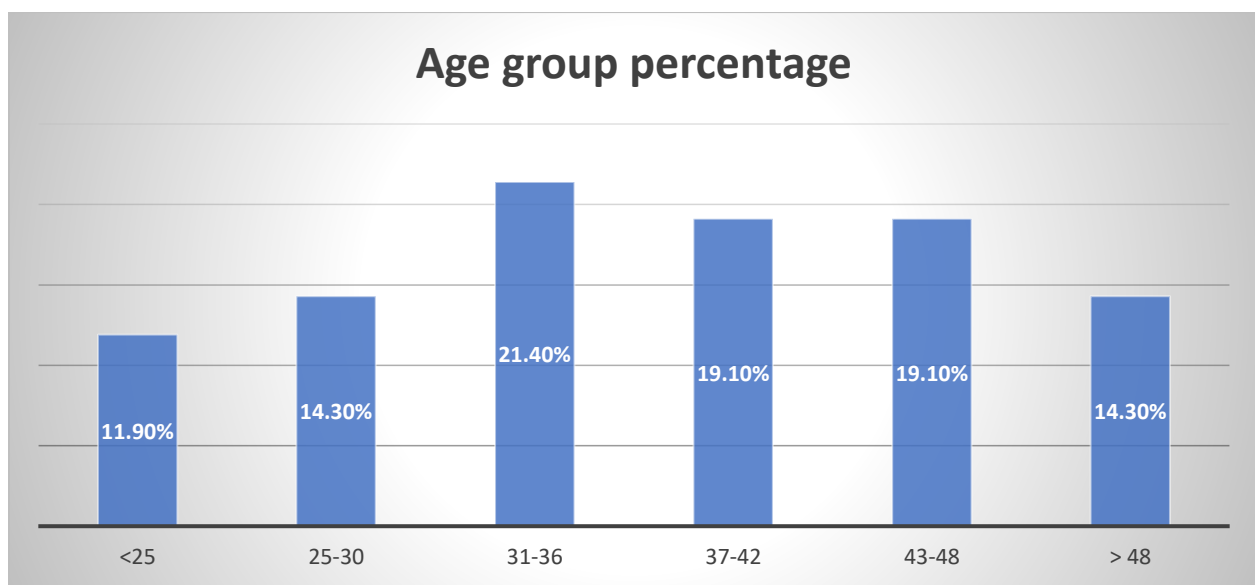


Source: Researcher Survey, 2025

4.3.4 Age

The other demographic factor captured in this study was age of the respondents. When we look at the age group of respondents, the number of employees under the age of 25 becomes 11.9 % respondents, between 25-30 years becomes 14.3 % respondents, between 31-36 years becomes 21.4 % respondents, 37-42 years becomes 19.1%, 43- 48 years becomes 19.1% and above 48 years becomes 14.3% respondents. This indicates that all working age groups were represented

Figure 4.2 Age Distribution of Respondents

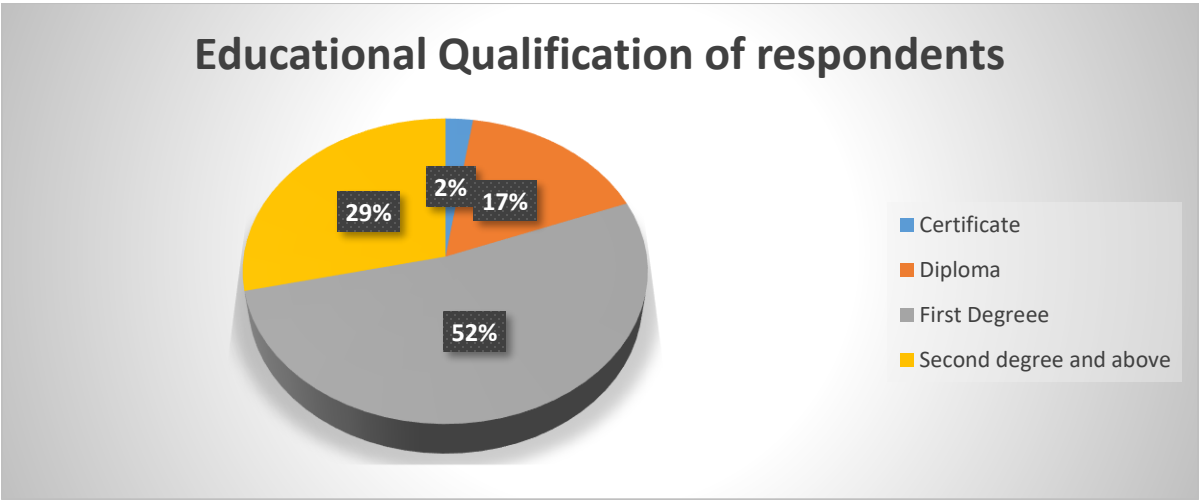


Source: Researcher Survey, 2025

4.3.5 Education Level

Regarding the educational qualification 28.6% were second degree holder and above where as 52.4% were first degree holders. The diploma and certificate holders were only 7% and 1 % respectively. From this it is possible to infer that 99 % of respondents were aware about the study are that is leadership style and its impact on AMR prevention performance. Furthermore to this the researcher believed that the concept of leadership style and its impact were easily understandable to the participants.

Figure 4. 3 Educational qualification

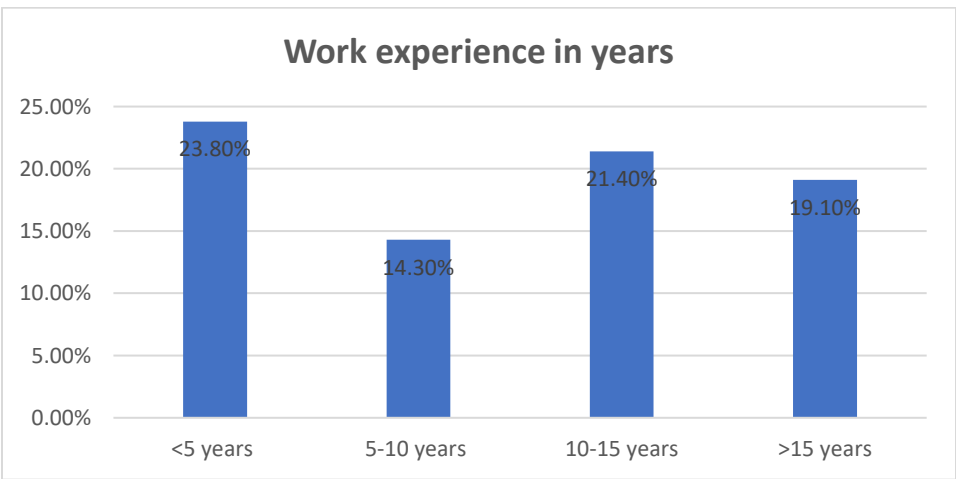


Source: Researcher data, 2025

4.3.6 Work Experience

In addition to the above demographic characteristics, the study also assessed the work experience of respondents. 23.8% of the respondents served for less than 5 years as well as for 5-10 years. The number of respondents who served between 10-15 years is 35.7% where as those who served for more than 15 years is 16.7%. As the majority of the employees worked for more than five years, the information obtained from the respondents can be trusted to conduct meaningful analysis. The existence of senior employees helps the researcher that the finding would be reliable.

Figure 4.4 Work Experience of Employees



Source: Researcher data analysis, 2025

4.4 Descriptive Statistics

For the descriptive statistics, the data collected was entered and analyzed using SPSS version 27. Frequency and percentage of level of agreement of the respondents with regard to questions asked for the five leadership styles and the AMR prevention performance are presented in the following table.

Table 4.1. Descriptive Statistics

Leadership Style	No of respondents	Mean	Standard deviation	Skewness	Kurtosis
Transformational leadership Style	42	3.05	1,513	-0.262	-1.535
Laissez- Faire leadership Style	42	2.19	1.174	1.037	0.098
Transactional leadership Style	42	2.62	1.147	0.712	-0.618
Participatory leadership Style	42	3.98	0.749	-2.159	7.157
Autocratic leadership Style	42	2.83	1,342	0.256	-1.359
AMR prevention performance	42	3.21	1.406	-0.069	-1.535

Source: Researcher's analysis result, 2025

4.4.1 Transformational Leadership

Descriptive statistics were undertaken to elucidate the central tendency results for both the skewness and kurtosis of the participants. The analyses were conducted on a robust sample size of 42, and list-wise deletion was applied to address missing data. The mean Transformational Leadership of the participants was 3.05, with a standard deviation of 1.513 ($M = 3.05$, $SD = 1.513$), and the score range spanned from 1 to 5. Skewness was determined to be -0.262, indicating a slight left skew, while the kurtosis was -1.535, signifying a distribution with lighter tails. In the context of AMR prevention, transformational leaders can foster a culture of innovation and commitment to infection control practices, such as antibiotic stewardship programs. For instance, a study by (Lievens; 2010) found that transformational leadership positively influences organizational outcomes by enhancing employee engagement and adherence to protocols

4.4.2 Laissez-Faire Leadership

Descriptive statistics were undertaken to elucidate the central tendency results for both the skewness and kurtosis of the participants. The analyses were conducted on a robust sample size of 42, and list wise deletion was applied to address missing data. The mean Laissez-Faire Leadership of the participants was 2.19, with a standard deviation of 1.174 ($M = 2.19$, $SD = 1.174$), and the score range spanned from 1 to 5. Skewness was determined to be 1.037, indicating a moderate right skew, while the kurtosis was 0.098, signifying a distribution with normal tails. This leadership style, often associated with passive management, can hinder organizational performance in high-stakes environments like healthcare, where clear direction is essential.

4.4.3 Transactional Leadership

Descriptive statistics were undertaken to elucidate the central tendency results for both the skewness and kurtosis of the participants. The analyses were conducted on a robust sample size of 42, and list wise deletion was applied to address missing data. The mean Transactional Leadership of the participants was 2.62, with a standard deviation of 1.147 ($M = 2.62$, $SD = 1.147$), and the score range spanned from 1 to 5. Skewness was determined to be 0.712, indicating a moderate right skew, while the kurtosis was -0.618, signifying a distribution with flat tails. These findings suggest a moderate presence of transactional leadership in Ethiopian healthcare organizations. A study by (Lowe; 1996) found that transactional leadership positively influences performance in structured environments but may not inspire the adaptive responses needed for complex challenges like AMR.

4.4.4 Participative Leadership

Descriptive statistics were undertaken to elucidate the central tendency results for both the skewness and kurtosis of the participants. The analyses were conducted on a robust sample size of 42, and list wise deletion was applied to address missing data. The mean Participative Leadership of the participants was 3.98, with a standard deviation of 0.749 ($M = 3.98$, $SD = 0.749$), and the score range spanned from 1 to 5. Skewness was determined to be -2.159, indicating a strong left skew, while the kurtosis was 7.157, signifying a distribution with highly peaked tails. This result indicate that participative leadership is the most prevalent and potentially the most effective style

in Ethiopian healthcare settings for AMR prevention. Participative leadership fosters collaboration among healthcare workers, enabling the integration of diverse perspectives in designing and implementing AMR strategies (Yuk, 2013)

4.4.5 Autocratic Leadership

Descriptive statistics were undertaken to elucidate the central tendency results for both the skewness and kurtosis of the participants. The analyses were conducted on a robust sample size of 42, and list wise deletion was applied to address missing data. The mean Autocratic Leadership of the participants was 2.83, with a standard deviation of 1.342 ($M = 2.83$, $SD = 1.342$), and the score range spanned from 1 to 5. Skewness was determined to be 0.256, indicating a slight right skew, while the kurtosis was -1.398, signifying a distribution with flat tails. This result indicates a moderate presence of autocratic leadership, suggesting it is not a dominant style in Ethiopian healthcare settings. A study by (Von, 2014) found that autocratic leadership negatively impacts organizational performance in dynamic healthcare settings.

4.4.6 AMR prevention Performance

Descriptive statistics were undertaken to elucidate the central tendency results for both the skewness and kurtosis of the participants. The analyses were conducted on a robust sample size of 42, and list wise deletion was applied to address missing data. The mean Organizational Performance of the participants was 3.21, with a standard deviation of 1.406 ($M = 3.21$, $SD = 1.406$), and the score range spanned from 1 to 5. Skewness was determined to be -0.069, indicating a nearly symmetrical distribution, while the kurtosis was -1.535, signifying a distribution with light tails.

4.5. Inferential analysis

Inferential analysis is type of analysis that used a random sample of data taken from a population to make inferences about the population. Inferential statistics are valuable when examination of each member of an entire population is not convenient or possible (Burn, 2001).

4.5.1 Correlation Analysis

As per Ratner (2009), a correlation coefficient enables to quantify the strength of the linear relationship between variables. It ranges from -1 to 1, where 1 indicates a perfect positive correlation, -1 indicates a perfect negative correlation, and 0 indicates no correlation. In the context of the research, the researcher used correlation analysis to examine how different leadership styles within Ministry of Health are related to the AMR Prevention performance. This analysis determines whether there is a significant positive or negative relationship between leadership style and AMR performance, and the strength of that relationship.

Pearson Product-Moment Correlation, often referred to simply as Pearson Correlation, is a widely used statistical method to assess the linear relationship between two continuous variables. This method calculates the correlation coefficient, a numerical value that indicates both the strength and direction of the linear association (Shoaib & Jaisharma, 2024).

Accordingly, Pearson Correlation Coefficient was conducted with the result shown in the table below.

Table 4.2. Correlational Analysis

Correlations				
		Transformational Style	Participatory Style	Autocratic Style
Transformational Style	Pearson Correlation	1	-.022	.241
	Sig. (2-tailed)		.889	.124
	N	42	42	42
Participatory Style	Pearson Correlation	-.022	1	.282
	Sig. (2-tailed)	.889		.070
	N	42	42	42
Autocratic Style	Pearson Correlation	.241	.282	1
	Sig. (2-tailed)	.124	.070	
	N	42	42	42
Transactional Style	Pearson Correlation	.015	.180	.049
	Sig. (2-tailed)	.923	.255	.757
	N	42	42	42
Laissez faire Style	Pearson Correlation	-.001	.362*	.105
	Sig. (2-tailed)	.996	.018	.509
	N	42	42	42
AMR Performance	Pearson Correlation	.399**	.414**	.199
	Sig. (2-tailed)	.009	.006	.207
	N	42	42	42

Correlations				
		Transactional Style	Laissez faire style	AMR Performance
Transformational Style	Pearson Correlation	.015	-.001	.399**
	Sig. (2-tailed)	.923	.996	.009
	N	42	42	42
Participatory Style	Pearson Correlation	.180	.362*	.414**
	Sig. (2-tailed)	.255	.018	.006
	N	42	42	42
Autocratic Style	Pearson Correlation	.049	.105	.199
	Sig. (2-tailed)	.757	.509	.207
	N	42	42	42
Transactional Style	Pearson Correlation	1	.090	.253
	Sig. (2-tailed)		.572	.106
	N	42	42	42
Laissez faire Style	Pearson Correlation	.090	1	-.015
	Sig. (2-tailed)	.572		.927
	N	42	42	42
AMR performance	Pearson Correlation	.253	-.015	1
	Sig. (2-tailed)	.106	.927	
	N	42	42	42

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

*. Correlation is significant at the 0.05 level (2-tailed).

4.5.1.1 Transformational Leadership and AMR Prevention Performance

A Pearson correlation analysis was conducted to examine the relationship between Transformational Leadership and AMR Performance scores. The results revealed a moderate and statistically significant positive correlation between these variables, $r(42) = .399, p = .009$. This indicates that increases in transformational leadership practices are associated with improved AMR prevention performance. This suggests that transformational leadership practices, characterized by inspirational motivation, intellectual stimulation, and individualized consideration, are associated with improved AMR prevention outcomes. Transformational leadership fosters a vision-driven approach, encouraging healthcare workers to align with organizational goals such as reducing inappropriate antibiotic use and promoting infection control measures. (Bass; 2006) highlight that transformational leadership enhances organizational performance by fostering innovation and commitment, which aligns with these findings. For instance, transformational leaders in Ethiopian hospitals could promote adherence to WHO guidelines on antibiotic prescribing, thereby reducing resistance rates.

4.5.1.2 Participative Leadership and AMR prevention Performance

A Pearson correlation analysis was conducted to examine the relationship between Participative Leadership and AMR prevention performance. The results revealed a moderate and statistically significant positive correlation, $r(42) = .414, p = .006$. This suggests that higher levels of participative leadership are associated with enhanced AMR performance. This indicates that participative leadership, which emphasizes collaboration, shared decision-making, and employee involvement, significantly enhances AMR program outcomes. In Ethiopia's MOH, where multidisciplinary teams including physicians, pharmacists, and infection control specialists are critical to AMR prevention, participative leadership fosters inclusivity and collective responsibility. The effectiveness of participative leadership aligns with findings from (Avolio; 2004) who noted that participative leaders enhance organizational performance by empowering employees and fostering a sense of ownership. In the context of AMR, participative leaders may involve healthcare workers in developing and implementing antimicrobial stewardship programs, ensuring that protocols are contextually relevant to Ethiopia's resource-limited settings. The significant impact of participative leadership

suggests it is particularly suited to Ethiopia's collaborative healthcare environment, where stakeholder buy-in is essential for program success

4.5.1.3 Autocratic Leadership and AMR Prevention Performance

A Pearson correlation analysis showed a weak and non-significant positive correlation between Autocratic Leadership and AMR prevention performance, $r(42) = .199, p = .207$. This suggests that autocratic leadership has a limited or statistically insignificant association with performance outcomes in this sample. Autocratic leadership, characterized by centralized decision-making and limited employee input, may hinder the flexibility and collaboration needed for effective AMR prevention in Ethiopia. In healthcare settings, where rapid adaptation to emerging resistance patterns is critical, autocratic approaches may stifle innovation and discourage frontline workers from reporting challenges, such as non-compliance with antibiotic protocols. This finding is consistent with (Northouse, 2019), who argues that autocratic leadership is less effective in dynamic and complex environments requiring teamwork. In Ethiopia, where AMR prevention requires coordination across hospitals, laboratories, and public health agencies, autocratic leadership may create bottlenecks in communication and implementation. For instance, top-down mandates on antibiotic use without stakeholder consultation may lead to resistance from healthcare providers, undermining program effectiveness.

4.5.1.4 Transactional Leadership and AMR Prevention Performance

A Pearson correlation analysis revealed a weak and non-significant positive correlation between Transactional Leadership and AMR prevention performance, $r(42) = .253, p = .106$. This suggests that the transactional leadership style does not have a statistically significant impact on AMR prevention performance in this sample. Transactional leadership, which focuses on contingent rewards and compliance with established procedures, may be less effective in addressing the complex, multifaceted nature of AMR prevention. In Ethiopia, where AMR programs require proactive innovation and long-term commitment, transactional leadership's emphasis on short-term goals and rule adherence may limit its impact. This aligns with (Burns, 1978) who notes that transactional leadership is more suited to stable environments with clear tasks, rather than dynamic

challenges like AMR. For example, transactional leaders may enforce antibiotic prescribing guidelines through rewards or penalties, but this approach may not address underlying issues such as inadequate training or resource shortages in Ethiopian healthcare facilities. The lack of significant impact suggests that transactional leadership alone is insufficient for driving AMR prevention in resource-constrained settings.

4.5.1.5 Laissez-Faire Leadership and AMR prevention Performance

A Pearson correlation analysis found a very weak and non-significant negative correlation between Laissez-Faire Leadership and AMR prevention performance, $r(42) = -0.015$, $p = .927$. This implies that laissez-faire leadership is not meaningfully associated with performance outcomes in the organization. This leadership style, characterized by minimal involvement and delegation without guidance, is unlikely to support the structured and proactive efforts needed for AMR prevention. In Ethiopia, where clear direction and accountability are essential for implementing antimicrobial stewardship and infection control measures, laissez-faire leadership may lead to disorganization and inconsistent program execution. This finding is supported by (Yuk; 2013), who argues that laissez-faire leadership often results in poor organizational performance due to a lack of direction. In the context of AMR, laissez-faire leaders may fail to enforce guidelines or monitor antibiotic use, exacerbating resistance rates.

4.5.2 Regression Analysis

One of the things that has a researcher has to do before conducting regression analysis is to ensure that basic assumptions concerning the original data are made. Failure to meet the assumptions may distort the interpretation of results. This study verified the following assumptions:

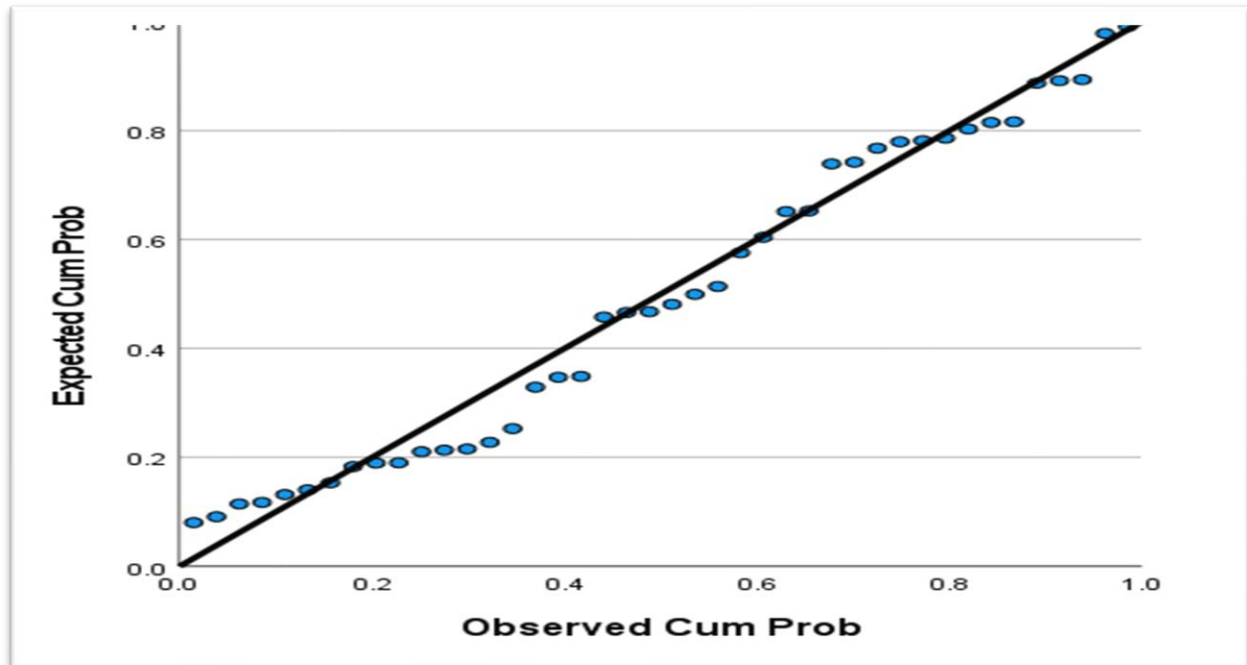
4.5.2.1 Normality Test

Normality test helps to verify if a sample or group of data fits a standard normal distribution. To assess normality, the Shapiro-Wilk test was used. As shown in the table below, the p-value for the studentized residual is 0.113, which is greater than 0.05. Thus, the null hypothesis that the data is normally distributed is not rejected. Hence, the assumption of normality is satisfied.

Figure 4.3 Shapiro-Wilk Test for Normality

Normal P-P Plot of Regression- Wilk Test for Normality

Dependent Variable: AMR Prevention performance



Source: Researcher data analysis

4.5.2.2 Multicollinearity Test

Multicollinearity is the existence of very high inter correlation or inter association among the independent variables. Statistical inferences made in a data will be invalid if multi-collinearity presents in a data. Collinearity diagnostics were conducted using Tolerance and variance Inflation factor (VIF) tolerance statistics in regression analysis helps to detect co-linearity problem. Tolerance value runs from 0 to 1 and values closer to 1 indicates no multicollinearity problem. In this study all the tolerances are above 0.8 and, therefore, the amount of variation in that construct is not explained by other predictors. All the two tests indicated that there is no multicollinearity problem.

The table below shows that that all VIF values are below the threshold of 10 and Tolerance values exceed 0.10, indicating that multicollinearity is not a problem among the independent variables.

Table 4.3 Collinearity Statistics

		Coefficients ^a			
Model		95.0% Confidence Interval for B		Collinearity Statistics	
		Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	-1.523	1.446		
	Transformational Style	.119	.576	.933	1.072
	Transactional Style	-.069	.368	.967	1.035
	Autocratic Style	-.153	.132	.859	1.164
	Participatory Style	.147	.649	.782	1.279
	Laissez Faire Style	-.275	.047	.868	1.152

a. Dependent Variable: AMR Prevention Performance

Source: Researcher analysis result

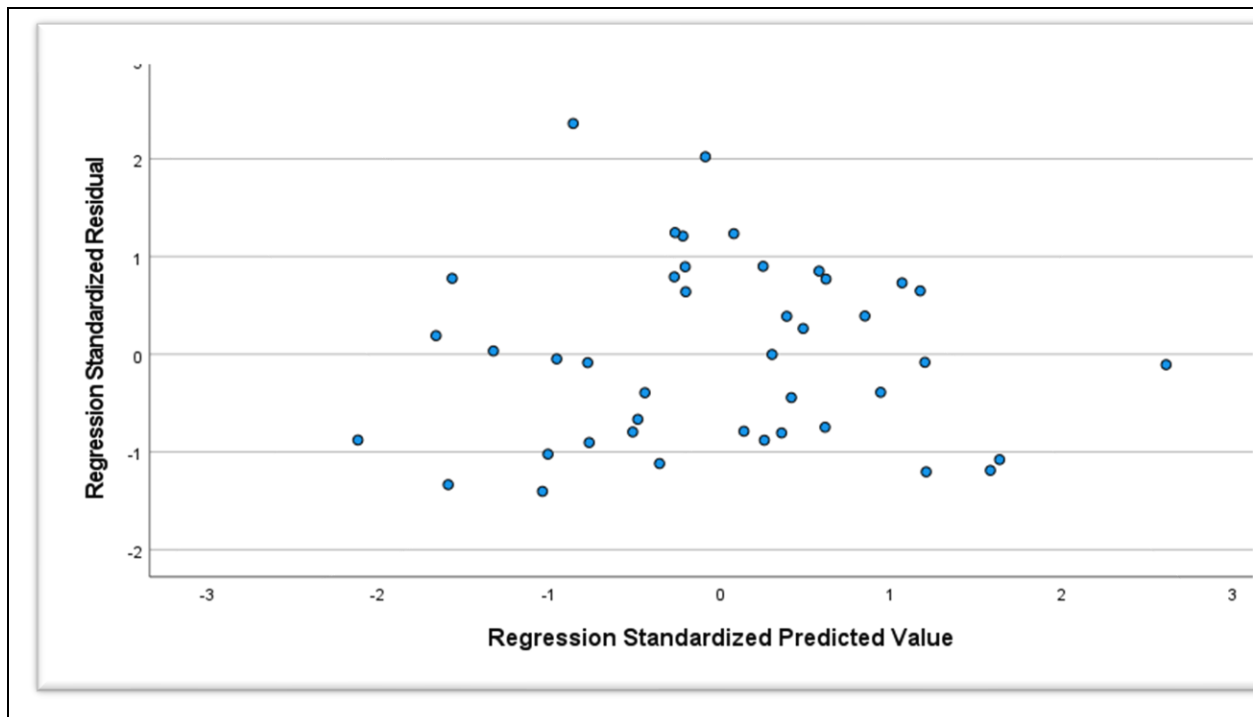
4.5.2.3 Homoscedasticity Test

A scatterplot of standardized residuals was examined. The plot demonstrated a random spread without discernible patterns, confirming that the assumption of homoscedasticity is satisfied.

Figure 4.5 Scatterplot for Homoscedasticity Test

Scatterplot

Dependent variable: AMR prevention performance

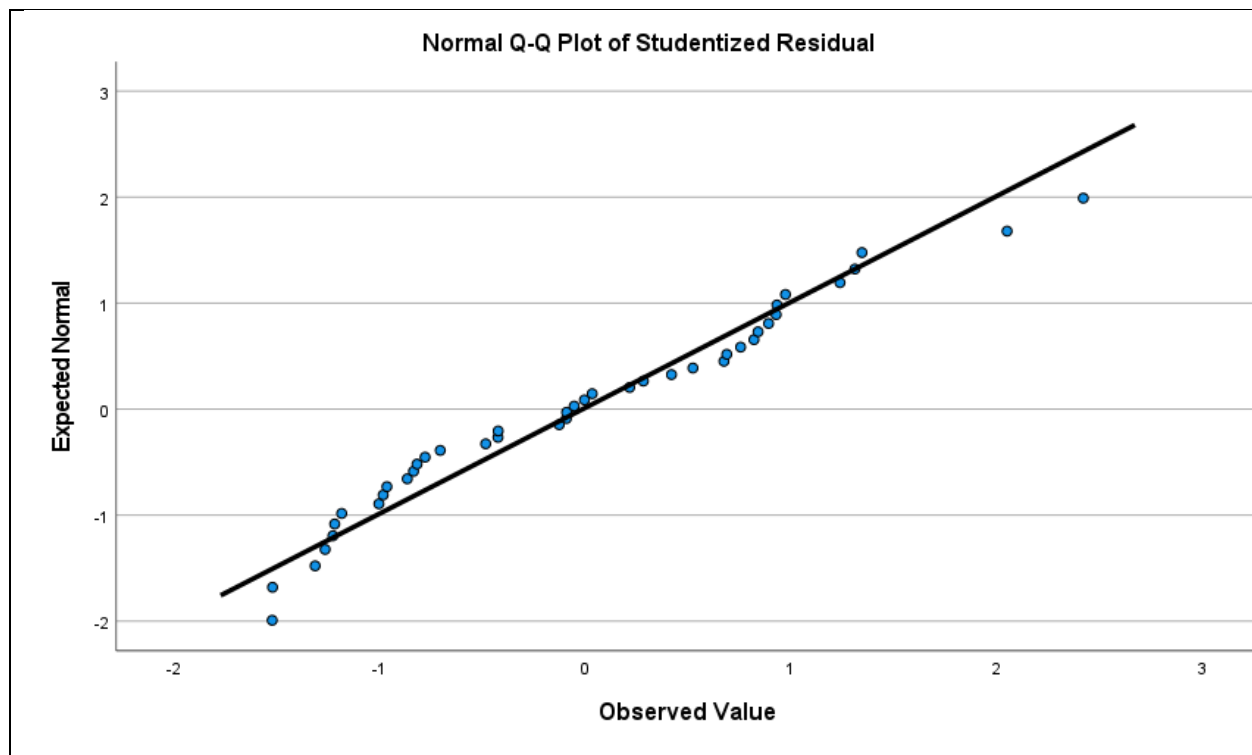


Source: Researcher analysis result

4.5.2.4 Linearity Test

The residual plot indicated a roughly linear pattern between the independent and dependent variables. There was minimal deviation in residuals, supporting the assumption of linearity.

Figure 4.6. Residual Plot for Linearity Test



4.5.3 Multiple Linear Regression Analysis

4.5.3.1 Model Summary

The model summary table below presents an R Square value of 0.403 ($R^2=0.403$), meaning that approximately 40.3% of the variation in AMR performance is explained by the leadership styles. The Adjusted R Square is 0.320, accounting for the number of predictors included in the model. This means that, 40.3% of the variance in the dependent variable; AMR performance can be explained by the independent variables, Participative Leadership Style laissez faire, transformational leadership, autocratic leadership and transactional leaders. Both the R-squared and the Adjusted R-squared values in this study are found to be sufficient to infer that the fitted regression line is very close to all of the data points taken together. R-Squared greater than 20% is still large enough for reliable conclusions for such data

Table 4.4 Model Summary Table

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.635 ^a	.403	.320	.19728

a. Predictors: (Constant), Laissez Faire Leadership, Transformational Leadership, Transactional Leadership, Autocratic Leadership, Participative Leadership

b. Dependent Variable: AMR Performance

Source: Researcher data analysis result

4.5.3.2. ANOVA

The ANOVA (Analysis of Variance) test yielded a statistically significant result ($F = 4.853$, $p = 0.002$), indicating that the regression model significantly predicts organizational performance. Thus, at least one of the independent variables contributes meaningfully to the dependent variable.

Table 4.5 ANOVA Test

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.944	5	.189	4.853	.002 ^b
	Residual	1.401	36	.039		
	Total	2.345	41			

a. Dependent Variable: AMR prevention Performance

b. Predictors: (Constant), Laissez Faire, Leadership, Transformational Leadership, Transactional Leadership, Autocratic Leadership, Participative Leadership

4.5.3.3. Coefficients Table

Under Beta coefficient table, standardized Beta coefficient and unstandardized beta coefficient values are used to predict the relative importance of each independent variable and to formulate the linear regression equation respectively.

Table 4.6 Regression Coefficients

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	-.039	.732		-.053 .958
	Transformational Leadership	.348	.113	.411	3.083 .004
	Transactional Leadership	.149	.108	.182	1.386 .174
	Autocratic Leadership	-.010	.070	-.021	-.149 .882
	Participative Leadership	.398	.124	.468	3.215 .003
	Laissez Faire Leadership	-.114	.079	-.198	-1.432 .161
a. Dependent variable: AMR performance					

Transformational and Participative Leadership have statistically significant and positive effects on AMR performance at 0.05 level. They are found to be significant predictors of AMR prevention performance at the MOH of Ethiopia, Ministry of Agriculture and at the Environmental control authority of Ethiopia. Transactional, Autocratic, and Laissez-Faire Leadership are not significant predictors at the 0.05 level.

The linear multiple regression equation is as follows

$$\text{AMR prevention Performance} = -0.039 + 0.348(\text{Transformational}) + 0.149(\text{Transactional}) + 0.01 + 0.398(\text{Participative}) + E$$

From the above linear regression equation formula, by assigning all the predictor variables to zero, for every unit increase in the value of transformational leadership, participatory leadership and transactional leadership, AMR prevention performance will increase by 46.8% and 41.1% and 18.2% respectively.

4.5.4. Hypothesis Testing

H1: Transformational leadership styles have statically significance effect on AMR prevention performance.

There is positive and significant relationship between Transformational leadership and AMR prevention performance. The $P < 0.05$ and the Value of Beta value 0.411 which shows that 41.1% variance in AMR prevention performance is determined due to transformational leadership. Thus

transformational leadership has positive and significant relation with AMR prevention performance. Therefore H1 is supported

H2: Transactional leadership styles have statically significance effect on AMR prevention performance.

There is positive and significant relationship between Transactional leadership and AMR prevention performance. The $P < 0.05$ and the Value of Beta is 0.182 which shows that 18.2% variance in AMR prevention performance is determined due to Transactional leadership. Thus Transactional leadership has positive and significant relation with AMR prevention performance. Therefore H2 is supported

H3: Autocratic leadership styles have statically significance effect on AMR prevention performance.

There is not positive and significant relationship between Laissez faire and AMR prevention performance. At $P < 0.05$, the Beta value is -0.21 Therefore H3 is rejected

H4: There is positive and significant relationship between participative and AMR prevention performance.

The $P < 0.05$ and the Beta value of 0.468 which shows that 46.8 % variance in organizational performance is determined due to participative leadership style. Thus participative leadership has positive and significant effect on AMR prevention performance. Therefore H4 is supported

H5: Laissez faire leadership styles have statically significance effect on AMR prevention performance.

There is not positive and significant relationship between Laissez faire and AMR prevention performance. At $P < 0.05$, the Beta value is -0.198 Therefore H5 is rejected

Table 4.7 Summary of Hypothesis

No	Hypothesis	Conclusion
1	Transformational leadership styles have statically significance effect on AMR prevention performance.	Accepted
2	Transactional leadership styles have statically significance effect on AMR prevention performance.	Accepted
3	Autocratic leadership styles have statically significance effect on AMR prevention performance.	Rejected
4	There is positive and significant relationship between participative and AMR prevention performance.	Accepted
5	Laissez faire leadership styles have statically significance effect on AMR prevention performance.	Rejected

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the discussion of findings, the limitation of the study, the recommendations and the conclusion. The discussion examines the role of various leadership styles transformational, participative, autocratic, transactional, and laissez-faire in influencing AMR prevention performance, based on the statistical findings provided.

5.2 Summary of Major Findings

The aim of the study was to analyze the effect of the leadership style on the performance of the AMR prevention in Ethiopia. Both qualitative and quantitative data were used to understand the effect of leadership style and governance of AMR in the country. Mixed methods approaches, combining quantitative data with qualitative data were used to provide a deeper understanding of leadership styles in AMR prevention. Study participants from the Ministry of Health, Ministry of Agriculture and the Ethiopia environmental control Authority were included. For The qualitative study, 10 participants were included in the interview which was designed to capture the necessary information on the effect of leadership style in the national AMR prevention performance. 42 questionnaires were distributed to respondents and 42 were filled and returned with a response rate of 100%. For the qualitative study, an open-ended questionnaire was administered to 10 key informants involved in Ethiopia's AMR prevention efforts. Thematic analysis was used to code and categorize responses into themes. Verbatim quotes were used to support findings, and triangulation was achieved by comparing informants' perspectives. For the quantitative study, data was collected used questionnaires and it was analyzed using statistical package for social sciences (SPSS) version 27. Both descriptive and inferential statistics were used for the data analysis. The descriptive statistics included frequencies, percentages, means, and standard deviations. Correlation, regression and hypothesis testing were included for the inferential statistics. The demographic characteristics of respondents' gender, age, educational level and years of experience in their respective ministries and authority were included. Out of 42 respondents

69% were male while 31 % were females. This indicates that the proportions of respondents with regard to sex were unbalanced. The other demographic factor included was age of the respondents. 11.9 % respondents were below the age of 25 years. 14.3 % respondents were from 25-30 years. 21.4 % respondents were between 31-36 years, 19.1 % respondents were between the ages of 37-42 years, 19.1 % respondents were between the age of 43-48 years and 14.3 % were above 48 years. Regarding the educational qualification 28.6% were second degree holder and above where as 52.4% were first degree holders. The diploma and certificate holders were only 7% and 1 % respectively. The other demographic factor included in the study was work experience which indicated that 23.8% of the respondents served for less than 5 years as well as for 5-10 years. The number of respondents who served between 10-15 years was 35.7% where as those who served for more than 15 years was 16.7%

The effect of the five leadership styles; transformational, laissez-faire, transactional, participative, and autocratic on AMR prevention performance, based on descriptive statistical findings from a sample of 42 participants was analyzed. The results provided insights into how leadership styles shape organizational outcomes in the context of Ethiopia's healthcare system, with implications for policy and practice. The perceived means and standard deviations were calculated.

The perceived mean score of Laissez-Faire Leadership style towards AMR prevention performance was 2.19 and SD= 1.174. This implied that employees didn't perceive laissez fair leadership had an impact on AMR prevention performance. In contrary, the descriptive statistics highlight that participative leadership, with the highest mean score of 3.98 is likely the most effective style for enhancing AMR prevention performance in Ethiopia followed by transformational leadership style with perceived mean of 3.05.

The Pearson correlation analysis revealed a moderate and statistically significant positive correlation between transformational leadership and AMR prevention performance, with $r(42) = 0.399$, $P = 0.009$. This suggests that transformational leadership practices, characterized by inspirational motivation, intellectual stimulation, and individualized consideration, are associated with improved AMR prevention outcomes. In the regression analysis, participatory leadership emerged as significant predictor of AMR performance with a standardized beta coefficient of beta

= 0.468 followed by transformational leadership and transactional leadership with a standardized beta coefficient of $\beta = 0.411$ and $\beta = 0.18$ respectively. Like the transformational leadership, participative leadership demonstrated the strongest influence on AMR prevention performance, with a Pearson correlation of $r(42) = 0.414$, $p = 0.006$, and the highest standardized beta coefficient in the regression model ($\beta = 0.468$). This indicates that participative leadership, which emphasizes collaboration, shared decision-making, and employee involvement, significantly enhances AMR program outcomes. In contrast, autocratic leadership, and Laissez-faire leadership showed a weak and non-significant correlation with AMR prevention. The regression analysis further confirmed that autocratic leadership and Laissez-faire leadership are not a significant predictor of AMR outcomes. The regression analysis also provided further insight into the collective impact of leadership styles on AMR prevention performance. The model summary indicates an R square value of 0.403, meaning that 40.3 % of the variance in AMR performance is explained by the leadership styles studied. The adjusted R square of 0.320 accounts for the number of predictors, suggesting a robust model fit. These values indicate that leadership styles, particularly transformational and participative, play a significant role in driving AMR prevention outcomes in Ethiopia.

5.3 Conclusion of the Study

Based on the study findings, transformational and participative leadership styles are preferred for enhancing AMR prevention performance in Ethiopia while transactional, laissez-faire and autocratic styles are viewed as detrimental. The findings from the qualitative study also confirmed this. The findings from the qualitative study also further indicates Ethiopia's AMR prevention efforts demonstrate strong governance and coordination, with a well-defined One Health framework and significant achievements in the implementation of the national action plan. However, sustainable resource mobilization remains a challenge. These findings provide valuable insights for policymakers and stakeholders in Ethiopia and similar settings, emphasizing the need for sustained funding and adaptive leadership to combat AMR effectively.

5.4 Recommendations

Based on the findings of the study, the following recommendations are put forward for relevant bodies' considerations.

- Transformational and participative leadership should be prioritized in AMR prevention healthcare, agricultural and environmental programs to enhance AMR prevention performance.
- Training programs for healthcare leaders could focus on developing transformational skills, such as inspiring teams to adopt evidence-based practices, and participative skills, such as involving frontline workers in decision-making.
- Given Ethiopia's resource constraints, participative leadership may be particularly effective in leveraging limited resources through collaborative efforts.
- The limited impact of autocratic, transactional, and laissez-faire leadership on AMR prevention performance suggests that these styles should be minimized in AMR programs.
- Integrating transformational and participative leadership into national AMR strategies could strengthen coordination between multi-sectorial stakeholders.
- Further research needs to be conducted at regional levels as well as facility levels to gain further understanding of the leadership styles that works best to combat AMR in the country.

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Annexure 1: Questionnaire for the Quantitative Study

INTRODUCTION

Dear Respondents,

Before I begin, I would like to thank you for taking this time to participate in this study. The information you provide will help us to better understand your experience, perception or opinions about **The effect of leadership style in prevention of AMR in Ethiopia**. The data collected will be used for partial fulfillment of the requirement for master's degree in Masters of Arts in Business Leadership at Addis Ababa University, College of Business and Economics, School of Commerce. Your responses will be kept confidential. There is no right or wrong answer and the intent of the questionnaire is to understand your experience and perceptions/opinions.

Part I: General Information of Respondents

1) Gender: A. Male B. Female

2) Age:

- | | |
|-------------------|-------------------|
| A. below 25 years | B. 25-30 years |
| C. 31-36 years | D. 37-42 years |
| E. 43- 48 years | F. above 48 years |

3) Educational Qualification

- | | |
|-----------------|----------------------------|
| A. Certificate | B. Diploma |
| C. First Degree | D. Second Degree and above |

4) Years of service

- | | |
|----------------------|----------------------|
| A. Less than 5 years | B. 5 -10 years |
| C. 10-15 years | D. More than 15 year |

Part II: Specific Questions about the Effect of Leadership Style in Performance of Organization

Note: Questions are designed to ask your level of agreement on the raised point.

You expect to choose from the given alternatives where the acronyms are explained below.

1 =strongly disagree

2 = Disagree

3= Neutral

4= Agree

5= Strongly Agree

Annexure 1: Questionnaire

No	Questions about Each Leadership Style	1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
	Transformational Leadership					
1	My leaders make others feel good to be around them					
2	Leaders Express their idea with a few simple words what we could and should Provide in the company					
3	leaders Enable employees to think about old problems in new ways					
4	All team members are given opportunities to attend relevant trainings and conferences in the company					
5	Leader Spend time to teaching and coaching employee					
6	Leader gives complete freedom in decision making and problem solving to employees					
	Laissez-fair Leadership					
1	In complex situations, leaders were let subordinates to work out problems on their own.					
2	Leaders requires to stay out of the way that subordinates were do their work.					
3	As a rule, leaders should allow subordinates to appraise their own work.					
4	Leaders delay responding to urgent questions.					
5	Leaders avoid him/her from getting involved when important issues arise.					
6	Leader waits for things to go wrong before taking an action.					
	Transactional Leadership					
1	My leader maintains definite standards of performance.					
2	My leader makes clear what one can expect to receive when performance goals are achieved					
3	My leader is effective in meeting organizational requirements					
4	My supervisor clearly clarifies the responsibility for achieving targets					
5	As long as things are working I do not try to change things					
6	I provide recognition rewords when others reach their goals					

	Participative Leadership Style	1. Strongly Disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree
1	Employees want to be a part of the decision-making process.					
2	Providing guidance without pressure is the key to being a good leader.					
3	Most workers prefer supportive communication from their leaders					
4	Leaders need to help subordinates accept responsibility for completing their work.					
5	It is the leader's job to help subordinates find their "passion.					
6	People are basically competent and if given a task will do a good job.					
	Autocratic leadership style					
1	Employees need to be supervised closely, or they are not likely to do their work.					
2	It is fair to say that most employees in the general population are lazy					
3	As a rule, employees must be given rewards or punishments in order to motivate them to achieve organizational objectives.					
4	Most employees feel insecure about their work and need direction					
5	The leader is the chief judge of the achievements of the members of the group.					
6	Effective leaders give orders and clarify procedures.					
	Organizational performance					
1	There are effective coordination with in the institution/Ministry and outside for AMR activities					
2	Annual reports are developed and there implementation is monitored in a regular basis.					
3	There is enough government budget allocation for the institution/ministry to carry out its duties					
4	The organization has met its annual performance target					
5	Employees are satisfied by the collective effort and progress of the institution					
6	The institution AMR performance is progressive and its overall performance is good.					

Annexure 2: Questionnaire for the Qualitative Study

INTRODUCTION

Dear Respondents,

Before I begin, I would like to thank you for taking this time to participate in this study

The information you provide will help us to better understand your experience, perception or opinions about the The data collected will be used for partial fulfillment of the requirement for master's degree in Masters of Arts in Business Leadership at Addis Ababa University, College of Business and Economics, School of Commerce. Your responses will be kept confidential. There is no right or wrong answer and the intent of the questionnaire is to understand your experience and perceptions/opinions.

Participant demographic information

Date: _____

Age _____

Gender _____

Name of the facility/Ministry/authority _____

Highest professional education level (tick the appropriate)

() Certificate

() Diploma

() First degree

() Postgraduate

How long have you been in the ministry/authority: _____ years.

Interview questions

1. Is there a clearly defined AMR governance in your institution?
2. What is the specific role of your institution in tackling AMR in the country?
3. Have the recent policies, governance structures and stakeholder's coordination contributed to tackle AMR in your organization?

4. How much has been achieved with regard to structuring processes and coordinating relevant sectors together?
5. How do you evaluate the performance of AMR prevention in your Institution, Ministry/Authority?
6. What factors are affecting the multi-sectoral coordination of AMR in Ethiopia?
7. The national performance in prevention of AMR is very good.
 - A. Strongly disagree
 - B. Disagree
 - C. Neutral
 - D. Agree
 - E. Strongly agree
8. What type of leadership style do you believe is good for effective performance in AMR prevention?
 - A. Transformational
 - B. Autocratic
 - C. Transactional
 - D. Laissez-fair
 - E. Participatory
9. In your opinion what type leadership style do you think is bad for effective performance of AMR prevention?
 - A. Transformational
 - B. Autocratic
 - C. Transactional
 - D. Laissez-fair
 - E. Participatory