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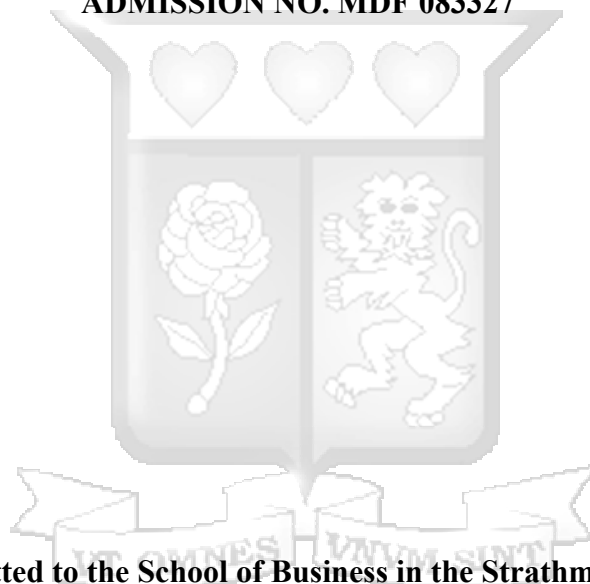
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**EFFECTS OF BLENDED FINANCE ON ACHIEVEMENT OF SUSTAINABLE
DEVELOPMENT GOAL NUMBER SIX ON WATER, SANITATION, AND HYGIENE
IN KENYA**

KELVIN NZAMBA

ADMISSION NO. MDF 083327



**A Dissertation Submitted to the School of Business in the Strathmore Business School in
Partial Fulfillment for the Master of Science in Development Finance of Strathmore
University**

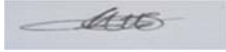
MAY 2024

DECLARATION

I hereby declare that neither this university nor any other university has previously accepted my work as a submission for a degree. To the greatest degree of my knowledge and conviction, the thesis does not contain any prior works that have been written or published by other authors, with the exception of the references properly cited within the thesis.

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Signature:



Date: 29/05/2024

Approval

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Date: 30-05-2024



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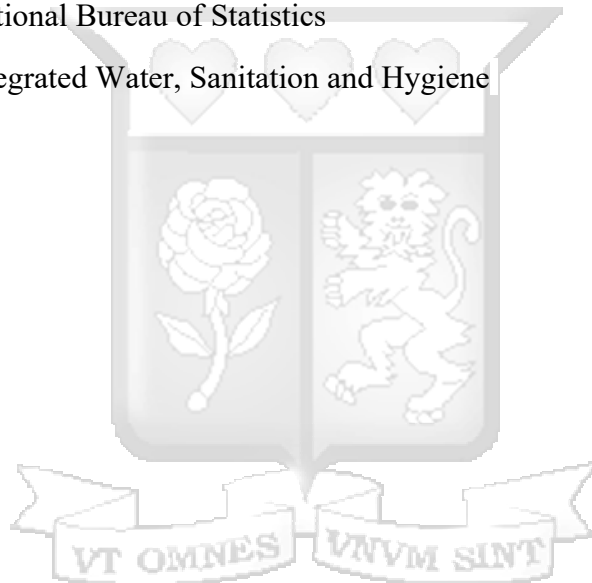
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ABBREVIATIONS AND ACRONYMS

ODA:	Official Development Assistance
FDI:	Foreign Direct Investment
AFD:	Agence Francaise de Development
OBA:	Output-Based-Aid
WASH:	Water, Sanitation and Hygiene
UNICEF:	United Nations Children's Fund
RWST:	Rustenburg Water Services Trust
DNWR:	Department of National Water Resources
KNBS:	Kenya National Bureau of Statistics
KIWASH:	Kenya Integrated Water, Sanitation and Hygiene



DEFINITION OF TERMS

Alternative Finance	These are financial channels, processes, and instruments that have evolved outside traditional financial systems and operate through online marketplaces (Rubanov & Marcantonio, 2017).
Blended finance:	It is defined as the deliberate use of development financing to raise additional commercial funding for the SDGs in poor nations (Attridge & Engen, 2019).
Concessional loans:	It is defined as a loan provided on more favorable conditions than the applicant could get on the open market (Kasirye & Lakal, 2019).
Governance:	It referred as the process of making and enforcing decisions including the institutions, procedures, and practices used to deliberate on and regulate matters involving shared interest (Berliani & Violita, 2021).
Guarantee financing:	This an arrangement that ensures that, in the event a borrower defaults, a third party will repay the lender for the amount owed (Lundsgaarde, 2023).
Private sector financing:	It can be defined as a method of using the private sector to fund public sector initiatives (Attridge & Engen, 2019).
Sustainable development:	This the development which satisfies current demands without jeopardizing the capacity of generations to come to satisfy their individual needs (Guppy, Mehta, & Qadir, 2019).
Technical assistance:	It is the process of offering focused support to an organization having a development demand or issue (Simon, 2018).

DEDICATION

This research is dedicated to the resilient communities of Kenya, whose unwavering commitment to progress and sustainable development serves as a beacon of hope amidst challenges. To the individuals and organizations tirelessly working to improve access to WASH facilities across the country, your dedication inspires us to push the boundaries of knowledge and explore innovative solutions.

To the countless voices advocating for change, your passion fuels our determination to investigate the efficacy of blended finance models in achieving clean water and sanitation in Kenya. Your unwavering support motivates us to delve deeper into understanding the intricacies of governance, private sector involvement, technical assistance, and concessional loans in shaping the future of WASH projects.

To the families and communities in the nine counties which undertook KIWASH projects – Kitui, Siaya, Makueni, Nairobi, Kakamega, Kisumu, Migori, Busia, and Homa Bay – your resilience and determination to improve living conditions are the driving force behind this research endeavor. Your experiences and insights are invaluable in guiding our exploration of the impacts of blended finance on sustainable development goals.

This dedication is a tribute to your enduring spirit and serves as a reminder of the profound impact of collective efforts in creating a better tomorrow. As we embark on this journey of inquiry and discovery, your stories, struggles, and triumphs remain at the heart of our pursuit of knowledge and progress.

May this research contribute to amplifying your voices, advancing your aspirations, and fostering positive change in the pursuit of a more equitable and sustainable future for all.

ACKNOWLEDGEMENT

I extend my deepest gratitude to the individuals and institutions whose contributions have been instrumental in this research proposal's finalization. Specifically, I sincerely express my appreciation to the resilient communities of Kenya, particularly those in the nine counties which undertook the KIWASH projects. The decision you made to take part in this investigation and provide your priceless thoughts has been crucial in determining the focus and conclusions of the present investigation.

I am indebted to the employees working within the water, sanitation, and hygiene sections of Kitui, Siaya, Makueni, Nairobi, Kakamega, Kisumu, Migori, Busia, and Homa Bay counties for their cooperation and willingness to provide data. Your involvement have been pivotal in ensuring the relevance and reliability of the study.

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To everyone mentioned above, your support and collaboration have been invaluable in the realization of this research proposal. Thank you for your generosity, dedication, and commitment to advancing knowledge and promoting sustainable development goals in Kenya and beyond.

ABSTRACT

The development and expansion of economies depend heavily on developments in Water, Sanitation, and Hygiene (WASH). This is the reason developing economies embrace blended finance models to promote the achievement of sustainable development goal (SDG) number six. The growth of the blended finance market has given rise to significant momentum in the development of sustainable infrastructure, allowing the private sector to participate and overcome the financial gap to achieve SDG No. 6. However, not much information has been published regarding the efficacy of blended finance on the execution of WASH projects in Kenya. The lack of information about blended financing motivated the study to establish the effects of blended finance on achievement of SDG in Kenya. Particularly, the study determined the effect of guarantee on the achievement of SDG No. 6 in Kenya; assessed the effect of technical assistance on the achievement of SDG No. 6; established the effect of private sector financing on the achievement of SDG No. 6; assessed the effect of concessional loans on the achievement of SDG No. 6; and established the moderating effect of governance on the relationship between blended finance and achievement of SDG No. 6. The study targeted the nine counties undertaking KIWASH projects (Kitui, Siaya, Makueni, Nairobi, Kakamega, Kisumu, Migori, Busia, and Homa Bay). A target population of 20 employees from each county under WASH section were selected leading to a total of 180 employees from the counties. A sample of 12 employees was then purposively selected from each county. The study used a positivist research philosophy and explanatory research design. A questionnaire was used to collect data. Both research instrument's validity and reliability were tested. Both descriptive statistics and multiple regression were utilized during data analysis. Various diagnostic tests were used to ascertain assumptions of the model. The study found that guarantee, concessional, and technical assistance had a positive significant relationship with achievement of SDG NO. 6. However, private sector financing had a negative but significant relationship with SDG NO. 6. It was also found that governance as a moderator had an interactive effects on the relationship between blended finance and achievement of SDG No. 6. On guarantee financing, it concludes that financiers were strict on the funds' security, counties financial standing, and credit history. In regard to technical assistance, it concludes that WASH county employees were not subjected to ongoing training and development via workshops, inductions, and seminars. In relations to private sector financing, the study concludes that private funds towards WASH projects were not adequate and this was attributed to the fact that WASH projects have not attracted increased financing by credit providers. On concessional loans, the research concludes that there was adequate grace periods, flexible repayment schedules, and lower maturity of concessional loans. On governance, it concluded that the counties lacked effective mechanisms that provided adequate checks and balances on SDG No 6 funds. The study concluded that SDG No. 6 has led to increased access to basic sanitation, safe drinking water, low cost water, and increased water and sanitation quality. The study recommends that WASH county employees should be exposed to incessant training and development to improve their skills, knowledge and competency. It recommends that the counties should improve their financial rating by putting in place risk management mechanisms to attract funding from the private sectors. The research recommends that counties should give priority to concessional loans because it was found to be affordable insofar as serviceability is concerned.

Key words: Blended finance, guarantee finance, concessional loans, private sector finance, and technical assistance, governance, SDG NO. 6

CHAPTER ONE: INTRODUCTION

The chapter presents the background of the study that included blended finance, clean water and sanitation and KIWASH projects in Kenya. The chapter also include problem statement, research objectives/questions, significance, and scope of the study.

1.1 Background to the Study

In 2015, the United Nations agreed with nations on the achievement of sustainable development goal (SDG) with a deadline of 2030. By the year 2030, one of its objectives is to offer everyone accessibility to clean water and sanitation. Over 2.1 billion individuals do not have accessibility to safe clean drinking water and 4.5 billion people do not have access to sanitation, which amounts to 260 billion dollars (Prontera & Quitzow, 2022). Additionally, this amounts to a financing gap of 114 billion US dollars that must be filled in order to achieve clean water and sanitation by 2030 (Organisation for Economic Co-operation and Development, (OECD, 2020). Blended finance gives room for imaginative supporting model to clean water and sanitation to meets it focus continuously (Tan, 2019). It is against this backdrop that the financing of clean water and sanitation embraces the utilization of blended finance.

Blended finance is a model of financing sustainable development projects, particularly those undertaken by private sector entities and funded by government agencies (Halland, Monk, & Sharma, 2018). According to Attridge and Engen (2019), blended finance consist of concessional capital with capital that requires a return. Blended finance has three distinct characteristics: the use of concessionary finance provided by public or development philanthropists to de-risk risk investments that would otherwise not attract capital; the utilization of this concessionary finance to attract more non-concessionary capital from private investors that generate a financial return; and finally, the use of this concessionary finance to have measurable development impact (Pories, Fonseca, & Delmon, 2019). One example of this would be a guarantee to provide commercial finance for the acquisition of solar energy that would be used in small and medium-sized water projects (OECD, 2020).

Historically, water SDG no. 6 has been financed through use of public budgets and it is clear that with this model many people have been left out without access to this basic model. The Addis Ababa action plan in 2015 were in the view that domestic commercial finance and private sector finance were critical catalyst in sustainable development finance (OECD, 2020). The United

Nations asked the private sector to form partnerships, come up with new financing models, and close the financing gap that prevents sustainable development from being achieved. Blended finance, according to the OECD, is crucial in attracting private capital for water and sanitation investment (OECD, 2018)

As of 2017, 92% of the more than 900 million people who called Europe home used services for managing the safety of drinking water (WHO-Regional Office for Europe, 2020). In order to improve access to water through pipes in Cambodia, blended finance included concessional credit, technical support, and grants (OECD, 2018). According to Phim (2021), just 7% of the population had access to water through pipes prior to the enforcement, and the cost of connecting privately for residents was expensive at 34% of their income. Additionally, they had poor accessibility to financing and lacked the security needed to get funding. Agence Francaise de Development (AFD) started the project's possibility of financing in 2014. In order to extend more enticing loans to providers of water services in small cities, it encompassed a US \$24.2 million grant, discounted credit line, and guarantee. The majority of other banks have participated in the design, construction, and financing of new water treatment facilities because they are confident enough to expand on their past success.

In Bangladesh, the World Bank authorized Output-Based-Aid (OBA) project that offered sanitation services to lower-income households at reasonable rates, in accordance with clean water and sanitation in 2016 (Khatun, Shadat, & Al Kabir, 2021). Two prominent MFIS received OBA subsidies totaling \$3 million to expand their access to lower income households and improve sanitation. The MFIS offered credit loan packages that were suited to the necessities of the residents, allowing families to spend their finances in buying and putting in of latrines (World Bank, 2016). Each eligible household's weekly repayment was decreased by 11% as a result of our initiative. So, blended finance has resulted in improved water access in the country.

In the Czech Republic, clean water and sanitation has been effectively rolled out (Dvouletý, Čadil, & Mirošník, 2019). For instance, it has been stated that private companies who receive loan guarantees finance clean water and sanitation. Additionally, Dvoulet (2017) argued that the number of water projects financed by credit guarantees and soft loans has grown nationwide, improving access to clean water. Thus, it has been observed that providing microfinance services to guarantee loans has led to greater investment in Water, sanitation and hygiene (WASH)

infrastructure, which has positively impacted WASH projects across the nation. Therefore, it is essential that countries build institutions, enhance incentives, and upgrade planning and policies to promote clean water services' access.

The state of WASH is poor and is still not better in Africa (Lundsgaarde, 2023). As per United Nations Children's Fund (UNICEF, 2019), 709 million people in Sub-Saharan Africa (SSA) lacked adequate access to sanitation, while 402 million had access to just limited or nonexistent drinking water facilities. A number of African nations have looked into blended funding possibilities. For instance, in 2018, roughly 46.3% of families had access to water pipes inside their homes, showing the weak and deteriorated status of the WASH sector in various African nations (Stats SA -GHS, 2018). The provision of water services in South Africa began to "flatline" in 2006–2007, and better service delivery metrics had to be created to comprehend why little advancement had been achieved in clearing the holdups. The entire set of updated indicators would efficiently monitor both the availability of infrastructure and the long-term viability of the service (Smith, Samuelson, Libanda, Roe, & Alhassan, 2022). Majority of the country now has greater access to potable water thanks to the intensified actions.

In Nigeria, a paltry 11% had accessibility to clean water while 42% utilized basic sanitation services in 2018 (National Bureau of Statistics, (NBS, 2018). Nigeria has reportedly had persistent problems with sanitation access, with 24% of its citizens still using open defecation techniques and only 19% having access to well-maintained sanitation facilities. The nation also noted that these figures have decreased since WASH NORM's 2018 outcomes, and as a consequence, a decree in WASH sector was proclaimed, giving Department of National Water Resources (DNWR) a presidential executive order to speed up the National Open Defecation Roadmap 2025 implementation. According to Musa, Kolley, and Aassouli (2021), a World Bank loan of US\$700 million that was agreed in 2019 and whose implementation was scheduled to start in 2021 provided the funding for this program. Nigeria added that notwithstanding this budget prioritizing, fewer than one-third of its states have adopted a similar strategy. This shows that it has been difficult for certain poor countries to completely achieve clean water and sanitation.

In East Africa, specifically Uganda, percentage of people accessing better drinking water climbed from 71% in 2016 to 79% in 2019, while it rose in rural regions from 65% to 69% during the same time period (Kiiza, Nassimbwa, & Mulumba, 2019). According to reports, the number of villages

having a reliable supply of clean water has increased from 64% in 2017 to 66% in 2019 (Water Organization, 2020). The nation is said to be facing a number of problems, including the necessity of ecosystems related to water due climatic change, urbanization, hydropower, and danger posed by rising pollution and a greater need for water from an increasing number of people (Kasirye & Lakal, 2019). The nation underlined that double the present yearly pace of improvement and increasing funding, particularly from the private sectors, would be necessary to achieve universal access to the most basic sanitation facilities by 2030.

In Kenya, the onset of the new constitution which created 47 Counties saw most of the services devolved to the counties with water and hygiene governance lying in the hands of the county government. Moreover, about 59% of Kenyans have access to clean drinking water, but a paltry 29% are accessible to basic sanitation, according to UNICEF. While access to sanitation has decreased by 5% from 2000, access to clean water has rose by 13%. (UNICEF, n.d). This is equivalent to 5.9 million Kenyans who openly urinate and 9.9 million who have access to potable water.

In Kenya, 62.9% of people utilizes water from safe sources, according to data from the Ministry of Water, Sanitation, and Irrigation (2019). However, only 51% of the people in Kenya's service areas are provided with water services. Because their poor creditworthiness index to acquire commercial banks' financing services, they only make up 23% of the overall population. Water supply operations and maintenance are predicted to cost Ksh 128 billion per year, of which Ksh 39.5 billion is anticipated to emanate from government funding. Even so, Ksh 6.7 billion of the total budget is still accessible (Kenya National Bureau of Statistics (KNBS) Economic Survey, 2019). This demonstrates a major finance shortfall that prevents efficient and forward-thinking development in Kenya's WASH sector. According to Gikama (2020), Kenya is now working on a 5-year, national WASH project. According to the report, effective targeting is essential for the project to succeed in order to ensure that WASH are used to benefit the intended population.

1.1.1 Blended Finance

According to the OECD (OECD, 2019), blended finance is a planned application of development finance to marshal extra funds for SDG in poor economies. Consequently, it is a financing strategy aimed at development projects that are friendly to investors and are focused on sustainability and economic progress (Kim & Jun, 2022). It can be used as a dependable capital source for nations

that might not receive sufficient Official Development Assistance (ODA) or Foreign Direct Investment (FDI) to finance essential programs. Three elements make up blended finance: private funding, government assistance (state financing), and funding from donors.

Pories, Fonseca and Delmon (2019) opine that, blended finance mechanisms can be used, with a strong emphasis on guarantees and technical assistance. It is evident that the majority of the blended finance mechanisms are in strong emphasis on guarantee and technical assistance. When raising private funds, investors provide protection from credit risk and political risk. Moreover, the developmental actors use guarantees to limit the exposure of commercial lenders. Contrarily, technical assistance can have a variety of entry points, such as for project development, investors like utilities, or financiers like banks to set up new lending programs for the water and sanitation sector (OECD, 2020). When it comes to adapting existing blended finance structures to local contexts, technical assistance plays a critical role.

According to Charitz, Lorenzato, and Santoro (2018), the significant funding gap caused by the lack of commercial funding has forced development communities to come up with creative strategies to draw investors to the ostensibly unappealing industry. As a result, resources with somewhat lower interest rates and longer repayment terms are now available to boost access to water services (Simon, 2018).

The blended finance approach has gained widespread use and acceptance as a financing strategy for WASH projects throughout time (Vecchi, Casalini, & Cusumano, 2022). The strategy's method for lowering risk is its ability to draw commercial financing to clean water and sanitation activities. In order to encourage the industry to pursue investments that they are unlikely to think about under typical circumstances, it makes use of a variety of instruments of finance (Deloitte, 2017). In the words of Tew et al. (2016), blended finance utilization offers ability to raise substantial quantities of funds from private sector for WASH initiatives with little ODA.

However, evidence is emerging that the combination of commercial finance concessional finance does not always generate or lead to more development results. Professionals like Karlin et al., (2021), argued that there is need of adapting financial structure linked to the development intervention rather than using a particular financial structure. They have added that they have been successful when the right financial structure has been used and the development intervention's goals have been met (Karlin et al., 2021). Furthermore, the amount of concessional capital required

to attract private investment should also be linked to the investment risk. Blended finance has an impact on risk return features of an investment by mixing capital with expected return with one without expected return in an investment structure. In cases of inadequate budgets which is very common in developing countries such investment structures may help in efforts in achieving the SDG by 2030 (OECD, 2018). In the context of water hygiene and sanitation, this may mean using public funds in water and sanitation infrastructure to enable private investor invest in it because it is perceived to have high risk.

The study also uses governance as a moderating variable. The goal of the good governance to sustainable development is to support societies in implementing sustainable development principles through international collaboration and developing efficient government within democratic systems (Hao, Nyaranga, & Hongo, 2022). Good governance also entails empowering the populace to take on local initiatives and actively participate in decision-making for the public interest. Through such initiatives, the fostering and bolstering localized good governance towards achievement of clean water and sanitation will be a possibility (Di Vaio, Trujillo, D'Amore, & Palladino, 2021). Therefore, through good governance, elements such as accountability and transparency will be enhanced thus enhancing the achievement of clean water and sanitation.

Studies related to blended finance included one by Quatrini and Crossman (2018) that assessed effect of blended finance on mobilizing funds for sustainable development. However, the investigation was in the context of a developed nation thus the call for a study with a localized context. Fonseca and Pories (2017) looked at many approaches to increasing funding for WASH initiatives and lowering disparities. However, the study did not look at how blended finance affected project performance, nor did it concentrate on WASH programmes in Kenya. Mbinya (2021) examined how various blended finance approaches worked for WASH projects in Kenya. However, the study did not target the nine counties hence a contextual research gap. The aforementioned studies had contextual, conceptual, methodological and empirical gaps hence the need for this study. To bridge this study specifically focused on effects of blended finance on the achievement of SDG NO. 6 among Kenyan Counties.

1.1.2 Achievement of Clean Water and Sanitation

Clean water and sanitation have unique financing requirements when it comes to accessing capital because they do require long payment periods to service the debt and sell the commodity at favorable prices to the users (Kroll, Warchold, & Pradhan, 2019). This also because the aim is to increase the access of the water to majority of the citizens and by using normal models it will require adjustment of the price which can also cause many people not to afford the commodity this deviating from the main goal. Most of the water and sanitation companies also do not have adequate levels of operational and financial efficiency require to attract risk adjusted returns on investment (OECD, 2018).

The government has historically provided funding for water and sanitation, but this will not be enough to meet the achievement of clean water and sanitation on its own (Williams et al., 2023). Blended finance thus becomes a useful tool for mobilizing commercial capital to close the funding gap and fortify the financial frameworks that support investments in water and sanitation. By redirecting resources to sustainable development in nations and industries with major investment requirements in the WASH sector, blended financing can bring value. It can also serve as a market-building tool to help WASH initiatives transition from relying on grants and other donor funding to more self-sustaining financing methods such blended finance.

In the words of Guppy, Mehta, and Qadir (2019), since clean water and sanitation have such significant unmet financing needs, mixing money is essential if governments are to meet achievement of clean water and sanitation. Therefore, to fund water supply and sanitation initiatives, developers must take advantage of every chance to combine the limited government funding and/or concessionary funds with local private financing (Roy & Pramanick, 2019).

1.1.3 KIWASH Projects in Kenya

Kenya is ranked as one of the world's most water-scarce nations. This is reducing the amount of water accessible for household and productive applications, together with an increase in the frequency of severe weather cycles and the depletion of natural resources. About two-thirds of Kenyans have the opportunity to use basic sanitation, and about 60% have accessibility to safe drinking water (KIWASH, 2023). This means that about 40% have no access to safe water despite the KIWASH projects. This is concern that need studies to identify issues bedeviling the sector hence the call for the current study.

In Kenya, approximately five million individuals use open defecation, while 9.9 million others drink straight from polluted surface water sources. Merely 25% of households possess a handwashing station with soap and water (Gikama, 2020). Such shortfalls show the need for the current study to provide much desired literature and knowledge gaps.

Kenya Integrated Water, Sanitation and Hygiene (KIWASH) Project is a five-year, \$51 million project that runs from October 2015 to September 2020 (KIWASH, 2023). It is carried out by a consortium headed by Development Alternatives, Inc. (DAI) and is sponsored by USAID/Kenya and East Africa (USAID/KEA). By the creation and administration of sustainable water, sanitation, and hygiene (WASH) services in Kenya, KIWASH seeks to enhance people's lives and well-being. Its goal is to enhance complementary hygiene practices and institutionalize catalytic forms of sustainable service delivery, thereby enabling faster access to water and sanitation in target countries (Onyancha, 2020).

Together with suppliers of water and sanitation, KIWASH is creating viable business models, enhancing operations, and making funding more accessible. Simultaneously, behavior-change communication strategies associated with community-led comprehensive sanitation and hygiene aim to increase demand for better nutrition, hygiene, and household sanitation (Mbinya, 2021). Nine counties are involved in KIWASH operations, which are divided into two main focus areas: the Tana/Athi Focus Area which includes Kitui, Makueni, and Nairobi counties, and the Lake Victoria Focus Area which includes Busia, Nyamira, Migori, Siaya, Kisumu, and Kakamega counties. It is in this vein that, embracing finance blending is integral as it helps in bridging the financing gaps that may exist in the WASH sector. The statistics in Table 1.1 shows the trend of WASH projects in Kenya.

Table 1.1 Trend of WASH projects in Kenya

SERVICES	2017/18		2018/19		2019/20	
	KES Million	Percent	KES Million	Percent	KES Million	Percent
Water supply through large network systems	26,906.91	37%	30,497.99	36%	32,416.90	37%
Basic drinking water supply	22,688.25	31%	22,802.29	27%	25,280.07	29%
Sanitation through large network systems	5,961.48	8%	6,870.36	8%	8,592.51	10%
Basic sanitation	949.34	1%	10,954.32	13%	5,325.97	6%
Support services to the WASH sector	13,645.68	19%	12,164.13	14%	13,135.60	15%
Water resources protection	679.55	1%	965.26	1%	1,873.08	2%
River basin development	1,195.05	2%		0%		0%
Total	72,026.26	100%	84,254.34	100%	86,624.14	100%

Source: KIWASH Reports (2017/2018, 2018/2019, & 2019/2020)

1.2 Statement of the Problem

About two-thirds of Kenyans have the opportunity to use basic sanitation, and about 60% have accessibility to safe drinking water (KIWASH, 2023). In Kenya, approximately five million individuals practice open defecation, while 9.9 million others drink straight from hazardous surface water sources. Merely 25% of households possess a handwashing station with soap and water (KIWASH, 2023). Poor funding and poor priority by the governments have mostly impeded efforts to establish adequate water and sanitation facilities in developing economies like Kenya (Onyancha, 2020).

Development community have been urging the use of blended finance towards closing the gap that already exists in financing for the clean water and sanitation. Staff at the World Bank, for instance, and Managing Director of Embu Water, Engineer Karugendo detailed the factors that contributed to their blended finance success (World Bank, 2018). They have benefited from concessional loans and partial credit guarantees from development partners, commercial finance, and grants for asset improvement and household connections. For instance, Embu has accessed the commercial market four times each time, and as a result, they have gotten longer tenors and better interest rates because they developed a proven track record. He adds that improved operational performance leads to improved creditworthiness.

Harun (2017) found out that capitalizing on private commercial finance had a positive correlation in access to water for the rural communities in Turkey. Meanwhile, Avolio (2017) found a positive

correlation between private public partnership and access to water in rural and peri-urban settlers. Sene (2019) found out that blended finance had a positive relationship with water development in Senegal. Habbel, Jackson, Orth, Richter, and Harten (2021) found that blended finance as an instrument had no relationship to performance while Karásková (2023) studied determinants of blended finance projects' performance in emerging economies. All the above studies were not done in Kenya but in other countries and the operating environment in those countries may be different to the local context thus justifying the need for this study.

Mbinya and Fatoki (2020) established that private sector funding had negative significant relationship with access to water in Kenya while public sector had a positive connection but the study did not utilize governance as moderating variable hence a research gap. Mbinya (2021) studied blended finance approaches' effects on water and sanitation projects' implementation. Nonetheless, the study used implementation as dependent variable thus a conceptual research gap that this work will bridge by using achievement of clean water and sanitation as dependent variable. Rop's (2022) study also used institutional factors while the current study will use blended finance approaches (concessional, guarantee, private, technical) and governance as independent and moderating variables respectively to bridge the conceptual research gap.

Based on the studies, various gaps were identified. Specifically, some researches failed to utilize achievement of SDG No. 6 as dependent variable thus a conceptual research gap. Additionally, some of the studies were done in other countries thus leading to a contextual research gap that calls for a local study. Further, some studies focused on different sectors (Rop, 2022) thus necessitating a contextual knowledge gap. Others researches found mixed and inconsistent results (Sene, 2019; Mbinya & Fatoki, 2020) regarding the relationship between blended finance and water development. Therefore, it is against this backdrop that this study explored blended finance' effects on achievement of SDG No. 6 in Kenya.

1.3 Research Objectives

1.3.1 General Objectives of the study

The main objective of this study was to establish the effects of blended finance on achievement of SDG No. 6 in Kenya.

1.3.2 Specific Objectives

- i) To determine the effect of the guarantee financing on the achievement of SDG No. 6 in Kenya
- ii) To assess the effect of technical assistance financing on the achievement of SDG No. 6 among KIWASH Counties in Kenya.
- iii) To find out the effect of private sector financing on the achievement of SDG No. 6 among KIWASH Counties in Kenya.
- iv) To assess the effect of concessional loans on the achievement of SDG No. 6 among KIWASH Counties in Kenya.
- v) To establish the moderating effect of governance on the relationship between blended finance and achievement of SDG No. 6 among KIWASH Counties in Kenya.

1.4 Research Questions

- i) What is the effect of the guarantee financing on the achievement of SDG No. 6 among KIWASH Counties in Kenya?
- ii) What is the effect of technical assistance financing on the achievement of SDG No. 6 among KIWASH Counties in Kenya?
- iii) What is the effect of private sector financing on the achievement of SDG No. 6 among KIWASH Counties in Kenya?
- iv) What is the effect of concessional loans on the achievement of SDG No. 6 among KIWASH Counties in Kenya?
- v) What is the moderating effect of governance on the relationship between blended finance and achievement of SDG No. 6 among KIWASH Counties in Kenya?

1.5 Scope of the study

The purpose of this research was to investigate the perceived effect of blended finance on the achievement of clean water and sanitation in Kenya during which time the achievement of clean water and sanitation were in place and the Addis Ababa task force recommended using private finance to fill the funding gap. The study was conducted in nine counties—Kitui, Makueni, Siaya, Nairobi, Kakamega, Kisumu, Migori, Busia, and Homa Bay—that are recipients of the USAID KIWASH project, which includes blended finance as one of its components. The employees from

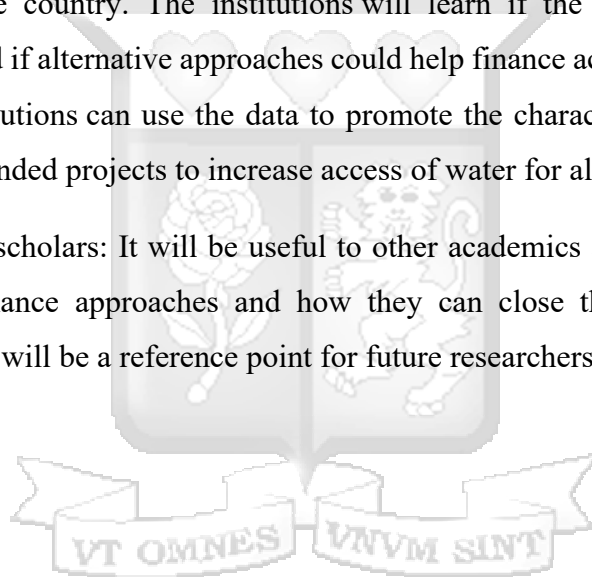
the KIWASH department were included. The time period for this research was three months (March-May 2024).

1.6 Significance of the Study

1.6.1 Government and policy makers: The study's findings will be crucial for policymakers, local and national governments. Specifically, this investigation will provide logical information on how to come up with policy to close the funding gap in WASH sector via blended finance. As a result, it will aid in decision-makers' explanation of how to sufficiently support the nation's water sector to guarantee that every person has access to usable, clean water.

1.6.2 Water sector and related stakeholders: In general, the research will be beneficial to the Water related institutions in the country. The institutions will learn if the current blended funding approaches are viable and if alternative approaches could help finance achievement of clean water and sanitation. The institutions can use the data to promote the characteristics that increase the effectiveness of donor-funded projects to increase access of water for all.

1.6.3 To academics and scholars: It will be useful to other academics and scholars who wish to comprehend blended finance approaches and how they can close the financial gap seen in WASH sector. Finally, it will be a reference point for future researchers as well.



CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The chapter presents on other related studies in Kenya and outside Kenya, which have been reviewed from research and studies on assessing the relationship between blended finance and achievement of clean water and sanitation.

2.2 Theoretical Review

This investigation relied on three theories, agency, change, and resource dependency theories which align more with the study.

2.2.1 Agency theory

It was introduced by Jensen and Meckling (1976). According to Jensen and Meckling (1976), the agent should always act on behalf of the principal to maximize the value of resources provided. The agents should always ensure their interests are always in line with those of their shareholders and avoid any conflict of interest. According to Robert (2009), the agency problem occurs when the agent acts on their own interest rather than those of their shareholders this happens when the agents make decisions that benefit themselves rather than their master. A study by Vitolla, Raimo, and Rubino (2020) used it in their research.

The theory is not without criticisms. For example, the behavioural presumptions and theoretical focus of agency theory are narrowly defined, which is one of its biggest faults. Agency theory overlooks a greater variety of human motivations since it exclusively considers self-serving and opportunistic human action.

An agency link exists between county government (agent) and donor community (principal). Donor in this case donates funds to the country with the aim of de-risking a risky investment and making it investment ready for the private sector. The government in this relationship acts as the agent and should use the funds to the best interest of the donor community to achieve the intended

use of the funds. Therefore, the theory links the constructs of blended finance with the achievement of clean water and sanitation.

2.2.2 Theory of change (ToC)

The theory of change is advanced by Orasz and Wyatt Knowlton (2003). It shows the change one would want to move from one step to the other and steps involved. In this context, a theory of change explains how a particular development intervention is expected to lead to certain development impact based on causal analysis of evidence available (Baye, 2021). To the UN community, the change must be lead through stakeholder consultation and continuous leaning on what is working and what's not working as this helps to address special development challenges. Theory of change also helps in identifying assumption and risks inherent in a decision to ensure desired outcome is achieved (United nations development group, 2019).

Despite the relevance of this theory in this study, it has faced a lot of criticisms. For instance, the ToC does not offer explicit guidance on how to include (local) stakeholders in a project or plan, in contrast to the Logical Framework Approach. Further, ToC could end up with arrows linking boxes in ways that are impractical, making it overly simplistic, overly complex, or just plain incorrect. Funders don't always recognise its importance because, it may produce unexpected results.

Champion of this theory such as Bush (2019) stated that development problems are complex in nature and are caused by many factors that are linked to the norms and policies in the society. This theory is relevant to this study because it discusses how change is required to achieve SDG and close the gap because the current financing is not sufficient to attain the goal by 2030. Specifically, it is applicable to the private sector financing through their involvement in development challenges required and offering financial needs to change policy framework to make this work for investors towards achievement of clean water and sanitation (United nations development group, 2019).

2.2.3 Resource Dependency Theory (RDT)

Pfeffer and Salancik developed it in 1978, and it was updated in 2003. The two academics maintained that a company's capacity to obtain essential resources from its surroundings determined its likelihood of surviving (Pfeffer & Salancik, 1978). Because of this, businesses typically build partnerships with donors and other parties to get the resources they do not have

(Schiele, Ellis, EBig, Henke & Kull, 2015). In support of this theory, Verbruggen, Christiaens, and Milis (2011) argued that, organizations must acquire, utilise essential resources from both environmental sources by coopting cooperation with other companies in order to assure ongoing survival and lessen uncertainty.

The Food and Agricultural Organisation [FAO] (2014) states that sustainable development and the decrease of poverty depend on having access to clean electricity, water, and food, as well as adequate sanitation. Sanitation, water, and clean energy thus offered synergies for sustainable development and the decrease of poverty. There are opportunities for cooperation between the development and business-focused state mechanisms including the private sector, wherein the latter could be more effectively utilised for development (Bilal and GroßePuppendahl, 2015). Consequently, a collaborative effort involving stakeholders from the public and commercial sectors can yield greater advantages than independent efforts by the government or development communities.

The theory has two applications in the present investigation: First of all, it demonstrates how vital resources are, particularly in the severely underfunded WASH sector. Governments, development communities, and public organisations don't seem to be able to provide the funding required to raise the WASH standard in their individual regions, particularly in third-world nations.

Numerous academics affirm that the RDT is a valuable tool for researching organizational behavior. On the other hand, some academics fault the RDT. The majority of these objections center on the fact that the RDT's boundaries and underlying concept have not been subjected to the necessary level of testing. But researchers have found that testing every hypothesis put out by the RDT is challenging, if not impossible (Nienhüser, 2008). Regarding the RDT's general concept and theories, there are also some more detractors out there. According to Nienhüser's (2008) research, the RDT falls short of providing adequate justification for viewing organizations inside it as political systems as opposed to technical or economic ones.

The theory explains how blended funding for additional WASH projects is contingent upon collaboration between public and commercial institutions. The success of donor-funded programmes depends heavily on financial resources, and this theory serves to explain how relationship management techniques and financial resource management may all be used to

support the success of WASH. Hence, it explains how investor relations might affect the amount contributed and technical help provided to WASH programmes, as well as how financial resource management can improve guarantee, private, and concessional approaches.

2.3 Empirical Studies

Herein, several past researches are presented. The studies takes the funnel like approach. Specifically, the studies presented consists of methodology, findings and research gaps. The past studies are critically dispensed in line with key objectives.

2.3.1 Effects of Blended Finance on Achievement of Clean Water and Sanitation

A study was done by Quatrini and Crossman (2018) on the effect of blended finance on mobilizing funds for sustainable development with a case study of investment fund for land degradation neutrality in Italy. The target population was all firms that funded environmental conservation. This study used questionnaire. Data was analysed using descriptive statistics. The research found out that there is little or no evidence that using donor funds in land restoration was able to attract international private financing. Further, it was revealed that blended finance helped in reducing water costs and ultimately delivery quality commodities. However, the investigation was in the context of a developed nation thus the call for a study with a localized context.

Contrary to a study by Quatrini and Crossman (2018), McCallum (2020) studied the barriers that impact investors face when investing in water and sanitation projects. Information was obtained through semi structured interview with 20 respondents. Data was analysed using factor analysis and cross tabulation. Participants pointed out more barriers than opportunities to this sector, among the challenges was lack of life cycle support, risk inherent as a result of political interference and low financing return not commensurate to the level of risk. Involving community improved access to sanitation and water services. The experts interviewed were for the opinion that government support through reduced regulation can make investment in this sector better and attract more capital. However, the study was done in a developed economy hence the need for a local study.

Similarly, Olajuyigbe (2016) undertook a case study on the effect community participation on ownership of water enterprises and their sustainability. The study used closed ended and semi structured questionnaires administered to wash compete members, households, and key informants. A population of 163 households was used which represents 5% of the total population

of the total household including 7 people household. The 163 households were identified through simple random sampling. It was found out 84.2% were ready to contribute less than 1000 nairas towards rehabilitation of water infrastructure but was attributed to low incomes of the population interviewed. During this intervention the donors provided well ventilated latrines and offered technical training to rehabilitate them thereby improving access to water. Nevertheless, credit history and risks associated with repayment impeded lenders involvement. However, the study did not use concessional loans, private financing and guarantee as blended finance constructs hence a conceptual research gap.

In Kenya, Okeyo (2013) did a study to investigate how public-private partnership have contributed in providing water services in Kenya. The scope of the paper was to determine how PPT has led to provision of water. They employed secondary and primary data conducted from a survey of 288 households. Data was analyzed using tabulation to determine central tendencies and dispersion. The study found out that institution that have blended public and private finance through PPT arrangement have performed better and benefited from improved governance. The study however did not focus the effect of blended finance on achievement of sustainable development goal no six hence a knowledge gap.

Similar to Okeyo's (2013) study, Mbinya (2021) conducted a study on blended finance' effects on water access. All components including relationship between private sector finance, private sector finance and donor finance were applied. It employed descriptive design, respondents were conducted from 09 water companies using semi structured questionnaire including open ended and closed ended questions. Inferential statistics showed that private capital regression had a negative coefficient, this translates to involvement of private sector finance improves access to water holding all other variables constant. Public capital produced 0.373 coefficient and p value of 0.073 while donor funding produced coefficients of 0.350 and a p value of 0.22. These finding lead to a conclusion that private finance, public finance and donor funding have a positive impact on access to water in Kenya. Despite its relevance to this study, it was conducted in other sector hence a contextual research gap that calls for this research.

2.3.2 Effect of Private Sector Financing on the Achievement of Clean Water and Sanitation

In their study, Koenig and Jackson (2016) examined result-based financing as a strategy that donors and governments in developing nations might employ in conjunction with the private industry to encourage service delivery and foster innovation. They came to the conclusion that bonds, social impact incentives, advanced market commitments, put-based aid, and development effect may all be informed by RBF. They claim that because output-based aid (OBA) gives service providers incentives to serve underserved areas, it is typically utilized to target incentives for low-income clients.

A study by Koenig and Jackson (2016) differs from a research on result-based financing by Grittner (2013) gathered information from PBE programmes in 13 developing nations in South America, Asia, and Africa to examine effectiveness of funding based on performance in health industry. The outcomes demonstrated that compared to alternative funding systems, the implementation of RBF was more successful in enhancing healthcare coverage and supply. The investigation did not, however, find sufficient proof that rewards and money improved the effectiveness of healthcare personnel. This suggests that utilising various blended finance strategies—like private financing on technical assistance—had an impact on the delivery of healthcare. However, the study only focused on institutions in developed nations hence a contextual research gap that calls for the current study.

The application of blended credit score and loan quality models in bank shipping finance in Turkey was investigated by Gavalas and Syriopoulos (2015). According to the researchers, assessing the credit quality of borrowers is crucial to ensuring that commercial banks allocate loans effectively and that financial turmoil in businesses is discouraged. The study gathered data using questionnaire. Data was analysed using descriptive statistics. According to the study, applying quantitative and qualitative criteria can guarantee that businesses are financed as efficiently as possible and enhance commercial banks' ability to make decisions. However, the relationship between project implementation and the credit rating technique, which is the subject of the current research, is not specifically mentioned in the paper. The study results were restricted to descriptive statistics that is a basic data analysis tool hence a methodological research bias. The study differs from Grittner (2013) who used inferential statistics. Further, the current study used regression together with descriptive statistics.

In yet another study, Humprey (2015) examined how credit rating agencies affect multilateral development banks' ability to operate. The study demonstrated that development banks' ability to carry out their development purpose and provide better loans to smaller countries had been significantly and negatively impacted by their acceptance of credit rating firms' recommendations. The study demonstrated that inadequate allocation capacity and the growth of development missions have come from the absence of uniform, transparent, and comparable standards, even in the face of calls from G20 countries for an examination of credit rating agencies' judgements. However, the paper ignores the goal of the current study, which is to undertake WASH projects in poor nations. However, it differs from a study by Fonseca and Pories (2017) that found that blended finance was seldom used.

In their 2017 study, Fonseca and Pories looked at many approaches to increasing funding for WASH initiatives and lowering disparities. The research revealed that the industry uses blended and microfinance very little contrary to a research by Koenig and Jackson (2016). Therefore, laws should be developed by governments to encourage the use of microloans and to make it easier for people to make both domestic and foreign investments. More redistributive laws should be enacted to guarantee that resources are allocated strategically in order to increase the efficacy and efficiency of using the resources that are now available. However, the study did not look at how blended finance affected project performance, nor did it concentrate on WASH programmes in Kenya. The present study filled this need.

2.3.3 Effect of Guarantee Financing on Achievement of Clean Water and Sanitation

A study by Mbinya (2021) examined how well various blended finance approaches worked for WASH projects in Kenya. Descriptive research design and both quantitative and qualitative were utilized. The quantitative analysis made use of secondary as well as primary data sources. The research found that technical support and credit guarantees had a favourable and substantial impact on WASH programs. However, the study did not target the nine counties hence a contextual research gap. This study differs from FAO (2013) that focused on four continents.

Further, FAO (2013) examined credit guarantee programs for the growth of rural and agricultural businesses. The research comprehensively examined four notable case examples from four continents: the Fideicomisos Instituidos en Relación con la Agricultura (FIRA – Trust Funds for

Rural Development) group of guarantee funds in Mexico; the Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) in India; the Agricultural Credit Guarantee Scheme Fund (ACGSF) in Nigeria (the oldest CGS in SSA); and eleven other cases of CGs. According to the analysis, CGs weren't the best solution or the recommended choice for development funding. But the outcomes demonstrated that they weren't doomed to fail and that their success was dependent on the particular circumstances. However, the study focused on agricultural businesses services in a developed economy hence the need for the current study. The study only used guarantee as a measure for blended finance as opposed to the present study.

Muindi (2018) studied the impact of guarantee impact on the effectiveness of initiatives sponsored by county finances for social advancements. It has been discovered that M&E is essential at every stage of the project. The study employed a descriptive research approach, drawing on a census method used by 45 county government workers to identify all 45 employees. Additionally, simple random sampling were utilised to choose the 60 members of the project management committee. According to the research, Kibwezi Sub County should raise funds and assign staff to provide the necessary resources for overseeing and assessing county-funded projects. The findings contradict Mbinya's (2021) study that found favorable relationship among the variables. This research endeavours to bridge the gap by examining the effect of guarantee activities on the WASH projects.

In similar vein, Gurmesssa and Ndinda (2014) examined how small-scale enterprises' use of the Credit Guarantee Scheme (CGS) affected their ability to reduce poverty. The research used a systematic review methodology. Numerous elements, including the lending banks' financial standing, the regulatory environment, the financial standing of the borrowing enterprises, the scheme's specifics, financial ability of guarantors, and the output and input market characteristics, were found to be involved in the analysis. The analysis confirmed that different countries have used a wide range of designs and procedures due to the lack of a single viable model. The analysis confirmed the dearth of empirical data regarding the function and effects of CGS on sustainable development, particularly in countries in Sub-Saharan Africa. Nevertheless, the study was not on KIWASH thus the need for the current study to bridge the contextual knowledge gap.

Contrary to Gurmesssa and Ndinda (2014), Haunsen et al. (2012) evaluated SME financing credit guarantee programs in Africa using data from Kenya, Ghana, South Africa, and Tanzania. Data from our 100 organisations were gathered for the study using FGDs, surveys, and interviews. The

information was examined in light of CGs' goal to stimulate more bank funding for underprivileged businesses. The study discovered that the use of CGs was reliant on the returns included following the settlement of guarantee-related expenses. Banks were able to lower financing barriers (such stringent collateral requirements), credit history of guarantors and lengthen loan terms thanks to some of the guarantees. Conversely, some did not modify or ease loan availability in any way. The study was on SME financing rather than KIWASH projects by Kenya counties.

2.3.4 The Effect of Concessional Loans on the Achievement of Clean Water and Sanitation

The work of Rodriguez et al. (2014) examined use of output-based methodologies to assess efficacy of water projects. The strategy was effectively used to address water scarcity in Brazil; to boost family sewerage links in Uruguay; to enhance water accessibility for low-income households in Metro Manila; and to promote the availability of sanitation and water for the urban poor in Morocco. The primary problems with water projects, according to this study, were externalities, access constraints, inadequate service delivery, operations or maintenance, and limited infrastructure capabilities.

Further, Esseku and Roberts (2018) declared the RBS as 19 a successful tactic for fostering the sustainability of government-funded initiatives, contending that setting requirements that must be fulfilled improves project facilitation and oversight, hence enhancing Ghanaian citizens' access to sanitary services. This came after it was confirmed that a number of initiatives aimed at expanding the availability of sanitation had come to a standstill for a variety of reasons, including irregular payments and financial embezzlement, which was made worse by inadequate control both during and after implementation. One key findings was that friendly interest rate and longer maturity periods enhanced sustainability of government-funded initiatives hence the study findings resonate with the findings by Rodriguez et al. (2014). The study was based in Brazil and did not use blended finance and achievement of clean water and sanitation as independent variable.

Moreover, McGinnis et al. (2017) conducted a thorough analysis of the financial implications of providing WASH in institutions. Case studies from Latin American nations, Asia-Pacific nations (India and Bangladesh), and Africa (Uganda, Ethiopia, and Kenya) have been included in the scope. A Chromebook was used to create a review process for an organised evaluation of interventions. The information included research conducted between 1990 and 2015. A total of 48 publications were checked for relevancy, country, setting, WASH aspects, cost, and funding

mechanism after the data was taken from four databases. The findings demonstrated a deficiency in data concerning WASH pricing, specifically with software components, and a deficiency in general WASH data in educational settings relative to community WASH. Similar to Esseku and Roberts (2018), it also revealed that low loan service and flexible payment terms improved execution of projects. The concessional loan was established to hold a significant link with the timely and cost effective implementation of WASH initiatives. The study had results from various countries hence using the findings to infer to KIWASH in Kenya is not realistic.

2.3.5 Effect of Technical Assistance Finance on the Achievement of Clean Water and Sanitation

A review by Timmis (2015) concentrated on teachings from technical assistance programmes to donor backing. The identification of sources, conclusions, and the efficacy and significance of donor technical assistance programmes served as the driving forces for the study. Information for the review was gathered from published papers and subject matter experts from various initiatives and nations. The analysis discovered that, in order for capacity building initiatives to be successful and long-lasting, there is broad agreement in the literature. Whenever possible, they should make advantage of partner nation systems, such as local procurement procedures for TA services and associate budgets for aid distribution. Furthermore, the analysis found that capacity building initiatives can have a greater impact and effectiveness when a wider range of actors are involved as partners or beneficiaries. Despite its value in this study, it did not use governance as measured by accountability and transparency as moderating variable.

A study by Sagar (2006) studied the best practise methods for offering technical support to help execute the Trade-Related Intellectual Property Rights (TRIP) agreement. It used the mention of financial and technical support for developing and least developed WTO members. Information about the extent of the TA given to developing nations was gathered. 25 interviews were conducted. The information was centred on TA beneficiaries in developing nations, such as Argentina, Thailand, India, Cameroon, and Thailand. Every of the recipient nations had 45 additional interviewers. According to the report, the majority of TA nations focused on enforcing stronger domestic laws to safeguard intellectual property. Further, donors provided technical support such as research and advisory assistance. The fact that they relied on information on other

sectors rather than water and sanitation is research gap that warrants the present study with a local aspect.

A study by Miller et al. (2019) performed a systematic review of 218 reviews examining the effects of external support programmes on water supply. Primary external support programmes identified were financial, administrative, and technical assistance; all of these programmes were linked to increased household participation, satisfaction, and fee payment. Nevertheless, factors such as a political environment that was restrictive, inadequate training, and bad coordination had an impact on effectiveness of external support programmes. The findings contradict a study by Sagar (2006) that found that donors provided technical support such as research and advisory assistance. However, it was conducted in yet another country thus the need for a localized study on technical assistance finance and achievement of clean water and sanitation in Kenya

The World Bank (2015) created a synopsis of Greater Harare WASH Strategy Plan and verified that technical support in finances training for managers, revenue collection support, and management training was provided in Harare. The implementation of technology that improved the water infrastructure's accuracy, transparency, and feedback also served as monitoring, evaluation, and maintenance assistance. The investigation came to the conclusion that various types of outside management assistance enhanced the legality and, consequently, the long-term viability of projects run by Harare Water. Both of these analyses neglected to investigate how alternative finance techniques can affect the results of implemented programmes, instead concentrating on the effects of external support on project performance.

2.3.6 Influence of Governance on the Achievement of Clean Water and Sanitation

A research by Berliani and Violita (2021) studied the function of governance in SDG via public trust in government conducted in 24 nations of the Islamic Cooperation Organisation (OIC). For panel data, this research used both fixed and random effect regression. Normative Coefficients Comparisons between the impacts of macroeconomic factors and governance are also made using regression. The findings indicate that the public's trust is strengthened by two governance indicators: Political Stability and the Control of Corruption. Public's faith in the government was shown to be adversely affected by the responsibility indicator. Regression revealed that the influence of macroeconomic conditions is somewhat greater than that of governance. Given that

the study was not expressly focusing on clean water and sanitation necessitate the current study that specifically focused on KIWASH projects.

Further, Di Vaio et al. (2021) examined models of water governance in relation to SDG. Its specific goal is to determine which aspects of these models require revision in order to satisfy the UN 2030 SDGs, particularly clean water and sanitation. Two stages made up the data collection process: gathering articles from secondary sources, and then conducting a content analysis on the chosen publications. The results demonstrate that, in order to effectively solve the global sustainability difficulty, water governance models must incorporate cooperation, coordination, and involvement of stakeholders. There isn't a clear road towards sustainability because there hasn't been enough research done in the literature on how these ideas may be applied to improve local water resource management thus the call for this study to determine effect of governance on achievement of clean water and sanitation in Kenya.

In yet another study, Glass and Newig (2019) assessed how crucial democratic institutions, reflexivity, policy consistency, involvement, and adaptability affect attaining the Sustainable Development Goals. By adjusting for effects of extra socioeconomic conditions, they use multiple regression to examine the role of involvement, policy coherence, reflexivity, modification, and democratic institutions, on SDG performance. The factors that have been tested to explain the attainment of the SDGs are participation, democratic institutions, education, and geographic scope.

Further, Gündoğdu and Aytekin (2022) assessed the degree to which multidimensional sustainable development is fulfilled by sustainable governance. The variables that show how governance affects development in terms of sustainability were identified by multiple regression analysis, and the nations were ranked using the grey relational analysis method. According to the findings, countries can accomplish their Sustainable Development Goals (SDGs) with the help of rising internet usage, e-government and human development advancements, political reform, and environmental performance. Additionally, it was discovered that governance significantly and favourably affects the SDGs. It showed that wealthy and developed nations came in first, whereas developing nations going through unstable times like war and strife came in last.

Another study by Ahmed and Anifowose (2023) examined the connection between corporate governance, corruption, and the SDGs for Africa. The research hypotheses are tested by the

authors using OLS regression and panel data from 42 African nations from 2017 to 2020. To assess the robustness of the findings, the authors also employ different estimate approaches, such as the generalised method of moment and fixed effect and random effect regressions. The findings show that corporate governance has a large and beneficial impact on sustainable development (SD), while corruption has a negative impact. Furthermore, corporate governance has a greater positive impact on SD in nations where corruption is more common.

Sarpong and Bein (2021) studied the evidence from the SDG for sub-Saharan Africa demonstrates the impacts of sustainable development, aid, and good governance on social welfare. Latest data from 2000 to 2017 were used. It utilized various panel methods. The research indicates that good governance is essential to achieving SDG. Furthermore, ANS has a significant impact on how well human living is going in SSA. Macroeconomic factors like affluence and trade openness, as well as elements that create opportunities like urbanisation and electrification rate, were determined to be crucial. Additionally, empirical findings supported some of the previous work by showing a negative and substantial link between ODA and HDI.

In yet another study, Hao et al. (2022) examined evidence from Kenya's Bungoma County regarding citizen participation in government for sustainable development. They employed SEM techniques, including the CFA test for validating variables, path analysis to model the perceived fundamental direction of causality among the constructs, and effect estimation using the SEM regression coefficient estimator, with the primary information from Bungoma County in Kenya. According to the study, public participation has a major impact on SD for H2, governance significantly moderates the PP-SD link for H3, and the process of PP-Governance interaction including financial responsibility greatly enhances SD.

In another research, Kibe (2021) determined the obstacles to the SDGs' effective reporting in Kenya, concentrating primarily on reporting on the environment utilising NEMA as a point of comparison. The research population was selected from NEMA, the United Nations Environment Programme, and the State Department of Planning in Kenya, using a descriptive design. Using census sampling, 91 completed and returned questionnaires that they had self-administered. The primary investigator conducted interviews with six KI. Effective SDG reporting was positively correlated with NEMA's institutional ability and environmental governance in a moderately positive manner.

The study thus used governance to moderate the relationship between blended finance and achievement of SDG NO. 6. The variable is used because governance issues such as accountability and transparency among other elements have been a concern for donors in developing nations, Kenya not exception. The moderating effect of this variable is shown in the analysis section.

2.4 Summary of Literature and Research Gap

In Table 1, the summary of empirical studies are presented as per author, and theme. The location of the studies, methodologies, and findings are also presented. The gaps identified were equally presented.

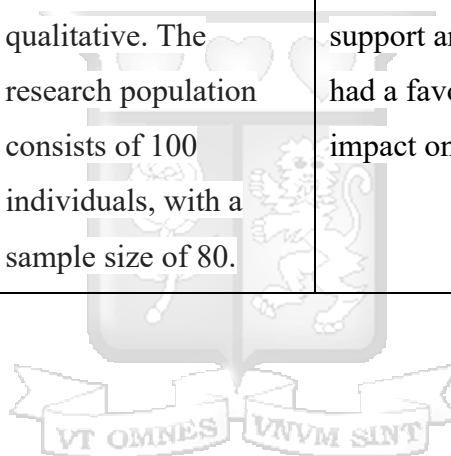


Table 2.1: Summary of Literature and Research Gap

Author	Study	Country	Methodology	Findings	Gaps
Quatrini and Crossman (2018)	Effect of blended finance on mobilizing funds for sustainable development with a case study of investment fund for land degradation neutrality	Italy	The target population was all firms that funded environmental conservation. This study used questionnaire to collect data from the respondents. Data was analysed using descriptive statistics	The research found out that there is little or no evidence that using donor funds in land restoration was able to attract international private finance	However, the study was done in a developed economy hence the need for the current study with a focus on a developing country. Data was only analyzed using descriptive statistics while the current study will use both descriptive and inferential statistics
Okeyo (2013)	Investigated how public-private partnership have contributed in providing water services in Kenya	Kenya	The scope of the paper was to determine how PPT has led to provision of water in terms of coverage, affordability of water, quality of water and customer service. The study used both	The study found out that institution that have blended public and private finance through PPT arrangement have performed better and benefited from improved governance	The study however did not focus the effect of blended finance on achievement of clean water and sanitation hence a conceptual research gap.

			primary and secondary data conducted form a survey of 288 households. the data was analyze by use frequency tables and tabulation to determine central tendencies and dispersion		
Gavalas and Syriopoulos (2015	The application of blended credit score and loan quality models in bank shipping finance	Turkey	The study gathered data using questionnaire. Data was analysed using descriptive statistics.	According to the study, applying quantitative and qualitative criteria can guarantee that businesses are financed as efficiently as possible and enhance commercial banks' ability to make decisions. However, the relationship between project implementation and the credit rating technique, which is the subject of the current research,	However, the study did not use guarantee, concessional loans as independent variable hence a conceptual research gap that calls for the current study

				is not specifically mentioned in the paper	
Stephen (2021)	Examined how well various blended finance approaches worked for WASH projects in Kenya.	Kenya.	Descriptive research design was used in the study to gather data that was both quantitative and qualitative. The research population consists of 100 individuals, with a sample size of 80.	The blended finance strategy determines the implementation of WASH projects, according to the moderate regression. The research found that technical support and credit guarantees had a favorable and substantial impact on WASH programmes	However, the study used type of investor as moderating variable while the current study will use governance as the moderating variable



2.5 Conceptual Framework

A conceptual frame work shows a connection among several variables. In this particular study, the independent variable is blended finance as measured by guarantee financing technical assistance, private sector financing, concessional loans. Meanwhile, achievement of clean water and sanitation is the dependent variable while governance is used as moderating variable. The diagrammatical representation is shown in Figure 1.

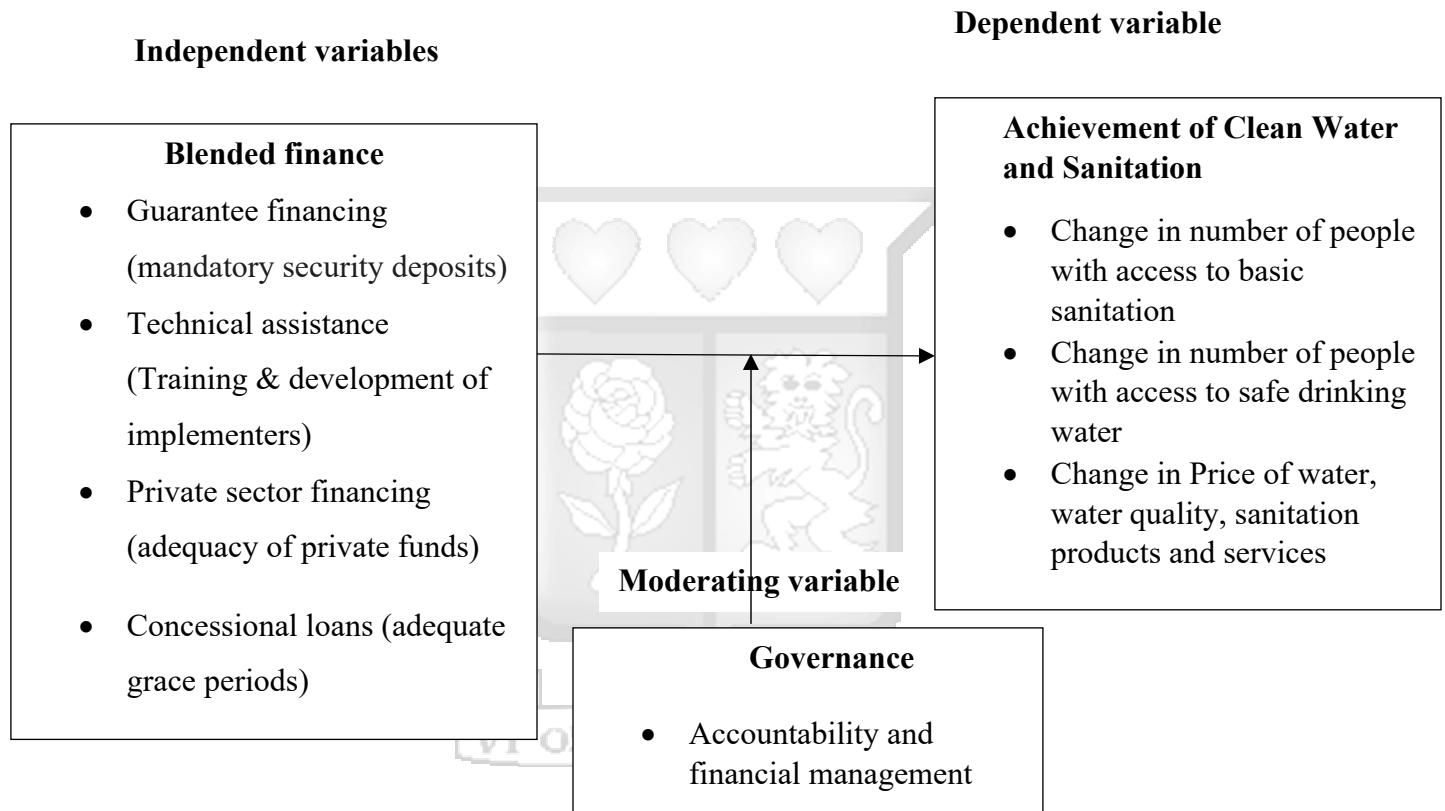


Figure 2.1: Conceptual Framework

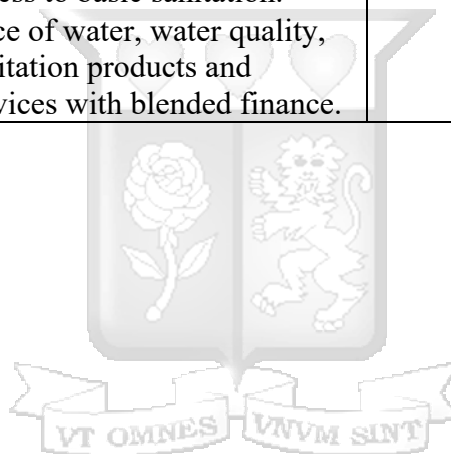
Source: Author (2024)

Table 2.2: Operationalization of variables

Type of variable	Variable	Operationalization	Theories	Supportive literature
Independent	Private financing	• Adequacy of private funds towards WASH projects • WASH projects have attracted increased financing by credit providers • Funders consider capacity to mitigate risks (credit, political risks) • Increased amount of equity financing by private investors	• Contracting cost Theory	• Koenig and Jackson (2016) • Gavalas and Syriopoulos (2015).
Independent	Concessional loans	• Adequate grace periods • Low maturities • Low interest rate • Preference for concessional loans because of flexible repayment terms	• RDT theory and agency theory	• Rodriguez et al. (2014) • McGinnis et al. (2017)
Independent	Technical assistance	• Training and development of implementers • Capacity building support through workshops, seminars • Advisory services • Research grants and associated costs	• Theory of change	• Sagar (2006) • The World Bank (2015)
Independent	Guarantee financing	• Mandatory security deposits • Financial standing of the borrowing enterprises • Credit history of the guarantor.	• Agency theory	• Stephen (2021) • Muindi (2018)

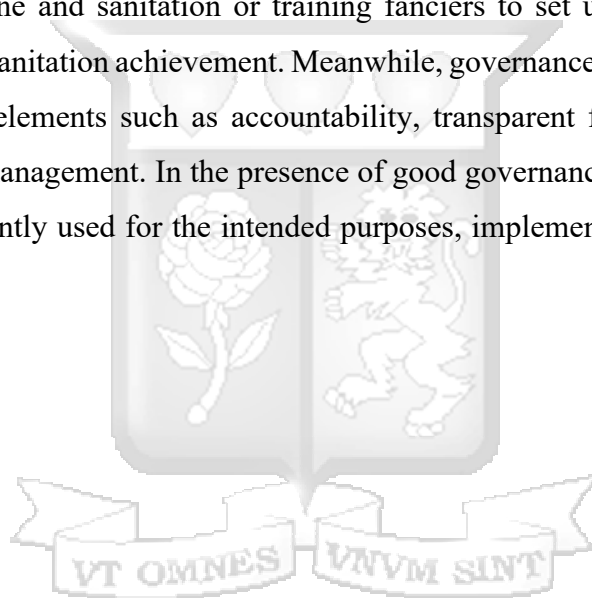
		Financial ability of the guarantor.		
Moderating	Governance	Accountability, checks and balances, and financial management	Contracting cost theory	- Di Vaio et al. (2021) - Glass and Newig (2019)
Dependent variable	Achievement of clean water and sanitation	- Increase in no. of people with access to safe drinking water - Increase in no. of people with access to basic sanitation. - Price of water, water quality, sanitation products and services with blended finance.	Resource Dependency Theory	- Quatrini and Crossman (2018) - Olajuyigbe (2016)

Source: Author (2024)



2.6 Operationalization of variables

Blended finance mechanisms exist through many forms with most common future being use of guarantee, technical assistant and grants and public financing operating under favorable policy and regulation frameworks. Guarantees cover credit risk and may extend to cover political risk. Guarantees act to cushion commercial financiers against utilities inherent risk of default or interference by politics. Technical assistance has a great impact on water sanitation and hygiene. It comes in many forms in blended finance i.e. providing expert services to water service providers in improving operational and financial efficiency, training of artisans in modern ways of contracting sanitation products, training investors on way of achieving risk adjusted returns from investing in water hygiene and sanitation or training fanciers to set up new lending programs towards clean water and sanitation achievement. Meanwhile, governance was used as a moderating variable and it covered elements such as accountability, transparent financial use, checks and balances, and financial management. In the presence of good governance, the funds provided can be effectively and efficiently used for the intended purposes, implementation of clean water and sanitation.



CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The research's approach to achieving the anticipated goal is described in this section. It begins with a description of the sample, population, data used, and methods used to analyze the data. The model and variables used to determine the effects of blended finance on Kenya's achievement of clean water and sanitation are also described in this chapter.

3.2 Research Philosophy

The principles that govern the study's design, data collecting, and analysis are outlined in the research philosophy. The methodology of positivism was used in this investigation (Bryman & Bell, 2018). A positivist research philosophy maintains that reliable information is that which is derived from measurement-based observations (Marsonet, 2019). Given that the investigator's mandate was restricted to data collection and objective interpretation, positivism was preferred in this research. Additionally, the results of the research were measurable and observable, leading to statistical analysis and presentation of data for simple interpretation. This approach was therefore used in this research since it enabled the investigator to more effectively present, understand, and explain quantitative data.

3.3 The Research Design

A research design serves as a road map for conducting a research study (Kothari, 2004). In other words, it is the overall strategy that you select to ensure that you will effectively address the research problem by integrating the various parts of the study in a logical and coherent way. A research design can be a descriptive, exploratory or explanatory. A descriptive research design is a method that allows a researcher to observe and measure without changing any variables (Imbeau, Tomkinson, & Malki, 2021). It is able to recognize traits, patterns, and relationships in a study. Meanwhile, an exploratory research design looks into research problems that have not been thoroughly examined before (Swedberg, 2020). It is frequently employed when the topic of inquiry is novel or the technique of gathering data presents certain difficulties. On the other hand, an explanatory research design is used when there is little information available about a topic in order to examine how or why phenomenon occurs. It can aid in improving a researchers' comprehension of a certain subject (Skinner & Dancis, 2020). The study thus made use of explanatory research design to comprehend the significant relationship between blended finance and the achievement

of clean water and sanitation. This design was applicable since it aided in enhancing a researcher's comprehension of blended finance and the achievement of SDG no 6 among the nine counties in Kenya.

3.4 Population and Sampling

In research, the term "population" refers to a group of subjects who share similar characteristics and serve as the study's foundation; the legitimate meaning of a populace is fundamental in characterizing the objects of examination (Kothari, 2004). Considering that testing every member of a community would be too costly and time-consuming, investigators frequently are unable to do this owing to the magnitude of the populations. The study targeted nine counties undertaking KIWASH projects. Each of the nine counties (Kitui, Siaya, Makueni, Nairobi, Kakamega, Kisumu, Migori, Busia, and Homa Bay) that are recipients of the USAID KIWASH project have a population of 20 employees under the water, sanitation, and hygiene sections. This led to a total of 180 employees from the counties. The unit of observation was employees in the KIWASH sector while the unit of analysis was the nine counties.

3.4.1 Sampling Design

A crucial part of any research is sampling. Accordingly, the process of selecting individual members of the population to draw statistical inferences and estimate the behavior of the entire population is known as sampling (Bhardwaj, 2019). The study thus used Mugenda and Mugenda (2009) sample formula that indicates that a sample size of 10-30% of a target population less than 10,000 is applicable for a study. The study thus collected data from 12 employees (4 from water, 4 from sanitation, and 4 from hygiene) at the KIWASH section in each county who were familiar with the clean water and sanitation. Each of the 4 employees represented each of the four blended finances (guarantee, technical, private, concessional loan). Therefore, the sample size for the nine counties was 108 employees. This represented a 60% of the target population. This research then used purposive sampling technique to sample the respondents. It used purposive sampling because it helped the researcher to extract a great deal of information from their acquired data (Rai & Thapa, 2015). Through this technique, the researcher was able to explain the significant influence the findings have on the public. The study also used stratified sampling technique because of the different sections that includes water, sanitation, and hygiene sections.

3.5 Data Collection Procedures

According to Flottman, Stewart, and Tayler (2012), data collection is the methodical procedure of collecting information from a variety of sources to access accurate and complete picture of a subject. Primary data was used in this study—to guarantee an impartial assessment of the phenomenon (Bloomfield & Fisher, 2019). A questionnaire was used to collect data from county KIWASH employees. The study used a questionnaire to collect data because it is less economical and has the capacity to gather data from a large population within a short time. The questionnaire was sub-divided into seven sections. Section one, included respondents' personal information. Section two, included information on effect of the guarantee on the achievement of clean water and sanitation in Kenya. Section three, solicited information on the effect of technical assistance on the achievement of clean water and sanitation in Kenya. Section four, consisted of information on effect of private sector financing on the achievement of clean water and sanitation in Kenya. Section five had information regarding the effect of concessional loans on the achievement of clean water and sanitation in Kenya. Section six established the moderating effect of governance on the relationship between blended finance and achievement of clean water and sanitation in Kenya. The last section sought information on achievement of clean water and sanitation. The questionnaire was structured on a five point Likert scale (1= Strongly disagree; 2 = Disagree; 3= Not sure; 4= Agree and 5= Strongly agree).

3.6 Research Quality

Under research quality, this research addresses the validity and reliability of questionnaire. Specifically, the reliability and validity of primary data was assessed as shown in the subsequent sections. The study also conducted a pilot study from employees in the WASH department from Kitui County. The 3 employees were not part of the larger sample size that main data collection focused on. The questionnaire was then adjusted based on the pilot study report.

3.6.1 Test-Retest Reliability Test

The degree to which research tools produce consistent results over time is measured by reliability (De Vet, Mokkink, Mosmuller, & Terwee, 2017). Consequently, when the research is repeated utilizing comparable data gathering and analysis procedures, it serves as a test-retest of the consistency of the results. The questionnaire reliability of this study was addressed using Cronbach Alpha Coefficient score. Any questionnaire reliability score near 1 was deemed satisfactory and

vice versa. Therefore, testing for reliability, the Alpha Coefficient score obtained is shown in Table 3.1. The results are is near to the threshold of 1 hence the data was determined to be reliable.

Table 3.1: Reliability Scores

	Alpha scores
Private financing	.878
Concessional loan	.799
Guarantee financing	.811
Technical financing	.901

3.6.2 Validity of data

According to Chih-Pei and Chang (2017), validity can take the forms of construct, internal, and external validity. The degree to which the research measurements accomplish the goals is referred to as construct validity. When a relationship between variables is found by the investigation, internal validity is demonstrated. When research findings are consistent with those of another researchable, this is known as external validity. In order to rule out the possibility of a Type I error occurring, the questionnaire validity concerns of this study were addressed by subjecting the questionnaire to judicious judgement by the university supervisor.

3.7 Data Analysis techniques

Applying reasoning to comprehend gathered data in order to identify reliable or unreliable patterns and provide an overview of the information found in the study is known as data analysis (McLeod, 2019). In this study, Social Packages Statistical Sciences (SPSS) version 25 software was used to analyze quantitative data (Kombo & Tromp, 2006). The same program was utilized to examine the acquired data. Descriptive statistics and linear regression were used in the investigation.

3.7.1 Descriptive Statistics

Mean, frequencies, percentages, tables, and figures was displayed through descriptive statistics. They were utilized by the study to aid in the comprehension of the data that has been presented and in the analysis of all variables, both independent and dependent. Descriptive statistics was used in the study merely because this approach helps to identify the fundamental characteristics of the data. They also offer concise summaries of the sample and the measurements. Moreover,

descriptive statistics are chosen since they serve as the foundation for almost all quantitative analyses of data.

3.8 Model Specification

The linear regression model was employed to determine the connection among variables. In this case the relationship between private capital, technical assistance, concessional finance (independent variables), governance (moderating variable), and achievement of SDG No.6 (dependent variable).

Regression model 1: No interaction

$$Y = \alpha_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + e_i$$

Where:

Y	-	Achievement of clean water and sanitation
α_0	-	Is the constant
X_1	-	Guarantee
X_2	-	Technical assistance
X_3	-	Private capital
X_4	-	Concessional finance
X_5	-	Governance
$\beta_1, \beta_2, \beta_3, \beta_4 \text{ \& } \beta_5$	-	Coefficients
e_i	-	Residual error term

Regression model 2: Moderation/interaction

The regression model with moderating variable:

$$Y = \alpha + \beta_1 GF + \beta_2 TA + \beta_3 PF + \beta_4 CL + \beta_5 GF * Z + \beta_6 TA * Z + \beta_7 PF * Z + \beta_8 CL * Z + e$$

Note. Y= the dependent variable (SDG No 6), GF (guarantee financing), TA (technical assistance), PF (private financing), CL (concessional loans), Z= moderator variable, α (constant), ε (error term), β (coefficients).

3.8.1 Diagnostic Tests

To ascertain the adequate assumption of the model and data, the study used normality, multicollinearity and heteroscedasticity.

Normality tests: The normality test was used to test the assumption of regression model and data (Mishra et al., 2019). Shapiro Wilk test of normality was used to determine whether the data on effects of blended finance on achievement of sustainable development goal no six in Kenya are normally distributed.

Heteroscedasticity: To determine assumption of regression model, the investigation will test for heteroscedasticity. Therefore, the Breusch-Pagan-Goldfrey Test was employed in the research. If the p-value for the variable in the Breusch-Pagan-Goldfrey test is less than 0.05, heteroscedasticity was to be present, necessitating another test (Klein, Gerhard, Büchner, Diestel, & Schermelleh-Engel, 2016). The null hypothesis of no heteroscedasticity is accepted if the p-values are greater than 0.05, making the model credible.

Multicollinearity: The investigation examined any multicollinearity by determining the regression assumption. For example, it is argued that the model fails to identify the independent variable or variables that influence the dependent variable, in this case the achievement of SDG No 6, when multicollinearity is present. As a result, the study employed the Variance Inflation Factor (VIF) values to assess if multicollinearity is present or not (Daoud, 2017). The rule of thumb is that multicollinearity is present for any variable with a VIF of more than 10.00. However, there is no any multicollinearity if the variable's VIF is between 1.00 and 10.00, which is a sign that the model is reliable.

3.9 Ethical Considerations

As indicated by Abbas et al. (2012), the importance of ethical considerations in research is widely accepted; first, adhering to research ethics fosters trust, respect, fairness, and accountability. Second, doing research necessitates close coordination and collaboration between the investigator and the research's participants (people and organizations). Third, ethical considerations support

the complex research goals of sincerity, truth, and error reduction. Fourth, ethical issues ensure that scientists can be considered responsible to the public. Lastly, ethical issues encourage public trust and support for environmentally friendly study. In light of this, the study sought for appropriate permit from National Commission for Science, Technology, and Innovation (NACOSTI) as well as Strathmore Ethics Review Committee's authorization to collect research data.



CHAPTER FOUR: DATA ANALYSIS, PRESENTATION, AND DISCUSSION

4.1 Introduction

This chapter presents a summary of the findings of the diagnostic statistics and the linear regression model's results are presented in the third section. The last section entails a general discussion of the results and findings from the study.

4.2 Personal Information

The study presented results for the respondents' personal information. These included gender, age, duration, and highest academic qualifications. The findings are shown in the subsequent sections.

4.2.1 Gender

The respondents were requested to indicate their distribution by gender. The findings are shown in Figure 4.1.

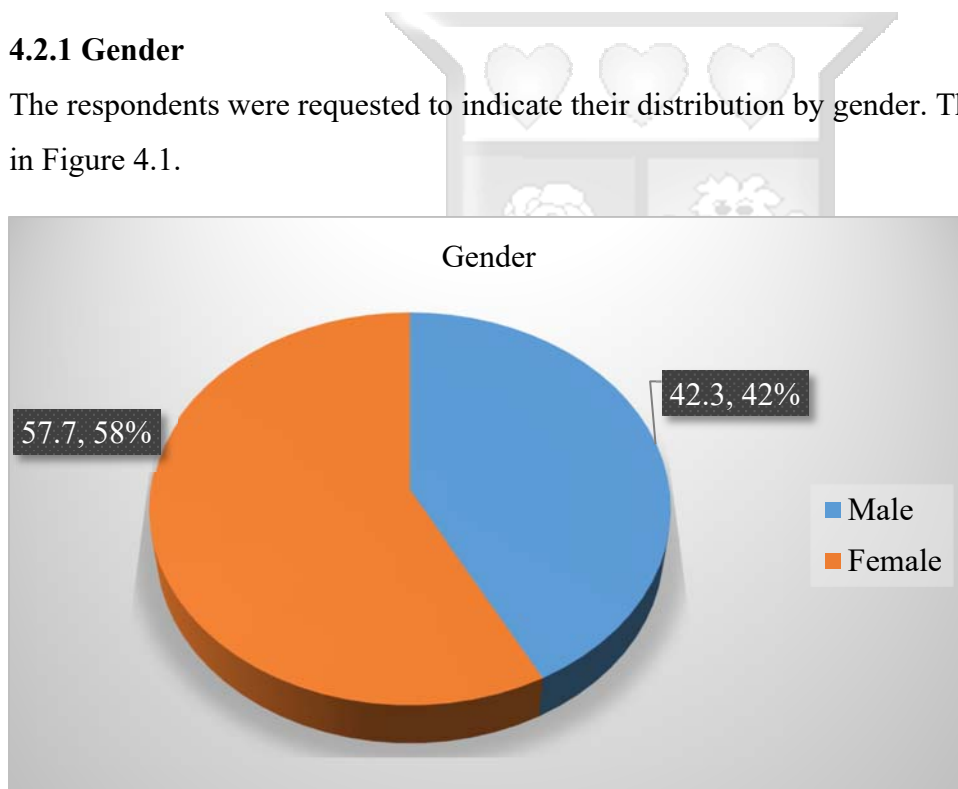


Figure 4.1: Gender

In Figure 4.1, 58% of the respondents working at WASH projects across the nine counties are females. Meanwhile, 42% are male employees. Based on these results, it can be said that, most of the WASH projects are run by female employees.

4.2.2 Age

Regarding age, the study sought to find out the distribution of respondents by their respective categories. The results are provided in Figure 4.2.

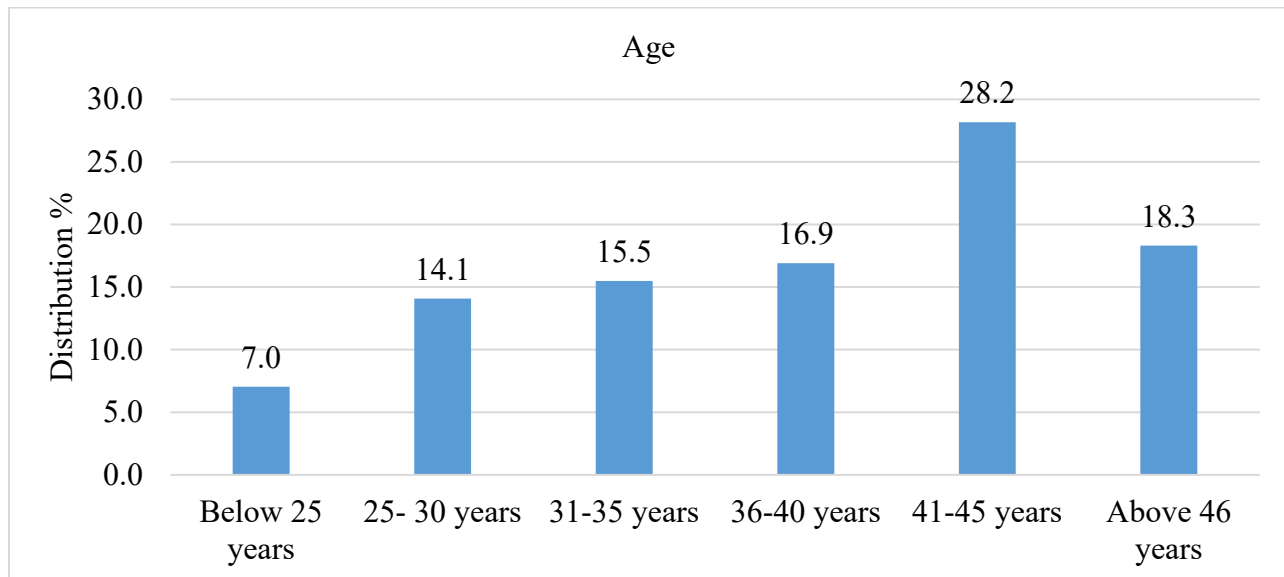


Figure 4.2: Age

The findings in Figure 4.2 show that majority of employees running WASH projects are in the age bracket of 41-45 years as reported by 28.2% of the respondents. This is followed by those employees who are above 46 years as shown by 18.3%. The third highest age category are those employees in the age bracket of 36-40 years as supported by 16.9%. Meanwhile, those in the age category of 31-35 years and 25-36 years are represented by 15.5% and 14.1%, respectively. The findings can be interpreted to imply that most of the counties have employed young staff to run WASH projects over the years.

4.2.3 Duration

Under this variable, the respondents were required to state the length of stay at their respective counties, especially in the WASH section. The results are indicated in Figure 4.3.

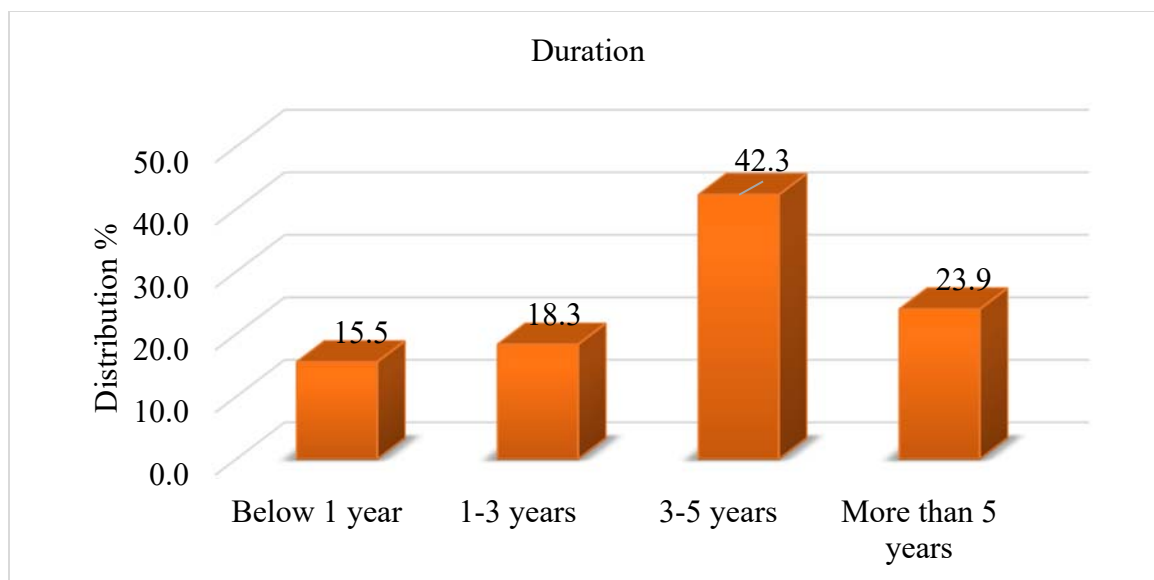


Figure 4.3: Duration

According to the results reported in Figure 4.3, 42.3% of the employees had a duration of 3-5 years while those with more than 5 years were reported to be 23.9%. The third highest categories were those who had a duration of stay of 1-3 years as reported by 18.3% while only 15.5% had a length of stay of less than 1 year. From the results, it can be said that majority of the respondents had been employed in the WASH departments for more than 3 years (66.2%) hence they understood the blended finance and SDG No. 6 activities across the counties.

4.2.4 Highest Academic Qualifications

Concerning the highest academic qualifications, the respondents were required to detail their academic achievements. The responses are illustrated in Figure 4.4.

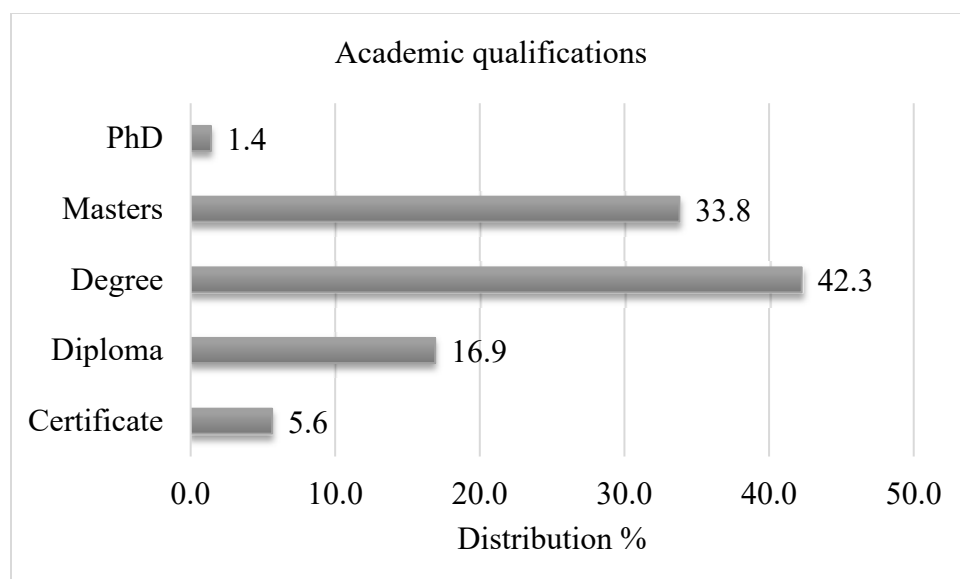


Figure 4.4: Highest Academic Qualifications

As shown in Figure 4.4, those staff at the WASH departments with bachelors' degrees were 42.3% and this happens to be the majority. Subsequently, those with masters' degrees were represented by 33.8%. Meanwhile, those with diploma as highest academic qualifications were 16.9%. The findings can be interpreted to imply that counties employed learned staff to run WASH projects.

4.3 Effect of the Guarantee Financing on the Achievement of SDG No. 6

The research sought to find out the effect of the guarantee financing on the achievement of SDG No. 6. The results are shown in Table 4.1.

Table 4.1: Effect of the Guarantee Financing on the Achievement of SDG No. 6

	Mean	Std. Deviation
The lenders demand mandatory security deposits	3.96	1.101
The lenders keen on financial standing of the borrowing enterprises	4.41	0.748
The funders keen on credit history of the guarantor(s)	4.01	1.115
Financiers strict on the financial ability of the guarantor(s)	3.99	1.127
The county prefers having commercial banks as guarantor(s)	4.04	1.176

The findings in Table 4.1 indicate that most respondents agreed that lenders demand mandatory security deposits as supported by a mean score of 3.96. The study also found that, majority agreed that the lenders are keen on financial standing of the borrowing counties with a mean score of 4.41. Further, it was found that the funders are keen on credit history of the guarantor(s) as reported by most respondents who with statement (mean score of 4.01). Again, it was established that the financiers were strict on the financial ability of the guarantor(s) as by the staff (mean score 3.99). Lastly, it was revealed that the counties prefers having commercial banks as guarantor(s) as agreed by most respondents and this was supported by a mean score of 4.04.

4.4 Effect of Technical Assistance Financing on the Achievement of SDG No. 6 in Kenya

The study analyzed and presented results on the effect of assistance financing on the achievement of SDG No. 6. The findings are shown in Table 4.2.

Table 4.2: Effect of Technical Assistance Financing on the Achievement of SDG No. 6 in Kenya

	Mean	Std. Dev
WASH county employees are subjected to ongoing training and development to improve their skills	2.5	1.351
Wash county employees exposed to workshops, inductions, and seminars	2.52	1.403
Lenders offer county with free advisory services on WASH projects	3.97	1.134
Funders provide research grants and cost associated with it	3.92	1.118
Financiers provide us with a platform for creating WASH innovative solutions	2.68	1.371

As presented in Table 4.2, the study found out that most respondents disagreed that WASH county employees are subjected to ongoing training and development to improve their skills (mean score of 2.50). It was again found that most employees disagreed that WASH county employees were exposed to workshops, inductions, and seminars and this was supported by a mean score of 2.52. Further, it found that lenders offer counties with free advisory services on WASH projects as agreed by majority with a mean score of 3.97. The study also found that majority agreed that funders provide research grants and cost associated with it as supported by a mean score of 3.92. The study finally found that most respondents disagreed that the financiers provide the counties with a platform for creating WASH innovative solutions (mean score 2.68).

4.5 Effect of Private Sector Financing on the Achievement of SDG No. 6 in Kenya

The researcher analyzed data on the effect of private sector financing on the achievement of SDG No. 6. The findings are as indicated in Table 4.3.

Table 4.3: Effect of Private Sector Financing on the Achievement of SDG No. 6 in Kenya

	Mean	Std. Dev
Adequacy of private funds towards WASH projects	1.87	1.013
WASH projects have attracted increased financing by credit providers	2.27	1.298
Funders prioritize private returns before offering support	3.75	1.192
Private funders keen on county's capacity to mitigate risks (credit, political risks)	3.96	0.920
We have witnessed decreased amount of equity financing by private investors in the recent past	4.15	1.200

In Table 4.3, the study found that majority disagreed that there was adequacy of private funds towards WASH projects (mean score 1.87). The established that majority disagreed that WASH projects have attracted increased financing by credit providers and this is supported by a mean score of 2.27. Additionally, it was revealed that funders prioritize private returns before offering support as represented by most respondents who agreed with a mean score of 3.75. The study also established that private funders keen on the county's capacity to mitigate risks (credit and political risks) as showed by majority who were in agreement with a means score of 4.15. Lastly, it was found that the counties have witnessed decreased amount of equity financing by private investors in the recent past as indicated by most respondents who strongly agreed with a mean of 4.15.

4.6 Effect of Concessional Loans on the Achievement of SDG No. 6 in Kenya

The study analyzed and presented data on the effect of concessional loans on the achievement of SDG No. 6. The study's findings are presented in Table 4.4.

Table 4.4: Effect of Concessional Loans on the Achievement of SDG No. 6 in Kenya

	Mean	Std. Dev
The adequate grace period contained in the concessional loans has enhanced implementation of SDG no.6	4.00	1.069
The lower maturity element of concessional loans has increased the implementation of SDG no.6	4.01	1.213

The concessional loans' low interest rate increases clean water and sanitation implementation	4.30	0.947
The county prefers concessional loans because of its flexible repayment terms	4.49	0.843
County prefers concessional loans since credit contains room for deferrals thus increasing implementation of SDG projects	4.23	0.974

In Table 4.4, it was found that the adequate grace period contained in the concessional loans has enhanced implementation of SDG no.6 as revealed by most respondents who agreed with a mean score of 4.00. The table also show that the lower maturity element of concessional loans has increased the implementation of SDG no.6 as reported by majority who agreed (mean of 4.01). Further, the concessional loans' low interest rate increases clean water and sanitation implementation as agreed by most respondents with a mean score of 4.30. The study also revealed that the county prefers concessional loans because of its flexible repayment terms as reported by majority who 62.0% strongly agreed with a mean score of 4.49. The research revealed that the counties also prefers concessional loans since its credit contains room for deferrals thus increasing implementation of SDG projects (mean score of 4.23).

4.7 Moderating Effect of Governance on the Relationship between Blended Finance and Achievement of SDG No. 6

On the moderating variable, the researcher sought to establish the effect of governance on the relationship between blended finance and achievement of SDG No. 6. The results are shown in Table 4.5.

Table 4.5: Effect of Governance on the Relationship between Blended Finance and Achievement of SDG No. 6

	Mean	Std. Dev
The county ensures the WASH projects' staff are accountable for their financial actions	3.87	1.182
The county has mechanisms that provide adequate checks and balances in the use of clean water and sanitation resources	2.30	1.281
Staff are subjected to ongoing training to enhance their financial management skills and knowledge	1.97	1.055
Financial responsibility among the employees is key to clean water and sanitation implementation	4.15	0.995

Table 4.5 show results for governance as a moderating variable. The study found that the counties ensure the WASH projects' staff are accountable for their financial actions as agreed by most staff with a mean of 3.87. The study again found that majority disagreed that the county has mechanisms that provide adequate checks and balances in the use of clean water and sanitation resources with a mean of 2.30. Moreover, most of the staff strongly disagreed that they were subjected to ongoing training to enhance their financial management skills and knowledge (mean score 1.97). Meanwhile, it was established that the financial responsibility among the employees is key to clean water and sanitation implementation as strongly agreed by majority (mean score 4.15).

4.8 Achievement of SDG No. 6

The data on the level of agreement or otherwise with the items on the effect of concessional loans on the achievement of SDG No. 6 were analyzed. The results are shown in Table 4.6.

Table 4.6: Achievement of SDG No. 6

	Mean	Std. Dev
The number of people with access to basic sanitation has increased in the recent past	3.93	1.073
The number of people with access to safe drinking water has increased in the county	4.17	1.134
The cost of water has lowered since the implementation of clean water and sanitation	3.94	1.206
The implementation of clean water and sanitation has increased access to quality water	4.17	1.014
The implementation of clean water and sanitation improves access to sanitation products and services	3.96	1.114

In Table 4.6, the results for the achievement of SDG No. 6 is represented. Specifically, the study found that the number of people with access to basic sanitation has increased in the recent past as reported as agreed by most respondents (mean score 3.93). The study revealed that the number of people with access to safe drinking water has increased in the counties as agreed by most respondents with a mean score of 4.17. The cost of water across the counties was also found to have lowered since the implementation of clean water and sanitation as indicated by mean score 3.94. Further, the implementation of SDG No. 6 was found to have increased access to quality water as supported by majority who strongly agreed with a mean score of 4.07. Lastly, the implementation of SDG No.6 was found to have improved access to sanitation products and services (mean of 3.96).

4.9 Diagnostic Tests

The objective of the research in this section was to test the data to ensure compliance with the regression model's assumptions. Heteroscedasticity, multicollinearity, and normality tests were employed in the investigation. The sections that follow include the results.

4.9.1 Normality Test

The Shapiro-Wilk test was employed in this research to assess the data's reliability. The general rule for the Shapiro-Wilk Test is that a value greater than 0.05 indicates a normal distribution.

Table 4.7: Normality Test

Variables	Sig.
Guarantee financing	0.511
Technical financing	0.423
Private financing	0.667
Concessional loans	0.612
Governance	0.178
SDG No. 6	0.335

In Table 4.7, guarantee financing has significant value of 0.511. Technical financing has a significant value of 0.423. It was also established that, private financing has a 0.667 significant value whereas concessional loans had a 0.612 significant score. Meanwhile, the moderating variable had a 0.178 significant score while SDG No. 6 was found to a normality significant score of 0.335. The results could be interpreted to imply that data for all the variables was normally distributed since all the sig-values are >0.05 .

4.9.2 Multicollinearity

This study utilized VIF to test multicollinearity. A VIF that is ≥ 1 or ≤ 10 is an indication of multicollinearity absence and vice versa. The findings presented in Table 4.8.

Table 4.8: Multicollinearity

Model	Collinearity Statistics	
	VIF	
1	Guarantee financing	1.434
	Technical financing	2.197

Private financing	1.584
Concessional loans	1.183
Governance	2.508

a. Dependent Variable: SDG No. 6

The results in table 4.8 show that, guarantee financing had a VIF of 1.434 while technical financing had a VIF of 2.197. Further, private financing, concessional loans, and governance had VIFs of 1.584, 1.183, and 2.508, respectively. Based on the findings, there is no multicollinearity since the VIFs are >1 and <10 .

4.9.3 Heteroscedasticity

The Breusch–Pagan test was used in the study to identify if the data was heteroscedastic or otherwise. Whenever the constant variance condition is broken, that's when heteroscedasticity is most likely to be present. More specifically, heteroscedasticity—different scatter—is defined as the opposite of homoscedasticity, which is defined as the variance failing to change over a range of observations. The study used p-value of 0.05 to test for heteroscedasticity. The findings are in Table 4.9.

Table 4.9: Heteroscedasticity

Variables	Heteroscedasticity	
	t	Sig
Constant	0.854	0.534
Guarantee financing	0.743	0.651
Technical financing	0.566	0.342
Private financing	0.689	0.541
Concessional loans	0.954	0.842
Governance	0.443	0.231
SDG No. 6	0.623	0.741

From the results presented in Table 4.9, guarantee financing, technical financing, private financing, concessional loans, governance, and SDG No. 6 had significant values of 0.651, 0.342, 0.541, 0.842, 0.231, and 0.741 respectively. The findings can thus be interpreted to imply that there is absence of heteroscedasticity since all sig. values are >0.05 .

4.10 Regression Analysis

The study conducted a regression test to ascertain the relationship among the variables. The results are presented in the following tables.

Table 4.10: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.768 ^a	0.589	0.557	0.82351

a. Predictors: (Constant), Concessional loans, Technical financing, Private financing, Guarantee financing

Findings in Table 4.10 show that the model is good fit as explained by an R of 0. 768^a (76.8%). This means that there exists a variation of 76.8% in the achievement of SDG No. 6 among the counties. Both R square and adjusted R square are also high thus indicating the significance of the variables used in the study.

Table 4.11: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	309.834	5	61.967	18.636	.000 ^b
Residual	216.137	65	3.325		
Total	525.972	70			

a. Dependent Variable: SDG No.6

b. Predictors: (Constant), Concessional loans, Technical financing, Private financing, Guarantee financing

In Table 4.11, the ANOVA results indicate reliability of the model. The model is reliable since it is significant with a p-value = 0.000 (at the 95% level).

Table 4.12: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.166	0.145		1.007	0.318
Guarantee financing	0.506	0.099	0.485	5.098	0.000
Technical financing	0.120	0.083	0.169	1.435	0.046
Private financing	-0.579	0.128	-0.453	-4.529	0.000

Concessional loans	0.317	0.085	0.322	3.728	0.000
Governance	0.602	0.158	0.480	3.814	0.000

a. Dependent Variable: SDG No. 6

The model is substituted as $Y = 3.166 + 0.485_1\text{Guarantee}_1 + 0.169_2\text{Technical}_2 + -0.453_3\text{Private}_3 + 0.322_4\text{Concessional}_4 + 0.480_5\text{Governance}_5 + 0.145$

In Table 4.12, coefficient results are presented. It was revealed that guarantee financing was significant and positively connected to the achievement of SDG No. 6 ($\beta = 0.485$, p-value = 0.000) at the 95% levels. These findings mean that an increase in guarantee financing leads to the achievement of SDG No. 6 in the counties.

It was also established that technical financing had a significant positive link with the achievement of SDG No. 6 ($\beta = 0.169$, p-value = 0.046) at the 1% levels. This implies that an increase in technical financing by any unit leads to the achievement of SDG No. 6 in the counties.

Additionally, the study revealed that private financing had a negative but significant relationship with achievement of SDG No. 6 ($\beta = -0.453$, p-value = 0.000). This result can be interpreted to imply that decreased private financing could results into the achievement of SDG No. 6 in the counties. This implies that the counties were hesitant to use private financing and this could be attributed to high interest rates and inflexible payment terms. Further, WASH had not attracted private funders.

Moreover, the study revealed that concessional loans had a positive and significant connection with achievement of SDG No. 6 ($\beta = 0.322$, p-value = 0.000). This means that increasing concessional loans by any unit will lead to the achievement of SDG No. 6.

Again, it was found that governance had a positive significant relationship with achievement of SDG NO. 6 ($\beta = 0.480$, p-value = 0.000). The results imply that an increase in governance by any unit could lead to an increase in the achievement of SDG NO. 6.

4.11 The Moderating Effect of Governance on the Relationship between Blended Finance and SDG No. 6.

The study sought to determine the moderating effect of governance on the relationship between blended finance and achievement of SDG No. 6. The study conducted multiple linear regression

analysis through the SPSS software to ascertain its moderating effect. This was made possible by running four distinct regression analyses whereby each blended financing model was interacted with governance in order to establish the moderating effect of the latter. Thus in this case, multiple linear regression model known as the hierarchical linear regression model was used. Whereby, only one independent variable was entered in the first, second, third, and fourth models. The findings were presented in Tables 4.13, 4.14, 4.15 and 4.16.

4.11.1 The Moderating Effect of Governance on the Relationship between Guarantee Financing and SDG No. 6.

In Table 4.13 based on its first section that presented the model summary results, the R-Square changed from 53.0% to .48.1% when governance was added in the model. This meant that governance explained a reduction of 4.9% variability on the SDG no. 6. This additional change was statistically significant based on the ANOVA results showing significance of 0.000^c. Based on the third section of Table 4.14 that displayed the regression co-efficient results, guarantee finance in the absence of governance had a positive significant effect on the level of SDG ($\beta = 0.533$; p -value = 0.000). Upon interacting guarantee financing with governance, coefficient was positive and also significant ($\beta = 0.023$, p -value = 0.000). This meant that governance does play an important role on the achievement of SDG no.6.

$$\text{SDG NO.6} = 8.887 + 0.553\text{GA}$$

$$\text{SDG} = 7.175 + 0.528\text{GA} + 0.180\text{GOV} + 0.023\text{GA} * \text{GOV}$$

GA is guarantee financing, GOV (governance), GA* GOV (interaction between governance and guarantee finance)

Table 4.13: The Moderating Effect of Governance on the Relationship between Guarantee Financing and SDG No. 6.

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.530 ^a	0.281	0.270	2.34154	
2	.481 ^b	0.232	0.221	2.41996	

a. Predictors:
(Constant), Guarantee

b. Predictors:
(Constant),
Governance*Guarantee

		ANOVA				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	147.658	1	147.658	26.931	.000 ^b
	Residual	378.314	69	5.483		
	Total	525.972	70			
2	Regression	121.895	1	121.895	20.815	.000 ^c
	Residual	404.077	69	5.856		
	Total	525.972	70			

a. Dependent Variable: SDG

b. Predictors: (Constant), Guarantee financing

c. Predictors: (Constant), Governance*Guarantee financing

Coefficients

Model		Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
		B		Beta		
1	(Constant)	8.887	2.192		4.055	0.000
	Guarantee	0.553	0.107	0.530	5.190	0.000
2	(Constant)	7.175	2.497		2.874	0.005
	Guarantee	0.528	0.107	0.506	4.923	0.000
	Governance	0.180	0.129	0.144	1.400	0.166
	Interactive effects (guarantee*governance)	0.023	0.005	0.481	4.562	0.000

a. Dependent Variable: SDG

4.11.2 The Moderating Effect of Governance on the Relationship between Technical Financing and SDG No. 6.

Table 4.14, displayed the regression results of the moderating effect of governance on the relationship between technical financing and achievement of SDG No. 6. In Table 4.14 based on its first section that presented the model summary results, the R-Square changed from 0.326

(32.6%) to 0.419 (41.9%) when governance was added in the model. This actually meant that governance explained the additional 9.3% variability on the level of achievement of SDG No. 6. This additional change was statistically significant based on the ANOVA results in the second model of the second section of Table 4.14 (p-value = 0.049^c). Based on the third section of Table 4.14 that displayed the regression co-efficient results, technical financing in the absence of governance as a moderator had a negative significant effect on achievement of SDG No. 6 ($\beta = -0.014$; p-value = 0.049). Further, when governance was interacted with technical finance, there was a positive significant relationship with the achievement of SDG No 6 ($\beta = 0.136$; p-value = 0.031).

$$\text{SDG NO.6} = 11.562 - 0.014\text{TF}$$

$$\text{SDG} = 7.762 + 0.766\text{TF} + 0.441\text{GOV} + 0.136\text{TF} * \text{GOV}$$

TF is technical financing, GOV (governance), TF* GOV (interaction between governance and technical financing)

Table 4.14: The Moderating Effect of Governance on the Relationship between Technical Financing and SDG No. 6.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.456 ^a	0.326	0.214	1.8006
2	.577 ^b	0.419	0.321	2.1221

a. Predictors: (Constant), Technical financing

b. Predictors: (Constant), technical*governance

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Si g.
1	Regression	0.100	1	0.100	0.078	.049 ^b
	Residual	525.872	69	7.621		
	Total	525.972	70			
2	Regression	26.773	1	26.773	2.881	.031 ^c
	Residual	499.199	69	7.235		

Total	525.972	70			
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a. Dependent Variable: SDG

b. Predictors: (Constant), Technical financing

c. Predictors: (Constant), Governance*Technical financing

		Coefficients ^a			
		Unstandardized Coefficients		Standardized Coefficients	
Model		B	Std. Error	Beta	t
1	(Constant)	11.562	0.231		10.560
	Technical	-0.221	0.076	-0.014	-1.670
2	(Constant)	7.762	2.66		2.740
	Technical	0.501	0.103	0.766	1.608
	Governance	0.207	0.182	0.441	1.565
	Interaction (technical*governance)	0.082	0.008	0.136	2.432

a. Dependent Variable: SDG

4.11.3 The Moderating Effect of Governance on the Relationship between Private Financing and SDG No. 6

Table 4.15, displayed the regression results of the moderating effect of governance on the relationship between private financing and achievement of SDG No. 6. In Table 4.15 based on its first section that presented the model summary results, the R-Square changed from 0.026 to 0.130 when governance was added in the model. This meant that governance explained the additional 10.4% variability on the level of achievement of SDG No. 6. This additional change was statistically insignificant based on the ANOVA results in the second model of the second section of Table 4.15 (p-value = 0.708^c). Based on the third section of Table 4.15 that displayed the regression co-efficient results, private financing in the absence of governance as a moderator had a negative significant effect on achievement of SDG No. 6 ($\beta = -0.205$; p-value = 0.182). In the contrary, presence of governance had an interactive effect on the relationship between private financing and the achievement of SDG No 6 ($\beta = 0.003$; p-value = 0.708).

$$\text{SDG NO.6} = 23.449 - 0.205\text{PF}$$

$$\text{SDG} = 20.986 - 0.393\text{PF} + 0.445\text{GOV} + 0.003\text{PF} * \text{GOV}$$

PF is private financing, GOV (governance), PF* GOV (interaction between governance and private financing)

Table 4.15: The Moderating Effect of Governance on the Relationship between Private Financing and SDG No. 6.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.160 ^a	0.026	0.012	2.72520
2	.361 ^b	0.130	0.104	2.59413

a. Predictors: (Constant), Private financing

b. Predictors: (Constant), private*governance

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.528	1	13.528	1.822	.182 ^b
	Residual	512.444	69	7.427		
	Total	525.972	70			
2	Regression	1.078	1	1.078	0.142	.708 ^c
	Residual	524.893	69	7.607		
	Total	525.972	70			

a. Dependent Variable: SDG

b. Predictors: (Constant), Private financing

c. Predictors: (Constant), Governance*private financing

Coefficients^a

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	23.449	2.451		9.566	0.000
	Private	-0.205	0.152	-0.160	-1.350	0.182
2	(Constant)	20.986	2.488		8.436	0.000
	Private	-0.393	0.159	-0.307	-2.473	0.016

Governance	0.445	0.156	0.355	2.855	0.006
Interactive effects (Private*governance)	0.003	0.007	0.045	0.377	0.708

a. Dependent Variable: SDG

4.11.4 The Moderating Effect of Governance on the Relationship between Concessional Loans and SDG No. 6

Table 4.16, displayed the regression results of the moderating effect of governance on the relationship between concessional loans and achievement of SDG No. 6. In Table 4.16 based on its first section that presented the model summary results, the R-Square changed from 0.223 to 0.285 when governance was introduced. This meant that governance explained the additional 6.2% variability on the level of achievement of SDG No. 6. This additional change was statistically significant based on the ANOVA results in the second model of the second section of Table 4.16 (p-value = 0.000^c). Based on the regression co-efficient, concessional loans in the absence of governance as a moderator had a negative significant effect on achievement of SDG No. 6 ($\beta = 0.465$; p-value = 0.000). However, by interacting concessional with governance, there was a positive effect on the relationship between concessional loans and the achievement of SDG No 6 ($\beta = 0.026$; p-value = 0.000).

$$\text{SDG NO.6} = 10.401 + 0.465\text{CL}$$

$$\text{SDG} = 4.964 + 0.505\text{CL} + 0.373\text{GOV} + 0.026\text{CL} * \text{GOV}$$

Note: CL is concessional loans, GOV (governance), CL* GOV (interaction between governance and concessional loans)

Table 4.15: The Moderating Effect of Governance on the Relationship between Concessional Loans and SDG No. 6.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.472 ^a	0.223	0.212	2.43349
2	.534 ^b	0.285	0.275	2.33451

a. Predictors: (Constant), Concessional Loans

b. Predictors: (Constant), Concessional*^agovernance

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	117.362	1	117.362	19.818	.000 ^b
	Residual	408.610	69	5.922		
	Total	525.972	70			
2	Regression	149.926	1	149.926	27.510	.000 ^c
	Residual	376.046	69	5.450		
	Total	525.972	70			

a. Dependent Variable: SDG

b. Predictors: (Constant), Concessional Loans

c. Predictors: (Constant), Governance* Concessional Loans

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error			
1	(Constant)	10.401	2.213		4.700	0.000
	Concessional loans	0.465	0.104	0.472	4.452	0.000
1	(Constant)	4.964	2.803		1.771	0.081
	Concessional loans	0.505	0.100	0.513	5.048	0.000
	Governance	0.373	0.127	0.298	2.930	0.005
	Interactive effects (Concessional* ^a governance	0.026	0.005	0.534	5.245	0.000

CHAPTER FIVE: DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

5.1 Introduction

This chapter presents discussions of the results, conclusions and recommendations. Limitations encountered during the research as well as areas of further research are also discussed in this chapter.

5.2 Discussions

5.2.1 Effect of the Guarantee Financing on the Achievement of SDG No. 6

The study found that 83.1% had an agreement that lenders demand mandatory security deposits. The results are in line with RDT theory that argue that firms depend on funders to finance business activities. The findings are in line with a study by Gurmessa and Ndinda (2014) that found that the regulatory environment, the financial standing of the borrowing enterprises, the scheme's specifics, financial ability of guarantors, and the output and input market characteristics were involved in the analysis by financiers. The study also found that, 94.4% respondents widely agreed that the lenders are keen on financial standing of the borrowing counties as supported by the agency theory that calls for financial discipline by agents (counties). In uniformity, a study by Mbinya (2021) found that credit rating had a favorable and substantial impact on WASH programs financing. Further, it was found that the funders are keen on credit history of the guarantor(s) as indicated by the RDT theory. The results are in uniform with another study by Olajuyigbe (2016) that showed that credit history and risks derailed lenders involvement. Again, it was established that the financiers were strict on the financial ability of the guarantor(s) as shown by a combined agreement of 76.0%. It was also revealed that the counties prefers having commercial banks as guarantor(s) as reported by 78.9% respondents. The results resonate with Okeyo (2013) who found that institution that have blended public with private finance through PPT arrangement have performed better in delivering services to the people. The regression analysis revealed that the variable had a positive significant relationship with the achievement of SDG No. 6. In agreement, a research by Mbinya (2021)

concluded that donor funding in the form of guarantees have a positive impact on access to water in Kenya.

5.2.2 Effect of Technical Assistance Financing on the Achievement of SDG No. 6 in Kenya

The study revealed that 69.0% respondents had a disagreement with the statement that WASH county employees are subjected to ongoing training and development to improve their skills. The results are in line with ToC theory that calls for change (in this case, knowledge change on WASH projects) among employees to promote performance. The results are not in agreement with Miller et al. (2019) who found that inadequate training had an impact on effectiveness of external financial support programs. It was again found that 74.8% disagreed that WASH county employees were exposed to workshops, inductions, and seminars and this could affect their productivity against the tenets of agency theory that calls for accountability among workers to boost principals' confidence. The findings contradict a study by Timmis (2015) that revealed that capacity building initiatives such as training can have a greater impact and effectiveness when a wider range of actors are involved as partners or beneficiaries. Further, it found that lenders offer counties with free advisory services on WASH projects as reported by 73.2% respondents (in agreement). The results resonate with RDT theory that renders help to the borrower (dependency) to promote achievement of SDG NO.6. The study also found that funders provide research grants and cost associated with it as supported by that 78.9% agreed. However, 56.7% disagreed that the financiers provide the counties with a platform for creating WASH innovative solutions. In agreement, a research by Sagar (2006) found that donors in Argentina, Thailand, India, Cameroon, and Thailand provided technical support such as research and advisory assistance. The regression analysis showed that the variable had a positive significant relationship with the achievement of SDG No.

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5.2.3 Effect of Private Sector Financing on the Achievement of SDG No. 6 in Kenya

The study established that 87.3% disagreed that there was adequacy of private funds towards WASH projects and this goes against the tenets of RDT theory that provide room for resource dependence to promote achievement of SDG NO. 6. The established that 71.8% disagreed that WASH projects have attracted increased financing by credit providers. The results contradict the argument by the authors of RDT that called for resource dependence. In agreement, Gavalas and Syriopoulos (2015) argue that funders assess the financial health of borrowers to enhance

commercial banks' ability to make decisions. Additionally, it was revealed that funders prioritize private returns before offering support as supported by the agency theory that argues that principals require agents (counties) to safeguard their interests. The study also established that private funders keen on the county's capacity to mitigate risks. The agency theory also requires the agents to put measures that champions their interests and this include risks related measures. Gavalas and Syriopoulos (2015) found that financiers allocate loans based on the business financial capacity hence issues such as financial turmoil due to risks are considered. Lastly, it was found that the counties have witnessed decreased amount of equity financing by private investors in the recent past and this could be due to credit rating. The RDT argues that lack of financial support/dependence could derail projects success. A study by Humprey (2015) demonstrated that development banks' ability to carry out their development purpose and provide better loans to smaller countries had been significantly and negatively impacted by poor credit rating. Using regression analysis, the study revealed that the private had a negative relationship with the achievement of SDG No. 6. In agreement, Grittner (2013) established that utilising various blended finance strategies—like private financing's technical assistance—had an impact on the SDG.

5.2.4 Effect of Concessional Loans on the Achievement of SDG No. 6 in Kenya

The research determined that the adequate grace period contained in the concessional loans has enhanced implementation of SDG no.6. The results concur with the RDT theory that champion for resource dependence to implement projects. The results are in tandem with a study by McGinnis et al. (2017) that showed that low loan service fees and flexible payment terms improved execution of projects. The study also showed that the lower maturity element of concessional loans has increased the implementation of SDG no.6. This means that counties relied on funders to finance WASH projects as envisioned by the agency theory. Further, the concessional loans' low interest rate increases clean water and sanitation implementation and this increased access to clean water and sanitation which is the goal of ToC theory that calls for a change in funding of projects by incorporating as many funders as possible to increase access to services. The results are in agreement with a study by Esseku and Roberts (2018) that revealed that friendly interest repayment rate, longer maturity periods, and change in funding strategy enhanced sustainability of government-funded initiatives. The study also revealed that the county prefers concessional loans because of its flexible repayment terms as supported by Esseku and Roberts (2018). The research revealed that the counties also prefers concessional loans since its credit contains room for

deferrals thus increasing implementation of SDG projects. The agency theory supports this finding since it opines for interests of both the agents (counties) and the funders (principals). The regression results showed that concessional loans had a positive significant connection with the achievement of SDG No. 6. The results concur with a research by McGinnis et al. (2017) that found that loans do hold a significant connection with the timely and cost effective implementation of WASH initiatives

5.2.5 Moderating Effect of Governance on the Relationship between Blended Finance and Achievement of SDG No. 6

The study found that the counties ensured the WASH projects' staff are accountable for their financial actions as supported by the agency theory. A study by Anifowose (2023) showed that corporate governance has a large and beneficial impact on sustainable development while corruption has a negative impact, as such individuals should be accountable for their personal or collective action. The study again found that respondents disagreed that the county has mechanisms that provide adequate checks and balances in the use of clean water and sanitation resources and this goes against the agency theory that avers for accountability from the agents. The findings goes against the position of Berliani and Violita (2021) that indicated that public's trust is strengthened by two governance indicators: political stability and the control of corruption. Moreover, most staff disagreed that they were subjected to ongoing training to enhance their financial management skills and knowledge. This means that the counties failed to embrace the tenets of the ToC theory that calls for a change in knowledge to promote achievement of SDG NO. 6. As championed by the agency theory, it was established that the financial responsibility among the employees is key to clean water and sanitation implementation. In yet another study, Hao et al. (2022) found that the process of PP-Governance interaction including financial responsibility greatly enhances sustainable development.

Based on the regression co-efficient results, guarantee finance in the absence of governance had a positive significant effect on the level of SDG ($\beta = 0.533$; $p\text{-value} = 0.000$). Upon interacting guarantee financing with governance, coefficient was positive and also significant ($\beta = 0.023$, $p\text{-value} = 0.000$). This meant that governance does play an important role on the achievement of SDG no.6. Further, the regression co-efficient results on technical financing shows that in the absence of governance, there was a negative insignificant effect on achievement of SDG No. 6 ($\beta = -0.014$; $p\text{-value} = 0.049$). Further, when governance was interacted with technical finance, there

was a positive insignificant relationship with the achievement of SDG No 6 ($\beta = 0.136$; p-value = 0.031). Additionally, private financing in the absence of governance as a moderator had a negative significant effect on achievement of SDG No. 6 ($\beta = -0.205$; p-value = 0.182). In the contrary, presence of governance had an interactive effect on the relationship between private financing and the achievement of SDG No 6 ($\beta = 0.003$; p-value = 0.708). Moreover, concessional loans in the absence of governance as a moderator had a negative significant effect on achievement of SDG No. 6 ($\beta = 0.465$; p-value = 0.000). However, by interacting concessional with governance, there was a positive effect on the relationship between concessional loans and the achievement of SDG No 6 ($\beta = 0.026$; p-value = 0.000). The results revealed that governance as a moderator had an interactive effects on the relationship between blended finance and achievement of SDG No. 6. The regression results conform to the results obtained by Gündoğdu and Aytekin (2022) that discovered that governance significantly and favourably affects the SDGs.

5.2.6 Achievement of SDG No. 6

The results on the achievement of SDG No. 6 showed that the number of people with access to basic sanitation has increased in the recent past thus resonating with the ToC theory that prefers a change in the operations of the counties to ensure that WASH projects are implemented to improve access. In yet another research, McCallum (2020) found that investors' funding improved access to sanitation and water services. The study revealed that the number of people with access to safe drinking water has increased in the counties and this is attributed to use of various sources of financing as championed by RDT theory. A study by Mbinya (2021) found that private finance, public finance and donor funding had a positive impact on access to water in Kenya. It was also determined that the cost of water across the counties was also found to have lowered since the implementation of clean water and sanitation and this is attributed to support from donors as envisaged by the RDT theory. Further, the implementation of SDG No. 6 was found to have increased access to quality water hence the interest of the agents was met. Lastly, the implementation of SDG No.6 was found to have improved access to sanitation products and services and this was attributed to funding from donor community thus inking with the RDT theory. The results concur with yet another investigation by Quatrini and Crossman (2018) that revealed that blended finance helped in reducing water costs and ultimately delivery quality commodities.

5.3 Conclusions

Concerning guarantee financing, the study concludes that financiers were strict on the funds' security and counties financial standing and credit history. Meanwhile, the counties preferred using commercial banks as guarantor(s) so as to access guarantee financing from funders.

Regarding technical assistance, the study concludes that WASH county employees are not subjected to ongoing training and development via workshops, inductions, and seminars. However, funders offered counties free advisory services, research grants and cost associated with WASH projects.

In relations to private sector financing, the study concludes that private funds towards WASH projects were not adequate and this was attributed to the fact that WASH projects have not attracted increased financing by credit providers. The hesitancy by the private funders could be pegged on credit and political risks.

On the concessional loans, the research concludes that the adequate grace period contained in the concessional loans, flexible repayment schedules, lower maturity element of concessional loans together with concessional loans' low interest rate increases achievement of SDG No. 6.

In regard to governance, the study concluded that the counties insisted on accountability among the WASH projects' staff despite that they lacked adequate skills from financial management training. However, the counties lacked effective mechanisms that provided adequate checks and balances on SDG No 6 funds.

In line with the achievement of SDG No. 6, the study concluded that SDG No. 6 has led to the increased access to basic sanitation, safe drinking water, low cost water, and increased water quality as well as access to sanitation commodities.

The study concludes that the theories used in this study including ToC, Agency, and RTD have been supported by the current study findings. For instance, counties depended on donor support to implement WASH projects as supported by RDT. Further, donors and counties championed for their interest, however, the former insisted on accountability as envisaged by agency theory. Additionally, ToC theory championed for a change in operations as well as staff knowledge via training to enhance achievement of SDG NO.6.

5.4 Recommendations

The study recommends that WASH county employees should be exposed to incessant training and development to improve their skills, knowledge and competency. Approaches such as workshops, inductions, and seminars and further education can be sought.

The study recommends that the counties should improve their financial rating by putting in place risk management mechanisms such as unambiguous credit procedures and guidelines, comprehensive credit evaluations, close observation and analysis of client payment patterns, execution of risk reduction strategies, and frequent adjustments to credit limits in response to evolving conditions to attract funding from private sector financing.

Further, managers should also make sure that WASH project ratings align with the requirements of possible donors or investors (including private lender) with whom they hope to work with. This will facilitate access to a variety of investment possibilities and guarantee that credit scores are suitable when looking for new financing options to optimize achievement of SDG No. 6.

The research recommends that the counties should give priority to concessional loans because it was found to be affordable insofar as serviceability is concerned. Its flexibility repayment nature coupled with low interest rate aspect could enhance the achievement of SDG No. 6.

The report suggests that national and local administrations should deliberately engage in WASH initiatives run by independent organizations. This will significantly raise the projects' worth to lenders, and this will increase lenders' optimism regarding WASH projects across the nine counties. This may facilitate funding requests for projects and increase the involvement of business organizations in WASH initiatives in the nine counties.

5.5 Limitations

The study only collected data from the implementers of the WASH projects thus ignoring the financiers. The financiers are believed to be having important information on the operations of the nine counties insofar as the usage of blended finance and achievement of SDG No. 6 is concerned hence their inclusions in this study could have added unique information on the overall execution of WASH projects across the nine counties. Some respondents did not attend to all questions in the questionnaire as such their valuable inputs were not included in the study. This was a limitation since their inputs were much desired for inclusion in the report.

5.6 Areas for Further Research

The study specifically aimed at studying the effects of blended finance on achievement of SDG number six on water, sanitation, and hygiene in Kenya. The researcher suggest that a future study should be conducted on the same topic but with the aim soliciting information from the financiers and management team at the county level. Secondly, the study suggest that a future research should be done on blended finance but with a specific attention on SDG No 3 that focuses on health in the country.



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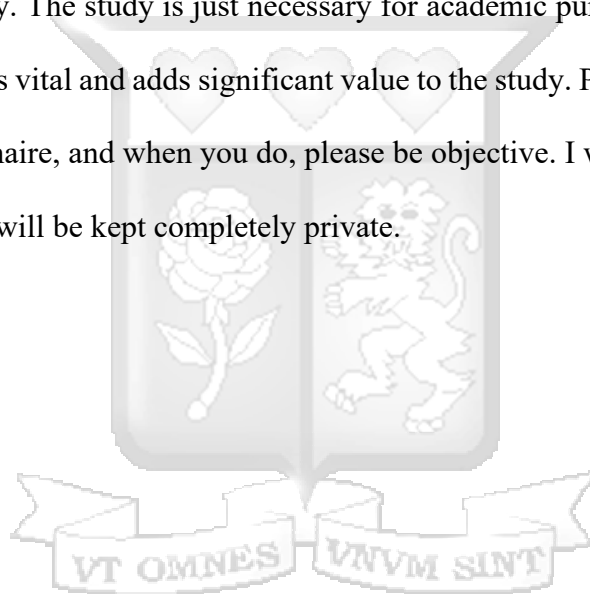


APPENDICES

APPENDIX I: INTRODUCTION LETTER

Dear Participant,

My name is Kelvin Nzamba, a postgraduate student undertaking a Master of Science in Development Finance at Strathmore University-Nairobi. As an accomplishment for the requirements for the same award, I am currently conducting a study on the **“Effects of blended finance on achievement of SDG NO.6 in Kenya”**. The provided information will be treated with the highest confidentiality. The study is just necessary for academic purposes. Your assistance in answering the questions is vital and adds significant value to the study. Please take a few moments to complete the questionnaire, and when you do, please be objective. I want to guarantee that any information you provide will be kept completely private.



Yours Sincerely,

KELVIN NZAMBA

APPENDIX II: QUESTIONNAIRE

The sole goal of this questionnaire is to gather information for scholarly research. Please respond to all inquiries as best you can.

SECTION A: GENERAL INFORMATION

Kindly tick (✓) best option in each question/statement

1 Gender: Male () Female ()

2. Age: Below 25 years () 25- 30 years () 31-35 years () 36-40 years () 41-45 years ()
Above 46 years ()

3. Duration as a worker in the WASH Section? Below 1 year () 1-3 years () 3-5 years ()
More than 5 years ()

4. Highest academic qualification? Certificate () Diploma () Degree () Masters ()
PhD ()

SECTION B: EFFECT OF GUARANTEE FINANCING ON THE ACHIEVEMENT OF CLEAN WATER AND SANITATION IN KENYA

5. What is your level of agreement or otherwise with the following items regarding guarantee financing of WASH projects? Employ a Likert scale of 1-5 (1= Strongly disagree; 2 = Disagree; 3= Not sure; 4= Agree and 5= Strongly agree).

Items	1	2	3	4	5
The lenders demand mandatory security deposits					
The lenders keen on financial standing of the borrowing enterprises					
The funders keen on credit history of the guarantor(s)					
Financiers strict on the financial ability of the guarantor(s)					
The county prefers having commercial banks as guarantor(s)					

SECTION C: EFFECT OF TECHNICAL ASSISTANCE ON THE ACHIEVEMENT OF CLEAN WATER AND SANITATION IN KENYA

6. What is your level of agreement or otherwise with the items on the effect of technical assistance on the achievement of clean water and sanitation in Kenya? Employ a Likert scale of 1-5 (1= Strongly disagree; 2 = Disagree; 3= Not sure; 4= Agree and 5= Strongly agree).

Items	1	2	3	4	5
The WASH county employees are subjected to ongoing training and development to improve their skills					
Wash county employees exposed to workshops, inductions, and seminars					
The lenders offer my county with free advisory services on WASH projects					
The funders provide research grants and cost associated with it					
The financiers provide us with a platform for creating WASH innovative solutions					

SECTION D: EFFECT OF PRIVATE SECTOR FINANCING ON THE ACHIEVEMENT OF CLEAN WATER AND SANITATION IN KENYA

7. What is your level of agreement or otherwise with the items on the effect private sector financing on the achievement of SDG no six in Kenya? Employ a Likert scale of 1-5 (1= Strongly disagree; 2 = Disagree; 3= Not sure; 4= Agree and 5= Strongly agree).

Items	1	2	3	4	5
Adequacy of private funds towards WASH projects					
WASH projects have attracted increased financing by credit providers					
Funders prioritize private returns before offering support					
Private funders keen on county's capacity to mitigate risks (credit, political risks)					
We have witnessed decreased amount of equity financing by private investors in the recent past					

SECTION E: EFFECT OF CONCESSIONAL LOANS ON THE ACHIEVEMENT OF

CLEAN WATER AND SANITATION IN KENYA

8. What is your level of agreement or otherwise with the items on the effect of concessional loans on the achievement of clean water and sanitation in Kenya? Employ a Likert scale of 1-5 (1= Strongly disagree; 2 = Disagree; 3= Not sure; 4= Agree; and 5= Strongly agree).

Items	1	2	3	4	5
The adequate grace period contained in the concessional loans has enhanced implementation of clean water and sanitation					
The lower maturity element of concessional loans has increased the implementation of clean water and sanitation					
The concessional loans' low interest rate increases clean water and sanitation implementation					
The county prefers concessional loans because of its flexible repayment terms					
County prefers concessional loans since the credit contains room for deferrals thus increasing implementation of clean water and sanitation projects					

SECTION F: EFFECT OF GOVERNANCE ON THE ACHIEVEMENT OF CLEAN WATER AND SANITATION IN KENYA

9. What is your level of agreement or otherwise with the items on the effect of governance on the achievement of clean water and sanitation in Kenya? Employ a Likert scale of 1-5 (1= Strongly disagree; 2 = Disagree; 3= Not sure; 4= Agree and 5= Strongly agree).

Items	1	2	3	4	5
The county ensures the WASH projects' staff are accountable for their financial actions					
The county has mechanisms that provide adequate checks and balances in the use of clean water and sanitation resources					
Staff are subjected to ongoing training to enhance their financial management skills and knowledge					
Financial responsibility among the employees is key to clean water and sanitation implementation					

SECTION G: ACHIEVEMENT OF SDG NO.6 IN KENYA

10. What is your level of agreement or otherwise with the items on the achievement of clean water and sanitation in Kenya? (1= Strongly disagree; 2 = Disagree; 3= Not sure; 4= Agree and 5= Strongly agree).

Items	1	2	3	4	5
The number of people with access to basic sanitation has increased in the recent past					
The number of people with access to safe drinking water has increased in the county					
The cost of water has lowered since the implementation of clean water and sanitation					
The implementation of clean water and sanitation has increased access to quality water					
The implementation of clean water and sanitation improves access to sanitation products and services					

END

THANK YOU!

APPENDIX III: INTRODUCTION LETTER

Ole Sangale Rd, Madaraka Estate
P. O Box 59857 - 00200, Nairobi, Kenya.
Cell: +254 703 034 414/6/7, Twitter: @SBSKenya
Facebook/LinkedIn: Strathmore Business School
Email: info@sbs.ac.ke or visit www.sbs.strathmore.edu



Monday 8th April 2024

To Whom It May Concern,

RE: FACILITATION OF RESEARCH – KELVIN MUSEE NZAMBA

This is to introduce Kelvin Musee Nzamba, a Master of Science in Development Finance (MDF) student at Strathmore University Business School, admission number MDF/83327/19. As part of our MDF Programme, Kelvin is expected to do applied research and undertake a project. This is in partial fulfilment of the requirements of the MDF course. To this effect, he would like to request appropriate data from your organization.

Kelvin is undertaking a research paper on *“Effects of Blended Finance on Achievement of SDG Number Six on Clean Water and Sanitation in Kenya”*. The information obtained shall be treated confidentially and shall be used for academic purposes only.

Our MDF Programme seeks to establish links with industry, and one of the ways of doing so is directing our research to areas that would be of direct use to industry. We would be glad to share our findings with you after the research, and we trust that you will find them of great interest and of practical value to your organization.

We appreciate your support and shall be willing to provide any further information if required.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Njoki Kiagiri".

**Njoki Kiagiri,
Manager – Graduate Programmes.**

Strathmore University Business School is a Proud member of:



APPENDIX IV: ISERC LETTER



5th April 2024

Mr Nzamba Kelvin,
Kelvin.nzamba@strathmore.edu

Dear Mr Nzamba,

RE: Effects of Blended Finance on Achievement of SDG Number Six on Clean Water and Sanitation 1n Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC2134/24**. The approval period is from 5th April 2024 to 4th April 2025.

This approval is subject to compliance with the following requirements:

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

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

Yours sincerely,

A blue ink signature of Mr Ambrose Rachier.

Mr Ambrose Rachier,
Chairperson; SU-ISERC



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APPENDIX V: NACOSTI PERMIT

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
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