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Resource Mobilization and Successful Implementation of Virtual Weighing Station Project by Local Firms in Kenya

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Abstract:

Resource mobilization has gradually become relevant to all local firms of Kenya in the context of the global economic crisis, declining resource flows and greater demands for accountability. While it is recognized that there cannot be a one-size-fits-all approach and that different firms need to mobilize resources in different ways, there are some commonalities that pertain to all firms. Resources are the driving forces of organizations. Local firms need resources to effectively implement programs that improve the lives of their beneficiaries. However, local firms complain about not having enough resources to accomplish their goals since they often rely on singular funding streams from donors, which are provided over a limited time. Therefore, this study sought to investigate the influence of resource mobilization on local firms' successful implementation of virtual weighing station projects in Kenya. The research was guided by the following specific objectives:

- To assess the effects of Human Resource mobilization on the successful implementation of virtual weighing stations by local firms in Kenya.*
- To establish the effects of financial mobilization on the successful implantation of virtual weighing stations by local firms in Kenya.*
- To establish the effects of material mobilization on the successful implementation of virtual weighing stations by local firms in Kenya.*
- To investigate how the use of technology affects the successful implementation of virtual weighing stations by local firms in Kenya.*

Theories such as resource mobilization theory, resource-based view theory and constraints theory were used for the development of this research. The research employed descriptive and explanatory research designs, given the small target population, which entailed officials from KeNHA (20), contractors' staff (20) and project suppliers (10). Data were collected through the administration of interviews and questionnaires, while analysis was undertaken through the use of tools such as the statistical package for social sciences (SPSS). From the data collected and analyzed, the study employed the use of descriptive statistics such as percentages, variances, means and standard deviations to analyze the data. The findings of the study indicated that human, financial, material and technology resource mobilization positively affects the successful implementation of virtual weighing stations in Kenya. From these findings, this research drew its conclusions on how resource mobilization influences the successful implementation of virtual weighing stations across the country by local firms.

Keywords: *Virtual weighing stations, KeNHA, resource mobilization theories, local firms*

1. Introduction

This chapter provides insights into the successful implementation of virtual weighing stations in Kenya by local firms. It, therefore, aims at providing information for better comprehension of the study through the examination of the various perspectives, then narrow down to issues considered. The chapter gives background information, the statement of the problem, the objectives of the study, its significance, scope, and limitations.

1.1. Background to the Study

Virtual weighing stations consist of (VWS) weigh-in-motion (WIM) systems consisting of weighing sensors, classification sensors, positioning sensors, digital imaging devices, and data transmission devices, among other equipment

that provide commercial vehicle records in real time to enable enforcement agencies remotely monitor compliance with size, weight and safety regulations (CPCS, 2019). Data collected from the VWS is transmitted to the data center/Central server through the internet service provider transmission network. Any overloading cases are sent to axle enforcement agencies (ALEHU, KeNHA Axle Load Control) and static weighing stations for enforcement. Additionally, vehicles found to be overloaded are tagged and the tags can only be removed after the necessary fines are paid or the courts rule otherwise.

Virtual weighing stations have various advantages, including increasing the efficiency of weight enforcement, improving highway safety for all users, unlimited inspections on all vehicles, significantly lower installation prices than traditional traffic scales, lower maintenance costs and lower land acquisition costs. Further, the cost savings arising from efficiency and safety improvements make VWS technology an attractive option for KeNHA Axle Load Control and road maintenance departments. The CPCS report (2019) indicated valuable screening technology for trunk roads to identify potential violators for further screening at static stations. Specifically, stakeholders in some states in the USA pointed out that the utilization of fewer staff at VWS leads to improved efficiency in service delivery.

Some of the major challenges facing VWS projects in the USA include lack of funding, inclement weather together, with lack of staff and financial resources for periodic servicing and maintenance, thus the need for effective project resource mobilization.

Resource mobilization is becoming gradually relevant to all local firms in Kenya in the context of the global economic crisis, declining resource flows and greater demands for accountability. While it is recognized that there cannot be a one-size-fits-all approach and that different firms need to mobilize resources in different ways, there are some commonalities that pertain to all firms. Resources are the driving forces of organizations. Nagaraju, Reddy & Chaudhury (2012) define a resource as an entity that contributes to the accomplishment of project activities, such as manpower, materials, money, equipment, time, and space. Resource mobilization refers to all activities involved in securing new and additional resources for an organization. It also involves making better use of existing resources to promote efficiency and effectiveness in an organization. Resource mobilization is often referred to as 'New Business Development' (Seltzer, 2014). According to Mavoko (2013), resource mobilization goes beyond financial resources to accommodate networks, skills, human resources, influence, and organizational capacity to raise resources internally.

Local firms need resources to effectively implement programs that improve the lives of their beneficiaries. However, (Lestler, 2007) argues that plans for resource mobilization must be identified to achieve the intended results. While some percentage of those resources may come from donors, donor funds are limited and continually shifting in response to a wide array of epidemiological, geographic, economic, and political factors. Inevitably each local firm faces a point when it must begin to plan for a greater measure of self-sufficiency (Seltzer, 2014).

By mobilizing available resources in a strategic and thoughtful manner and making this activity a key tenet of its mandate, local firms can sustain their work and continue promoting the well-being of constituents in an effective and efficient manner. According to Cuthbert (2011), resource mobilization is not just about writing proposals or collecting money but rather about winning hearts and minds of people and building a constituency of supporters for a particular cause. It is about learning to communicate effectively with the public and developing a network of enthusiastic and committed supporters who are ready to embark on that journey without relenting. There are many strategies local firms can employ to mobilize resources for improved service delivery. According to Yunus (2011), local firms complain about not having enough resources to accomplish their goals because they often rely on singular funding streams from donors, which are provided over a limited time.

One of the biggest challenges for the successful implementation of virtual weigh stations by local firms in Kenya, however, is a lack of or less emphasis on local resource mobilization. According to International Labour Organization (2010), local resources include local labour, materials, knowledge, skills and culture, local institutions, Non-governmental Organizations (NGOs) and Community-Based Organizations (CBOs), locally produced tools and equipment and local social capital. Sekajingo (2010) argues that local resources refer to financial and non-financial contributions. Local resources produced by local firms not only allow for the implementation of successful public projects such as virtual weigh stations but also contribute to the long-term sustainability of initiatives conducted by NGOs and CBOs by building lasting relationships. Local Resource Mobilization describes the activity of finding new ways of engaging resources in the local environment (i.e., funds, people, goods, and services) to support an organization and make it self-sustaining. Mavoko (2013) argues that those local firms fortunate enough to have adequate resources to support their current operations still face uncertainty over future funding due to the ever-changing world and the ever-growing need, especially in developing countries.

The uncertain continuity of donor funding forces local firms to live a project-to-project existence, which makes it difficult to design and expand project activities to improve the quality of services. This is what has affected project sustainability in the developing world and hence the recurrence of the same problems again and again (Curthbert, 2011). According to Kiiru (2010), local firms make mistakes by depending on a single source of funding. Overdependence on one source of funds has made it hard for organizations to execute their mandate; hence programs are compromised or terminated in the long run. The most effective way of mobilizing resources is by involving local community members.

Local resources not only allow for the implementation of successful projects but also contribute to the long-term sustainability of building lasting relationships. According to Chiter (2012), resource mobilization strategies do not only mean the use of money but extensively signify the process that achieves the mission of the organization through the utilization of knowledge in the human use of skills, equipment and services. Kyunyu (2014) argues that it is the enabler of the activity that not only satisfies the need but also satisfies the giver of the resources that the resources have been

effectively used. Resource mobilization, therefore, is an important aspect of projects that build relationships amongst project stakeholders, that is, from the client, the contractors, project teams and the suppliers.

1.1.1. Global Perspective of Resource Mobilization

Resource mobilization in the United States of America includes two concepts:

- First, the non-financial resource is also important, and
- Second, certain resources can be generated by the organization rather than accessed from other sources.

According to Kiiru (2010), resource mobilization offers people the opportunity to give. It is not an end but rather the process whereby resources are transferred from those who are able to give to those who have the need to receive. Resource mobilization facilitates this process. It is the enabler of the activity that satisfies not only the need but also the giver that the resources have been wisely and effectively used. It is all about building relationships with donors – whether individuals or major corporations.

Cuthbert (2011) points out that in India, some of the key elements that strengthen resource mobilization efforts strategies include; having a clear sense and commitment to the organization's vision and mission, effective management and leadership that ensures, among others, that there is accountability and transparency in the organization, solid reputation, credibility and positive image, the ability to attract, create and sustain new resources while discharging services to their clients/ community.

According to Simiyu (2011), organizations should make adequate preparations for resource mobilization strategies to be effective and to ensure they are maximizing all opportunities. Dillon (2007) noted that organizations in Australia develop resource mobilization plans and tightly integrate them with their organizational strategic and communication plan to enhance the performance of their organizations. Organizations that are well-managed and convey their key messages effectively to their target audiences are more successful in raising resources, and this, in turn, contributes to the organization's continued growth. Resource mobilization must, therefore, be planned to follow closely the vision, objectives and goals of an organization and be aligned with the specific objectives of raising those resources to ensure successful project implementation.

According to a resource mobilization workshop held in Mongolia (2009), money was identified as one of the key resources that any organization needs to be able to function and carry out its work well. Where an organization cannot raise adequate resources, it, therefore, means it cannot fulfil its mission, and it is up to the leadership to ensure in some way or another that those resources are available. Consequently, much attention should be given to establishing a secure and sustainable resource mobilization base for the design and delivery of effective project objectives and successful project implementation.

1.1.2. Regional Perspective of Resource Mobilization

East African cities of Nairobi – Kampala and Dares Salaam are the least costly African cities to build in and are on the same scale as Kuala Lumpur (Kogi, 2017). The likes of Luanda, Maputo and Lusaka are expensive cities on the list based on this metric. A well-worn argument postulates that infrastructure in Africa is focused on resources due to dependence on exports. The scene is, however, changing due to the improving GDP per capita in many African countries. African cities continue to expand daily, with over 30 cities having more than 2 million people, up from 22 cities in the year 2010 (Kogi, 2017). African cities are therefore demanding more from their governments as regards infrastructure development and that is where virtual stations come in (Sikhakhane, 2015). Therefore, it is important to note that Africa's development is no longer dependent on capital but has focused on improving transport facilities and efficiency (International Housing Coalition, 2015).

The Government of Malawi developed a Development Assistance Strategy (DAS), which sets out the policy and strategies for increasing efficiency and effectiveness in the mobilization and utilization of Aid in achieving the development results set out in the MGDS' (GoM, DAS, 2). The DAS aims to achieve this objective through the five norms of the Paris Declaration and their associated indicators as well as a set of country-specific actions, with time-bound targets, seeking to reform both the Government's use and reporting on Aid and own resources and the modalities with which support is administered. Using joint UN Resource Mobilization, The UNCT in Malawi work together to mobilize resources based upon requirements identified in the UNDAF.

Parts of the resources are mobilized as core funds through the different UN agencies. Some resource requirements may be met from special Trust Funds (such as the Expanded Delivery as One Window) or bilateral donor agreements. Resource mobilization in Malawi is guided by the following principles:

- UNCT Malawi will mobilize funds for the UNDAF at national, regional and international levels.
- Resources that are being mobilized through joining UN resource mobilization efforts will be channeled through and managed by the One UN Fund.
- In all resource mobilization efforts, strong preference is given to un-earmarked contributions to the One UN Fund.

Exceptionally, and where the potential resources cannot be pooled in the One UN Fund, earmarked funding could be accepted as the least preferred option in consultation with the UNCT, provided that its focus is clearly on the achievement of at least one of the four UNDAF outcomes; Under the leadership of the Resident Coordinator, the UNCT works together with the Government of Malawi to jointly mobilize resources to cover the funding gap in the UNDAF. Exception is made for earmarked funding sources (Regional Technical Cooperation Programs, normative actions and programs and projects specifically designed and financed to meet a request from the Government, which will be considered as part of resources contributed within the overall Budgetary Framework; Agencies can also continue to raise

programmatic resources on an agency basis. These resources, together with agency's regular (core) resources, will remain within the control of the agency but programmed and disbursed in full alignment with the UNDAF. Agencies will be asked to inform the RCO of the amount mobilized and the planned allocation of those resources to ensure the UN System at all times has an accurate overview of the available and required resources (UN Report, 2013).

The Joint Resource Mobilization Strategy is supported by the establishment of two instruments, the One UN Fund (resources tied to programmatic interventions as reflected in the UNDAF 2012-2016). This donor financing instrument provides a forum for policy dialogue and harmonization and contributes to reduced transaction costs of engaging with the UN for governments, donors, and national counterparts. The One UN Fund aligns with national ownership and improves coordination among donors and among UN agencies in the context of Aid Effectiveness agenda. They also allow smaller donors or those who are not present in the country to contribute to the country's development priorities without a need for a field presence. Within the One UN Fund mechanism, funding windows will be created at the UNDAF Outcome level to enable resource mobilization for un-earmarked interventions.

1.1.3. Resource Mobilization by Local Firms in Kenya

Kenya's Vision 2030 aims to transform Kenya into a middle-income country by 2030. The government understands the need to improve the quality of road facilities, standards, and safety. KeNHA is the government body responsible for the management, development, and maintenance of national trunk roads. The Kenya Roads Act gives KeNHA the power to construct, maintain, improve, and manage roads under its jurisdiction with roads under the authority classified as A, B and C. KeNHA recognizes that road construction and maintenance alone are not the only components of road development; rather, the management and protection is equally important. These roads carry about 80% of Kenyan passengers and cargo.

The effective implementation of the strategy for resource mobilization will require an unremitting effort from all relevant stakeholders of the Convention at all levels. Political will and commitment to better recognize the importance of resource mobilization in sustainable development must be reinforced to achieve the funding target. The Kenyan Government introduced a lot of changes in terms of development planning and resource allocation through the devolved funds, where there was a lot of emphasis on bottom-up planning and devolved funding.

The creation of these funds offered a fertile opportunity for local firms to mobilize funds through the government. Among the devolved funds included the central government funds such as Constituency Development Fund, Youth Fund, Constituency Bursary Fund, and the Constituency Aids Fund (Ministry of Planning and National Development, 2006). UNDP (2006) argues that this concept evolved to give the Kenyan public at the grassroots level a chance to develop their respective constituencies in accordance with their priorities. This involves partnerships between grass root organizations such as CBOs, other forms of civil society organizations, the private sector, and the government by developing mechanisms for which such resources would be accessed and utilized. UNDP (2006) reports that the support of women groups increased from Kshs. 46 million in 2004 to Kshs. 48.1 million in 2005 in Kenya.

There is a mismatch between the policy changes on the devolution of these funds and awareness creation at the community level to enable the public to understand clearly what the policy articulated and how this policy is intended to be implemented. As a result, there have been inequities in how these funds have been accessed at the community level. UNDP (2006) indicates that the central and local government funds have not been accessed by civil society organizations due to inadequate awareness about the source and the procedures required to access the funds. Among the factors blamed for this situation were the low literacy levels of some of the people elected to the civic seats, which hindered them from articulating these policies to the public and the weak capacity of CSOs to elect effective civic leaders. Besides, the operations of the county councils were not seen as transparent enough, hence suffocating the opportunities for people's participation in the identification of the projects to be implemented. The ability of CSOs to challenge these dominant structures was equally weak due to the fear of the ordinary people of government authorities and the fear of victimization. The Kenya government has made efforts to provide land, which is a core resource to social development projects at a micro level. There is no systematic process regarding the allocation of such parcels of land, which can involve a roadside declaration by a head of state to bribe various officers within the line ministries to secure a public utility land to implement a community-based project.

1.1.4. Implementation of Virtual Weighing Station

A virtual weigh station (VWS) is an enforcement facility that does not require continuous staffing and is monitored from another location. The virtual weigh station concept is very flexible. While there is a minimum set of functionality/technology that must be deployed in association with a VWS, states can customize their VWS deployments to meet their specific functional needs (e.g., focus exclusively on truck size and weight issues, expand the focus to include safety and credentialing regulations), operational environment (e.g., typical weather conditions, physical space, terrain), and communication infrastructure (e.g., presence of communication infrastructure at the site, presence of power at the site). Due to the expansive road network across the country, it was realized that it was never going to ever be possible to control overloading on Kenya's road network through management at the existing ten static weighbridges (Odhiambo, 2017).

A policy to develop a system of remote (virtual) weigh stations was prepared, also integrated into the existing static weigh station, utilizing CAMEA Weigh-IN-Motion technology in partnership with AEA Limited. Virtual weighing stations are one of the many construction projects that have been undertaken by KeNHA for the last five years through the

contracting of local firms. The Kenya National Highways Authority has set up 13 new virtual weigh stations on major highways to curb overloading and road damage (Okoth, 2020). These stations help to:

- Increase compliance with national size and weight standards through augmented enforcement operations,
- Improve commercial vehicle safety through targeted enforcement at commercial vehicles that are known to be overweight, are improperly credentialed, or are operated by high-risk motor carriers,
- Improve the efficiency and effectiveness of roadside enforcement assets,
- Improve resource allocation and staffing decisions through the use of information, and
- Reduce costs associated with the expansion of commercial vehicle size and weight/safety enforcement programs through the use of technology (Odhiambo, 2017)

As institutions consider the next generation of roadside technologies, VWS sites also may be designed to serve as conduits for two-way communication between the stations. It is, however, a unique project involving the latest technologies in information technology and one of its kind in the African continent. The successful implementation of this project, therefore, depends not only on the two aspects of quality and quantity but also on the availability of resources. Project time and cost depend on the availability of resources as each activity must be allocated resources and scheduled to be completed within a certain time or otherwise affect the overall project duration. According to Edwards and Hulme (2008), broadening the resource mobilization strategies in African countries has been found to greatly enhance the sustainability of any organization. The challenge that has remained is how other similar organizations can generate and mobilize their own resources, survive and thrive in the face and midst of an increasingly competitive, difficult and harsh socio-economic environment.

1.2. Statement of the Problem

Batti (2014) argues that the common mistake that local firms make is to become over-dependent on a single source of funding. When that source reduces or dries up, the firm struggles to generate new funding when it is too late. Hence, programs are compromised or terminated. Efficient performance of road infrastructure where virtual stations are regarded as road infrastructure projects is essential for economic growth and development.

Kenya government has put several measures to address the performance of road infrastructure projects. These measures are meant to provide a legal and institutional framework for the construction, rehabilitation, and maintenance of roads. Ochenge (2014) argues that despite government measures, road infrastructure projects by local firms in Kenya continue to face challenges that lead to poor project performance. The KPMG report (2014) illustrates that, on average, 39.4% of road infrastructure projects undertaken by local firms in Kenya were completed within the planned costs and the scheduled timelines, while only 35% of these projects met the required quality standards. This accounted for 36.9% performance of road projects undertaken by local firms from 2011 to 2014. Mattas and Ashkenas (2011) break down the implications of these poor performances to slow economic growth, increased levels of poverty and resource constraints. There is also a revelation that there have been many more failures than successes in the implementation of projects, especially in developing countries.

This was recorded by an examination of post-world-war planning history (World Bank, 2010). The government and citizens are concerned as most projects fail at the implementation stage. Road projects in Kenya are rarely completed within the stipulated timeframe. Most of them get completed as late as between 2-5 years later or even end up stalled (Ministry of Planning, 2014). The completion of most of the road projects in Kenya hangs in the balance due to a combination of slapdash work characterized by inadequately funded and ill-equipped contractors compromising the quality of work being done, running behind schedule, and having high-cost overruns (GoK, 2015; Nyabaro, 2015). Many roads have recorded poor performance at the end in the past (Njenga, 2014).

Previous studies focused on the performance of other infrastructure projects and not-for-profit organizations. The same conclusions cannot be drawn on virtual weighing stations implemented by KenHA through local firms. This study, therefore, seeks to establish the effects of resource mobilization as a project management practice on the successful implementation of virtual weighing stations by local firms in Kenya. Specific attention is given to how human resources, financial resources, material, and technology mobilization influence the successful implementation of virtual weighing stations by local firms in Kenya.

1.3. Objectives of the Study

1.3.1. General Objective

The general objective of this study is to establish the influence of project resource mobilization and the successful implementation of virtual weighing station projects by local firms in Kenya.

1.3.2. Specific Objectives

- To determine the influence of financial resources on the successful implementation of virtual weighing stations in Kenya by local firms.
- To assess the effects of Human Resource mobilization on the successful implementation of virtual weighing stations by local firms in Kenya.
- To establish the effects of material mobilization on the successful implementation of virtual weighing stations by local firms in Kenya.

- To determine how the use of technology affects the successful implementation of virtual weighing stations by local firms in Kenya.

1.4. Research Questions

- Do financial resources influence the successful implementation of virtual weighing stations in Kenya by local firms?
- How does Human Resource mobilization influence the successful implementation of virtual weighing stations by local firms in Kenya?
- What is the impact of material mobilization on the successful implementation of virtual weighing stations by local firms in Kenya?
- How does technology affect the successful implementation of virtual weighing stations by local firms in Kenya?

1.5. Significance of the Study

The study seeks to inform project stakeholders, including project managers and contractors, to understand the resource mobilization efforts that weigh determining the successful implementation of virtual weighing stations and, by extension, other road infrastructural projects, more so local firms. The findings of this research will be of importance to government stakeholders to have in place an effective policy framework to promote resource mobilization practices. For academicians, the project aims at providing crucial information on the effects of project management practices on the successful implementation of projects by local firms in Kenya. In furtherance of this, this study will also seek to act as a reference and the trigger of interest among academics for further research on the problem.

1.6. Scope of the Study

This study seeks to establish the effects of project management and resource mobilization practices on the successful implementation of virtual weighing stations by local firms in Kenya. Some of the aspects considered will be human resource mobilization, financial resource mobilization, and physical resource mobilization, as well as how technological resource mobilization in these projects affects their successful implementation. The target respondents will be the stakeholders in the implementation of the 23 virtual weighing stations in Kenya, including 20 stakeholders distributed from KeNHA, 10 members from AEA Ltd, 10 from Danka Africa and 10 from other stakeholders who were implementers in the projects. The project is chosen because it is a unique project and a first of its kind in Africa and therefore calls for effective and complex resource mobilization strategies if any successful implementation of a project is to be experienced. Further, the virtual stations are one of the most recent government projects undertaken.

1.7. Justification of the Study

Virtual weighing stations have the potential to improve the efficiency of our transport sector by reducing the time and cost associated with static weighing stations. This research intends to provide knowledge on the successful implementation of virtual weighing stations and this could improve the efficiency of the transportation sector, thus improving the overall economic status of the country.

The provision of real-time data transmitted from virtual weighing stations provides vital information on the movement of goods and traffic.

The uniqueness of this project could contribute to the potential improvement of efficiency, transparency, and accountability. Further, the new knowledge opens up more insight into the transport sector.

2. Literature Review

2.1. Introduction

The purpose of this chapter is to understand what other writers have written about the influence of resource mobilization on the successful implementation of virtual weigh stations by local firms in Kenya. It aids in appreciating what other writers, both local and international, have written about this field of study and access what possibly needs to be researched further. Most importantly, try and fill in the gaps the other researchers left. Various past research studies and works of literature are to be collected and gathered to complete this chapter. The chapter discusses related literature to the study. It covers theories, models and conceptual framework, empirical review, critiques, research gaps and summary of the study.

2.2. Theoretical Framework

According to Rugenyi (2016), a theoretical review is an examination of several theories regarding an issue, concept, theory, or phenomenon that needs understanding. A theoretical review helps to identify theories that exist, their relationships, and the degree to which the theories have been tested and develop new hypotheses to be tested. Rocco and Plakhotnik (2009) simplify this by defining a theoretical review as a presentation of a theory, then establishing the empirical and conceptual work about the theory.

A theory describes the specific realm of knowledge and explains how it works (Swanson & Chermack, 2013). It is formulated to explain, predict, and understand a phenomenon and, more so, to challenge and extend existing knowledge within the limits of critical bounding solutions. A theoretical framework is a component that supports a theory utilized in a research study. It introduces and describes the theory that explains why the research problem is worth studying. This

study is based on the resource mobilization theory, resource-based view theory, constraints theory and the triple constraints theory.

2.2.1. Resource Mobilization Theory

Resource Mobilization Theory (RMT) theory explains social movements by viewing individuals as rational actors that are engaged in instrumental actions that use formal organizations to secure resources and foster mobilization. It explains people joining social movements with rational actor theory and the actions of the Social Movement Organizations (SMOs) that are formed by rational actors by viewing the social movement organizations as organizations that function for self-preservation and market their products. Rational actor theory states that people will join social movements when the benefit of joining these groups outweighs the cost to that individual (McCarthy & Zald, 1997). Social movements arise when a selected group has the resources available to mobilize a group (Leslie, 2012). It has been argued that the main purpose of these groups is to amass resources for their own benefit (McCarthy & Zald, 1997).

Resource mobilization theory dictates that for such aggregation of resources, some organizations need to focus on understanding the social movements of the organizations that are formed. Resource mobilization theory clearly explains social movements because it explains the actions of individuals by analyzing their social behaviors and it does not force individuals to behave in a certain way. According to Beuchler (1993), for Social Movement Organization to form and be effective, the individuals within it need to form some sort of collective identity so that they can act with some degree of social cohesion.

Resource Mobilization theory focuses on a centralized type of organization; hence, it lacks the role of the collective identities that are formed, which leads to difficulty in explaining the activities of many social movements. The resource mobilization theory of social movements states that social movement arises from long-term changes in a group, available resources, and opportunities for combined action. The theory is based on a perception that resources such as time, money, and organizational skills are very critical to the success of a movement (Eltantawy & Wiest, 2011). In contrast to variables considered by other social movement theories, resource mobilization theory was among the first to recognize the importance of the influence of social movements.

According to McCarthy and Zald (1997), resource mobilization theory is based on five main principles:

- The actors are coherent and are able to weigh the benefits and costs of movement participation,
- Members are recruited through networks,
- Obligations are strengthened by building a collective identity and continuous nurturing of interpersonal relationships,
- Movement organizations are dependent on the collection of resources, Social movements need resources and leadership continuity and
- Lastly, the type of resources shapes the activities of a movement, e.g., access to a TV station increases the use of TV as communication media.

According to Leslie (2012), the assumptions of the resource mobilization theory include costs, mobilization of resources, the organization or state or society suppressed or repressed and the movement outcomes.

- First, the participants weigh the costs and benefits of participating in collective actions,
- Second, the mobilization of resources may take place within or outside the aggrieved group,
- Third, the organization and mobilization of resources are very important for the success of collective action,
- Fourth, the costs of participating in collective actions are related to the society or the state and
- Fifth, there is no direct correspondence between the degree of mobilization and movement success.

Critics point out that resource mobilization theory fails to explain social movement communities that are part of a large network of individuals and provide them with various services (McCarthy & Mayer, 2001). It has also been argued that it fails to explain how groups with limited resources can succeed in bringing social change (McCarthy & Mayer, 2001). Despite its weaknesses, resource mobilization theory has been useful because it challenges the outmoded approaches and provides a detailed framework that has served to integrate research hence generating substantial research (Leslie, 2012).

2.2.2. Resource Based View Theory (RBV)

The theory bases its argument on the applications of both tangible and intangible resources that give the firm a competitive advantage over others. It explains how these resources are important in completing a project within the budgeted costs, scheduled timelines and meeting the expected quality (Barney, 1986). The argument here is that adequate resources give a firm a competitive advantage and superior performance over other firms and every project manager has the intention to improve the performance of the projects undertaken. The challenge, however, entails the limited resources and the time available, constraining the efforts to improve the performance of a project (William & Dettmer, 2010). Resources are either tangible or intangible. Tangible resources include funds, materials, equipment, and labor, while intangible resources include trademarks, intellectual property and processes. The employment of modern equipment, as Gimeno (2011) puts it, can make a firm complete an infrastructure project within the estimated project timelines and reduce project cost overruns.

Robert and Bradley (2013) note that for a firm to improve its performance and successfully implement a project, resources available and their value are assessed together with a strategy on how best to utilize the resources formulated to give the firm a competitive advantage. This school of thought further argues that resources such as capital, skills, equipment, and patents enable a firm to implement projects efficiently. Barney and Smith (2010) noted that for a project to be effectively undertaken, basic resources such as human, physical and technology must be present. Otherwise, it is

difficult to undertake mega infrastructure projects without resources. Bofinger (2009) argues that competitive advantage entails being able to put together resources that can perform project activities. Further, Crivelli and Gupta (2013) study public-private initiatives in resource mobilization, while Might and Fisher (2011) employ the theory while discussing the causes and delays in the construction industry of Malaysia.

The study by Heinrich and Bofinger (2009) notes that the resources at the disposal of a firm are indicative of superior performance and the ability of the firm to nurture and develop these resources is a pointer to its sustained competitive advantage. The argument here is that the best way to sustain a competitive advantage is to keep upgrading the resource pool. From Porter's diamond model, innovation is considered a force that leads to the creation of a competitive advantage for a firm. Firms must, therefore, focus on acquiring the necessary technological tools for innovations in projects.

Peteraf and Berney (2012) argue that the RBV theory creates an inter-firm competition platform based on the resources at their disposal. The resources available affect the performance of a project and the successful implementation thereof. Therefore, this theory is very important to this study because it defines and explains the tangible and intangible resources required to enhance the successful implementation of virtual weighing stations by local firms in Kenya. Since the intention of every firm is to successfully implement a project, resource mobilization becomes a critical aspect and the RBV theory is relevant because it expresses the required resources by local firms to successfully implement road infrastructure projects.

2.2.3. Theory of Constraints

The theory introduced by Goldratt (1984) was developed with the aim of helping organizations achieve their goals through improvement of project performance. It is a form of systems thinking which suggests that any complex system at any point in time has only one aspect that would limit its ability to achieve its goal. This, therefore, calls for the need to address that constraint, adjust scheduling and utilize resources effectively. The theory has found application in two main areas of project management:

- Simplifying control through the scheduling of projects and
- Allocation of resources required for the project (Steyn, 2002)

The basis of this theory is that constraints have negative impacts on the performance of any organization/firm. It puts emphasis on the effective management of these constraints by project managers. It challenges managers to find creative ways that will enable a firm to achieve quality despite existing constraints. Linhares (2010) notes that most constraints firms face are because of policies and inadequate tangible resources.

William (2013) notes that constraints can be characterized as a set of concepts, principles and measurements focusing on the logistical tools that make project workflow seamless. Debra, James, and Eric (2015), in studying the competencies of project management that have an impact on successful project implementation, noted that the project manager must focus on the project constraints. Armit and Schoemaker (2011) argue that critical chain project management (CCPM) is a good application of the theory of constraints. The method is a good one in ensuring articulate planning and execution management to deal with uncertainties that are inherent in managing projects while taking into consideration the constraints facing resources. The primary constraints in project management are scope, time, and cost.

Scope refers to what is required for the project to be successfully completed. The bigger and more complex a project is, the more challenging it is. Complexity brings in aspects of equipment used, the materials, machinery, and the people available. In fact, Bladderstone (2012) notes that sub-contracting is one way of dealing with big complex projects. It is significant to sub-contract as it helps in breaking complex projects into simpler and smaller projects that can be handled easily and effectively. The integration of other techniques, such as Just in Time (JIT) and Total Quality Management (TQM), with the theory of constraints, provides the avenue for improving project activity. It enhances the delivery of project deliverables, the creation of value to clients, the reduction of project cost and the completion of the project in time. The theory is relevant in this study given the fact that it breaks down the constraints that inhibit the successful implementation of projects.

2.2.4. Theory of Triple Constraints

The triple constraints theory derives its argument from the very definition of a project, that is, a temporary activity designed to produce a unique product, result or service (PMI, 2015). Alternatively, a project is simply a unique, transient endeavor undertaken to achieve planned objectives which would be defined in terms of outputs, outcomes, or benefits. It is, therefore, deemed successful only if it can achieve the acceptance criteria within an agreed timescale and budget (APM, 2015).

These definitions indicate that projects take place within firms and organizations. In every organization, there is always a finite number of resources with which to accomplish infinite tasks. The result in scarcity gives us triple constraints in terms of deadlines, budget and minimum acceptable level of performance (Dobson, 2004).

The theory of triple constraints states that the triple constraint is a triangle of cost, time and performance that forms the bounds within which every project must be accomplished. The key major elements to be borrowed from this theory are:

- Firstly, the triple constraint constitutes a balance of project elements on cost, time and scope as functions of the successful project implementation.
- Secondly, the cause and effect of new or changing any of the constraints are effectively negotiated during the full project life cycle. Thirdly, the triangular relationship of these three constraints implies that at least one must be

constrained (to achieve a baseline for planning) and at least one of the variables must have capacity for exploitation.

2.3. Conceptual Framework

A conceptual framework is the way ideas are organized to achieve a research purpose (Shields & Rangarajan, 2013) and it is explicitly focused on the close to the data theory needed to direct how data is collected in empirical research. Mugenda and Mugenda (2003) note that a conceptual framework is a diagrammatical representation that shows the relationship between dependent and independent variables.

Resource mobilization aspects of finances, materials, technology, and human resources were identified as aspects that influence the successful implementation of virtual weighing stations in Kenya by local firms in developing this proposal document. The study intends to consider these factors in establishing their relationship with the successful implementation of virtual stations in Kenya and, by extension, other road infrastructure projects. The relationship between all the variables, as envisaged in this study, is shown below:

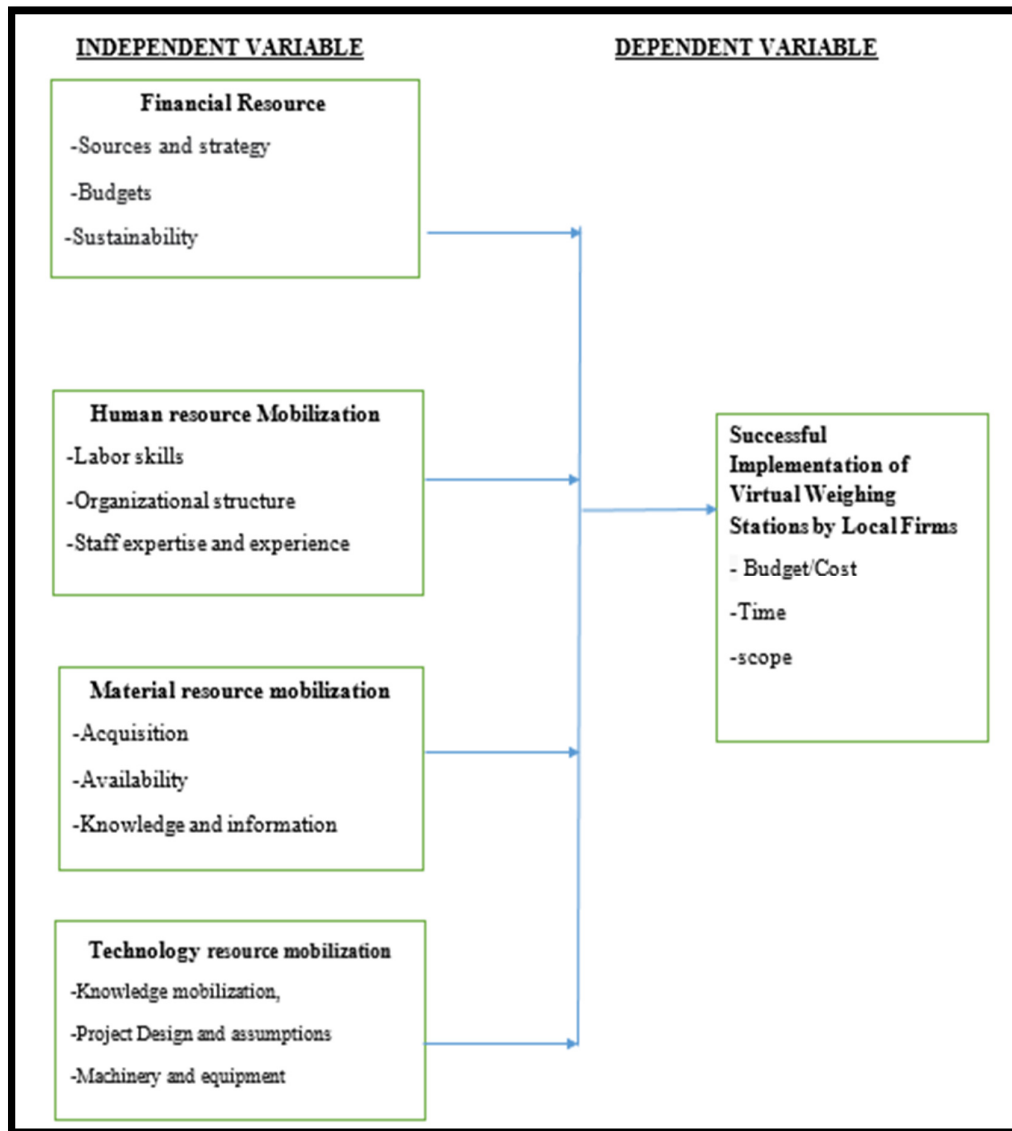


Figure 1: Conceptual Framework

2.3.1. Influence of Financial Resource on Resource Mobilization

According to Chitere (2012), the means by which a firm acquires the resources it needs and the sources of those resources determine what the firm is and what it can be. Feuerstein (2006) observed that for a firm to survive, it must understand the importance of identifying resources, particularly local resources. The sources of resources and resource mobilization strategies can help sensitize the firm to the public and can lead to insight and inspiration. Identifying and mobilizing resources reinforces, strengthens firms and leads them toward sustainability. Usually, sources of resources that reflect low vulnerability, low sensitivity, low criticality, high consistency, substantial autonomy, and high compatibility are more desirable as they enable the local firms to be more agile and adaptive.

According to Mala (2009), in Switzerland, for instance, the first major strategic decision that NGOs make in soliciting resources is to focus on human resources, material resources or financial resources. Since NGOs are usually dependent on external funding, the mobilization of financial resources tends to dominate. However, mobilizing volunteer and community resources is also a strategy that keeps an NGO close to its community-based roots.

In mobilizing financial resources, an organization faces two immediate decisions, namely:

- To generate its own financial resources, which leaves it in greater control and
- The threat to autonomy is reduced.

Having autonomy also means less vulnerability to outsiders, less sensitivity, and the ability to replace critical resources because the organization can decide where to put the surplus it produces. Sources of resources for CBOs include: members' contributions, loans from financial institutions, selling assets, volunteering of individual skills, expertise, gifts, and talents, and members' donation of natural resources such as land, water, and minerals, among others (Edwar & Hulm, 2007).

According to Cole (2009), the other relatively unexplored area in resource mobilization is for Non-Governmental Organizations to actively pursue non-financial resources. Non-monetary contributions such as volunteer work from Community-Based Organizations and linkages with other organizations should be explored and fully utilized. Often these options receive little attention in resource mobilization because they do not increase the organization's income. However, they are important options that have many advantages and provide other positive benefits. In addition to reducing costs, non-financial sources of resources can build networks, enhance information, create links to power holders, and enhance public awareness and organizational credibility. The key resources cited by the foresaid scholars concern NGOs and are observations made from highly developed countries and regions compared to the local area targeted by the current study.

2.3.2. Influence of Human Resource Mobilization in Resource Mobilization

Resources that are not financial may include talents, skills, and capacities. Mapping human resources can help local firms in Kenya find out alternative and effective resources for the project they have proposed to implement. It will be helpful to the local firms in rediscovering other innovative ways by mapping old-fashioned practices and technologies.

According to Mulwa (2010), awareness of public members' skills may make it possible to save the resources an organization already has by reducing the organization's expenditure in several ways, for example, using one of their members to provide the required services such as training rather than hiring an external expert. Taking into consideration the community members' skills may also help make fundraising local and encourage the local firms to find a reason to invest in the organization, thereby creating a sense of hope and control.

Being aware of several local firms' assets can help make good relationships among stakeholders, associations, institutions and among themselves, enhancing the implementation of virtual weigh stations and other projects. According to the article published by AWDF (2014), having a staff with the required skills, talents, attitudes, and support in an organization makes it easier to have good financial management within the organization. It further points out that all the organization members have a role to play in ensuring the sustainability of the projects.

When human resources are integrated into a wider aspect of mobilizing the resources required in the organization, the expenditures on external resources are minimized hence increasing the resources in an organization. Vartika (2016) argues that by mapping human resources, the best practices that an organization needs to incorporate and ensure the sustainability of its projects are identified. Better ways of identifying how these practices can be incorporated into resource mobilization can be identified to ensure that the required tasks are completed in a consistent and effective manner.

2.3.3. Influence of Material/Equipment Mobilization

Henderson (2015) points out that for any organization to live up to its long-time goals, it must have the necessary physical resources required in the organization. Some of them are good workspaces, communication systems, and enough information systems, among others. Acquisition of physical resources as an aspect of resource mobilization is considered the costliest aspect. As a result, project managers should ensure that they critically assess their needs before making any operations. An organization needs to combine labor, capital, energy, materials, and information to generate a product or service hence making its operation more sustainable (Nadler, 1992). Labor is the work provided to an organization by volunteers and workers. It is very important for the organization since it is needed to produce the required goods and services (Bradwel & Holden, 2004). They also state that capital is the strongest tool to produce a product or service. It can be in the form of machines and tools. Ensuring that the organization is fully equipped with these items may increase its sustainability and prolong its operations.

Energy makes the ability to produce and operate easily in an organization. Needed in various operations in an organization, such as heating up or lighting up the organization premises, moving the machinery in enhancing operations and ensuring an organization is a comfortable place so that members are entitled to a proper work environment (Bradwel & Holden, 2004). Materials also come in raw form. It is needed to produce the product or service. Without materials and energy, it means that the operations in the organization were reduced or even stopped, which can negatively influence the sustainability of the organization's projects. Information is very important for an organization. In this competitive world, information gives us continuous updates. It is the knowledge that project members need to produce the product or service (Bradwel & Holden, 2004).

2.3.4. Influence of Technology in Resource Mobilization

Technology has the potential to transform human development. As inequalities in education, healthcare, human rights, and economic development continue to prevail, entrepreneurs around the world are beginning to address social problems through technology.

Katheka (2013) notes that construction technology is used as advanced methods and equipment in building structures. The availability of modern equipment and tools easily integrated with software increases the output, making work easier while ensuring optimum resource allocation and utilization. The utilization of computer design software, monitoring and evaluation techniques together with other project management methods give a firm a better understanding of a project. Resources can be easily identified, mobilized, and correctly allocated with proper utilization of technology.

Entrepreneurs use bricolage to construct resources in penurious environments (Baker & Nelson, 2003) and with little institutional support (Chao, 1999; Lanzara, 1998; Stark, 1996).

Bricolage is a resource-mobilizing activity that occurs within a venture. An individual act of bricolage is defined as “making do with current resources and creating new forms and order from tools and materials at hand” (Baker, Miner & Eesley, 2003:264; Levi-Strauss, 1966). Bricolage as a resource-mobilizing activity describes how entrepreneurs thrive by constructing useful resources and extracting services out of junk materials (Baker & Nelson, 2005; Baker, Miner & Eesley, 2003; Harper, 1987). Bricolage is a particularly useful concept to explain how firms develop in economically depressed environments when external resources are hard to procure. Bricolage in technology entrepreneurship uses technology to venture into resources.

2.4. Implementation of Virtual Weighing Station in Kenya

Owing to the expansive road network across the country, it was realized that it would never be possible to control overloading on Kenya's road network through management at the existing ten static weighbridges. Therefore, a policy shift was made to develop a system of remote (virtual) weigh stations, also integrated into the existing static weigh station, utilizing CAMEA Weigh-In-Motion technology. Ten of these virtual weigh stations were first integrated in 2018 into the existing five static stations with CAMEA technology to form an integrated system of fifteen weighbridges, complete with a dynamic 24-hour manned control center. Thirteen more virtual stations were constructed through a phase two project that was undertaken from January 2019 to December 2021.

Vehicles determined, through this system, to be overloaded above a critical threshold (initially 20% above permissible gross vehicle weight) are automatically tagged and the tags are sent to the static weigh stations as well as the Axle Load Enforcement and Highway Unit (ALEHU) for possible impounding and prosecution whenever encountered. This system of integrated virtual and static weighing stations has been in operation since October 2018. This has seen a dramatic and unprecedented reduction in overloading incidences and elevated levels of compliance across the country.

A virtual weigh station (VWS) is an enforcement facility that does not require continuous staffing and is monitored from another location. The virtual weigh station concept is very flexible. While there is a minimum set of functionality/technology that must be deployed in association with a VWS, state institutions can customize their VWS deployments to meet their specific functional needs, operational environment, and communication infrastructure. Implementation of Virtual weigh stations in Kenya was very important for the government through KeNHA to; increase compliance with national laws and weight standards through augmented enforcement operations for instant screening of commercial vehicles and persistent enforcement operations on known bypass routes around fixed facilities, improve commercial vehicle safety through targeted enforcement of commercial vehicles that are known to be overweight, are improperly credentialed, or are operated by high-risk motor carriers; Improve the efficiency and effectiveness of roadside enforcement assets; Improve resource allocation and staffing decisions using information; and reduce costs associated with the expansion of commercial vehicle size and weight/safety enforcement programs using technology. As countries consider the next generation of roadside technologies, VWS sites also may be designed to serve as conduits for two-way communication between the roadside and a vehicle in motion and, therefore, may support a broader range of safety, security, mobility, and systems management objectives.

From the system, one can know the speed of the truck and its length. The CCTV cameras also capture its number plates and overview images of the whole vehicle. Virtual stations are cost-effective, help protect the roads from premature damage caused by overloading and also protect the freight business from unfair competition caused by over loaders.

2.5. Empirical Literature

The study covers articles obtained in journals, reports, documents, and material obtained from the internet, such as research repository websites and databases, together with other relevant publications. It discusses the key constructs, perspectives and variables underlying the influence of resource mobilization on the successful implementation of virtual weighing stations in Kenya by local firms.

2.5.1. Resource Mobilization in Financing and Successful Project Implementation

Majanja (2012) conducted a study on financing constraints of infrastructure projects in Kenya covering 87 construction firms. The study used two alternative variables to measure financing constraints:

- The degree of financing constraints the firm faces, and
- The use of bank credit by firms

To assess this constraint, respondents were asked to rate access to financing as a constraint of the project's successful implementation. The results pointed to financing being a major obstacle faced by firms in undertaking their projects. Majanja suggested the implementation of public-private partnerships to raise adequate funds for projects. Simmons (2012) also noted that local firms faced problems accessing credit facilities due to the lack/or perception of lack of collateral security. Majanja, however, assumed that only finances influence the successful implementation of projects. This study includes other variables such as machinery/equipment, materials, and labor-force.

Gitenya and Ngugi (2012), while studying the determinants of housing project performance in Kenya by local firms, found out that most of them are constrained by inadequate financial resources. The study further noted that while the overall theories were sufficient for the project in theory, challenges arising along the project life led to the constraints faced. Activities scheduled to take place at the same time during the project life were constrained due to the pressure on the resources available. It is, therefore, evident that the resources available affected the success of the project.

2.5.2. Resource Mobilization in Human Resource and Successful Project Implementation

Carter (2012) investigated the challenges facing road infrastructure projects undertaken in Sub-Saharan Africa. It analyzed the influence of outsourcing technical teams using questionnaires issued to project managers and contractors. The findings of this study indicated that local firms experience a harder task compared to international firms when it comes to finding the competitive skill-force required to undertake projects. It further indicated that every organization faces constraints when it comes to the resources available for any project. Therefore, the role of the project manager is to mobilize these resources and ensure optimal utilization to successfully execute the projects within the constraints. Carter further notes that the successful implementation of these projects required effective planning in establishing an efficient project team that had the necessary skills to perform project activities (Warner Well, 2013).

In another study by Mcrael (2013), the role of managerial skills in managing infrastructure projects in Europe, the level and training in managerial skills would boost the performance of construction firms in terms of quality and time of project completion. Training would play a significant role in empowering people to make better decisions and provide better quality goods and decisions. Mcrael further notes that in scheduling activities and assigning resources, the project manager was able to effectively utilize the available workforce effectively. The emphasis here was that clarity in the understanding of major project activities and durations was a significant part of the scheduling process. Ghura (2013) also points out that adequate and timely personnel planning would prevent overruns in cost for road infrastructure projects. The argument in this study was that it is important to have the project manager understand the number of team members required to perform project activities scheduled in a project.

As with Leyman (2013), the study sought to establish project management competency development in big Swedish organizations. Some of the findings of this study were that the lack of staff with the required skills to perform infrastructure projects was a challenge in performing road construction infrastructure projects, yet this is a critical aspect of project success, matching member skills with the work to be performed depending on the time taken to complete a task. This was consideration missing in local firms and led to schedule overruns where a task was completed long before it was supposed to be due. Leyman, therefore, notes that a list of the skills required for the project needs to be developed by the project manager as it determines the personnel required for the project. The study concludes by noting that a competent human resource is paramount to the achievement of quality, productivity, and efficiency in successful road infrastructure projects.

2.5.3. Resource Mobilization in Physical Resources/Materials and Successful Project Implementation

Another study by David (2013) assessed the various ways in which technical resources can be applied in running projects to enhance management and ensure successful implementation. Fox (2013) examined the effect of using modern tools and techniques in projects involving Chinese construction companies. The findings of this study asserted that the deployment of modern tools and equipment greatly impacts the quality of a project and hence its successful implementation. The study further notes that the utilization of technology was significant in the timely completion of projects. Graham and Mohammed (2016) investigated the level of awareness of the uses of technology in the construction of agricultural projects in Europe. The findings were that agricultural projects were characterized by appropriate technology high level with institutional capacity to use modernized technological skills. It recommended the use of modern technology in road infrastructure projects which would result in increased delivery of quality projects and reduce both schedule and cost overruns.

Stephene (2013) undertook a study to assess the importance of technical resources in the performance of infrastructure projects in Kenya. The findings of this study indicated that no projects could succeed by applying obsolete technics. It advocated for the development of effective and reliable information systems for managing road projects after they carried out a study on the application of technology in project management. In addition, the study also indicated that the use of modern technology is significant in the efficient delivery of quality projects and therefore meets client needs. Ellaine & Harris (2014) studied the performance of power infrastructure projects in Uganda and the findings were that technology could lead to timely project completion and within cost. Odekinya and Yusuf (2014) studied the causes and effects of delays in infrastructure projects in Nigeria and indicated that such projects could be significantly improved by using modern equipment. This study, however, did not put into consideration other factors that affect project performance and successful implementation. Tony (2014) carried out a study on the effect of technology on performance in Europe and noted that challenges facing infrastructure projects could be addressed through modern techniques and technological solutions. The study also agreed that using modern equipment and techniques resulted in high-quality projects, reducing both time and cost overruns.

The UNESCO report (2014) also indicated that there was a need to have more training opportunities for students to build skills after school for self-reliance. The study recommended that the Kenyan government should provide hands-on practical skills relevant to Kenyan needs and boost economic development. Among other strategies, the report recommended that the government should increase the institutional capacities of various training institutions to provide quality training and increase opportunities through optimal utilization of these centers.

2.5.4. Resource Mobilization in Organization Structure and Successful Project Implementation

Chitere (2012) asserts that how an organization gets its resources and the sources of such resources determine the status of the organization and the potential it holds. Another study by Feuerstein (2006) noted that for an organization to survive, it must understand the significance of resource identification and, more particularly, resources found locally. The sources of these resources and the strategies employed in resource mobilization play a key role in leading to more insight and inspiration for the project management team and the organization. Identifying and mobilizing resources is, therefore, an important aspect of reinforcing and strengthening a project team, hence the sustainability of the project. Generally, it's also important to note that sources of materials and other resources that reflect low vulnerability, low criticality, sensitivity, autonomy and high consistency together with compatibility enable the organizations to be more agile and adaptive. Having autonomy, therefore, implies being less vulnerable to outside forces and having the ability to decide where to allocate surplus material.

Lavesser (2010) investigated the effect of organizational structure on the management of power projects in Zambia. 135 questionnaires were issued to project managers and 79 to project contractors. The study found out that organizational structure was significant in determining the project timelines. It further indicated that projectized organization structures not only fostered collaboration but also made the whole process of decision-making faster hence the shortened project schedules. With such structures, the study further notes that the ability of the project managers to overcome organizational issues improved the performance of projects taking time and cost into consideration.

Another study by Ngandu et al. (2010) focused on the effect of functional organizational structures in the construction of infrastructure projects in South Africa. The objective of this study was to establish the effectiveness of this structure in project management. It found out that the functional manager carried out construction tasks such as evaluation of performance and the setting of payment levels. Other findings in this study were that functional structures brought about conflict between the project managers and the project contractors over control of resources, allocation and control of workers since project managers had limited authority. However, this study failed to include other significant aspects, such as resource mobilization in successful project implementation.

Kumar, Ajay & Fanny (2012) studied functional structure on the performance of infrastructure projects in the United Kingdom and noted that these structures were set up for ongoing operations; and were found in firms whose primary focus was standardized products. Gulyani et al. (2012) studied the role of organizational structure on project performance in England and found out that projects that belong to the same functional division did not generate as many organizational issues as those that cut across several divisions. Such projects cutting across several divisions faced more challenges because they entailed the project managers engaging the other organizational managers for cooperation. Mwangi (2012) asserted that projectized organizational structures enabled the project team to have deeper expertise and thus led to better performance of projects.

Richard (2011) investigated functional, matrix and projectized organizational structures to establish the impact of allocating authority to project managers and whether this had any impact on the eventual successful implementation of a project. The study was undertaken in Eastern Europe. The study found that the matrix structure had both the project and functional managers with authority, leading to a strong team culture. However, resource conflicts still pose a potential for conflict between the two. Another challenge with this structure too entailed the presence of two managers for project staff.

Bjarne (2015) sought to find out whether an organization gained any significant advantage in adopting a given organizational structure in central Europe. The study indicated that organizations with projectized structures were able to complete their projects in good time and expected quality as compared with those that used functional matrix organizational structure. Graham and Mohamed (2013) examined the role of project managers in allocating and organization of project resources in the US. It found out that the project managers required full authority and responsibility in managing infrastructure projects. Daniels (2014) criticized this structure as having fewer specialties as team members are Jacks of all trades. This is also true since, in such structures, the project manager reserves all the authority to allocate resources and organize team members on tasks and activities. Greeve and Hodge (2011) investigated what determines project success and asserted that for proper implementation of the project, a project team needs to be created with its own technical staff and management. Resources should also be assigned to the project team and the project manager should be given full authority on how to control them. Reporting channels should be directed to the project manager. This study, however, did not discuss how organizational structure relates to the whole process of resource mobilization; the focus was on resource utilization.

Guash (2012) conducted a study on organizational structure and its implications on infrastructure projects in Malaysia. It covered 50 firms and found that when projects are isolated from the functional divisions of a firm, the lines of communication are shortened, thus enhancing swift decision-making. The establishment of project teams also led to higher commitment levels by the project team members, thus, effective and successful project implementation. The study further asserted that the whole process meant a dedicated project team gained more experience with each implemented project. Bowman (2013) supported this study by indicating that the projectized structure model made it easier to manage projects because the whole structure had its focus on the project.

2.6. Critique of the Literature Reviewed

According to Majanja (2012), financing of infrastructure projects happens to be one of the major setbacks in successful project implementation. Simmons (2012) further notes that local firms in Kenya face problems accessing credit facilities due to a lack of collateral security. According to Gitenya and Ngugi (2012), inadequate financial resources are a major constraint when it comes to the performance of projects undertaken by local firms. It is, however, important to note that different local firms striving to undertake projects face different levels of challenges in sourcing financial resources based on their capacity and capability. The studies indicate that the lack of these financial resources is a challenge to project performance and success. For these reasons, this study endeavors to shed light on how effective resource mobilization can overcome such challenges and yield better results in project success.

On human resource matters, Carter (2012) notes that skills mobilization may warrant the need for an organization to outsource technical teams, as was done during the implementation of the virtual stations project. Effective planning on how to mobilize these skills is therefore paramount and significant. Mcrae (2013) and Leyman (2013) agree that project management competency is a significant aspect of project success. According to Leyman (2013), the lack of staff with the required skills and the inability to match staff skills with tasks led to cost and schedule overruns that eventually affect the success of a project. These studies tend to point at the requirements of the staff, including their competency but fail to point out that the attainment of such skills is vastly affected by human resource mobilization efforts. These findings were undertaken in European countries and can only be tested in Kenya through evaluation of how local firms are faring. It is, however, important to note that competitive human resources are vital to the success of any project.

According to Lavesser (2010), projected organizational structures are good for project decision-making processes, thus shortening project schedules. Ngandu et al. (2010) focused on the effects of functional organizational structures in the construction of infrastructure projects in South Africa. The findings of this study indicated that the functional project manager is tasked with the evaluation of performance and setting of payment levels. Due to the limited authority of functional managers in projects, the study notes that conflicts on resource allocation and control arose. This is a very important aspect of successful project management practices but fails to note the significant roles functional project managers would play in resource mobilization.

Kumar, Ajay and Fanny (2012) studied the functional structure and performance of infrastructure projects in the United Kingdom and noted that such structures were set up for ongoing operations. Gulyani (2012) found out that projects that belong to a single functional division did not face as many issues as those that cut across several divisions in an organization. Richard (2011) sheds light on this matter by investigating functional, matrix and projected organizational structures. A strong team culture arose from a matrix structure that integrates both functional and project managers with authority. However, as noted in the study, staff could end up with two managers, which contradicts the spirit of sustainable resource mobilization pursued by this study. It is also important to note that these studies were undertaken in European countries, thus the need to test the same in Kenyan local firms.

Fox (2013) examined the use of modern tools and techniques involving Chinese companies. The findings of this study were that modern tools are paramount to the success of a project. This study did not consider the knowledge availability in using such equipment. It would be futile to have modern tools and equipment whose operational knowledge staff do not have. Graham and Mohammed (2016) investigated the level of awareness of the uses of technology in European agricultural projects. Successful agricultural projects were characterized by appropriate technology, institutional capacity, and skillset. This is a study that was undertaken on agricultural projects in Europe and, therefore, would only be relevant to this study if the efforts were also directed towards road infrastructure projects especially undertaken by local firms in Kenya.

Stephene (2013) noted that modern technology utilization is significant in the delivery of quality projects. Odekinya and Yusuf (2014) studied the causes and effects of delays in infrastructure projects and noted that significant improvement could be realized through the utilization of modern equipment. However, these studies failed to consider other factors that are significant in the success of projects. The researchers further did not emphasize the importance of technological resource mobilization; an investigation into how to effectively mobilize technological resources for the success of a project would go a long way in improving resource mobilization efforts significant for the success of road infrastructure projects.

It is prudent to indicate that all these studies discussed in this paper were carried out in different countries, with varying scopes and addressing diverse challenges. This, together with no projects, is similar in terms of their cycles and challenges that determined the need to carry out this study on virtual station projects in Kenya.

2.7. Summary of the Literature Reviewed

This chapter delves into the existing literature on project resource mobilization and the successful implementation of projects across the globe. The theoretical review tries to explain the relationships between the variables considered in this study as supported by several theories. The conceptual framework gives a diagrammatic and explanatory representation of all the dependent and independent variables considered, while the empirical review was included to shed light on the topic through other relevant studies undertaken by various researchers. A critique of these past studies is also included, as is the gap analysis in research to identify areas of further study.

Heinrich and Bofinger (2009) found out that the resources at the disposal of a firm are indicative of a superior competitive advantage of a firm over others and the ability to effectively mobilize and nurture such resources is a pointer to the sustainability of the firm. This argument looks at the continual expansion of the resource pool to attain a competitive advantage in the field of project management.

Analysis of resources in terms of finances, human resources, physical and technological simplifies the whole process of resource mobilization and makes it easier for the project manager to effectively break down the resources as indicated in the conceptual framework of this study. It enshrines project management practices into the aspects of resources that can be effectively utilized in an integrated manner to produce outputs that are within the cost, time and quality deliverables of a project.

2.8. Research Gaps

Hujo (2020) notes that implementing development strategies rests on the capacity of an organization to design policies, create environmental support and mobilize the necessary administrative and financial resources. This challenges the general belief that local firms in developing countries heavily rely on external funding and highlights the significance of resource mobilization and sustainability. Gespar et al. (2019) indicate that the International Monetary Fund (IMF) estimates that an additional 2.6 trillion US dollars are required for 121 emerging market economies and low-income countries. Hujo (2020), however, argues that many low-income countries have low capacities in fiscal resource mobilization and sustainability. This is to say that the goals may not actually be realized if resource mobilization is not tied to sustainable development goals and strategies in a firm.

This study, together with others considered, is limited in its address of how to sustainably utilize the resources mobilized for better long-term benefits. It is paramount that organizations investigate strategic analysis of their resource pools, development of sustained economic growth and the overall improvement of staff welfare for long-term sustainability to be realized. This line of thought indicates that organizational processes, policies, and decision-making strategies determine yields from the resources mobilized, which in turn impact the sustainability of the projects undertaken. Therefore, the sustainable utilization of the resources mobilized for sustainable projects by local firms is an area for further investigation.

3. Research Methodology

3.1. Introduction

This chapter will focus on the methods and procedures that will be used in the research for the study. This includes research design, the target population, the sample and sampling technique, data collection instruments and tools, data collection process, data analysis and presentation.

3.2. Research Design

Bloomberg, Schindler, and Cooper (2014) define research design as the scheme, outline or plan used to provide answers to problems in research. The research design is also referred to as the conceptual structure that guides the conduction of research. Mugo (2017) elaborates this by noting that research design is the blueprint for the collection, measurement and analysis of data.

Mugenda and Mugenda (2008) argue that optimal results of a study are achieved using more than one approach. Therefore, this study employs descriptive and explanatory research designs based on a survey to investigate the influence of resource mobilization on the successful implementation of virtual weighing stations in Kenya. According to Mugenda and Mugenda (2012), descriptive design allows for comprehensive inferences on the variables under investigation. It is quick, economical and practical. Descriptive research is appropriate to this research since it utilizes quantitative approaches to data collection, analysis and presentation/reporting of both the independent and the dependent variables in a project research study. As noted by Saunders *et al.* (2007), the survey method is perceived as authoritative by researchers because it allows using both descriptive and inferential statistics in data analysis. Explanatory research further enables the study to establish the causal relationships between variables in a study.

3.3. Target Population

According to Saunders (2012), the target population refers to the population in which a researcher wants to generalize the results of the study. Mugenda and Mugenda (2009) define population as the elements that meet the criteria for consideration in a study. The target population in this study will comprise 50 stakeholders distributed from KeNHA Axle Load Control directorate, AEA Ltd, Danka Africa, and other stakeholders. This project was chosen due to its unique nature and because it will be the first of its kind in Africa, with Kenya being the only country having employed such technology on its roads. According to information from KeNHA, a total of 23 virtual stations were implemented on Kenyan roads from 2017–2021.

No.	Firm	Target Population
1	KeNHA ALC	20
2	AEA Ltd	10
3	Danka Africa	10
5	Suppliers	10
	Total	50

Table 1: Target Population

3.4. Sampling Frame

According to Mugenda and Mugenda (2003), a sample frame is a set of information used to identify a sample population for statistical treatment. A sampling frame includes a numerical identifier for each individual and other identifying information about the characteristics of the individuals to aid in the analysis and allow for division into further frames for more in-depth analysis. Kothari (2004) also noted that the sampling frame must be representative of the population. It defines a set of elements from which a researcher can select a sample of the target population. In this study, a census of 50 stakeholders directly or indirectly involved in resource mobilization and implementation of virtual weighing stations in the country.

3.5. Sample and Sampling Technique

A sample is a subset and a true representation of a population to be studied (Krishnaswamy, Sivakumar & Mathirajan, 2009). Sampling, on the other hand, is the process of selecting a subset of individuals from within a population to yield some knowledge about the whole population, especially for decision-making based on statistical inferences. Garg and Kothari (2014) note that a good sample should be a true representation of a population, result in minimal errors, viable, economical and systematic where results can be universally applied with reasonable levels of confidence.

This study will conduct a census of the target population since the number of individuals who participated in the implementation was few. Respondents include the assistant RE, inspectors, project managers, functional managers of the implementing contractors, the project implementing team and sub-contractors involved in the process. Gall, Gall, and Borg (2013) note that a census is allowed whenever the population size is smaller than two hundred respondents and tends to be more accurate than when sampling is applied. A total of 50 respondents shall be interviewed in this study.

3.6. Data Collection Instrument

According to Bryman and Cramer (2009), a data collection instrument is how information is obtained from the selected subject of an investigation. This research will collect both primary and secondary data during the study. Primary data will be collected using questionnaires and interviews. The questionnaires will contain structured questions. According to Dworkin (2012), the questionnaires will be used for data collection because of their simplicity in the administration and scoring of items and data analysis. Saunders, Lewis and Thornhill (2019) argue that these are the most effective elements in any structured survey. With the general objective in mind, the study intends to utilize closed-question items sufficient to yield only relevant data. The Likert scale is included to measure the levels of agreement or disagreement. It is a preferred method for converting qualitative data to quantitative formats for ease of analysis using computer-based software.

Secondary data will be gathered from existing credible and recognized sources. The secondary data will comprise relevant materials such as library textbooks, internet and magazines and reports in the organization.

3.7. Data Collection Procedure

The study shall use a structured questionnaire to collect primary data from the study respondents. The questionnaire will be administered to the selected study respondents (stakeholders involved in the building of virtual weight stations). The researcher will proceed to collect data from the selected respondents after obtaining permission from the University and other relevant authorities and after applying the drop-and-pick system. Secondary data will be collected from documented information, including government offices and libraries (books, journals, periodicals, and other publications) to supplement the primary data. After data collection, 'data cleaning' will be done to ensure that questionnaires are accurately completed. The questionnaires will undergo pilot-testing to check for reliability and validity. Borg and Gall (1996) recommend pre-testing of research instruments before being used in research.

3.8. Pilot Study

A pilot test is defined as a small-scale preliminary research that is conducted to evaluate time, cost and feasibility to improve on the design of a particular study before conducting the actual one or full-scale research project (Babbie, 2017). A pilot study will be conducted in order to establish the validity and reliability of data collection instruments (Saunders, Lewis & Thornhill, 2019). The questionnaires will be pre-tested on a pilot set of 5 active people in the projects for comprehension, logic and relevance. The rule of thumb suggests that 5% to 10% of the target sample should constitute the pilot test (Cooper & Schindler, 2017). It is supported by Walker (2012), who recommends that a pilot test of 10% of the population can be used for pilot testing. The findings of the pilot test will be omitted from the actual study. All features of the questionnaire that will be pre-tested include question content, wording, sequence, form and layout, question difficulty and instructions. The response obtained will be used to revise the questionnaire before administering it to the study respondents.

3.8.1. Reliability of the Research Instrument

Reliability is defined as the degree of consistency with which the instrument measures an attribute (Borg & Gall, 2017). It further refers to the extent to which independent administration of the same instrument yields the same results under comparable conditions. The less variation the instrument produces in repeated measurements of an attribute, the higher the reliability (Borg & Gall, 2017). Reliability analysis will be used to assess internal consistency among the variables of the study.

The reliability of the study measures will be assessed by computing Cronbach's Alpha coefficient for all items in the questionnaire and the overall assessment will be given (Cronbach, 1951; Sekaran & Bougie, 2010). The Cronbach's alpha coefficient ranges between 0 and 1, with higher alpha coefficient values being more reliable. A questionnaire with good internal consistency should have high alpha coefficients. The study will use a set threshold of 0.7 suggested by (Cronbach, 1951). All items that will return a Cronbach's alpha coefficient of 0.7 or more will be considered reliable. Individual items in an instrument measuring a single construct should give highly correlated results, which would reflect the homogeneity of the items. This can be tested using Cronbach's alpha, which tests all possible split halves and reflects the homogeneity of the items.

3.8.2. Validity of the Research Instrument

According to Glesne (2016), validity can be defined as the extent to which a measuring instrument provides adequate coverage of the topic under study or, in simple terms, the degree of relevance the instruments are towards the research. Mugenda and Mugenda (2009) regard instrument validity as the extent to which an instrument reflects the construct under consideration in research. The study will conduct a content analysis of the research instrument before being used for the main survey. The content validity of an instrument is the extent to which it provides adequate coverage for the construct domain or essence of the domain being measured (Dawson, 2019). The determination of content validity is not numerical but subjective and judgmental (Chakrabarty, 2017). Prior to data collection, the content validity of the instrument will be established by grounding it in the existing literature. Pre-testing the measurement instrument before data collection will further validate it by administering questionnaires to a few experts who participated in implanting virtual weighing stations.

3.9. Data Analysis and Presentation

Questionnaires shall be prepared to ensure optimum validity and relevance to the research problem. This data shall then be coded and entered SPSS (V.21) to create a data sheet to be used for iXn analysis. During analysis, respondents shall be coded with numbers, where data collected shall be screened and cleaned to minimize errors.

This data shall then be analyzed using descriptive statistics using percentages and mean scores to determine the varying degrees of responses. Standard deviations to determine disparity in responses, more so for the Likert scale, shall be adopted. Descriptive statistics is viewed as an invaluable tool in describing the data to portray the most authentic responses and reveal a pattern in the responses.

Regression analysis shall then be utilized to determine the relationship between variables in the research problem. Analysis of Variance (ANOVA) and multiple regression analysis will be used to determine the relationship between the independent and dependent variables in this research. A 5% significance level shall be applied for all tests. Respondents shall be assigned numerical values consistent with the numerical codes assigned earlier. The equation below shows the linear regression model of the independent and dependent variables to be adopted.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \epsilon \dots \dots \dots \text{equation}$$

Where:

Y = Successful implementation of virtual weighing stations projects

β_0 = Constant

$\beta_1, \beta_2, \beta_3, \beta_4$ = Independent variable coefficients

X1 = Financial resource mobilization

X2 = Human resource mobilization

X3 = Material resource mobilization

X4 = Technological resource mobilization

ϵ = error term.

The error term is assumed to be a normally distributed term with mean zero and constant variance. Descriptive statistics will be used to describe the characteristics of the data collected, which will then be presented in frequency and percentages for ease of interpretation and comprehension of the findings.

4. Data Findings, Analysis and Discussions

4.1. Introduction

This chapter discusses data analysis procedures, presentation, and interpretation of the research findings on resource mobilization and successful implementation of virtual weighing station projects in Kenya by local firms. It covers descriptive statistics where analyzed data were presented using means, percentages, standard deviations, tables and charts. Inferential statistics through the application of a multi-linear regression model are used to establish the significance of the independent variables on the dependent variable.

4.2. Response Rate

The study conducted an analysis of the response rate to determine the actual number of respondents who answered and submitted the questionnaires for data analysis. From the results, the response rate was (47) 94% of the total sample size and the non-response rate was (3) 6%. The response rate of 94% was accepted since it helped gather sufficient data that could be generalized to reflect respondents' opinions on resource mobilization and the successful implementation of the virtual weighing station project by local firms in Kenya. This was in tandem with Kogi (2017) that a

response rate above 30% contributes to the gathering of sufficient data that could be generalized to represent the opinions of respondents in the target population on the research problem under study.

Statistics					
Gender of the Respondents					
N	Valid	47			
	Missing	3			
Gender of the Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	36	72.0	76.6	76.6
	Female	11	22.0	23.4	100.0
	Total	47	94.0	100.0	
Missing	System	3	6.0		
	Total	50	100.0		

Table 2: Response Rate

The recorded high response rate can be attributed to the data collection procedures, where the researcher pre-notified the potential participants of the intended survey and utilized a self-administered questionnaire which respondents completed and sent back via email and WhatsApp communication tools.

4.3. Pilot Study Test Results

To ensure reliability in the study, a pilot test was done on a total of 6 which is 12% of the active project officials and of these, (5) 10% of the respondent population was able to reply. Dempsey (2003) indicates that 5% to 10% of the target population is an adequate sample for determining the number of respondents to be involved in the pilot. Cooper and Schindler (2003) agree that while determining the validity and reliability of the data collection instruments in a research study, the pilot study should be equivalent to respondents who are between 5% and 10% of the target population.

4.3.1. Reliability Analysis

This refers to the consistency, stability and dependability of the data. Whenever measurements of a variable are involved, the research seeks to ensure that the results of the study are consistent and dependable (Cooper & Schindler, 2003). A reliable measurement is one that, when repeated, would give a similar result to the output of the first instance. Any deviation from the initial measurement would indicate that the result is unreliable (Kiess & Bloomquist, 2009).

To measure the reliability of data collection instruments, an internal consistency technique using Cronbach's Alpha was applied using SPSS. Cronbach's Alpha is a coefficient of reliability that gives an unbiased estimate of data generalizability (Kogi, 2017).

Constructs	Cronbach's Alpha Values	Comments
Financial Resource mobilization	0.800	Accepted
Human Resource mobilization	0.805	Accepted
Material Resource mobilization	0.840	Accepted
Technological Resource Mobilization	0.767	Accepted

Table 3: Reliability Analysis

As presented in table 3, all the study variables had an alpha coefficient of above or equal to 0.75, which satisfies the Zinbarg (2005) argument that an alpha coefficient of 0.75 or higher is indicative of the data as reliable with relatively high internal consistency and can be used to generalize opinions of all respondents within the target population. This, thus, implied that the data collection instruments were reliable in gathering data for use in determining how resource mobilization influences the successful implementation of virtual weighing station projects in Kenya by local firms.

4.3.2. Validity

Data Validity refers to the degree the results represent the research topic under study, indicating the accuracy of results, meaningfulness and independence (Orodho, 2009). To establish the validity of data collection instruments, research questionnaires were given to 5 people. The respondents were supposed to indicate the relevance of the research questions in determining how resource mobilization affects the implementation of virtual weighing station projects in Kenya by local firms.

The content of the responses given by the officials was checked against the study objectives and rated using a Likert scale where 1 represents strongly agree and 5 represents strongly disagree. The content validity index was used to determine the validity by adding up all the items rated using a scale of 3 and 4 and then dividing the sum by the total number of questionnaires. The coefficient of the data gathered from the pilot study was computed with the assistance of SPSS. A context validity above 0.75 achieved implied that the questionnaire was a valid research instrument for the study.

4.4. Demographic Data

This section presents the respondents' background information, including gender, education level, experience, and local firm affiliation.

4.4.1. Gender

On gender, the majority of the respondents (76.60%) were males, while 23.40% were females. The gender difference was experienced due to the scarcity of women in the fields of engineering and virtual weighing stations. However, the gender disparity did not influence any incidences of bias or misinterpretation.

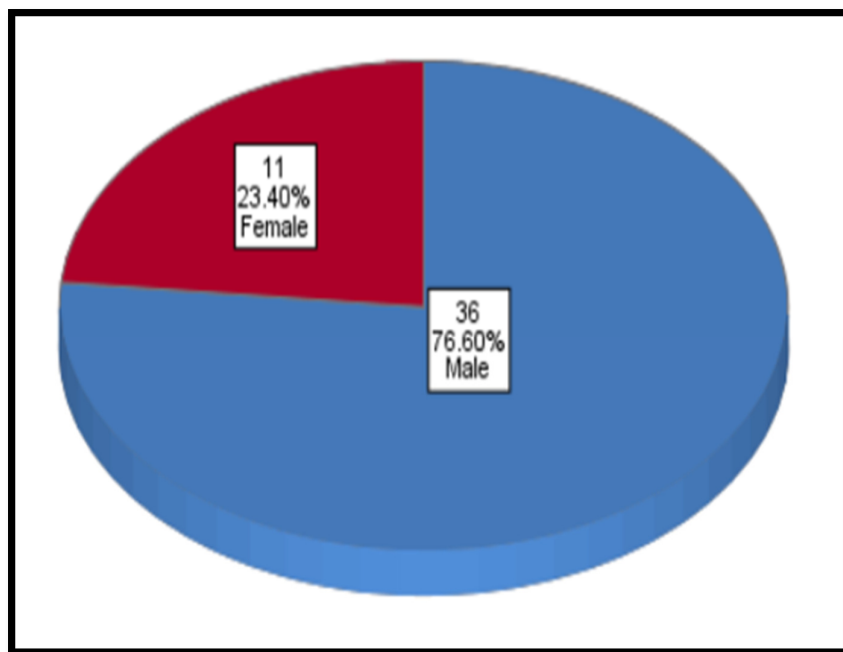


Figure 2: Gender of the Respondents

4.4.2. Highest Education Level

The study sought to establish the highest level of education held by the study respondents to determine if they had the relevant knowledge and skills on resource mobilization and successful implementation of virtual weighing station projects in Kenya by local firms. The study found out that 4% of the respondents had a high school certificate, 50% had a college diploma, 34% had a university bachelor's degree and 6% of the respondents in the pilot study had a master's degree. There were no correspondents with a Ph.D. level of education. The data are tabulated below.

Education Level of the Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High school	2	4.0	4.3	4.3
	College diploma	25	50.0	53.2	57.4
	Bachelor's degree	17	34.0	36.2	93.6
	Master's degree	3	6.0	6.4	100.0
	Total	47	94.0	100.0	
Missing	System	3	6.0		
	Total	50	100.0		

Table 4: Education Level of the Respondents

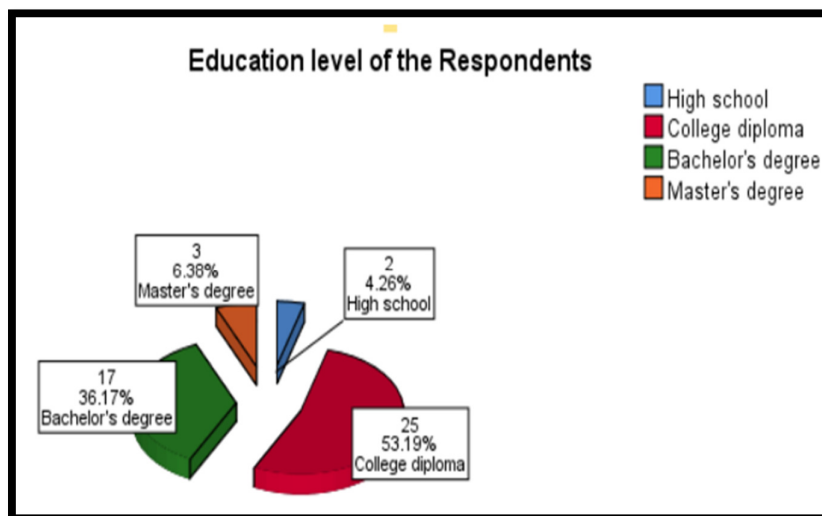


Figure 3: Education Level

4.4.3. Virtual Weighing Station Project Experience

The study further sought to find out the work experience of the respondents to determine the quality of data collected based on their working experience. As can be observed in the bar graph below, 31.9% of the respondents had experience of less than 2 years, 34% of the respondents had experience between 2 and 5 years, 25.5% had a working experience between 5 and 10 years, while the remaining 8.5% had an experience of above 10 years.

Experience of the Respondents					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 2 years	15	30.0	31.9	31.9
	2-5 years	16	32.0	34.0	66.0
	5-10 years	12	24.0	25.5	91.5
	More than 10 years	4	8.0	8.5	100.0
	Total	47	94.0	100.0	
Missing	System	3	6.0		
Total		50	100.0		

Table 5: Experience of the Respondents

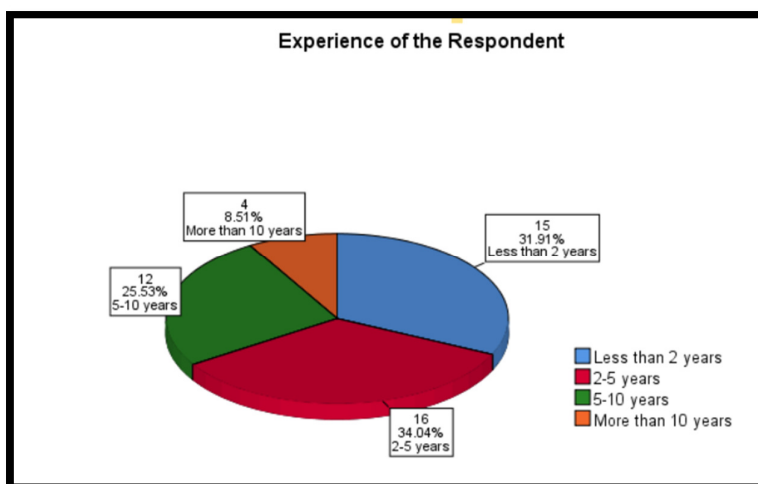


Figure 4: Experience

4.4.4. Respondents' Type of Education

Respondents in this study were drawn from various projectors and stakeholders actively involved in the implementation of virtual weighing stations in Kenya and employees from KeNHA, AEA Limited, Danka Africa (k) Limited and Suppliers in the project. The distribution is shown in the table and the chart below.

Local Firm/Organization Affiliated to					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	KeNHA	20	40.0	42.6	42.6
	AEA Limited	9	18.0	19.1	61.7
	Danka Africa	10	20.0	21.3	83.0
	Suppliers	8	16.0	17.0	100.0
	Total	47	94.0	100.0	
Missing	System	3	6.0		
Total		50	100.0		

Table 6: Local Firm/Organization Affiliated to

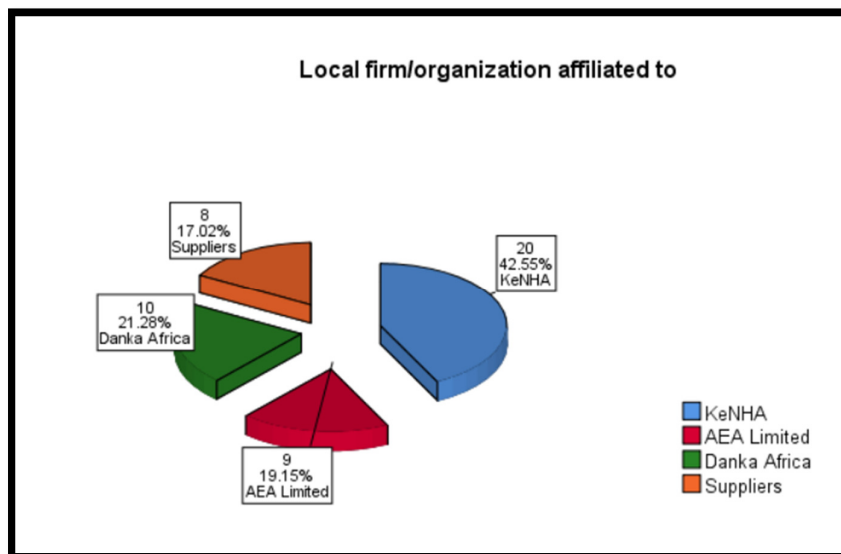


Figure 5: Local Firm/Organization Affiliated To

4.5. Descriptive Statistics

The study sought to determine how resource mobilization affects the successful implementation of virtual weighing stations in Kenya by local firms. Specifically, the study sought to find out the influence of financial resource mobilization on the successful implementation of virtual weighing stations in Kenya by local firms and assess the effects of human resource mobilization, material mobilization and technological mobilization effects on the successful implementation of virtual weighing stations in Kenya by local firms. This section discusses descriptive statistics where data obtained were analyzed using mean, standard deviation and variance results.

4.5.1. Financial Resources

The study sought to establish how financial resource mobilization influences the successful implementation of virtual weighing stations in Kenya by local firms. Respondents were issued with questionnaires and required to indicate how they agreed to the factors in relation to financial resource mobilization using a scale of 1 to 5 where: 1=Strongly agree, 2=Agree, 3=Neutral, 4=Disagree and 5=Strongly Disagree. The financial factors included financial resource strategy, identification of financial sources, the influence of available resources on design and quality and sustainability of resources mobilized through efficient utilization. Averagely, financial resource mobilization strategy had a mean of 1.20, identification of sources 1.80, influence of available resources on design and quality 2.00 and sustainability of resources through efficient utilization 2.00.

Financial Resource Mobilization				
	N	Mean	Std. Deviation	Variance
Financial resource strategy	47	2.72	0.971	0.944
Identification of sources	47	2.83	1.257	1.579
Influence of available resources on design and quality	47	2.87	1.035	1.070
Sustainability of resources through efficient utilization	47	2.70	1.041	1.083
Averages		2.78	1.08	1.17
Valid N (listwise)	47			

Table 7: Financial Resource Mobilization

On average, from the study, all the financial resource mobilization factors had an average mean of 2.78 with a standard deviation average of 1.08 and an average variance of 1.17, respectively. The standard deviation and variance are both measures of variation for interval-ratio variables, and both describe the variation and the diversity of a distribution (Sekeran, 2003). Standard deviation indicates how far the individual responses deviate from the mean. It is from the standard deviation that the researcher can tell the spread of responses (Graham, 2002).

A standard deviation and a variance greater than one imply that the respondents have divergent views, while a standard deviation and a variance less than one indicate that respondents had similar opinions on the issues concerned (Ramsey, 2003). Therefore, the findings of this study imply that the respondents had slightly divergent opinions on all factors under financial resource mobilization, with most of the respondents choosing to agree and remain neutral about financial resources impacting the success of the VWS projects.

4.5.2. Human Resources

This research sought to assess the effects of human resource mobilization on the successful implementation of virtual weighing stations in Kenya. Similar to the financial resource mobilization variable, respondents were issued with questionnaires and required to indicate how they agreed to the factors in relation to human resource mobilization using a scale of 1 to 5 where: 1= Strongly agree, 2=Agree, 3=Neutral, 4=Disagree and 5=Strongly Disagree. Factors of human resource mobilization included human resource mapping, effective team management, Organizational structures, and staff experience.

Human Resource Mobilization				
	N	Mean	Std. Deviation	Variance
Human resource mapping	47	2.34	1.089	1.186
Effective team management	47	1.81	0.711	0.506
Organizational structures	47	1.94	0.639	0.409
Staff experience	47	2.00	0.752	0.565
Averages	47	2.02	0.80	0.67
Valid N (listwise)	47			

Table 8: Human Resource Mobilization

From these results, the average mean scores for the various factors were human resource mapping 2.34, effective team management 1.81, and organizational structures 1.94 while staff experience gave a mean score of 2.00, implying that the majority of the respondents agreed that human resource mobilization factors investigated affect the successful implementation of virtual weighing stations.

On average, all the human resource mobilization factors had an average mean of 2.02, an average standard deviation of 0.80 and an average variance of 0.67. The standard deviation and variance are both measures of variation for interval-ratio variables, and both describe the variation and the diversity of a distribution (Sekeran, 2003). Standard deviation indicates how far the individual responses deviate from the mean. It is from the standard deviation that the researcher can tell the spread of responses (Graham, 2002).

A standard deviation and variance that is greater than one implies the respondents have divergent views, while a standard deviation and a variance that is less than one indicates that respondents had similar opinions on the issues concerned (Ramsey, 2003). Therefore, the findings of this study imply that the respondents agreed that all factors under human resource mobilization were significant and had a significant impact on the successful implementation of virtual weighing stations in Kenya.

4.5.3. Material Resources

Material Resource Mobilization				
	N	Mean	Std. Deviation	Variance
Material/Equipment acquisition	47	1.79	0.690	0.475
Material/Equipment availability	47	1.91	0.686	0.471
Knowledge and information available to implementing team	47	1.87	0.711	0.505
Availability of knowledge on implementing technology	47	2.04	0.833	0.694
Averages	47	1.90	0.73	0.54
Valid N (listwise)	47			

Table 9: Material Resource Mobilization

The third objective of this research was to determine the effects of material resource mobilization on the successful implementation of virtual weighing stations in Kenya by local firms. Respondents were presented with a questionnaire as the researcher sought answers on how material mobilization impacts the successful implementation of virtual weighing stations in Kenya by local firms. Respondents were issued with questionnaires and required to indicate how they agreed to the factors in relation to financial resource mobilization using a scale of 1 to 5 where: 1= Strongly agree, 2=Agree, 3=Neutral, 4=Disagree and 5=Strongly Disagree.

Factors considered in this variable included: material/equipment acquisition, material/equipment availability and knowledge available to the implementing team. Material/equipment acquisition had a mean score of 1.79, material/equipment availability had a mean score of 1.91, knowledge and information available to the implementing team gave a mean score of 1.87, while the availability of knowledge on the implementing technology gave a mean of 2.04.

On average, all factors considered under material resource mobilization were noted to have an average mean of 1.90, an average standard deviation of 0.73 and an average variance of 0.54. The standard deviation and variance are both measures of variation for interval-ratio variables, and both describe the variation and the diversity of a distribution (Sekaran, 2003). Standard deviation is an indicator of how far the individual responses deviate from the mean. It is from the standard deviation that the researcher can tell the spread of responses (Graham, 2002).

A standard deviation and a variance greater than one imply that the respondents have divergent views, while a standard deviation and a variance less than one indicate that the respondents had similar opinions on the issues concerned (Ramsey, 2003). This, therefore, implies that material mobilization plays a significant role in the successful implementation of virtual weighing station projects in Kenya by local firms.

4.5.4. Technological Resources

Technological Resource Mobilization				
	N	Mean	Std. Deviation	Variance
Type of technology available	47	1.89	.840	.706
Technology determines machinery and equipment	47	1.66	.600	.360
Benefits of technology on project success	47	1.79	.657	.432
Quality and sustainability of VWS	47	1.83	.637	.405
Averages	47	1.79	0.68	0.48
Valid N (listwise)	47			

Table 10: Technological Resource Mobilization

From these findings, respondents agreed that technological mobilization is a key factor in the successful implementation of virtual weighing stations in Kenya by local firms. Respondents were issued with questionnaires and required to indicate how they agreed to the factors in relation to financial resource mobilization using a scale of 1 to 5 where: 1= Strongly agree, 2=Agree, 3=Neutral, 4=Disagree and 5=Strongly Disagree.

Respondents indicated the type of technology available to have a mean of 1.89, with a standard deviation of 0.84 and a variance of 0.706. On whether technology determines the equipment and machinery in use, a mean of 1.66 with a standard deviation of 0.60 and a variance of 0.360 were the results. When it comes to the benefits of technology on project success, the study found a mean of 1.79, a standard deviation of 0.657 and a variance of 0.432. On average, all the technological factors had an average mean of 1.79, an average standard deviation of 0.68 and an average variance of 0.48. Standard deviation and variance are both measures of variation for interval-ratio variables, and both describe the variation and the diversity of distribution. Standard deviation is an indicator of how far the individual responses deviate from the mean. It is from the standard deviation that the researcher can tell the spread of responses.

A standard deviation and a variance greater than one imply that the respondents have divergent views, while a standard deviation and a variance less than one indicate that the respondents have similar opinions on the issues concerned. This, therefore, implies that technological mobilization plays a significant role in the successful implementation of virtual weighing station projects in Kenya by local firms.

4.5.5. Successful Implementation of Virtual Weighing Station Projects by Local Firms

Successful Implementation of VWS				
	N	Mean	Std. Deviation	Variance
Timely completion	47	1.72	.649	.422
Budgetary completion	47	1.68	.629	.396
Success of VWS stations	47	1.70	.749	.562
Averages		1.79	0.68	0.46
Valid N (listwise)	47			

Table 11: Successful Implementation of VWS

The research study sought to establish the extent to which key aspects such as quality, scope, timely completion, and budgetary compliance during the implementation of virtual weighing stations could impact the success of the projects when implemented by local firms in Kenya. The timely virtual weighing stations attained a mean of 1.72 with a standard deviation of .629 and a variance of .422. Budgetary completion had a mean of 1.68, a standard deviation of 0.629 and a variance of 0.396. Further, the success of VWS stations had a mean of 1.70, with a standard deviation of 0.749 and a variance of 0.562.

An average mean of 1.70 people believed that virtual weighing stations were a success based on the quality and sustainability of the project, with a standard deviation of 0.68 and a variance of 0.46. The standard deviation and variance

are both measures of variation for interval-ratio variables, and both describe the variation and the diversity of a distribution (Sekaran, 2003). Standard deviation is an indicator of how far the individual responses deviate from the mean. It is from the standard deviation that the researcher can tell the spread of responses (Graham, 2002).

A standard deviation and a variance greater than one imply that the respondents have divergent views, while a standard deviation and a variance less than one indicate that the respondents have similar opinions on the issues concerned (Ramsey, 2003). This, therefore, implies that most of the respondents agree that virtual weighing stations were a successful project that delivers quality, is sustainable and is delivered within projected timelines and within the planned budget. These findings agree with Davis (2013), who indicated that performance is all about how well something can be done, and project performance is measured in terms of project timelines, cost, quality and customer satisfaction.

4.6. Regression Analysis

This section presents the results of inferential statistics where multiple linear regression analysis is used to determine the relative significance of each of the variables' successful implementation of virtual weighing stations in Kenya by local firms. The researcher undertook a multiple regression analysis to determine the relative significance of each one of the variables with respect to the successful implementation of virtual weighing stations in Kenya by local firms. SPSS was applied to enter data and analyze it using multiple regressions. The findings are represented in the table below.

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.755 ^a	.570	.362	.599	.570	2.737	15	31	.009
a. Predictors: (Constant), Financial resource mobilization, Human resource mobilization, Material resource mobilization and Technological resource mobilization									
b. Dependent Variable: Dependent Variable: Successful implementation of VWS									

Table 12: Model Summary

The results of the linear progression gave out $R^2 = 0.570$ and $R = 0.755$, indicating a strong relationship among financial resource mobilization, human resource mobilization, material resource mobilization, technological resource mobilization and the successful implementation of virtual weighing stations in Kenya by local firms.

4.6.1. ANOVA

The factorial analysis of variance (ANOVA) is undertaken to test the significance level of the overall regression model. One-way analysis of variance is helpful in determining the significant relationship between research variables (Kogi, 2017).

ANOVA ^a						
	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.717	15	.981	2.737	.009 ^b
	Residual	11.113	31	.358		
	Total	25.830	46			
a. Dependent Variable: Success of VWS stations						
b. Predictors: (Constant), Financial resource mobilization, human resource mobilization, material resource mobilization and technological resource mobilization.						

Table 13: ANOVA

The table shows a P-value = .005, which is less than 5%, to indicate that the model is significant. It further implies that financial resource mobilization, human resource mobilization, material resource mobilization and technological resource mobilization have a significant impact on the successful implementation of virtual weighing stations in Kenya by local firms.

Coefficient determination explains the extent to which changes in the dependent variable can be explained by a change in the independent variable. This is to say a change in the percentage in the dependent variable, the successful implementation of virtual weighing stations in Kenya by local firms, is explained by the four independent variables (financial resource mobilization, human resource mobilization, material resource mobilization and technological resource mobilization). The four independent variables studied in this research explain the 99.1% variance in the successful implementation of virtual weighing stations in Kenya. This implies that other factors not included in this study contribute to 0.9% of the variance successful implementation of virtual weighing stations in Kenya by local firms. Further research, therefore, should be undertaken to investigate more factors in the successful implementation of virtual weighing stations in Kenya by local firms.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.714	0.960		0.744	0.462
	Financial resource Mobilization	0.064	0.098	-0.107	-0.740	0.292
	Human resource mobilization	0.019	0.152	0.001	-0.069	0.404
	Material Resource Mobilization	0.163	0.173	0.155	0,942	0.439
	Technological Resource Mobilization	0.072	0.184	0.064	0.389	0.728

Table 14: *Coefficients* Dependent Variable: Successful Implementation of Virtual Weighing Stations in Kenya

4.6.2. Beta Coefficients

The multiple regression analysis was conducted to determine the relationship between y and the four variables. The equation, therefore:

$(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \varepsilon)$ becomes:

$Y = 0.714 + 0.064X_1 + 0.019X_2 + 0.163X_3 + 0.072X_4$

Where: Y is the dependent variable (Successful implementation of virtual weighing stations), while the independent variables are:

X1 is the financial resource mobilization variable.

X2 is the human resource mobilization variable.

X3 is the material mobilization variable.

X4 is the technological mobilization variable.

Based on this regression equation, with all independent variables accounted for as a constant, at zero, the successful implementation of virtual weigh stations had 0.714. Further analysis of the data indicates that keeping other independent variables constant at zero, a unit increase in financial resource mobilization led to a 0.064 increase in the successful implementation of virtual weighing stations in Kenya by local firms. Analyzing the second variable by keeping the other independent variables constant at zero led to the conclusion that a unit change in human resource mobilization led to a 0.019 similar change in the successful implementation of a virtual weighing station project in Kenya by local firms. Further, a unit change in material resource mobilization with all other independent variables constant at zero indicated that a corresponding 0.163 change would be realized in the successful implementation of virtual weighing stations in Kenya by local firms. A unit change in technological resource mobilization with all other independent variables kept at a constant zero led to a 0.072 change in the successful implementation of virtual weighing stations in Kenya. This infers that human resource mobilization contributes more to the successful implementation of virtual weighing stations in Kenya by local firms, followed by material resource mobilization, financial resource mobilization and technological resource mobilization, respectively.

5. Summary, Conclusions and Recommendations

5.1. Introduction

This chapter summarizes the major findings on the factors influencing the successful implementation of virtual weighing stations in Kenya by local firms. From these findings, the chapter draws a conclusion to this study and makes recommendations for future project management practice and the successful implementation of virtual weighing stations in Kenya.

5.2. Summary of Findings

The objective of the study was to establish the impact of resource mobilization on the successful implementation of virtual weighing station projects in Kenya by local firms. Independent variables such as financial resource mobilization, human resource mobilization, material resource mobilization and technological resource mobilization were weighed based on their impact on the successful implementation of virtual weighing stations in Kenya by local firms.

5.2.1. Financial Resources

The study found that financial resource mobilization has a significant influence on the successful implementation of virtual stations in Kenya. Respondents indicated that financial resource strategies, identification of sources for finance, quality, design and efficient utilization to ensure resource sustainability are key aspects of successful VWS projects. This was reported by a mean score of 2.78 for the overall average mean of respondents. This was supported by a standard deviation of 1.08 and a variance of 1.17. Further analysis indicated that an average of most respondents chose to agree or remain neutral on whether financial strategy impacts the overall successful implementation of VWS.

5.2.2. Human Resources

This study, while assessing the influence of human resource mobilization, found out that these resources influenced the successful implementation of virtual weighing stations in Kenya by local firms. Further, the study concludes that human resource mapping, effective team management, organizational structures and staff experience were critical aspects of human resource mobilization to get it right from the project initialization phase. Kogi (2017) noted that any

construction would experience cost overruns if they lacked qualified and skilled local contractors. This agrees with the findings in this study. The human resource mobilization variable gave a coefficient of 0.019, translating to 1.9%. This indicates that human resources significantly impact the successful implementation of virtual weighing stations in Kenya by local firms. This showed that most of the respondents agreed that human resource aspects of mapping to specific roles, effective team management, and organizational structures such as projected, functional and matrix, together with staff experience, significantly affected the implementation of virtual weighing stations.

5.2.3. Material Resources

From the findings, to some extent, firms must strive to implement material resource mobilization strategies for success to be realized during the implementation of virtual weighing stations. The study further found out that acquisition, availability and the knowledge available on how to utilize the materials are key in ensuring the success of such projects. The coefficient of this variable from the data available was 0.163, indicating a 0.163 change in the successful implementation of virtual weighing stations in Kenya with a unit change in the variable.

5.2.4. Technological Resources

This study found out that technological resource mobilization is a key variable in ensuring the successful implementation of virtual weighing stations in Kenya by local firms. It revealed that the availability of knowledge on implementing technology, the type of technology available and its benefits thereof are important in technological resource mobilization. The coefficient for this variable in the regression equation was 0.072, which translates to a 7.2% effect on the successful implementation of VWS.

5.3. Conclusions

In conclusion, this study found out that financial resource mobilization, human resource mobilization, material resource mobilization and technological resource mobilization would enhance the successful implementation of virtual weighing stations.

In view of the findings, several deductions, like effective financial resource mobilization strategies, are key in ensuring financial resources are available for the project to be undertaken with no disruptions. Aspects of financial sources, availability of funds and efficient utilization of these resources are paramount for the successful implementation of virtual weighing station projects in Kenya by local firms.

On human resource mobilization, human resource mapping through clear job descriptions, effective team management, and type of organizational management structure and staff experience is key in ensuring the successful implementation of virtual weighing stations in Kenya by local firms.

Material resource mobilization is a very significant variable in the implementation of virtual weighing stations in Kenya. Local firms must, therefore, ensure they acquire the necessary materials and equipment to undertake this unique task of implementing virtual weighing stations in Kenya by local firms. Availability of materials and the knowledge on utilization of material is another very important part that local firms need if virtual weighing station projects are to be successful.

Lastly, to ensure the project is a success, technology mapping, including the availability of knowledge and continuous updating of knowledge and information to assess its benefit, are essential parts that would otherwise negatively impact the successful implementation of virtual weighing stations in Kenya by local firms.

5.4. Recommendations

This research, from its data collection, analysis of data and development of conclusions, recommends that resource mobilization is important for the successful implementation of virtual weighing stations in Kenya. It is, therefore, very important that the sub-variables used herein are given attention from the start. Therefore, this research recommends that management be on their toes from time to time in ensuring resources are available to project teams during implementation, ensuring timely approvals and participation of stakeholders in relevant decision-making processes. The study also recommends that management in organizations be proactive in implementing financial control systems with a focus on achieving successful implementation of projects and, by extension, virtual weighing station projects.

Further, human resource management should focus on hiring qualified teams for better human resources ensuring project team competency in terms of experience is well scrutinized. Continuous training and knowledge transfer is also good way of ensuring an organization remains competitive in its pursuit of success, especially in projects. Necessary support must be provided to the project teams, both technical and operational. This will be key to ensuring that value for money is realized.

5.5. Suggestions for Further Studies

This research was conducted to establish the role resource mobilization plays in the successful implementation of virtual weighing stations in Kenya by local firms. This included financial resource mobilization, human resource mobilization, material resource mobilization and technological resource mobilization, which accounted for 99.1% of variables affecting the successful implementation of virtual weighing stations in Kenya. Other research should focus on investigating the other factors. A recommendation for further studies to identify new emerging technologies will also be appropriate in ensuring the successful implementation of virtual weighing stations in Kenya by local firms.

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Appendix I

Introduction Letter

Date

To
The Respondents
Nairobi
Dear Sir /Madam,

RE: INTRODUCTION LETTER

My name is Collins Simiyu. I'm a student at Jomo Kenyatta University of Agriculture and Technology pursuing a Master of Science Degree in Project Management and currently undertaking a research project which is required to be awarded a degree of masters. I kindly request you to provide the required information to the best of your knowledge by filling in the questionnaires attached. The information provided will only be used for academic research and will be held at the highest level of confidentiality. The questionnaire is designed to take a maximum of 20 minutes of your time.

Your positive response will be highly appreciated.

Yours faithfully



Simiyu Collins Khisa

Research Questionnaire

(Please fill in the questionnaire as carefully as you can. Tick in the appropriate box in agreement or disagreement as directed by the question/statement. For the spaces provided, kindly read the questions carefully and fill them in. Your response shall be of great help in my academic research and all information provided shall be treated with utmost confidentiality).

SECTION A: GENERAL INFORMATION

1. Gender

Male Female

2. Level of education

High school

College diploma

Bachelor's Degree

Master's degree

Ph.D. level

3. Period of service (Your work experience in years)

Less than 2 years

2-5 years

5-10 years

More than 10 years

4. What was your role during implementation of virtual stations by KeNHA?

5. Type of local firm

KeNHA

AEA Limited

Danka Africa Limited

Other stakeholders

SECTION B

Financial Resources

Research has identified project financial resources as a possible obstacle to the implementation of virtual weighing stations. Do you agree with these statements?

No.	QUESTIONS	SA (1)	A (2)	N (3)	D (4)	SD (5)
1.	Identification of the right source of resources by local firms reduces the cost					
2.	Various sources of resources for mobilization by local firms will speed the implementation of virtual weighing stations					
3.	Financial resources available influenced aspects such as quality and design of the virtual weighing stations					
4.	The resources utilized in the project were efficiently utilized and are sustainable in the long term					

Apart from the factors indicated above, how else do you think financial resource mobilization influences the successful implementation of virtual weighing stations by local firms in Kenya?

Human Resource Mobilization

Please indicate by ticking the appropriate box the extent to which you agree to each statement.

SA – Strongly Agree A – Agree N – Neutral D – Disagree SD – Strongly Disagree

No.	QUESTIONS	SA (1)	A (2)	N (3)	D (4)	SD (5)
1.	Mapping human resources can help local firms in Kenya to find out alternative and effective resources for the project that they have proposed to implement					
2.	Effective management of implementing teams is key in the successful implementation of virtual weighing stations in Kenya					
3.	The organizational structure: projectized or functional management systems affect the successful implementation of virtual weighing station projects by local firms					
4.	Staff experience and expertise is a very key aspect on the successful implementation of virtual weighing stations in Kenya					

Apart from the factors indicated above, how else do you think human resource mobilization impacts the successful implementation of virtual weighing stations by local firms in Kenya?

Material/Equipment Mobilization

Please indicate by ticking the appropriate box the extent to which you agree to each statement.

SA – Strongly Agree A – Agree N – Neutral D – Disagree SD – Strongly Disagree

No.	QUESTIONS	SA (1)	A (2)	N (3)	D (4)	SD (5)
1.	My firm enhances material/equipment acquisition as a way of resource mobilization					
2.	Material/equipment availability influences the successful implementation of virtual weighing stations					
3.	The knowledge and information available to the implementing team is key in the successful implementation of virtual weighing stations in Kenya					

Apart from the factors indicated above, how else do you think financial resource mobilization affects the successful implementation of virtual weighing stations by local firms in Kenya?

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Technology in Resource Mobilization

Please indicate by ticking the appropriate box the extent to which you agree to each statement.

SA – Strongly Agree A – Agree N – Neutral D – Disagree SD – Strongly Disagree

No.	QUESTIONS	SA (1)	A (2)	N (3)	D (4)	SD (5)
1.	The availability of knowledge on the implementing technology is key in the successful implementation of virtual weighing stations in Kenya					
2.	The technology available determines the project design and assumptions. It is also true that project design could lead to new ideas					
3.	The technology used determines the machinery and equipment mobilized for successful implementation of virtual weighing stations					
4.	Use of technology such as for virtual weighing stations has a positive impact on increasing the benefits of the project to the country making it successful					

Apart from the factors indicated above, how else do you think technological resource mobilization influences the successful implementation of virtual weighing stations by local firms in Kenya?

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Implementation of Virtual Weighing Station

Please indicate by ticking the appropriate box the extent to which you agree with each statement.

SA – Strongly Agree A – Agree N – Neutral D – Disagree SD – Strongly Disagree

No.	QUESTIONS	SA (1)	A (2)	N (3)	D (4)	SD (5)
1.	Implementation of Virtual weigh stations is an economical project sustainable in the long-term with long-term benefits.					
2.	Virtual station projects are completed within schedule					
3.	Virtual weighing stations implementation has achieved the objectives set					
4.	Virtual weighing station implementation by local firms was a success in Kenya					

Apart from the factors indicated above, how else do you think virtual stations have been successful as a project?

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Work Plan

Month	Project Concept	Project Proposal	Pilot Study	Data Collection and Analysis	Final Project Submission
September 2022					
February 2023					
February 2023					
March - April 2023					

Budget

Item	Needed	Description	Cost/Unit Kshs.	Total Cost Kshs.
Proposal	10 copies	Printing 100 pages	10.00	10,000.00
	8 copies	Spiral binding	300.00	2400.00
Sub Total				12,400.00
Questionnaires	150 Copies	Printing 3-page set document.	10.00	4500.00
Sub Total				4500.00
Stationery	Notebook	2	300.00	600.00
	Pen	7	25.00	175.00
	Pencil	5	30.00	150.00
	Highlighter	4	45.00	180.00
Sub Total				1105.00
Data collection preliminary costs		Introductory letters and questionnaires		4,500.00
Transport and facilitation				60,000.00
Sub Total				64,500.00
Final report	8 copies	Printing 80 pages	10.00	6,400.00
Publishing				60,000.00
	8 Copies	Hard cover Binding	1000.00	8,000.00
Sub Total				74,400.00
Total project cost				156,905.00