ASSESSING THE INFLUENCE OF KENYA'S SPACE EXPLORATION ON ITS FOREIGN POLICY DYNAMICS WITH THE UNITED STATES

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DECLARATION AND APPROVAL

Declaration by the Student

This Research Project is my original work prepared with no other than the indicated sources and support and has not been presented elsewhere for a degree or any other award.

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Approval by the Supervisors

The Undersigned certify that he has read and hereby recommend for acceptance of Mount Kenya University a Research Project entitled "Assessing the Influence of Kenya's Space Exploration on its Foreign Policy Dynamics with The United States"

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DEDICATION

This project is dedicated to my dad Wanyonyi, mum Alice, also my brother and sisters for encouragement not forgetting God for its by His mercy.

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ABSTRACT

Historically, the space race has been dominated by USA, Russia and China, with the African continent venturing in recently. Studies have focused on space exploration and its importance leaving out the aspect of policies and how it influences them. Kenya, formed its own Kenya Space Agency (KSA) to spearhead the process. This has shaped foreign policies adopted and the nature of relationships. This study investigated the influence of Kenya's space exploration on its foreign policy dynamics with the United States. It was guided by the following objectives: investigate the impact of space exploration in shaping the Kenya

and USA foreign policy, examine the role and influence of USA in Kenya's space exploration race and how it has affected foreign policy, analyze the scope of Kenya USA foreign policy in space exploration and the impacts it has on both countries and evaluate the benefits of Kenya USA relations in space exploration. The research adopted a correlational method of study to fully examine the relationship between the countries, borrowing from the systems theory and grounded theory. The target population was individuals working in the space industry, foreign affairs department and diplomats, with a sample size of 200 people. The study adopted stratified random sampling procedures. The main instruments of data collection were questionnaires, online sources and past publications. The pie charts and bar graphs were used to present the data collected. A pilot study was carried out to ascertain the effectiveness of the study. The research established that Kenya benefits through technological exchanges, international cooperation, educational and scientific exchanges. Security agencies benefit through Enhanced Earth Observation, Intelligence Gathering, Improved Communication and Navigation Systems and Space Situational Awareness. The study established gaps with most people not aware of the institutional collaboration as well as the role in the country's growth and wellbeing globally. The government should fully exploit the research opportunities, technological transfer and economic benefits through partnerships to ensure maximum benefits.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

NASA - National Aeronautics and Space Administration

KSA – Kenya Space Agency

USA – United States of America

1KUNS-JUX - 1st Kenyan University Nano Satellite Precursor Flight

ICAO – International Civil Aviation Organization

STEM – Science, Technology, Engineering and Mathematics

COPUOS – Committee on the Use of outer Space

CHAPTER ONE
INTRODUCTION

1.0 Introduction

This chapter presents the background of the study, study objectives, research questions, significance of the study, the scope, limitations and delimitations, assumptions of the study and the definition of key terms.

1.1 Background of the study

Space exploration is every country's dream, and Kenya has positioned itself on the global map by venturing into it. Although other countries have already been key players in the field, the United States remains at the forefront (Kobierecki, 2021). Space exploration has become an important frontier for nations worldwide in the 21st century, driving scientific discovery, technological advancement, and international cooperation (Maertens et al., 2021). A wide range of strategic, economic, and scientific goals drive nations' efforts to investigate the universe. The journey beyond our planet is no longer solely the domain of superpowers; it has become a global endeavor reflecting a collective desire to push the limits of human knowledge and capability (Wambugu & Nyangau, 2021).

The pursuit of scientific advancement is the driving force behind this motivation. Space exploration provides unparalleled opportunities to investigate the possibility of life beyond Earth, comprehend celestial phenomena, and understand the universe's origins. By exploring outer space, countries aim to answer fundamental questions about the nature of our universe and our place in it (McLauchlin, Seymour, & Martel, 2022). This chapter will address the developments that have occurred since the conception of this idea and the influence on international relationships.

The race for space exploration began in 1957 when the Soviet Union launched its first artificial satellite, Sputnik 1. This period was marked by political hostility, threats, and propaganda between the Soviet bloc countries and Western powers, lasting from 1945 to 1990. The race intensified with the USA launching its own satellite in 1958, followed by the formation of the National Aeronautics and Space Administration (NASA). Just four years later, in 1962, Lieutenant Yuri Gagarin of Russia became the first human to orbit the Earth in Vostok 1 (Kobierecki, 2021).

Previously, in partnership with Italy, Kenya facilitated the launch of 20 sounding rockets and 9 satellites from Malindi. The Longonot Earth Station was also established and eventually began operations, with additional Earth Stations constructed in Kericho and Nairobi. Kenya's entry into the air and space arena was driven by socio-economic development goals, guided by prevailing international treaties and frameworks (Mkutu, 2020).

Kenya's national space program, currently known as the **Kenya Space Agency (KSA)** and previously the **National Space Secretariat**, has successfully launched its first satellite. The agency's vision is to promote access to and effective utilization of Kenya's space economy for sustainable development (Mwangi, 2023). KSA coordinates the space sector to enhance its contribution to Kenya's socio-economic development. It is tasked with developing and adopting necessary legislation to support the growth of the space sector and related technologies.

Additionally, KSA is committed to intensifying capacity-building and outreach programs to increase the number of professionals in the space sector and to inspire the next generation. KSA aspires to facilitate the design, construction, and deployment of satellites for

communication, Earth observation, and scientific research. It aims to develop ground stations, spaceports, and other infrastructure necessary for space missions (Onditi & Yuko, 2023). The agency also contributes to global space science through research in planetary science, Earth observation, and space weather and ensures that Kenya's space policies and regulations are aligned with international standards and practices.

Recently, Kenya has worked closely with the United States in pursuit of becoming a regional space hub. This collaboration has significantly influenced the country's space exploration efforts. The launch of the Taifa-1 observation satellite onboard a SpaceX rocket from the United States serves as a milestone achievement toward realizing this ambition (Mwangi, 2023). This satellite is designed to collect environmental and agricultural data including monitoring floods, wildfires, droughts, and supporting disaster management thus fulfilling the socio-economic vision of the Kenya Space Agency

1.2 Statement of the problem

Kenya as a country needs to be stable in space related activities as space technology has become the epitome for the provision of all modern infrastructure. The two countries have in the long run had bilateral agreements in regards to exploring the outer space. Exploration is an expensive venture for Kenya to explore on its own due to her economic standing. The exploration race requires complex technology and highly qualified expertise that Kenya as a country has no capacity to provide. In addition to the high expenses that are associated with space navigation, the dynamic technological innovations in aspects to do with space exploration makes it quite difficult and complex for Kenya as a country to execute research and other vital activities associated with air exploration on its own. It is therefore on this basis that there is need for cooperation in various areas such as finance, technology, science,

also through training and policy formulations in outer space initiatives for the country with the US so as to accrue the benefits from Space like other nations. The 14 July 2022 Kenya US strategic trade and investment agreement saw enhanced engagements in increasing investment, agriculture, digital trade, environment and climate change action and entrepreneurship. The need for cooperation in space exploration needs a well-established platform to realize an integrated technology to enhance Kenya's stability in space activities. This requires technological advancements, propagated by exploring the space. The partnership determines the policies to be formulated to realize the same. The US has a well-established space platform which Kenya has tapped on to see her realize her potential as a regional and African space center. This in the long run will enable Kenya to be fully self-reliant in space matters.

1.3 Purpose of the study

The study aimed at establishing how Kenya's space exploration race has determined its foreign policy with the U.S.A and further assessed how the foreign policy has affected both countries. It examined the scope and role of USA in Kenya's space race hence the foreign policy. The study also established the challenges and opportunities both countries get from each other in collaborating towards space exploration. The study also looked at the future prospects of the space sphere in Kenya and its further influence on the regional and continental race. The geopolitical influence brought by the venture was also looked into. The study examined how the race has shaped international negotiations and treaties between Kenya and other nations as well as her standing on the global arena as part of the space expatriate and among pioneers in the African context.

1.4 Objectives of the study

General objective

The general objective was to investigate the impact of space exploration in shaping the Kenya and USA foreign policy.

Specific objectives

The specific objectives were to;

i. Examine the role and influence of USA in Kenya's space exploration race and how it has affected foreign policy. ii. Analyze the scope of Kenya USA foreign policy in space exploration and the impacts it has on both countries iii. Evaluate the challenges and opportunities of Kenya USA relations in space exploration in regard to foreign policy.

1.5 Research questions

i. What is the Role of US in Kenya's exploration race and effect on the foreign policy?

ii. What is the scope of Kenya USA foreign policy?

iii. What are the challenges and opportunities to Kenya in the space exploration partnership with the US?

1.6 Significance of the study

Space race has been on the rise globally. Kenya as a country is a no exception in securing its position in space activities. Over fifty (50) nations globally own space crafts and satellites. The benefits of space exploration are immense and Kenya as a country cannot afford to miss out on the same. Space exploration has generally been taken over by a small number of western countries, at this point lately, nations like Kenya have left on aggressive space

programs, driven by the commitment of industrial progression, economic development, and worldwide distinction. Reaching the stars is not the only goal of space exploration for Kenya; it is also intertwined with national development, scientific advancement, and regional leadership. The advancement in information technology has greatly contributed to this race and Kenya's vision 2030 is driven by technological advancement which can be speedily triggered by venturing into space exploration. The United States of America is seen to be at the forefront in space exploration and Kenya as a country has partnered with it to realize her dreams and this has brought about a significant influence. This however informs the foreign policy between the two countries. The study has greatly contributed to the world of academics regarding Kenya's foreign policy with the USA. It also informs policy makers in formulating policies that are geared towards making Kenya not just a consumer of space technology but key player. This also impacts on politics of the country, thus helping policy makers to put emphasis on policies that are of mutual benefit to both countries. It has enabled them see how such activities can be encouraged, while adding value by bringing together activities between the two nations and growing the Kenyan space market.

The immediate objectives of space missions are only a small part of the significance of space exploration to Kenya. It incorporates technological advancement, financial turn of events, global cooperation, instructive progression, and provincial initiative. By putting resources into space exploration, Kenya isn't just propelling its own capacities but regionally. Kenya's position as a dynamic and forward-thinking nation in the global arena will undoubtedly be strengthened by the discovery of new opportunities for growth, collaboration, and discovery as it continues to explore the outer space.

1.7 Scope of the study

The study targeted individuals working in the space industry, foreign affairs department which is charged with formulation of foreign policies and diplomats. The foreign affairs Ministry has the role of ensuring favorable terms when collaborating with other nations with diplomats being the key negotiators. Space experts have a deeper understanding of the operations hence form a key target population. The study also engaged people from other agencies that are not directly but indirectly affected by the venture which has seen them benefit immensely.

1.8 Study limitations

The researcher may have failed to access vital sources of information regarding the bilateral agreements between Kenya and the USA in collaborating to explore the outer space. The researcher was also be limited by resources and time hence reaching a small population during the study. The limitations of this research study were tied towards the availability of the up-to-date data as well as access to the key or major informants. The dependence on international or global partners as well as the need for capacity building also presented challenges for the space exploration. The limitations of the research included potential biases in the interview responses as well as the evolving nature that is associated with space diplomacy.

1.9 Delimitations

The research was based in Kenya, this implies that the research study might have failed in capturing the views of the USA population, however the interviews included diplomats from the USA and space experts from the country attached to KSA. Failure by the researcher to capture this implies that the study was ultimately biased on the views of the Kenyan

population only. The study also relied on secondary data which may be based on biases by the previous researchers.

1.10 Assumptions of the study

The study assumed that Kenya USA collaboration in realizing her space exploration race leads to mutual benefits that has seen Kenya accrue growth opportunities for her economic stability.

1.11 Operational definition of key terms

Air space – Atmosphere above a country or territory that is controlled by the nation/state

Diplomat – A person appointed by the government to maintain good relations with countries they are appointed to work in.

Foreign Policy – Policies that are adopted by states governing how they relate to each

other.

Space – The region above the earth surface. It's not owned by anyone.

Space craft – A device that is made and designed to operate in the outer space.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

Over the past 6 decades, the issue of space exploration has pushed the frontiers of both science and technology in various nations across the world Kenya included. This is because repeatedly, the issue of space science has proved that it has the advantage and capability of driving forward the growth of both science as well as technology in countries which are applicable themselves to it as well as in ways which had a significant as well as positive

impact on the other sectors and spheres of the economy (Nzinga *et al*.,2019). The foreign policy of Kenya as a country is known to rest on five major pillars which are interlinked and these are the: economic diplomacy pillar, peace diplomacy pillar, environment diplomacy pillar, cultural diplomacy pillar, and the Diaspora diplomacy pillar. Kenya's foreign policy pillars and space exploration efforts are closely linked, with space technology supporting diplomatic relations, economic development, scientific advancement, national security, and sustainable development. By advancing its space program, Kenya strengthens its global presence, fosters international partnerships, and leverages space technology for economic and societal benefits, aligning with its broader foreign policy objectives.

Studies have shown that Kenya's foreign policy toward the United States has long been a major determinant of investment in space research as well as the growth and extension of Kenya's space industry (McEwan *et al*. 2021). Furthermore, it was claimed that Kenya's exploration of space had an impact on the nation's foreign policy toward the United States of America because it had made it possible for its domestic space industry to contribute to many areas of technological advancement, research, manufacturing capabilities, and even innovation. As a result, Kenya is now in a better position to actively contribute to the development of the entire nation (Berger-Kern *et al*., 2021). In the end, this has benefited the nation. This has helped the country to positively contribute towards research and technology-based growth strategies which is indeed a central and vital tenet of its vision 2030 "production-oriented growth" which is expected to underpin the entry of Kenya into a medium-based income economy. This was mostly driven by Kenya Space Agency that has played a crucial in realizing the same. Space exploration promotes the development of high-

technology industries. Kenya's investment in space technology has the potential to stimulate innovation and foster a technology-driven economy. This is consistent with
Vision 2030's goals of industrialization and the creation of a knowledge-based economy (Schindler & Kanai, 2021).

Space missions, such as satellite launches, aid in the development of advanced infrastructure. Satellites deliver critical data for a variety of applications, including telecommunications, weather forecasting, and resource management. This aligns with
Vision 2030's goal of improving national infrastructure and technological capabilities. Space exploration initiatives offer opportunities for education and skill development in science, technology, engineering, and math. Kenya's space program has the potential to inspire and train a new generation of scientists and engineers, aligning with Vision 2030's emphasis on educational advancement and skill development. (Kovach, 2020) Space technology can help with healthcare by collecting data to monitor environmental health factors and disease outbreaks. This aligns with Vision 2030's goals of improving healthcare systems and public health.

Through the provision of information on crop health, soil conditions, and weather patterns, satellites can improve agricultural productivity. This helps achieve Vision 2030's goals of increasing food security and modernizing agriculture. Space-based data aids in disaster management and response. By improving the ability to monitor and respond to natural disasters, space technology contributes to Kenya’s resilience and sustainability goals outlined in Vision 2030.

2.1.1 Global space race

Several African nations have been successful in establishing relationships with a number of, global space powers. Africa is depicted in these relationships as a recipient than a partner (International Academy for Astronautics Conference, 2007). African states receive expertise, funds/assets, technology and even management of the joint space projects with these global powers. This is a clear indication that policies on joint space activities are either inexistent or not implemented. In as much as this goes a long way in Africa's development in space activities, it is also evident that such policies will be more aligned to meet the interests of the donors. The global space is run by various multinational agencies.

Kenya has not been left behind as it has endeavored to start its own Kenya Space Agency (KSA) to run its space affairs.

2.1.2 National Aeronautics and Space Administration

National Aeronautics and Space Administration (NASA) was established in October 1958. It is involved in several outer space activities among them studying climate change, cumulative changes in sea level, freshwater resources and severe weather events on the Earth. NASA has support agreements for 36 countries for AERONET Sun photometer sites, among them From Africa; Kenya, Morocco, Mozambique, South Africa, and Uganda. A further five photometer sites are operated independently in Mali, Egypt,

Mauritania, Papua New Guinea, Niger, Nigeria, and Mauritania Zambia, Senegal, and Guinea (Steele, 2014). Although not directly, the AERONET sites in these locations upheld by NASA, are integrated with the organization and their information is openly shared. NASA involves educators and students from all over the world, including Africa in education

programs and utilize NASA's educational resources to improve students' comprehension of the STEM subject's matter (Uwe, 2007).

Kenya hosts a UN Regional Centre for Mapping of Resources for Development (RCMRD) which utilizes data from American Earth observation satellites to respond to requests from member States for crop monitoring, water conditions, and disaster warning. The RCMRD also hosts the East Africa node of the SERVIR program mentioned above.

2.1.3 Russian Federal Space Agency

Russian Federal Space Agency (Roscosmos) is one of the partners in the International Space Station (ISS) programme and is actively engaged in the development of space vehicles, launchers and ground-based space infrastructure. Russia has helped launch the majority of the satellites launched by African nations, including South Africa, Egypt, Nigeria, Morocco, and others, from its launch site in Kazakhstan. In 2006, Russia and South Africa came to an agreement to work together on the peaceful exploration and use of space.

2.1.4 European Union's Space Agency

European Union's Space Agency (ESA) was established in 1975. It is an intergovernmental organisation formed by ten founding member states. European Space Agency currently constitutes 22 member states. Steele (2014), Africa and the EU collaborate in space, particularly with regard to satellite navigation and Earth observation. In addition to EU supporting space projects of independent African such as the Regional

Earth Observation for Mediterranean Sea Emergency Surveillance (RAMSES) with Morocco to monitor oil spilling in the Mediterranean, the Union has laid emphasis in regional African space projects such as global monitoring for environment and security (GMES)-

Africa initiative launched in December 2007. Another important area of cooperation between Africa and the EU in space exploration is the meeting of the EUAfrica Space Troika. This is a forum that was set up in 2011 by the "College-to-College" meeting bringing together representatives of the African Union Commission Departments and European Commission Directorates involved in space matters so as to advance cooperation in space and monitor the implementation of agreed projects.

2.1.5 China National Space Administration

China has engaged Africa's regional institutions such as the African Union and its satellite sub regional organisations based on strategic partnerships thus challenging traditional parameters of EU African relations (Uwe, 2007). Space shuttles and launch vehicles, as well as satellites for telecommunications and Earth observation, are currently being deployed by CNSA, one of the world's leading space agencies. China has carried out a variety of international space cooperation and exchanges since 2006. It has marked various participation arrangements and memoranda on the quiet use of space with a large group of nations including Africa, space organizations and global associations. In 2007, China sent off a Chinese-made communication satellite into space for Nigeria. Steele (2014), The communications satellite orbiting at geostationary orbit Services over Africa, parts of the Middle East, and southern Europe showed that China wanted to work with developing nations to use space peacefully and build closer ties between China and Africa.

2.1.6 Indian Space Research Organization

Indian Space Research Organization (ISRO) is the first Asian space agency to reach Mars orbit. It is currently the world's first space agency to have achieved this in its first attempt in November 2013 when it launched the Mars Orbiter Mission (MOM), also known as

Mangalyaan. As of September 2015, ISRO has successfully launched 51 foreign and 33 Indian satellites into space using its 1993-designed, cost-effective Polar Satellite Launch Vehicle (PSLV). For instance, in 2010, an earth observation satellite was launched from Chennai, India, by Algeria, which established its own space agency in 2002 (Steele, 2014).

2.1.7 Efforts by Kenya Space Agency

It was ascertained that the nascent exploration program of space by Kenya became a pivotal element and aspect in its foreign policy with the US and thus helped in driving of technological cooperation, diplomatic interactions, and economic engagements. It was further ascertained that Kenya's foraying into space exploration marked a pivotal moment and stage in its pursuit of national development and technological advancements. This is because the creation of the KSA in the year 2017 helped in setting the stage for the nation to be in a better position of harnessing space technology for different applications that included disaster management, resource mapping, and even environmental monitoring (Schindler & Kanai, 2021). It was further ascertained that Kenya's space exploration initiatives helped in influencing its foreign policy dynamics with the US, emphasizing economic partnerships, technological collaborations, and even diplomatic engagements. It was worth noting that the space program for Kenya is rooted in the Vision 2030 that aimed at transforming the nation into a middle-income country.

While Kenya's Vision 2030 was aimed at aspiring to transform Kenya into a newly industrializing and middle-income nation, the United States on its part as a leader in aspects of space exploration through NASA showed increased interests in international collaborations that are aimed at fostering of global scientific advancements. Uwe (2007) Space exploration initiatives in Kenya had significant impacts on its foreign policy dynamics

with the US and this resulted to an increase in technological collaborations, diplomatic engagements, and economic partnerships. It is no secret that the dynamic collaboration of Kenya with the United States brings in mutual benefits especially in terms of diplomatic engagements and technological advancements. According to analysis that was made, it was ascertained that the space exploration program by Kenya had a positive influence on the country's foreign policy with the US. This partnership resulted to increased economic investments, technological collaborations, and even diplomatic engagements. Such developments underscored the strategic importance of space exploration in the enhancement of bilateral relations as well as promotion of mutual benefits (Ayamga & Kassahun, 2021).

It is important to note that the "burgeoning field of space exploration" has indeed become a vital element of international diplomacy and national prestige. For Kenya, a nation that is conventionally focused on "terrestrial concerns", the venturing into space is a representation of both a strategic pivot and an ambitious leap. It can truly be asserted that the space exploration efforts by Kenya have greatly influenced its foreign policy dynamics with the United States. Initial efforts in space exploration by Kenya started with the creation of KSA in 2017 which duly focused on aspects of satellite technologies for disaster management and environmental monitoring. Recent years saw Kenya collaborate with global agencies across the world. Launching nano satellites such as 1KUNS-PF, and even develop partnerships with the US and Japan. It is therefore no secret that historically, the US has been Kenya's significant all through provision of trade partnerships, military cooperation, and aid. The space ambitions by Kenya have thus added new dimensions towards this relationship by the two countries (Johnson, 2014). This is because the issue of space exploration has indeed become a vital arena for both diplomacy and soft power. Kenya's collaboration with NASA

as well as other entities in the United States thus underscores a strategic move aimed at enhancing its geopolitical significance and technological prowess. Based on a realist perspective, the space initiative program by

Kenya can be seen as being efforts aimed at enhancing its strategic security and autonomy.

2.2 Impact of space exploration in shaping Kenya USA foreign policy

2.2.1 Addressing Problems and Challenges in Airspace activities and operations

It was noted that Kenya effectively recognizes that it is through the foreign policy that it has towards the US that it will be able to become aware of the challenges and problems that its space exploration is facing and therefore take corrective actions. The study further noted that Kenyan foreign policy towards the US is highly hinged on its space exploration and that in order to achieve the much-needed technology leap, then it was prudent to ensure that the foreign policy that it has towards the USA was not punitive due to the wide range of benefits that the country stands to gain (Salman *et al*, 2020). It is through the foreign policies that Kenya has had with the United States that the country has been in a better position of finding viable solutions towards the technological challenges it faces in its space exploration as it continues pushing for frontiers in the country.

Kenya's foreign policy towards the US has been pinged on space exploration in that the country is keen in ensuring that the economy was capable of benefiting from both technologies as well as space services from the US. It was noted that Kenya was well aware of the fact that through development of constructive foreign policies with the US in matters to do with space exploration, then the country was in a better position of stirring up the imagination of youths, students, and scholars (Ayamga & Kassahun, 2021). This is through

inspiring and motivating them so that they were in a better position of engaging in disciplines that will not only help in formation of capabilities but also help in contributing towards the future economic and social development of the country.

It has been established that Kenya gains valuable insight into safest practices from the United States' management of intricate air traffic systems. Comprehensive safety protocols, including improved procedures for dealing with air traffic congestion and emergency situations, can be developed and implemented through collaborative efforts. Buono (2020) By sharing expertise in cybersecurity and anti-terrorism measures, the partnership also addresses security issues. Modern airspace management relies heavily on safeguarding air traffic control systems from cyberattacks and ensuring their integrity. Airspace operations can be protected from potential threats and security measures can be improved through joint efforts.

2.2.2 Economic, Political, and Social Developments to Kenya

Studies conducted state that Kenya's space exploration was a significant determinant of its foreign policy with the US. It is actually through its cooperation with the US in matters to do with space exploration that Kenya has been capable of applying technological developments in various airspace initiatives for its economic, political, and social developments. It has made it possible for Kenya to become aware that Space programs are indeed multi-sectorial in their nature and thus helped in ensuring that the Kenya Space Agency becomes in a better position of coordinating the different sectors as well strategy. This has ultimately helped the KSA to be in a better position of translating viable programs that have ensured balanced allocation of numerous benefits to a wide range of sectors in the country (Buono, 2020). It was also through an effective foreign policy by Kenya towards the

US that it has been in a better position of developing viable goals, principles, and guidelines that have made it possible for the country to have a sustainable usage as well as development of technologies and space science.

2.3 Role and influence of USA in Kenya's space exploration race

2.3.1 Abiding by Airspace Conventions through Kenya and US Partnerships

According to research, it was noted that Kenya as a country has during the past 62 years engaged in numerous space initiatives. This was through subscription by the country to the United Nations Conventions and Treaties regarding the peaceful usage of the outer space as well as through the use of numerous bilateral as well as multilateral agreements with the United States and other countries which have ultimately enabled the country to establish not only national but also regional and global initiatives regarding the utilization of the outer space resources (Eric et.al, 2020). Through this collaboration, the exploration of airspace in Kenya has been made easier in that the country has gained immense skills and knowledge in not only the strategic exploitation but also the use as well as management of its vital resources that concern the outer space.

Collaborative frameworks and networks have seen various milestones. Airspace management protocols and shared responsibilities for commercial, military, and satellite operations have bene outlined in bilateral agreements between Kenya and the United States. International conventions and standards established by organizations like the International Civil Aviation Organization (ICAO) are followed by both nations. These partnerships facilitate smoother and safer airspace operations by ensuring compliance with these standards (Buono, 2020).

Engaging best practices has been crucial in making strides to align with the international guidelines. Airspace management and safety has been enhanced as a result of the two countries sharing operational procedures and best practices. This has included instructing Kenyan aerospace engineers and air traffic controllers in advanced American technologies and methods that are strictly following the set standards on the global arena. With its cutting-edge aerospace technology, the United States has been able to provide Kenya with cutting-edge communication, satellite tracking, and air traffic management systems. In order to effectively manage airspace and guarantee safety, these technologies are absolutely necessary which ensure compliance.

2.3.2 Copying Airspace Experiences from the United States by Kenya

It was noted from studies that collaboration has enabled Kenya to be in a better position of copying airspace experiences from the United States. This has enabled Kenya to be provided with an ideal and viable platform of supporting the development or creation of a Kenyan knowledge-based economy. It was further noted that the collaboration with the US has enabled the country to attain a wide range of practical benefits which can also be ultimately derived from the effective utilization of the airspace (Pearson, 2023). The implementation of the foreign policy in matters to do with the airspace has enabled the country to be in a better position of monitoring the management of the natural resources as well as the environment using the airspace and these includes marine ecosystems, wildlife, mineral explorations, oil, gas, and even mining. It was further noted that the exploration of the airspace has made it possible for Kenya to enter into treaties with the United States that have enabled it enhance its security surveillance. In addition to that, it has made it possible for the

country to be in a better position of enhancing its conflict monitoring, peace keeping efforts, and resolutions through the use of information that have been obtained from the satellite.

Nthenya (2023) The partnership between Kenya and the United States provides a solid framework for addressing the complicated issues and difficulties associated with managing airspace. Both countries can collaborate to enhance the effectiveness, safety, and security of their airspace systems through technological integration, safety enhancement, regulatory alignment, capacity building, and capacity building. Kenya and the United States can come up with novel solutions to the challenges they face now and, in the future, when it comes to managing airspace. They can also help regional and global efforts to improve aviation safety and efficiency by utilizing each other's strengths and expertise. This collaboration exemplifies how international partnerships can significantly advance airspace management and ensure a global aviation network that is safer and more effective.

2.4 Scope of Kenya USA Foreign policy

2.4.1 Partnership in Airspace by Kenya and the USA

With the realization that it requires new ways of engaging in business partnerships with the US, it was noted that Kenya became aware that the US was a crucial partner that could enable it to achieve set goals in space exploration and that is why its foreign policy to the country has been of mutual understanding. According to studies, it was noted that Kenya needed the support and cooperation of the US in order to effectively explore its space and especially in its commitment towards the building of numerous centers of excellence across the country in the aspects of technology, skills development, and science which are critical and crucial towards a sound technological and scientific base. It was due to this realization that Kenya as a country has been keen to ensure that the development of foreign policy with the US is

structured with an aim of helping it transition from being simply a passive user of airspace into a greater contributor towards matters to do with development of space technologies in the region (Lockhart *et al*. 2021). As a result, it was noted that the country is now in a better position of effectively utilizing its airspace for its national development and reaping of maximum benefits from what other countries across the world have done. This partnership has made it easier for Kenya to adopt cutting-edge airspace management technologies like advanced radar systems, satellite-based tracking, and automated air traffic control systems. In addition to improving the efficiency of airspace operations, these innovations aid in the growth of local technological expertise. Kenya has been able to modernize its airspace infrastructure, ensuring that it meets international standards and can accommodate growing aviation traffic, by incorporating American technology and best practices (Pearson, 2023).

It is evident that the airspace management collaboration between Kenya and the United States demonstrates the transformative power of technological innovation. The USA, with its high-level aviation innovation and foundation, provides Kenya with state-of-the-art frameworks for air traffic, satellite correspondences, and navigation. In order to effectively monitor and manage airspace, the study established that the technologies are essential.

Gray & Colin (1997) The primary objective of airspace management is to guarantee safety and security, and the partnership between Kenya and the United States is crucial to this end. To prevent accidents and handle emergencies, effective airspace management necessitates robust surveillance, communication, and coordination systems. Kenya's airspace operations benefit from the United States' knowledge of managing high-density airspace and complex air traffic control systems. Pearson (2023) The implementation of cutting-edge surveillance systems and the creation of extensive air traffic control protocols are examples of joint safety

management efforts. Using satellite-based tracking systems, for instance, makes it easier to keep an eye on aircraft movements in real time, lowering the likelihood of collisions and ensuring that air traffic is managed effectively. Additionally, collaborative training programs for aerospace professionals and air traffic controllers contribute to the improvement of operational procedures and overall safety.

The study has advanced that Kenya-USA partnership in airspace management is a good example of how international cooperation is necessary to deal with global issues. Nthenya (2023) Airspace management requires cooperation with neighboring nations and adherence to international standards and is not constrained by national boundaries. Kenya strengthens its diplomatic relations and improves its global standing by working with the United States. This collaboration demonstrates Kenya's dedication to international norms and practices. Positive relationships are built between the two nations through joint initiatives like participating in international forums and contributing to global airspace management policies. The strategic partnership between Kenya and the United States of America is strengthened by this cooperation, which extends beyond airspace management to more general areas of space exploration, technology sharing, and security.

2.4.2 Kenya's Endowment with Natural Resources

This has enabled Kenya to enter into beneficial ties and cooperation with the United States in exploration of the airspace which has also helped it learn beneficial knowledge and skills from the USA. This was deemed to be of great benefit since it has helped in guiding Kenya as a host country of the US into the space industry thus eventually making and influencing it to become an active contributor towards the development of both space as well as space-based technologies across the African continent (Nthenya, 2023). Kenya space exploration

has been a significant determinant of Kenya's foreign policy towards the US and has had a significant influence in that it has enabled the two countries to develop an indigenous capability and capacity in both space as well as space-related technologies which have enabled them fare well in space exploration thus bringing mutual benefits.

2.5 Challenges and Opportunities of Kenya USA space relationship

2.5.1 Aid by the US to Kenya in Achievement of Set Targets

Kenya's space exploration is truly a significant determinant of the country's foreign policy and has been deemed as a crucial partner for the US in helping it hit set targets. This is attributed to the fact that Kenya is indeed bestowed with a unique variety of vital resources because of not only its geographic location or positioning at the equator but also because on the East, it borders with the Indian Ocean which the US sees as being an easy facilitator towards the tracking and launching of space crafts and its set targets (Kenya Space Agency[KSA], 2020). Kenya's foreign policy with the US has further seen it be in a better position of developing essential space programs that are duly guided by the international or global Treaties and Conventions to which Kenya is a state party. This has helped Kenya be in a better position of observing national principals in airspace that have eventually helped in promotion of peaceful usage of the outer airspace for the benefit of the general humanity across the world.

2.5.2 Use of Telemedicine as a result of Space Exploration

Kenya's exploration of the airspace has further been enhanced as a result of putting in place constructive practices which have helped the country to be in a better position of exploring its airspace. This has been through enhancing the manner in which the country handles a wide range of natural disasters and hazards through forecasting, monitoring, evacuation,

relief support services, and effective management. This has also seen Kenya advance its use in telemedicine where space technologies are used in taking of health services to the remote parts of the nation with more ease. This has also played a beneficial role in the country in that it has helped individuals' access education. For instance, space technologies have been used in Kenya in enhancement of space technologies which have helped in enhanced distance learning as well as taking education closer to the people and more so those who come from the remote areas of Kenya (Mhalla, 2020). Through space exploration, Kenya has been capable of borrowing skills and knowledge from the US for land use planning in aspects of mapping and surveying thus made the issue of both rural and urban planning easier.

Kovach (2020) The technology of telemedicine, which enables remote diagnosis and treatment, is one of these fields. The requirements and innovations brought about by space exploration have had a significant impact on the growth and development of telemedicine. Remote health monitoring and diagnostics need to be improved in order for space medicine to progress. NASA spearheaded the utilization of different remote detecting advances to screen space explorers' wellbeing, including wearable gadgets that could follow crucial signs and physiological boundaries. These advances were intended to guarantee space explorers wellbeing and security during missions and laid the foundation for far off wellbeing checking frameworks utilized in telemedicine today.

Gray & Colin (1997) Space exploration has driven the advancement of remote diagnosis of various ailments and diseases. For instance, today's telemedicine platforms make it possible for healthcare professionals to carry out virtual consultations, diagnose conditions, and offer treatment recommendations without having to be physically present with the patient. Patients who live in rural or remote areas with limited access to healthcare facilities now require this

capability. To this account, wearable health monitors have evolved into sophisticated telemedicine devices. These devices are able to send real-time data about a variety of health metrics, including heart rate, blood pressure, and glucose levels, to healthcare providers. This consistent checking takes into consideration ideal mediations and better administration of ongoing circumstances.

The study acknowledges the profound impact that technological innovation has on various aspects of life is demonstrated by the advancements in telemedicine brought about by space exploration. The requirements of space missions prompted the development of remote monitoring systems, data transmission technologies, and emergency medical support, all of which have changed the way healthcare is provided on Earth. As a result of space exploration, telemedicine gives patients and healthcare systems around the world more access to healthcare, better care, and lower costs. Gray & Colin (1997) Space exploration's influence on telemedicine will likely continue to drive innovation and improve healthcare outcomes as technology advances, underscoring the crucial link between space exploration and terrestrial well-being.

2.6 Theoretical Framework

The theoretical framework is known to highly dwell on the time-tested theories that embody findings of various investigations regarding the occurrence of a phenomenon. The study was guided by both grounded and systems theory (Barney Glaser, 1967).

2.6.1 Grounded theory

Barney and Anslem (1960) introduced grounded theory in response to the limitations of existing research methods. The use of Grounded theory aimed at studying a phenomenon to

discover new developments that come with it. The study employed ideas from the Grounded theory to assess the impacts of space exploration on bilateral agreements and therefore the policies adopted. Space activities are a new phenomenon in the region hence relevance of the theory.

2.6.2 Systems theory

Burrows (2022) Systems theory gives a construction to understanding and looking at complex structures by overview them as solid wholes made from interconnected and dependent parts. Systems theory portrayed society as a system with individuals and groups who have different believes. However, society has to overcome this to prevent conflict.

The perception of space activities varies and may not be in line with a country's norms hence affects policies to be adopted by her counterparts. Kenya and USA have different ideologies and believes hence formulated foreign policies should be in line with each nation's interests.

2.7 Empirical Review

The study borrowed from the structural realist theory. Structural realist theory offers insights into future space relationships. Waltz (2012), the international structure shapes the options available to states. Levels of interdependence have significantly increased in the international system, leading to complex webs of economic and strategic relationships among states. This phenomenon, often referred to as "complex interdependence," underscores how states are interconnected through multiple channels, reducing the utility of military force and emphasizing the role of international institutions and economic ties (Farrell & Newman, 2019).

The foreign policy options available to states vary between bipolar and multipolar international systems. In a bipolar system, two superpowers dominate, leading to a more predictable and stable international order. Conversely, a multipolar system, characterized by multiple centers of power, can result in a more fluid and potentially unstable global environment due to shifting alliances and power balances (Allen, 2018).

The structure of the international system influences how states align with or against each other. Structural realism posits that the anarchic nature of the international system compels states to prioritize survival, leading them to form alliances and balance against perceived threats (Waltz, 1979). This theoretical framework helps explain why states strategically position themselves in emerging domains like space to enhance their relative power and security.

Space activities and exploitation are creating new patterns of interaction and power relationships among states. The increasing militarization and commercialization of space have led to strategic competition, particularly among major powers, as they seek to secure their interests and assert dominance in this domain (Saltzman, 2025).

Structural realism provides a valuable framework for understanding the space exploration dynamics between Kenya and the USA. It emphasizes how the anarchic international system, power dynamics, strategic interests, and global governance structures influence state behavior in the space domain. Both nations engage in space activities to enhance their strategic positions, with the USA aiming to maintain its leadership and Kenya seeking to bolster its technological capabilities and economic development (Saltzman, 2025).

Control over space is increasingly viewed as indispensable to power on Earth. Space power is becoming a critical component of national security and economic prosperity, prompting countries with positive economic development trajectories, including those in Africa, to invest in space programs and seek representation in space activities (Saltzman, 2025).

Anantatmula (2013) The USA's space policy emphasizes maintaining its leadership in space, which influences its interactions with other nations, including Kenya. Kenya's space ambitions, such as launching satellites and participating in international space missions, reflect its desire to enhance its own standing and capabilities. The USA's collaboration with Kenya can be seen as part of a broader strategy to extend its influence and foster cooperation, while Kenya seeks to leverage this partnership to achieve its own strategic goals.

2.8 Conceptual framework

A conceptual framework implies the idea of the researcher regarding how the research problem will ultimately be explored. This is usually founded or based on the theoretical framework that lies on a much wider resolution scale. The conceptual framework was written based on a theoretical framework that was reviewed. Space activities determine the scope, role and benefits Kenya accrues from working with the US. Foreign policy forms the dependent variable entirely being determined by the space exploration activities in place.

Schindler & Kanai (2021) Kenya's KalifaSat project, which involved collaboration with the USA and other international partners, exemplifies how space collaboration supports foreign policy objectives. The project not only advanced Kenya's space capabilities but also strengthened its ties with international partners, including the USA. It demonstrated how

space collaborations can enhance diplomatic relations, provide technological benefits, and support broader strategic goals.

Massé & Margulies (2020) The scope of how foreign policy relies on space collaboration between Kenya and the USA encompasses strategic, economic, scientific, security, environmental, and international dimensions. Space collaboration serves as a means to strengthen bilateral relations, achieve mutual benefits, advance scientific research, enhance national security, support environmental and humanitarian goals, and contribute to global space governance. By leveraging space exploration partnerships, both Kenya and the USA can achieve their foreign policy objectives and enhance their global standing.

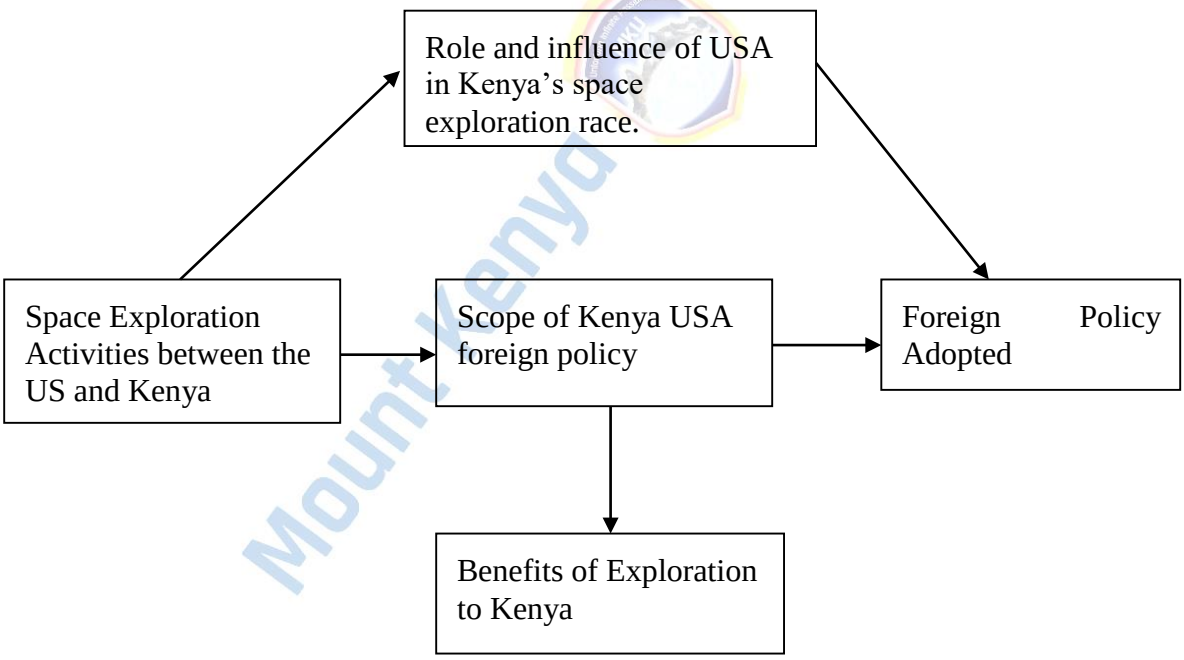

Figure 1: Conceptual framework

Source: Researcher, 2023

2.9 Research Gap

While studies have been conducted in assessing the influence of space exploration on the foreign policy dynamics between Kenya and the US, limited comparative studies have been conducted between Kenya's space initiative and the USA in regards with other African countries. The historical examination of the past initiatives between the two countries may be limited and may pose a challenge in assessing the policy changes over time. Finally, a lack of an analysis on existing policies governing space exploration and their impact on foreign policies.

2.10 Recap of Literature reviewed

Kenya Space Agency, (2023) Space exploration has pushed the frontiers of science and technology with countries aiming at being technologically stable. Kenya's endowment with natural resources puts her in a position to venture into ways that will enable exploiting the resources for her benefit. Investment into space science as well as in the growth and expansion of Kenya's space industry has since time immemorial been highly dependent on the foreign policy that it has towards the United States. Kenya National Innovation Agency (2023), It has helped Kenya be in a better position of observing national principals in airspace that have eventually helped in promotion of peaceful usage of the outer airspace for the benefit of the general humanity across the world. Mwangi (2022) Kenya has been be able to become aware of the challenges and problems that its space exploration is facing and therefore take corrective actions. This has also enabled Kenya to be provided with an ideal and viable platform of supporting the development or creation of a Kenyan knowledge-based economy. This study has effectively analyzed the impacts of Kenya's exploration initiatives and endeavors on its foreign policy dynamics with the United States of America. Through

analysis of both the historical as well as the contemporary data, this research study aimed at uncovering how exploration of space has shaped the technological, economic, and economic collaborations between the two nations. The findings thus provided insights into the wider implications of space diplomacy for developing countries like Kenya. It was ascertained that the exploration of the airspace by Kenya has had a significant influence on its foreign policy with the US and this is through not only fostering of technological collaborations and enhancement of economic partnerships but also the shaping of diplomatic engagements as well the development of other critical sectors of the economy and the region, extending to the African continent.

Kenya faces several challenges in maintaining relationships accrued from space collaboration with the USA, including funding constraints, technical and operational difficulties, political and diplomatic issues, regulatory and policy challenges, public perception, capacity building, and security concerns. Addressing these challenges requires ongoing effort, effective management, and strong commitment from both Kenya and the USA to ensure the sustainability and success of their space partnership.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented a discussion on both the methodology as well as the procedures which will be followed when conducting the study (Crucian *et al*. 2018). It thus presented a discussion of the research designs, the study area, the sample population, sampling procedures, and the research procedures and instruments that were used for collection of data as well as its analysis.

3.2 Research Methodology

Research methodology is defined as being the practical know how regarding a specific piece of research. In majority of the cases, research methodology is usually defined as being the studying of the research methods and can even further imply to the methods themselves or even a philosophical discussion of the related background assumption. As a result, a method is defined as being a structured procedure that is used to bring about specific goals. Methodology further implies to an overarching strategy as well as rationale of a research project and thus involves the studying of the methods that will be used in air and space exploration field by the researcher. This ultimately helps the researcher to be in a better position of developing viable approaches which matches with the research objectives (Wensveen, 2018). Examples of research methodologies are the primary and secondary research. In primary research, a researcher gathers specific data that is used in the research study and it is deemed as being more reliable because it enables a researcher to gain firsthand information. Secondary research on the other hand, uses information that has already been gathered by other researchers.

3.3 Research Design

It is a plan or an outline which is used in generation of answers towards given research problems. A research design is thus deemed as being a glue which holds all the research project elements together. The research adopted a correlational method of study. Siegle (2015) Advances that the correlational methods, are applicable in determining the extent to which two or more variables relate in single group of people. The variables are at no time manipulated to meet the interests of the researcher and the results of the correlation may be either positive or negative. The study involved investigation of Kenya's space activities in collaboration with USA. In depth analysis was done on the results given by the studied samples, which represented other solutions. In a case where the number of organizations under study are few, a small sample will be available and an in-depth analysis will necessary, a case study will be the most appropriate in this.

The researcher also employed a qualitative research design that utilized case studies, expert interviews, and document analysis to effectively explore the influence of space exploration by Kenya on its foreign policy with the United States. Primary data were collected through interviews with officials from the Kenya Space Agency (KSA), space policy experts, and the U.S. State Department, following best practices for qualitative space policy research (Marques de Almeida et al., 2020). Secondary data were sourced from academic journals, government documents, and credible news sources such as Space in Africa and the Kenya Ministry of Defence. Thematic analysis was employed to identify and interpret patterns related to economic factors, diplomatic engagements, and technological collaborations (Braun & Clarke, 2019).

The integration of both correlational and qualitative methods was critical. Studies relying solely on correlations may miss the nuances of variable interactions in real-world contexts. Qualitative methods enable researchers to explore underlying mechanisms and generate explanations for observed relationships, complementing the statistical insights of correlational approaches (Maxwell, 2021). While correlational research is effective for identifying trends and predictive relationships, it does not establish causality. In contrast, qualitative research can help develop theories about why these relationships exist and how they manifest in practice (Silverman, 2020).

The mixed-method approach therefore supports a comprehensive understanding of the research problem. In contexts where research is intended to inform practice or policy— such as international space collaboration and diplomacy—this approach is particularly beneficial. Correlational data can reveal statistically significant trends, while qualitative data provide practical insights into how these findings apply in real-world settings (Creswell & Poth, 2018). This was essential for capturing the complex interplay between
Kenya's space exploration activities and its evolving diplomatic relationship with the United States

3.4 Location of the Study

The study area refers to the area which is related directly to the research that will be carried out (Mishra & Alok, 2022). This is thus an area where the researcher deems as being essential for the research study to be carried out. The study area comprised of Kenya as a country, focusing on Nairobi region. While undertaking this research study, the researcher put into consideration all the aspects of space and airspace activities from all parts of the world. Kenya, specifically Nairobi was the best location of the research study since most of the

space activities are centralized within the area offering a god platform for the research. The researcher selected this area for the study because Nairobi capital is most engaged in space activities. The space agencies have primarily been located in the area and most of the experts are located here. The area also offers a big, diverse population both from the local and international arena who provided a varied opinion on the study topic, providing a variety of opinions. The location has diverse institutions including the Kenya Space Agency, the Diplomatic offices, Security Institutions and Foreign affairs offices from which the researcher drew the population samples. The institutions have their headquarters within Nairobi hence providing an ideal location for the study.

3.5 Target Population

The target population is defined as the group of individuals on whom the research is intended to be conducted, and from whom viable conclusions will be drawn. A target population refers to the larger group from which research subjects are selected (Creswell & Poth, 2018). This research targeted personnel from the Ministry of Foreign Affairs, diplomats, and individuals working within the space industry. The Ministry of Foreign Affairs, being responsible for managing bilateral relations, was vital for providing insights into the extent of agreements between Kenya and its international partners. Diplomats, as the negotiators and promoters of national interests, were key sources of information. Given the technical nature of the space field, experts from the industry provided important input on operational capacities and technological challenges (Marques de Almeida et al., 2020).

These target groups were prioritized due to their first-hand expertise and direct involvement in space-related policy and operations. A total of 200 respondents were selected from various stakeholders in Kenya's airspace and space sectors. A sample size of 200 is generally

considered adequate for achieving sufficient statistical power, which is defined as the probability of correctly rejecting a false null hypothesis (Faul et al., 2009). With this sample size, the study had increased power to detect meaningful effects or relationships, reducing the risk of Type II errors and enhancing the reliability of the results (Lakens, 2021).

3.6 Sampling Procedure and Techniques

The study adopted stratified random sampling method. DeVault (2017) a stratified random sample consists of homogeneous subgroups that are distinct but important in ways. A collection of them is called strata. The technique was appropriate as the study had different subgroups for sampling. The respondents were of different categories hence biasness was be minimal. It involved stratifying the population, defining a number of separate partitions using sample size, and the combining of the results to obtain the required stratified sample. By ensuring that each stratum is represented in the sample, stratified sampling helped to ensure that the sample reflects the diversity of the population. The sampling reduced sampling error because it ensured that all important subgroups are included. This results in more precise and reliable estimates for the entire population, as the variability within each stratum is typically less than the variability in the overall population.

3.7 Sample Population

The study focused on a sample population of 200 respondents drawn from the various target groups. Individuals from the Ministry of Foreign Affairs comprised a higher percentage of the sample because they are responsible for formulating and implementing foreign policy, thus providing the researcher with diverse insights from dealings with multiple countries and stakeholders. This diversity was crucial to understanding why the United States has been chosen as Kenya's principal partner in space collaboration (Creswell & Poth, 2018; Nyangi,

2024). Space experts and diplomats constituted a smaller portion of the sample since experts often share similar knowledge and operate within the same technical environments, meaning a smaller, focused sample can yield sufficient information (Braun & Clarke, 2019). The diplomats included were specifically those working on Kenya–USA relations, given their direct role in advancing bilateral interests in airspace and foreign policy matters. These respondents were therefore well positioned to provide nuanced perspectives on both the technical and diplomatic facets of the space sector and international cooperation (Marques de Almeida et al., 2020; Nyangi, 2024).

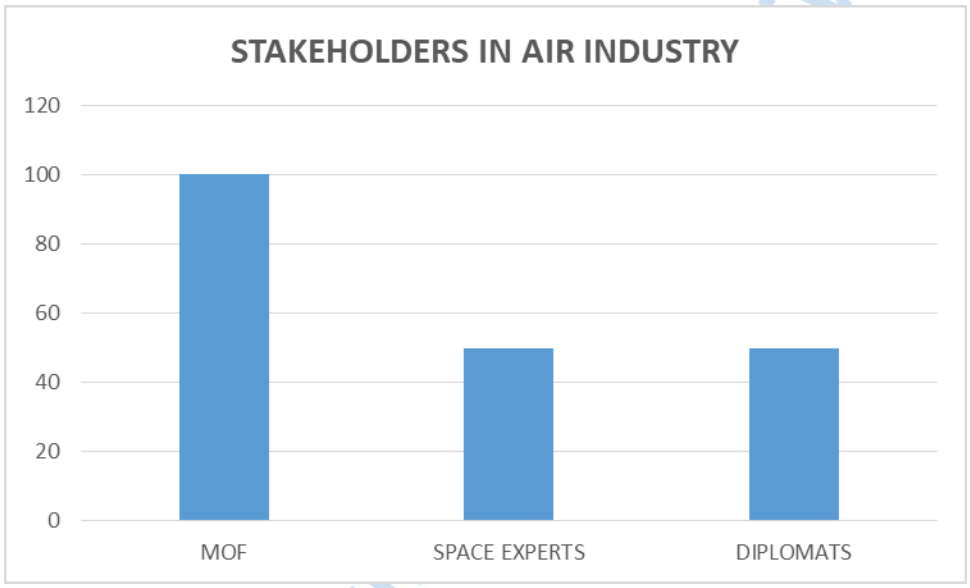

Figure 2: Sample Population

Source: Reseaecher, 2024

3.8 Research Instruments

Instrumentation ensures that data collected is good and thus leads to viable conclusions (Bougie & Sekaran, 2019). Data collection instruments were both primary and secondary.

Primary collection tools that included administration of questionnaires and interviews.

3.8.1 Questionnaires

Cohen (2013) A questionnaire is the instrument for collecting primary data. It is data that could not exist if there was no research. The questionnaires were administered to the nonmanagerial groups within the sample population. This enabled the researcher to get a data on the perceptions and views by the technical and the lower-level management on the impact of the collaboration.

3.8.2 Interviews

Cresswell (2012) Defines interviews as face-to-face conversations between a researcher and a participant involving a transfer of information to the interviewer. Interviews were conducted to the managerial groups of the sampled population while questionnaires were administered to the rest. The questions were structured to address the benefits that comes with the collaboration as well as looking into the challenges faced. The managerial groups mainly gave their feedback on the strategic implications while the rest were giving their feedback based on the hands-on experience. The experts gave their views on the operationalization of the space industry as well as the expertise. The study made use of electronic sources that contained discussions on space developments and past publications that had been done on the topic to collect data.

3.9 Testing for Validity and Reliability

3.9.1 Validity

This depended on the researcher ensuring that the research is carried out carefully and consistently. The study applied content valid as measures of the degree to which data from

the research instruments meaningfully and accurately represent the theoretical concept. The content validity was subjected to experts in the Department and the supervisor who cross checked information to ensure accuracy, relevance, completeness and consistency. Content validity ensured that the measurement tool covered all relevant aspects of the construct being studied. By ensuring that the measurement tool includes all necessary content, content validity improves the accuracy of the findings. If the tool captures the full range of the construct, the data collected are more likely to reflect true variations in the construct, rather than missing or incomplete aspects. This leads to more relevant and actionable results, as the findings are based on a more accurate representation of the construct. High content validity enhances stakeholder confidence in the research results by demonstrating that the measurement tools are accurately capturing the intended construct. This credibility is crucial for the acceptance and application of research findings in realworld settings.

3.9.2 Reliability

The study employed the test-retest technique to ensure reliability. This method enabled the researcher to confirm that the instruments used were dependable and could consistently produce stable results over time (Creswell & Creswell, 2018). Test-retest reliability assesses the stability and consistency of measurement outcomes when the same tool is administered at different points in time (Taherdoost, 2018). A high correlation between the two sets of scores indicates that the instrument reliably measures the intended construct, with minimal fluctuations, thereby confirming the stability of the data (Heale & Twycross, 2018). This consistency is crucial for ensuring that collected data are dependable and not affected by random errors or temporary conditions. Furthermore, test-retest reliability helps identify

random errors or inconsistencies in the measurement process, allowing researchers to improve the accuracy and robustness of their tools (DeVon et al., 2017).

3.10 Data Collection Methods and Procedures

They are defined as the process of gathering information regarding the respective variables of research interest in a well-established as well as systematic fashion which enables the researcher to be in a better position of answering the research questions that have been stated, test the hypotheses, and even evaluate outcomes (Bakker, 2018). The technique was stratified random sampling. The population was divided into different categories during the study. The different samples obtained were defined using sample size and results combined to obtain the desired results of the study.

3.11 Proposed Data Analysis Techniques and Procedures

The researcher ensured only appropriate and most viable methods and procedures of data collection were used in carrying out research (Bell *et al*, 2022). Data collected was analyzed qualitatively before making desirable conclusions.

3.12 Ethical Considerations

These are defined as principles which guide the researcher in both the research designs and practices. The study ensured informed consent of the respondents, voluntary participation of the respondents, confidentiality and anonymity. Data collected was only used for the intended study. The researcher was to seek for relevant authorization from appropriate offices and departments in order to be allowed to collect data. The researcher applied Data Anonymization and De-identification. This was through removing personal identifiers from the data so that individual participants cannot be identified and replacing sensitive identifiers

with pseudonyms or codes that cannot be traced back to the individual without additional information.

3.13 Access to the institutions

Permission to carry out the study shall have approval by the institutions, that is KSA, Ministry of Foreign affairs and the security installation. Considering that every organization has rules governing their policy and practice it was mandatory that the researcher seeks permission before carrying out the research. The researcher ensured they have the relevant authorization to access the institutions either through written or verbal consent by the management. A pre-visit was conducted to ensure familiarization with the areas before scheduling the main meeting.

CHAPTER FOUR
RESEARCH FINDINGS AND DISCUSSIONS

4.0 Introduction

This chapter presents the research findings, analysis of the data and its presentation. In the ever evolving and dynamic landscape of international or global relations, nations across the

world are increasingly recognizing the strategic importance and benefits of space exploration in shaping of their foreign policy dynamics respectively. Kenya, a country located in East Africa, has embarked on a notable and critical journey into space exploration and this is a venture that has not only helped in advancement of its technological capabilities but has also played a crucial role in influencing or impacting its foreign policy dynamics especially in its relations with the United States (Oyewole, 2020). This discussion thus delves into the numerous aspects of Kenya's Space exploration and further examines how this has greatly impacted or influenced the diplomatic ties between Kenya as a country and the United States.

4.1 Role and Influence of Space exploration on Kenya Unites States foreign policy

4.1.1 Space Exploration by Kenya

According to research, Kenya's space exploration initiatives have been driven by strategic interests including scientific research, national security, and economic development (Onditi & Yuko, 2023; Wambugu & Nyangau, 2021). The development of space technology has enhanced Kenya's capabilities in disaster management, environmental monitoring, and agriculture, contributing significantly to socio-economic development
(Nyangi, 2024; Wambugu & Nyangau, 2021). Additionally, space exploration fosters technological innovation and economic growth by attracting investments and creating high-skilled employment opportunities (Munyua & Chitere, 2019).

The multifaceted Kenya–US relationship spans security, diplomacy, and economic cooperation, with space exploration adding a new dimension to this partnership (Onditi & Yuko, 2023; Mwaura, 2020). The United States has shown interest in collaborating with African nations on space initiatives, recognizing the scientific and strategic benefits such partnerships offer (Mwaura, 2020; Wambugu & Nyangau, 2021). For Kenya, collaboration

with the US provides access to advanced technologies, funding, and expertise, influencing Kenya's foreign policy dynamics with the US in significant ways (Nyangi, 2024).

Kenya's formal entry into space exploration began with the creation of the Kenya Space Agency (KSA) in 2017, a milestone demonstrating Kenya's commitment to leveraging space technology for socio-economic development (Onditi & Yuko, 2023). The launch of Kenya's first satellite, Kenya-1, in 2018 symbolized Kenya's technological advancement and its emergence as a key player in Africa's space sector (Onditi & Yuko, 2023; Munyua & Chitere, 2019). Designed for earth observation, agriculture, and disaster management, Kenya-1 underscored Kenya's intent to use space technology to address real-world challenges and enhance its diplomatic standing internationally (Nyangi, 2024).

Kenya's space exploration has notably influenced its foreign policy with the United States, primarily through economic interests. The partnership facilitates US investments in Kenya's technology sector and supports joint ventures that stimulate economic growth and job creation in both countries (Mwaura, 2020; Onditi & Yuko, 2023). High-level agreements such as the 2019 Memorandum of Understanding (MoU) between NASA and KSA highlight the robust diplomatic relationship, fostering knowledge exchange and mutual trust. This MoU laid the foundation for future collaborations focusing on earth observation, capacity building, and satellite communications (Nyangi, 2024; Wambugu & Nyangau, 2021).

4.1.2 Importance of Space Exploration on Kenya-United States Relations

The influence of space exploration by Kenya on its foreign policy dynamics and especially with the US is actually multifaceted. First, it is because it has helped in strengthening of the diplomatic ties between the two countries. The US, a global leader in aspects of space

exploration, has greatly acknowledge the efforts and achievements of Kenya in this arena (Tella, 2021). This recognition has actually helped in translating into enhanced cooperation between the two countries in space domain thus fostering collaboration on issues to technology transfer, scientific research, and even capacity-building initiatives.

Kenya's space exploration has helped in opening numerous avenues for economic partnerships with the US. As aspects of space exploration increasingly becomes a significant driver of economic growth, the collaboration or cooperation between the United States and Kenya in these aspects has facilitated joint investments, ventures, and even the exchanging of expertise (Blair *et al*, 2022). This has not only resulted in contribution towards Kenya's economic development but also resulted in a creation of a foundation for even stronger bilateral relations. In addition to that, Kenya's space capabilities have greatly bolstered its overall position as a regional leader and thus made it attract respect and attention from the US (Bayly, 2021). As the United States seeks to have partners in the African continent, the advancements that have been made by Kenya in the field of space exploration ultimately make it to become a valuable ally for the US. This has not only helped in contribution towards the economic development of Kenya but it has also helped in creation of a foundation for stronger bilateral relations.

It is evident that the space capabilities of Kenya have greatly bolstered its overall position as a regional leader thus helped it to attract both respect and attention from the United States. Indeed, as the United States seeks to have strategic partners in Africa, Kenya's advancements in space exploration ultimately make it to become a valuable and important ally and partner (Langat et al 2021). This has ultimately helped in translation into increased diplomatic engagements as well as support from the United States in several international forums.

Some of the impacts of Kenya's space exploration with the US include technological collaborations such as knowledge exchange programs, the 1KUNS-PF satellite project, and capacity-building initiatives (Onditi & Yuko, 2023; Wambugu & Nyangau, 2021). Economically, these collaborations have led to increased US investments in Kenya's space sector, technological aid tied to economic development, and partnerships with US-based space companies (Munyua & Chitere, 2019; Mwaura, 2020). Diplomatically, bilateral relations have been strengthened through high-level meetings between Kenyan and US officials, joint policy statements reflecting shared interests in space technology, and formal treaties on space exploration (Nyangi, 2024; Onditi & Yuko, 2023).

Case studies emphasize that the launch of the 1KUNS-PF satellite marked a milestone in Kenya–US technological collaboration, highlighting the involvement of NASA, JAXA, and the University of Nairobi (Onditi & Yuko, 2023; Wambugu & Nyangau, 2021).

Examination of the Kenya-US Space Cooperation Agreement reveals that Kenya's space exploration has significantly enhanced its foreign policy dynamics with the US by deepening economic, diplomatic, and technological ties (Nyangi, 2024). These developments have positioned Kenya as an emerging space technology leader in Africa, contributing to regional stability and influencing international relations (Mwaura, 2020; Onditi & Yuko, 2023). For the United States, this partnership aligns with its broader strategic interests in Africa, enhancing its influence on the continent (Munyua & Chitere, 2019).

4.2 Scope of Kenya USA collaboration in space exploration

4.2.1 Technological Collaborations and Economic forums

The development of a space exploration program by Kenya has ultimately resulted in an increase in technological collaborations with the US. This is because the United States has

space programs that well established and thus Kenya could ultimately benefit from American technology, expertise, and even resources. In addition to that, it is also important to note that space exploration usually helps in opening up economic activities (Debisa, 2021). As a result, the involvement of Kenya into space activities with the US might eventually help in creation of viable opportunities for investments, partnerships, and ventures with the leading space companies in the United States thus resulting to economic benefits for both nations.

One of the significant areas of influence is the technological collaboration that prevailed between Kenya and the United States. For instance, Kenya's space ventures like for instance deployment of the "*Kibo Cube Satelite*" have played a crucial role in facilitation of capacity building and knowledge transfer. It was thus noted that partnerships with

United States space agencies such as NASA and private firms have greatly advanced the technological capabilities of Kenya and helped in fostering of a favorable environment for even further collaboration. Detailed case studies regarding the U.S-Kenya space partnerships highlight different joint missions and projects. International Academy for Astraunatics Conference (2007) The case studies underscored how technological exchanges have greatly enhanced space infrastructure in Kenya and also contributed towards the country's wider foreign policy goals. In addition to that, it was further ascertained that the exploration efforts by Kenya as a country were highly influenced by broader or wider geopolitical considerations. It was further noted that Kenya's space ambitions and strategic locations effectively aligned with the interests of the United States in maintenance of influence especially in the Horn of Africa. It was argued that space cooperation was actually part and parcel of the wider strategy aimed at counteracting Chinese influences in the area as well as securing the strategic interests of the United States.

It has resulted in technology transfers and scientific collaboration. Joint space projects are quite important since they help facilitate scientific collaborations, technology transfers, and strengthen bilateral ties between the two countries (Onditi & Yuko, 2023; Wambugu & Nyangau, 2021). For example, partnerships in space research and satellite development have played a significant role in enhancing Kenya's scientific capabilities while fostering goodwill with the United States (Munyua & Chitere, 2019). Space exploration by Kenya has influenced its foreign policy with the United States through economic diplomacy, as space exploration can be a vital tool for fostering economic ties (Nyangi, 2024). By positioning itself as a viable hub for space technologies in Africa, Kenya can attract investments and foster economic ties with the United States, ultimately increasing trade and investment flows beneficial to both countries (Mwaura, 2020).

It was noted that space exploration stimulates economic growth, attracting foreign investments and creating high-tech jobs in Kenya (Onditi & Yuko, 2023). By investing in space technology, Kenya is positioning itself as a viable emerging market for aerospace industries. This economic potential attracts US companies seeking to expand their international footprint (Munyua & Chitere, 2019). Additionally, Kenya-US partnerships in space technology can spur investments in related sectors such as environmental monitoring, agriculture, and telecommunications, enhancing Kenya's global economic standing (Wambugu & Nyangau, 2021).

4.2.2 International Cooperation and Strategic Alliances.

Indulgent in space exploration usually involves international collaboration. The involvement of Kenya into space projects implies that it has to seek important partnerships with different countries which includes the United States. Such kind of collaboration might extend beyond

aspects of space exploration to other different aspects of mutual interests. In addition to that, successful space endeavors by Kenya could also help in the enhancement of the country's global standing and thus potentially resulting to an enhancement of strengthening of crucial strategic alliances (Maertens et al. 2021). The US will also view Kenya as being a valuable partner and stakeholder in the African continent thus fostering even closer ties in different domains.

4.3 Opportunities and Challenges

4.3.1 Benefits and the encountered challenges

Kenya's space program has enabled it to enhance its disaster management and response capabilities through the use of enhanced satellite imagery and has enabled the country to boost agricultural productivity by using satellite data to monitor soil conditions and weather patterns (Onditi & Yuko, 2023; Wambugu & Nyangau, 2021). Additionally, the US influence has helped Kenya improve communication infrastructure, especially in remote areas (Munyua & Chitere, 2019). The space program has also fostered education and capacity building, particularly in STEM fields, positioning Kenya as a key player in the African space sector and promoting regional cooperation (Johnson, 2014; Mkutu, 2020).

On the other hand, the USA has utilized this opportunity to advance its interests in Africa, showing immense interest in collaborating on space initiatives. These interests are driven by strategic geopolitical considerations, including countering rival global powers such as Russia and China, as well as by economic opportunities in African space markets and enhanced security through satellite cooperation (Maertens et al., 2021; Nyangi, 2024). The US views

collaboration with Kenya as a means to secure a permanent strategic foothold in Africa, outpacing eastern counterparts in influence and space capabilities (Maertens et al., 2021).

Despite the positive developments, challenges remain. Sustainable long-term strategies, financial limitations, and technological constraints present significant hurdles requiring joint efforts from both countries (McLauchlin, Seymour, & Martel, 2022). Nevertheless, these challenges also offer opportunities for increased technology transfer, cooperative ventures, and joint research, which can further solidify diplomatic ties (Onditi & Yuko, 2023).

Sustaining long-term funding for Kenya's space projects is a major challenge. Technological transfer and capacity building remain critical issues, as Kenya's space program's effectiveness hinges on adequate technology coupled with local expertise development. Furthermore, geopolitical tensions, particularly the evolving US-China rivalry, could impact space cooperation between Kenya and the US (Nyangi, 2024; McLauchlin et al., 2022).

Kenya's foray into space exploration significantly influences its foreign policy dynamics, especially with the United States. Kenya's achievements in space technology have positioned it as a regional leader and strengthened strategic, economic, and diplomatic ties with the US (Mkutu, 2020; Onditi & Yuko, 2023). As these countries navigate the complexities of global space affairs, their collaboration underscores the mutual benefits of investing in scientific ventures beyond national borders.

To maximize the influence of space exploration on Kenya-US foreign policy relations, the challenges must be addressed. Resource constraints require substantial technological and financial investment, and sustainable infrastructure development and funding are vital for success (McLauchlin et al., 2022). The development of robust policy and regulatory

frameworks is essential to guide international space activities, ensuring compliance with global treaties and balancing national interests with international partnerships. While collaboration with the US offers many benefits, Kenya must safeguard its sovereignty and prioritize national development goals (Mkutu, 2020).

4.3.2 Educational and scientific exchanges and soft power and diplomacy.

Space programs invented by Kenya could help in stimulation of scientific research as well as development in Kenya. On the other hand, collaborative projects with institutions in the US by Kenya could ultimately result to educational and scientific exchanges thus helping foster a deeper relationship and understanding between Kenya and the US. That apart, attainments in space exploration can also significantly help in contribution to the soft power of Kenya a country (Ushie et al 2021). The successful space missions by Kenya could also have a positive and significant influence on the country's image on the global stage thus having a potential impact on the diplomatic relations with not only the United States but also with other nations.

It was established that Kenya and the United States have engaged in a wide range of space cooperation initiatives and some of them include the NASA partnerships that have seen Kenyan institutions and researchers participate in a wide range of NASA programs (North Atlantic Treaty Organization [NATO], 2019). This helped the country to not only build to but also benefit from the wealth of technological advancements and knowledge. On the other hand, the two countries also collaborate in a wide range of capacity building initiatives and for instance, the United States has duly supported educational programs in Kenya which are aimed at helping foster skis in space science and technologies. Through the space cooperation between Kenya and the United States, several joint collaborative satellite

projects have been established and these include the data sharing initiatives and joint satellite launches which has been vita areas of cooperation. This is an indicator that indeed, space exploration efforts by Kenya have greatly influenced its foreign policy with the US.

In aspects to do with capacity building and educational enhancements, studies found out that the space program in Kenya was capable of driving educational advancements and this was through partnerships with various institutions in the United States. This was because the use of collaborative programs was capable of facilitating scholarships, joint research initiatives, and exchange programs which could help enhance human capital in "Science, Technology Engineering, and Mathematics" which are commonly known as STEM. For example, Kenya's KSA could be better positioned in collaborating with American Universities on matters to do with satellite technology as well as space sciences and even easily foster a new generation of Kenyan engineers and scientists. Such kind of educational exchanges apart from building capacity, also helps in strengthening of academic and cultural ties between the two countries (McDowell, 2019).

On issues to do with soft power and geopolitical positioning, it was ascertained that space exploration was capable of enhancing the geopolitical positioning as well as soft power of Kenya on the global scene. Through active participation in matters to do with space exploration, Kenya as a country demonstrated its scientific and technological capabilities thus making it gain respect and recognition globally. This helped bolster its reputation and enhancement of its diplomatic leverage thus allowing the country (Kenya) to even play a greater and influential role in global organizations like the United Nations Committee on the Peaceful Use of Outer Space or COPUOS (North Atlantic Treaty Organization [NATO],

2019). The alignment of Kenya with the US in various space endeavors helped in the solidification of its position as a strategic partner in security and global space governance.

According to an examination about the role played by space programs in foreign policy in Africa, it was noted that the collaboration of Kenya with the U.S in aspects to do with space science has played a significant role in strengthening of diplomatic ties. It was suggested that space exploration programs served as a form of "soft power" that enabled Kenya to effectively assert its position in global forums as well as securing of agreements with the US which were favorable (Mosteshar, 2019).

4.3.3 Defense Considerations and Security

The United States sees Kenya's space capabilities as being relevant to regional security as well as defense (Callahan, 2000). This ultimately results in increased cooperation and collaboration in various aspects such as surveillance, satellite communication, as well as other technologies that are associated with defense. On the other hand, space exploration usually involves applications like environmental monitoring. If Kenya as a country focus on such kind of initiatives, it could ultimately help in aligning with a wide range of global priorities that includes those of the United States in addressing issues to do with environmental challenges and climate change (Regilme, 2021). It is important to note that the actual impacts of the exploration would highly depend on a wide range of factors that include the scale as well as success of not only Kenya's space exploration efforts but also geopolitical developments as well as the specific policies that are associated with both Kenya and the United States.

4.3.5 Technological innovations

In matters to do with technological innovations, it was found that the exploration efforts by Kenya presented opportunities for the country to have technological collaborations with the US. This is because KSA and the US's NASA can effectively engage in joint missions, data sharing, and satellite developments. Such collaborations are capable of enabling technology transfer and this providing Kenya with more access to cutting edge expertise and technologies. This is a clear pointer that enhanced collaboration of Kenya with NASA could ultimately result to more sophisticated projects that not only foster innovation but also strengthens bilateral ties. On aspects of economic investments and developments (North Atlantic Treaty Organization [NATO], 2019).

4.4 Discussion

According to the analysis of the results that were obtained from the questionnaires, it was ascertained that majority of the respondents, 80%, that is one hundred and sixty (160) highly believed that the exploration of space in Kenya greatly helped in enhancing its foreign policy with the US. On the other hand, only a small number, 15% that is thirty (30) of respondents asserted that they did not believe that that the exploration of space in Kenya helped in enhancement of foreign policy with the US while only 5% that is 10 of the respondents that they did not know whether space exploration helped the enhancement of foreign policy with the US. Majority of the respondents who believed in a positive impact posed by space exploration cited the economic, political, sociological and diplomatic influences it has brought to Kenya as a country, citing it as a new and upcoming space hub within Africa. The other population believed that exploring the space has no major benefit to Kenya but it's the

USA benefiting due to its word standing as a hegemony in influencing policies and advocating for her interests in the global sphere. This is depicted in the table 1 below:

Table 1: Believe exploration of space in Kenya helped in enhancement of foreign policy with the USA

YES	NO	DON'T KNOW
80%	15%	5%

Source: Field data, 2024

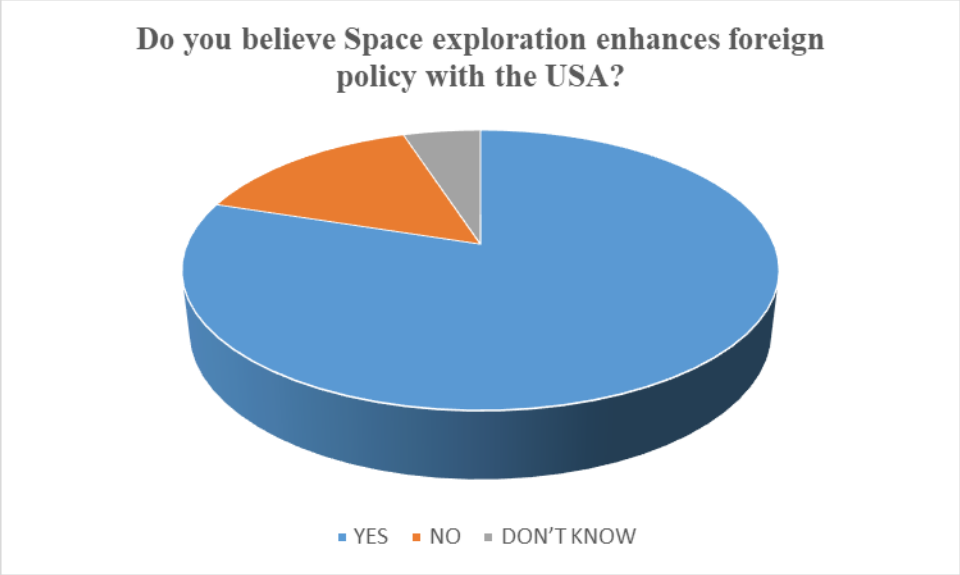

Figure 3: Space exploration enhancing Foreign policy with USA

Source: Field data, 2024

Respondents gave several ways through which Kenya's space exploration had a positive impact on the foreign policy towards the USA. Among some of the positive impacts that were mentioned by the respondents included learning of new knowledge and skills by Kenya from the United States and getting of foreign exchange from the US. Other respondents also mentioned increased military and tactical skills that used prevention of crimes from organized groups such as the Al Shaabab militant group.

On the other hand, while some of the respondents asserted that the exploration of space by Kenya had positive impacts on its foreign policy towards the USA, others asserted that it caused negative impacts. Some of the positive impacts mentioned by the respondents that emanated as a result of space exploration included enhanced skills and knowledge in matters to do with space exploration while the negative impacts included loss of culture as a result of inhabitation on Kenyan soil by the US experts in space exploration.

According to experts, it was ascertained that some of the activities in which Kenya can engage in order to help in creation of good relationship with the USA in the aspects of airspace exploration included: creation of attractive tourist destinations in areas of space explorations, removal of restrictions for experts involved in space exploration from the USA, and giving of diplomatic passports for experts from the US involved in space exploration. The research established that Kenya aspires to be a space hub in a bid to fulfill its Vision 2030 obligations which can be realized by creating favorable conditions with the largest world economies the USA being among them. It was established that space is the newest venture for human development and collaboration that is promoting globalization, a tool that requires good relationships with partners. It is also an opportunity for Kenya as a country to exploit her defense and intelligence sectors by having technological transfer from the USA

at an easier and goodwill deal propagated by this collaboration. The study noted that this would be benefitable for her to be a hegemony in the region as well as enhance her standing in the Horn of Africa towards the fight against Al-Shabaab terrorists in Somalia who have threatened her statue.

The advantage given to the US by NASA as a space pioneer due to the country's positive norms in the space race and inclusive norms will be indirectly trickled down to the Kenyan sphere. This was seen as a tool that will enhance the countries standing in space science regionally and across the Continent. The study noted that the experts have the wish of a race to the moon motivated by the ongoing South Africa Foundation for Space Development project dupped Africa Race to space which they see as a possibility for Kenya. This again is motivated by the collaboration with USA that is foreseen to shape the transfer of its technology to the country, a race that the USA has pioneered in the past and is still doing it. The respondents noted that the wish to the moon will be possible by working together with the Western Country that has the necessary expertise and mercenary to do the work.

According to analysis of the questionnaires, it was ascertained that only half of the respondents were aware of space exploration activities in Kenya while some of them were not aware of such exploration activities. Some of the activities mentioned by respondents included establishment of airstrips and airports, training of aviation experts, and the use of the air force for protection of the airspace. This explains the need for the creation of more exploration activities among the Kenyan population. The level of awareness created about space activities has been limited due to the existing educational programs as well as the career mentorship programs that have failed to capture the space sphere. These was evident

as most of the respondents had little or no knowledge about the space activities but could acknowledge the benefits that come with it. This is expressed in the table 2:

Table 2: Aware of Space exploration activities in Kenya

YES	NO	DON'T KNOW
50%	35%	15%

Source: Field data, 2024

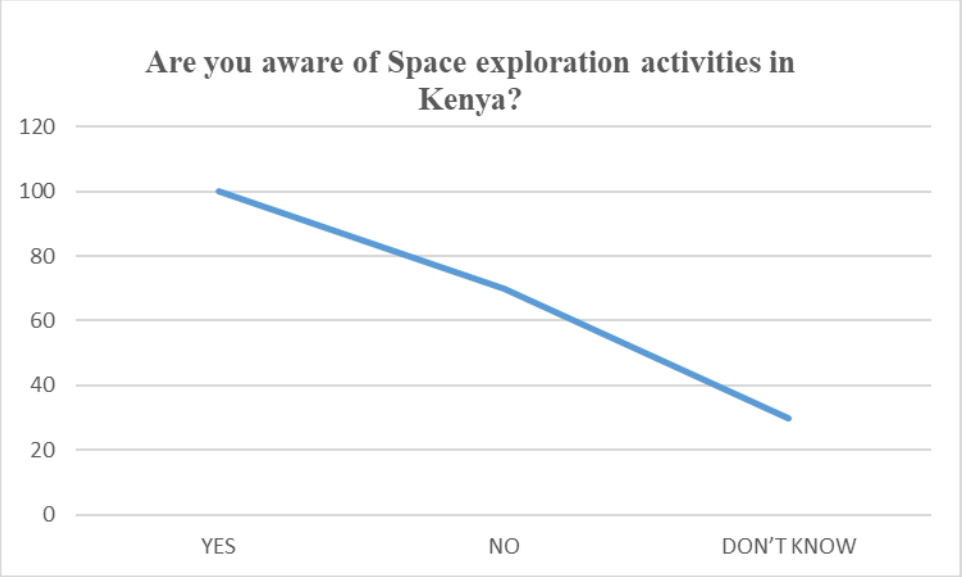

Figure 4: Awareness on Space Activities in Kenya

Source: Field data 2024

Majority of the respondents highly believed that Kenya's association with the United States in issues to do with space exploration greatly helped in enhancing of foreign policies between the two countries. According to the respondents, they believed this association was crucial as it helped in strengthening of ties between the two countries hence improving the foreign policy between them.

The respondents acknowledged that Knowledge and technology can be exchanged more easily due to these partnerships. Working on space projects with the United States can show Kenya's growing capabilities in space science and provide access to cutting-edge technologies and expertise. Some experts noted that Space-based collaborative projects have the potential to strengthen diplomatic ties. Both nations can cultivate mutual trust and cooperation through space missions, which frequently results in improved diplomatic relations as a whole. Both nations can strengthen their strategic alliances by participating in high-profile space projects. This can be especially crucial in areas like international policy, trade, and security, where strong bilateral relationships are advantageous. This is reflected in the table below:

Table 3: Believe Kenya's association with the USA in issues to do with space exploration help in enhancing foreign policies between the two countries

YES	NO	DON'T KNOW
90%	7.5%	2.5%

Source: Field data, 2024

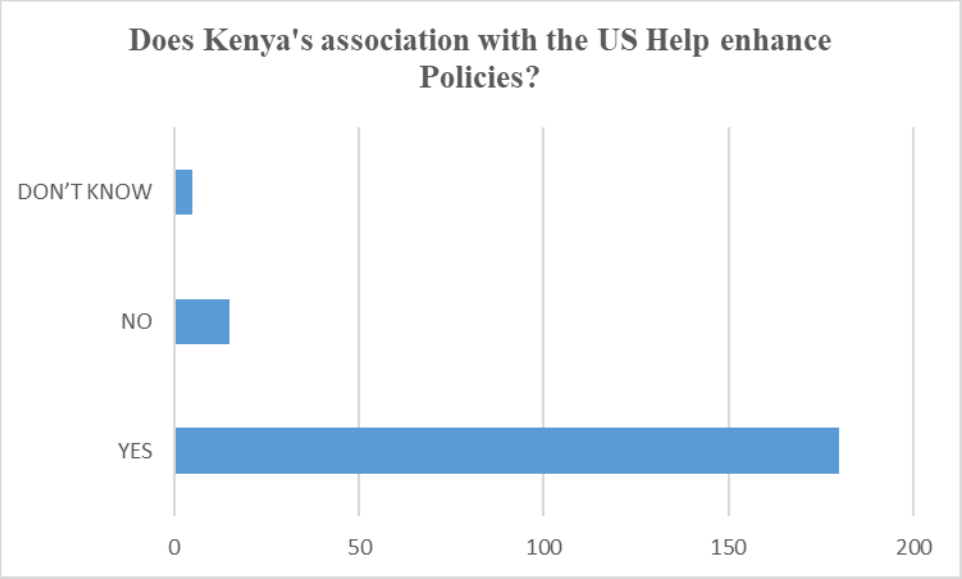

Figure 5: Kenya's association with USA enhancing policies

Source: Field data, 2024

It was noted by respondents that the United States played a crucial role in the race for exploration of space in Kenya. This, according to the respondents was through provision of the state-of-art resources that were used in exploration of space as well as provision of financial resources that were used in exploration of space in Kenya.

On the challenges that Kenya encountered in matters of space exploration, the respondents noted the lack of sufficient financial resources as the major challenge that the country encountered. Another notable challenge that was mentioned by respondents was the lack of sophisticated tools that could effectively be used in exploration of space which hampered Kenya's efforts to fully explore its space and thus affecting its foreign policy with the United States.

The research noted a significant number of successes to Kenya due to the collaboration. Kenya has received valuable technical assistance and expertise from the United States, which

are essential for the creation and operation of space missions. Data analysis, launch procedures, and guidance on satellite technology are all part of this. NASA and other US space agencies' workshops and training programs have been beneficial to Kenya. Scientists and engineers in Kenya have gained knowledge and skills courtesy of these programs.

Again, Kenya's ground stations and satellite facilities, which are necessary for the country's space operations, have grown as a result of the support from the United States. Experts noted that the success has resulted to financial assistance from the United States, including grants and investments aimed at advancing Kenya's space program. The gains have resulted from favorable foreign policy relations. The ability to pay for operating expenses and research and development requires this financial backing due to the Kenyan economic standing.

The success, as per the foreign affairs department, has been significant in global standing of the country. Kenya's global standing is enhanced by successful space missions, and its expanding capabilities in space technology. Kenya is positioned as a trustworthy partner in international space initiatives as a result of its favorable relationship with the United States. Kenya has diplomatic leverage in international forums and negotiations regarding space policy and global challenges due to its achievements in space and its relationship with the United States.

Other sectors also noted significant achievements from the collaboration. Opportunities for academic collaboration, joint research projects, and access to cutting-edge facilities have been made available to Kenyan students and researchers through partnerships with American universities and research institutions.

On rating of the success of Kenya as a country in aspects of space exploration, majority of the respondents rated it as above average and this implies that most of them rated it on the scale as between 5 to 10 and this is reflected in the table below:

Table 4: Rate the success of Kenya in Space exploration due to having a positive foreign policy with the USA

5-10	4-3	2-1
85%	10%	5%

Source: Field data, 2024

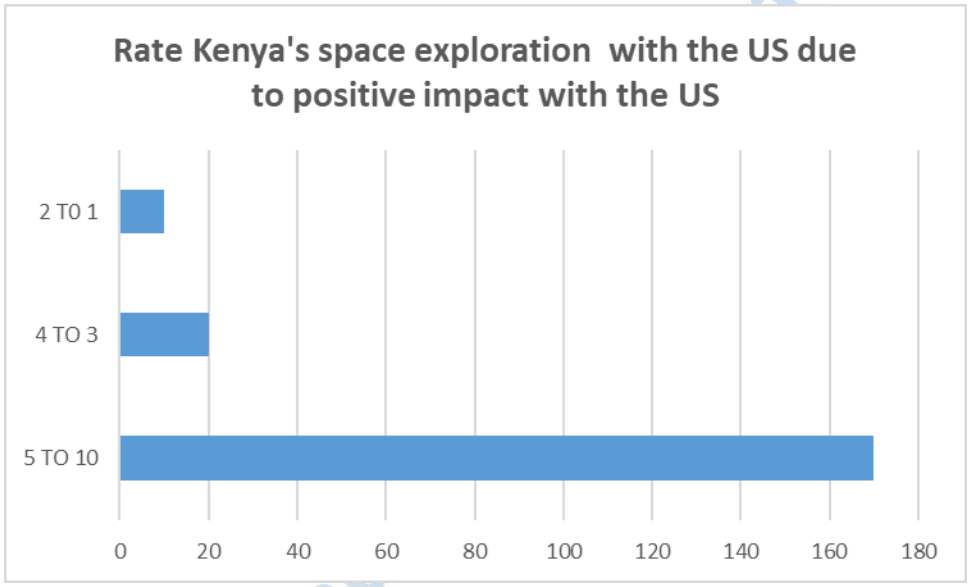

Figure 6: Positive impact of Kenya USA space exploration collaboration Source:

Field data, 2024

On whether Kenya should continue cooperating with the USA in its race for space exploration, majority of the respondents answered in an affirmative manner and gave reason that since the USA is an advanced country, Kenya stood to gain a lot by

collaborating with it. This is reflected in the table below:

Table 5: Kenya continue cooperating with the USA in its race for space exploration

YES	NO	DON'T KNOW
90%	5%	5%

Source: Field data, 2024

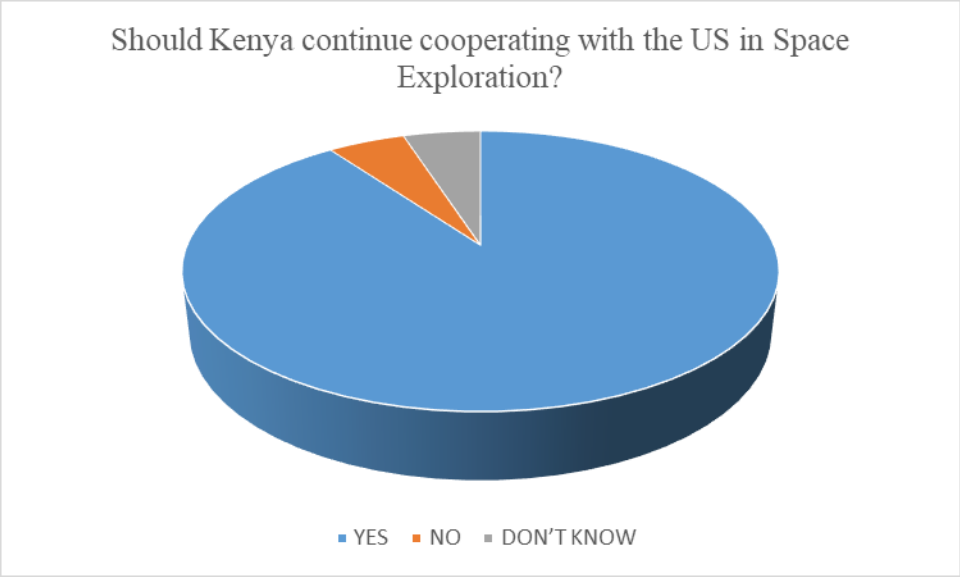

Figure 7: Kenya continued cooperation with USA

Source: Field data, 2024

On the steps that should be taken by Kenya in order to enhance its efforts in space exploration through use of foreign policy with the USA, majority of the respondents answered that Kenya should make it easier for the US experts dealing with matters to do with space exploration come to Kenya. Policy favoring easy entry of such experts should be put in place.

It was noted that apart from Kenya's race, there has been other driving factors continuing to engage in the space race in collaboration with the USA. It was noted that India, China, and

Turkey, as well as aspirant space powers, have long framed their space ambitions as purely developmental. However, they're presently shaking among themselves and with pioneer space-farers like the US (US) to beat each other to the moon or Mars (Grego, 2012). Both the promotion of development and the enhancement of national power and prestige are the goals of this.

Twelve African nations already had space programs, and eight more were working on starting one. The African Union will before long launch its own space program. KSA envisions a collaboration with US as it is the pioneer country in the space race. again, the technological advancement of the western nation puts it at a vantage point for countries to tap on them. KSA having an already established collaboration, will have a favorable and soft sport during the African Union launch which will make it as a reference point despite the already countries venturing into the same. again, a continued working together will enhance favorable policies being implemented. the collaboration is seen to create an avenue for other ventures including medicine and industrialization that is indirectly promoted by continued collaboration (Garber & Stephen, 2017)

CHAPTER FIVE
SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter deals with recommendations on the potential areas that requires further collaboration and teamwork between Kenya and the United States in matters to do with space exploration. It further proposes specific joint projects, partnerships, and even initiatives

which could help in strengthening of ties as well as fostering of mutual benefits between two countries.

5.2 Summary of the results findings

5.2.1 Role and Influence of Space exploration on Kenya Unites States foreign policy

Due to the evident benefits that have emanated as a result of space exploration in Kenya, it is highly recommended that both Kenya and the United States actively seek for opportunities for joint initiatives and projects. This could among others involve the sharing of technological expertise, carrying out of joint research activities, and participation in collaborative space missions (Faling & Biesbroek, 2019). The establishment of a dedicated bilateral committee aimed at facilitation of such collaborations will ultimately result in a continuous sustained engagement. There is need for Kenya as a country to ensure that it continues engaging in effective diplomatic outreach in order to help it leverage its endeavors in space endeavors. This could compromise among others participation in the global space forums, diplomatic missions, and even collaboration with other relevant space-faring countries.

Among the most substantial advantages of the Kenya-USA association in space exploration is the progression and trade of innovation and information. Kenya has access to cutting-edge technology and expertise due to collaboration with the United States, which has a long history of space exploration and cutting-edge aerospace technology (Flint, 2021). Kenya gains access to advanced space technology and infrastructure through collaborative projects like the launch of Kenyan satellites with American assistance. Kenya is able to build and run

its own space missions due to NASA's assistance with satellite design, launch, and data analysis, which encourages technological development and innovation.

The space exploration partnership between Kenya and the United States exemplifies how international partnerships can improve bilateral relations and yield a variety of benefits. Through innovative progression, financial development, strategic reinforcing, and instructive trade, the organization has encouraged a positive and useful connection between the two countries. As Kenya and the USA keep on cooperating in space exploration, they won't just propel their own advantages yet additionally add to the more extensive objectives of worldwide logical disclosure and global collaboration. Barston (2019) The Kenya-USA space investigation organization remains as a demonstration of the force of cooperative endeavors in forming the fate of room and improving the ties between countries.

5.2.2 Scope of Kenya USA collaboration in space exploration

In order to help in the maximization of the impact of Kenya's foreign policy on space exploration, there is need to put in place a "strategic outreach plan" which is quite essential. There is also dire need for Kenyan diplomats to become actively engaged with their counterparts from the United States and ensure that there is leveraging of space exploration as a vital diplomatic tool (Flint, 2021). This is important as it may the organization of joint conferences, workshops, seminars, and the creation of platforms for relevant dialogue on the space-related issues as well as showcasing of the achievements of Kenya in space science and even technology (Barston, 2019). It is important that Kenya builds the capacity in its space programs and engage in educational as well as training programs with the US support in order to bolster its human resources and space

capabilities.

5.2.3 Opportunities and Challenges

Recognition of the importance of skilled human resources in the space sector implies that it is highly recommended that both the US and Kenya collaborate on issues to do with educational as well as training programs. This could include among others exchange programs, scholarships, and even joint training initiatives for Kenyan engineers and scientists. The building of a skilled workforce will actually not only benefit the space program in Kenya but also help in the contribution of the country's overall development (Stone & Moloney, 2019).

Fabricating and keeping up with space missions requires the improvement of complex framework, for example, launchpads, ground control centers, and research labs. These offices support space missions as well as add to the more extensive logical and technological systems. A nation's ability to conduct research, develop new technologies, and support high-tech industries is enhanced by investing in space infrastructure.

Global organizations in space exploration, for example, the International Space Station (ISS) and joint missions, give amazing open doors to nations to cooperate on complex ventures. The development of global capacity for space exploration is aided by these collaborations, which facilitate the exchange of technology, expertise, and resources (Githaiga & Bing, 2019).

Space exploration is essential for advancing technology, enhancing human resources, bolstering institutions, and fostering international partnerships, all of which contribute to capacity building. Space missions contribute to the overall growth and development of nations and organizations involved in space exploration through technological

advancements, educational opportunities, and collaborative efforts. Space exploration will undoubtedly drive further capacity building, benefiting not only the space industry but also society and the global economy as a whole as it continues to push the boundaries of human knowledge and capability.

In order to help in ensuring that there is responsible as well as sustainable growth in Kenya's space program, it is highly important to ensure that the regulatory framework is highly strengthened. Kenya's exploration with the US in developing and refining of regulations that govern space activities will play a crucial role in helping Kenya as a country be in a better position of aligning with international or global standards (Lynch, 2019). This includes ensuring that issues associated with the management of space debris, liability frameworks, and licensing procedures.

5.3 Conclusions

Efforts to explore space by Kenya presents both challenges and opportunities in shaping the country's foreign policy dynamics with the US. Through leveraging of economic diplomacy, geopolitical influence, and scientific collaboration, Kenya is capable of enhancing its bilateral relations with the United States. However, the development of a robust policy framework, balancing of national interest, and addressing of resource constraints were critical and vital for the maximization of benefits associated with space exploration. There is therefore dire need for carrying out further research aimed at understanding the evolving dynamics of the Kenya-US relations especially in the context and aspects of space exploration. The space exploration initiatives that Kenya has embraced have had a significant impact on its dynamics in matters to do with foreign policy with the US.

5.3.1 Role and Influence of Space exploration on Kenya Unites States foreign policy

5.3.1.1 Impacts on Foreign Policies

The foray of Kenya into space exploration has undeniably resulted in the alteration of its "foreign policy dynamics" with the US. This is because the shared interests that have emanated in space activities have served as a significant catalyst for even closer cooperation as well as dialogue between the two countries (Githaiga & Bing, 2019). This kind of collaborations have not only helped in the elevation of Kenya's standing in the global space community but has further helped in positively influencing broader diplomatic ties among countries.

Through fostering of enhanced strategic partnerships, economic partnerships, and bilateral relations, such initiatives have ultimately positioned Kenya as being a vital player in the space sector in the African continent as well as an important ally for the United States. As both nations navigate the complexities associated with the geopolitical landscapes, their cooperation in space technology will indeed continue being vital elements associated with their bilateral relations. It is no secret that the space exploration programs indulged in by Kenya have indeed become significant factors in shaping of its foreign policy dynamic with the US. Through technological collaborations, strategic partnerships, and even geopolitical maneuveri.ng, Kenya as a country has effectively leveraged its space ambitions in order to improve its economic and diplomatic relations or ties with the United States (Lynch, 2019). In addition to that, further research also needs to be done in order to fully comprehend the long-term implications or effects of such dynamics as well as ensure that prevailing gaps in literature are duly addressed. Generally, the exploration of space endeavors was more likely capable of enhancing the profile of Kenya on the international space as well as influence

their relationships with the US. This is through opening of new avenues for support and collaboration.

5.3.2 Scope of Kenya USA collaboration in space exploration

5.3.2.1 Geopolitical Significances

It is no secret that the geopolitical significance of space exploration of Kenya cannot be duly overstated. Kenya being a regional leader in aspects of space endeavors has made it to become highly positioned as a key and vital player in the space landscape in Africa (Stone & Moloney, 2019). This not only helped in influencing the influence of Kenya but also helps in provision of a viable avenue for the US to strengthen its regional partnership through collaboration and teamwork with Kenya on various projects related with space.

The collaboration makes Kenya becomes a major player in the global scientific and technological community by participating in space exploration. It raises Kenya's international profile by demonstrating its capability and ambition in advanced fields that require space-based platforms to operate. (Githaiga & Bing, 2019) Kenya, as one of Africa's leading space powers, can use its influence on the continent to its advantage by encouraging regional cooperation in space technology and research.

Kenya's strategic partnerships can be strengthened and international support and investment attracted by working together with space-faring nations like the United States. Again, Space capabilities can bring in partnerships and investments from abroad, which can help Kenya's economy as a whole.

(Stone & Moloney, 2019) Global space policy and norms are influenced by the United States' leadership in space exploration, enhancing its position as a technological and scientific

leader. Additionally, The United States of America is able to influence international space treaties and regulations because of its achievements in space.

On the other hand, the USA gains a lot through the collaboration at the geopolitical arena. From satellite manufacturing to space tourism, the space industry provides American businesses with opportunities, fostering economic expansion and technological advancement. The United States of America is able to build and maintain strategic alliances, foster international cooperation, and support joint space objectives through collaborations with other nations, including emerging space players like Kenya (Flint, 2021).

5.3.2.2 Mutual Benefits

The collaboration between the United States and Kenya in issues to do with space exploration has ultimately led in mutual benefits. This is because Kenya as a country gains immense access towards advanced space technologies as well as expertise, thus fostering its economic and scientific developments (Stone & Moloney, 2019). Simultaneously, the US greatly benefits from Kenya as a strategic partner in the African continent thus opening new avenues for cooperation in different fields beyond issues to do with space exploration, development, trade, and security.

Space collaborations have the potential to benefit the economy. This could lead to opportunities for job creation, the improvement of infrastructure, and the stimulation of the local aerospace industry for Kenya. It is an opportunity for the United States to forge strategic partnerships in emerging markets.

5.3.4 Opportunities and challenges

Space applications in telecommunications will support the automation of legal and judicial services, as well as surveillance, in the political pillar by providing space data and information that supports security and law and order. Additionally, it aims to promote accountability in the public sector by supporting access to information and data through open data initiatives and enhancing transparency in service delivery. Additionally, it will aid in devolution program and seeing an achievement of the same. Previously, county boundaries were delineated with the help of geospatial data, which will be enhanced by the evolving new technology brought by this venture (Schindler & Kanai, 2021).

The space program will aim to improve health by identifying, tracking, and monitoring the spread and patterns of health risks and diseases through the social pillar. Space projects will also help map population and human settlements and let people choose where to build affordable housing. Digital education and Konza Technopolis's role as a regional technology hub will also be supported by Space Science & Technology.

Space science is expected to be most beneficial to the economic pillar. (Schindler & Kanai, 2021) Manufacturing, agriculture, and the blue economy, which uses space technologies to monitor marine life and traffic in the ocean and lakes, are among the industries that are expected to make use of satellite data.

5.3.5 Future prospects on Space Exploration Kenya

While looking ahead, it can truly be ascertained that the future prospects of the space program in Kenya and the impact that it has on foreign policy appear to be quite promising. A continuous collaboration with the US is thus anticipated to result in further advancements

which provides both countries with competitive edge in the international space arena (Schindler & Kanai, 2021). Indeed, the evolving nature associated with space exploration is capable of offering a dynamic platform for sustained cooperation which further positions the US and Kenya as being major contributors towards issues to do with space science and technology.

The United States of America and Kenya could expand their roles on international space platforms like the International Space Station. Kenya's participation in ISS-based research experiments, astronaut exchanges, and technical collaborations would not only demonstrate Kenya's expanding space capabilities but also advance scientific knowledge. Collaboration in space exploration between Kenya and the United States holds a lot of potential and promise for the future. (Massé & Margulies, 2020) The partnership has the potential to significantly benefit the international space community by concentrating on technological advancements, joint missions, capacity building, commercial opportunities, and geopolitical impacts. Both countries' capabilities and influence will grow as a result of continued collaboration, as will innovation and new discoveries in space exploration. As Kenya and the USA plan ahead, their partnership will assume a vital part in propelling space science, encouraging financial development, and reinforcing global ties.

5.4 Recommendations for practice

5.4.1 Role and Influence of Space exploration on Kenya Unites States foreign policy

5.4.1.1 The authorities for implementation

Authorities play a big role in the implementation and formulation of policies at hand. The Diplomatic core has the mandate of formulation of mutually benefiting policies between the countries. The states bilateral agreements should be geared towards a long-lasting

relationship for a balanced development. The space agency in Kenya should endeavor to have a clear focus on ensuring firm structures are put in place, that could steer the development agenda and harness the benefits in place.

5.4.2 Scope of Kenya USA collaboration in space exploration

5.4.2.1 Service users/ beneficiaries

The world of technology highly relies on space crafts to drive their agenda. Network providers highly rely on being served by servers from the skies. The realization of the sustainable development goals (SDGs) by states is as a result of venturing in space technologies that are aligned to the same. Basic services from transport, education, engineering to the world of medicine is a result of the same.

5.4.3 Opportunities and challenges

Space benefits are vast and are drivers of economic liberty and development in an economy. Individual benefits are also inherent as they benefit from employment opportunities to the individual exploitation of technological advancements that come with it. Mutual benefiting relationships are an avenue for individuals to freely interact with others for a joint development.

5.5 Recommendations for further research in this field of study

The venturing of Kenya into aspects of space exploration has not only marked a significant and vital milestone in the country's scientific achievements but it has also become a huge cornerstone in shaping of its foreign policy dynamics and more so with the United States. And as both countries move forward further studies are encouraged by both individuals and institutions to unlock a collaborative journey in issues to do with space exploration that

yields fruitful outcomes (Massé & Margulies, 2020). Further studies will not only help in fostering of scientific progress but also robust diplomatic relationships. This will in turn help in formulation of policies that are mutually benefiting to countries in play as well as fostering long-lasting collaborative relationships.

Even though prevailing literature presents valuable insights regarding the relationships between space exploration in Kenya and the foreign policy that it has with the United States, it is unfortunate that some gaps still remain. This is an indicator that there still remains need for having an even more comprehensive longitudinal studies which have the capacity of tracking the long-term impacts associated with space collaborations especially on bilateral relations. In addition to that, research could potentially benefit out of having a more detailed and comprehensive analysis of the socio-economic effects of space programs especially on not only local communities but also on the indirect effects that they have on foreign policy (Kovach, 2020)

Future research should aim at exploring the long-term impacts or effects of space exploration on the regional influence of Kenya, the role played by the private sector partnerships, and even the comparative studies with other African countries which are pursuing space exploration (Gray & Colin, 1997). In addition to that, the role played by the private sector partnerships in advancement of space exploration as well as potential for multilateral collaborations which involved other African countries could be duly investigated. This is quite important since it helped in provision of even a deeper comprehension of the wider implications that are associated with space diplomacy as well as the role that it played in shaping of international relations. it is no secret that enhanced space collaboration by Kenya could ultimately result in new bilateral agreements that focus on capacity building, joint

missions, and technology transfer. Kenya's endeavors in space exploration were ascertained as having significant impacts on its foreign policy dynamics with the US which helped position it as being an emerging player in the global or international space arena. As a result, future research should aim at focusing on the longterm implications of such developments as well as the potential for an expanded international or global cooperation.

Future research on this topic should aim at exploring the role played by the private sector in matters to do with space exploration as well as the influence that it has on the foreign policy of Kenya. This is quite important since comprehending the interplay that prevails between government and non-governmental actors in matters to do with space diplomacy will ultimately play a significant role in provision of an even more nuanced view and perceptions of the different dynamics which are at play

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APPENDICES

Appendix I: Introduction letter

Dear Participant,

I am conducting a research study to assess the influence of Kenya's space exploration on its foreign policy dynamics with the United States. As part of my Master's degree in International Relations and diplomacy at Mount Kenya University, your participation in this study is essential.

Your input will be gathered through a series of questions about your perceptions of how Kenya's space exploration has influenced its foreign policy with The United States. Rest assured that all information provided will be treated with strict confidentiality, and your anonymity will be preserved. Your participation is entirely voluntary, and you may opt out at any time without any negative consequences.

Thank you for considering this invitation, and your valuable contribution will significantly contribute to the understanding the foreign policy dynamics between the two countries

attributed to space exploration. In the event that you have inquiries regarding your privileges as an examination member, kindly contact the

Chairman,

Mount Kenya University, Ethical

Review Committee,

P.O. Box 342-01000, Thika.

Yours sincerely,

Appendix II: Consent

I have carefully read and understood the information provided regarding the research study on assessing the influence of Kenya's space exploration on its foreign policy dynamics with The United States. I have had the opportunity to ask any questions I may have had. I am aware that my participation in this study is entirely voluntary, and I have the right to withdraw my consent at any time without providing a reason and without incurring any costs. I understand that I will receive a copy of this consent form for my records.

I willingly give my consent to participate in this research study.

Participant's Signature: _____ Date: _____

Investigator's Signature: _____ Date: _____ Thank

you for your cooperation and time in advance.

Appendix III: Questionnaires

BIODATA

□ Gender:

□ Male

□ Female

□ Prefer not to say

□ Age: (years)

□ 25 -35

□ 36 -45

□ 46 - 55

□ 56 - 59

□ Others

□ Organization:

ROLE AND INFLUENCE OF SPACE EXPLORATION ON KENYA UNITES STATES FOREIGN POLICY

- Do you believe the exploration of space in Kenya helps in the enhancement of foreign policy with the USA? (Circle one)

  A. YES B. NO. C. I don't know

- What activities can Kenya engage to create a good relationship with the USA in aspects of airspace explorations?

- What roles does the USA play in the race for space exploration in Kenya?

- Do you believe Kenya's association with the USA in issues to do with space exploration help in the enhancement of foreign policies between the two countries? If yes, elaborate.

YES B. NO. C. I don't know

SCOPE OF KENYA USA COLLABORATION IN SPACE EXPLORATION

- Are you aware of Space exploration activities in Kenya? If yes, what are some of them?

A. YES B. NO. C. I don't know

- Should Kenya continue cooperating with the USA in its race for space exploration? If yes, elaborate.

YES B. NO. C. I don't know

- On a scale of 1 to 10, can you rate the success of Kenya in space exploration due to having positive foreign policy with the USA? 10 being the highest----------

---

OPPORTUNITIES AND CHALLENGES

- Does Kenya's space exploration positively impact the country's foreign policy towards the USA?

A. YES B. NO. C. I don't know

- How does Kenya's space exploration negatively or positively impact the country's foreign policy towards the USA? ----------

---

- What challenges does Kenya encounter in its space exploration and how does it affect its foreign policy with the USA?----------

---

- What steps can Kenya take in order to enhance its space exploration efforts using foreign policy with the USA?----------

---

Appendix IV: Ethical Clearance Letter from MKU

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MIRD/2019/51873

6th March, 2024

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

Dear Sir/Madam,

RE: ANDREW WEKESA WEBUKHA–REGISTRATION NO. MIRD/2019/51873

The purpose of this letter is to introduce the above named student who is pursuing **Master of Internal Relations and Diplomacy** in the department of **Institute of Security Studies, Justice and Ethics** in the school **of Social Sciences.**

The title of the research is **"Assessing the Influence of Kenya's Space Exploration on its Foreign Policy Dynamics with the United States."** It has been cleared by the University's Ethics Review Committee (Certificate attached) and now has to proceed to the field to collect data between **March, 2024 and May, 2024.**

Any assistance accorded to the student will be highly appreciated.

Thank you.

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

Dr. Samuel M. Karenga, PhD.
Director, Graduate Studies
Enc.

Appendix V: Instruction Letter from MKU

Mount Kenya University

DIRECTORATE OF GRADUATE STUDIES

MIRD/2019/51873

6th March, 2024

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

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RE: ANDREW WEKESA WEBUKHA–REGISTRATION NO. MIRD/2019/51873

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Any assistance accorded to the student will be highly appreciated.

Thank you.

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

Dr. Samuel M. Karenga, PhD.
Director, Graduate Studies
Enc.

Main Campus, General Kago Road, P.O. Box 342-01000 Thika.
Cell: +254 709 153 000 / +254 709 153 200
Email: info@mku.ac.ke Web: www.mku.ac.ke

Appendix VI: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **708636**

Date of Issue: **19/March/2024**

RESEARCH LICENSE

This is to Certify that Mr.. Andrew Webukha Webukha of Mount Kenya University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: ASSESSING THE INFLUENCE OF KENYA'S SPACE EXPLORATION ON ITS FOREIGN POLICY DYNAMICS WITH THE UNITED STATES for the period ending : 19/March/2025.

License No: **NACOSTI/P/24/33982**

708636

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

See overleaf for conditions

Appendix VII: Map of Nairobi

Appendix VIII: KSA APPROVAL LETTER

KENYA SPACE AGENCY

Telephone: +254 709 298200
Ext: +254 709 298202
E-mail: aloyce.were@ksa.go.ke

Pitman House, 4th Floor
Jakaya Kikwete Road
P.O. Box 7046-00200
NAIROBI, KENYA

Our Ref: KSA/ADMN/Vol. I

12 March 2024

Director of Graduate Studies
Mount Kenya University
P.O BOX 342-01000
THIKA

APPROVAL AND SUPPORT TO UNDERTAKE STUDIES FOR MASTERS IN INTERNAL RELATIONS AND DIPLOMACY.

MR. ANDREW WEKESA WEBUKHA REG.NO.MIRD/2019/51873

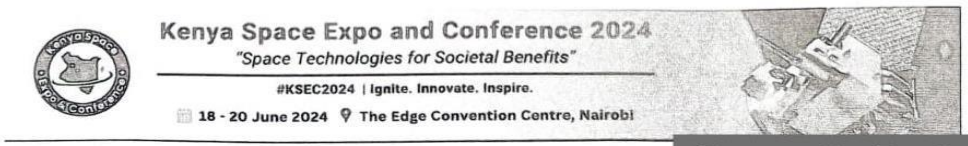
We make reference to your letter MIRD/2019/51873 dated 6 March 2024.

The Kenya Space Agency (KSA) is a State Corporation established with the mandate to promote, coordinate, and regulate space-related activities in the country. The Agency seeks to nurture the growth of Kenya's domestic space sector, focusing on the following:

- Enhancing the utilization of space services, technologies and space-derived data across the public sector for decision support, planning and predictive analytics;
- Developing national space capability;
- Promoting and nurturing the growth of the domestic space economy through support to start-ups in the space ecosystem; and
- Awareness creation and sensitization on the utility of exploration and exploitation of space capabilities in national socioeconomic development.

The Kenya Space Agency (KSA) is pleased to offer support to the above named student from your University to undertake his research work on "Assessing the Influence of Kenya's Space exploration on its foreign policy dynamics with the United States" during the slotted period of March to May 2024.

The Agency notes the importance of research findings in shaping its engagement with its strategic partners including the United States of America.



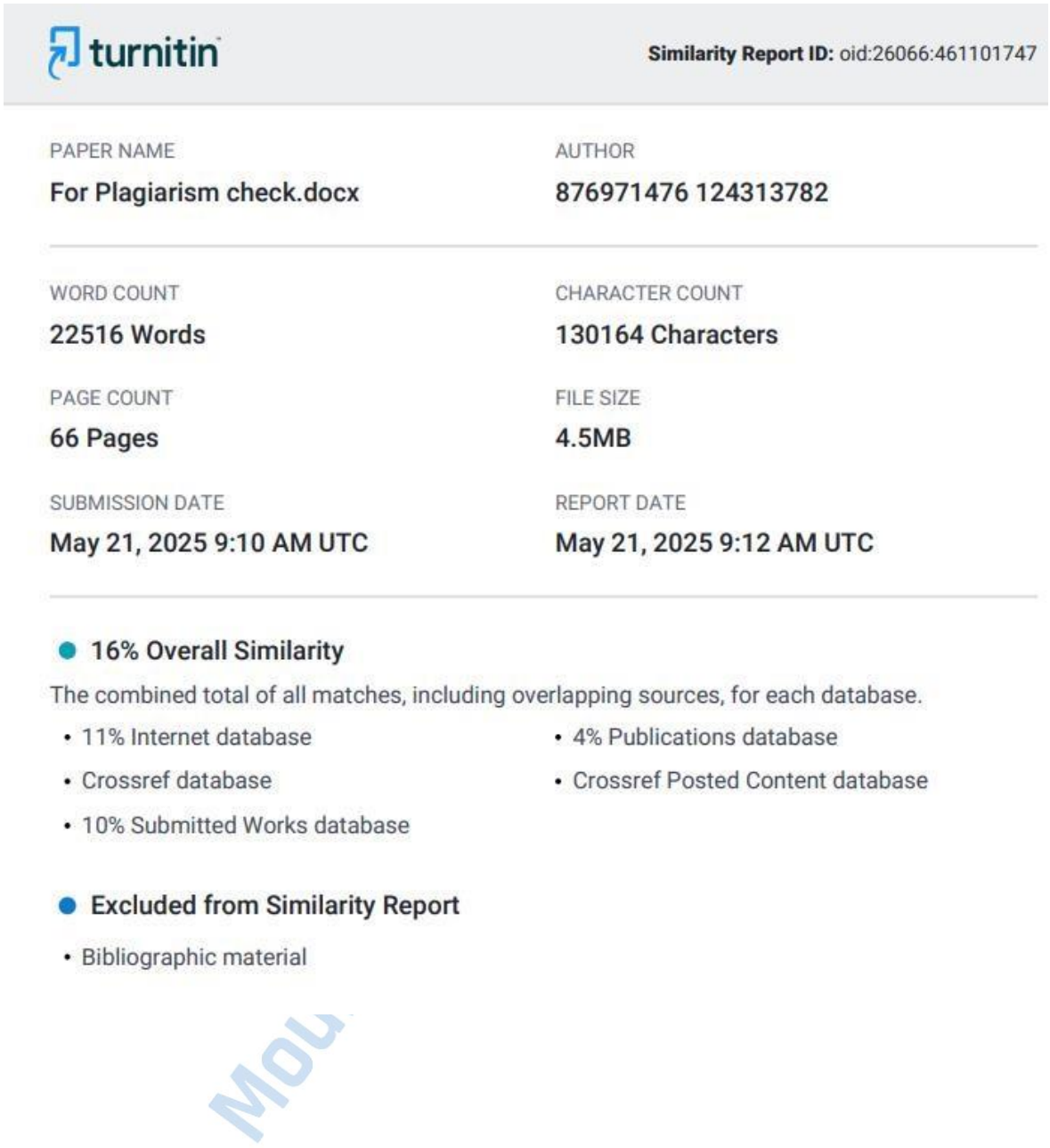
In view of the above, the Agency hereby grants Mr. Wekesa all necessary support and access to information and support from staff to assist him in meeting the research objectives.

We wish him all the best as he embarks on his research work at the Agency and in his further studies.

Yours Sincerely

ALOYCE WERE MAKOKHA
MAJOR
Ag. DEPUTY DIRECTOR
NAVIGATION AND POSITION

Appendix IX: Similarity Index



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