ASSESSMENT OF THE INFLUENCE OF FORCE ACCOUNT IN ACHIEVING VALUE FOR MONEY IN CONSTRUCTION PROJECTS IN TANZANIA: A CASE OF BARIADI TOWN COUNCIL
ASSESSMENT OF THE INFLUENCE OF FORCE ACCOUNT IN ACHIEVING VALUE FOR MONEY IN CONSTRUCTION PROJECTS IN TANZANIA:
A CASE OF BARIADI TOWN COUNCIL

By
STEPHEN MAYANI

A Dissertation Submitted in Partial/Fulfillment of the Requirements for Award of the Degree of Master of Science in Procurement and Supply Chain Management (MSc. PSCM) of Mzumbe University.
2019
CERTIFICATION

We, the undersigned, certify that we have read and hereby recommend for acceptance by the Mzumbe University a dissertation entitled “Assessment on the influence of Force Account in Achieving Value for Money in construction projects in Tanzania: A Case of Bariadi Town Council” in partial/fulfillment of the requirements for the award of Master of Science in Procurement and Supply Chain Management (MSc. PSCM) of Mzumbe University.

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Accepted for the Board of School of Business

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I, Stephen Mayani, declare that this dissertation is my own original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

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<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>BOQs</td>
<td>Bill of Quantities</td>
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<tr>
<td>CC</td>
<td>Construction Committee</td>
</tr>
<tr>
<td>CEO</td>
<td>Chief Executive Officer</td>
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<tr>
<td>CGA</td>
<td>Controller and Auditor General</td>
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<td>DC</td>
<td>District Commissioner</td>
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<td>DSO</td>
<td>District Security Officer</td>
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<td>FA</td>
<td>Force Account</td>
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<tr>
<td>HC</td>
<td>Health Center</td>
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<td>HCC</td>
<td>Health Center’s Committee</td>
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<td>HFMT</td>
<td>Health Facility Management Team</td>
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<td>ICT</td>
<td>Information Communication and Technology</td>
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<td>LGA</td>
<td>Local Government Authorities</td>
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<td>MRA</td>
<td>Multiple Regression Analysis</td>
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<td>PC</td>
<td>Procurement Committee</td>
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<td>PE</td>
<td>Procuring entity</td>
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<td>PO</td>
<td>President’s Office</td>
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<tr>
<td>PPA</td>
<td>Public Procurement Act</td>
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<td>PPRA</td>
<td>Public Procurement Regulatory Authority</td>
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<tr>
<td>QS</td>
<td>Quantity Surveyor</td>
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<tr>
<td>RALG</td>
<td>Regional Administration and Local Government</td>
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<tr>
<td>SPSS</td>
<td>Statistical Package for Social Sciences</td>
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<tr>
<td>TARURA</td>
<td>Tanzania Rural and Urban Roads Agency</td>
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<tr>
<td>TC</td>
<td>Town Council</td>
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<tr>
<td>TCE</td>
<td>Transaction Cost Economics</td>
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<tr>
<td>TED</td>
<td>Town Executive Director</td>
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<td>TPJ</td>
<td>Tanzania Procurement Journal</td>
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<tr>
<td>URT</td>
<td>United Republic of Tanzania</td>
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<td>VFM</td>
<td>Value for Money</td>
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ABSTRACT

For a long time there has been an outcry in public Institutions of low quality, delayed completion and high cost of construction projects; resulting from contractors, lack of adequate supervision, lack of funds and commitment. The government has been insisting on use of FA in construction of projects. This study assessed on influence of force account in achieving VFM in construction of Health Centers’ buildings at Bariadi Town Council. Explicitly, the study determined the influence of personnel on VFM in construction of health centers’ buildings, examined the influence of capital on VFM in construction of health centers’ buildings and assessed the influence of project management on VFM in construction of Health centers’ buildings. The study was conducted at Bariadi Town council. A mixed survey study design was used to get a sample size of 205 respondents. However, the study managed to collect and analyse 193 questionnaire and 12 interview guides from key informants. Both simple random and purposive sampling techniques were used in selection of sample. The study employed a questionnaire, interview checklists and documentary review methods of data collection. Reliability of questionnaire was tested before analysis of data. Quantitative data were descriptively analyzed and finally subjected to MRA to determine significance of influence on VFM using SPSS version 20, and presented by using tables and figures. Qualitative data were analyzed by using content analysis technique.

The study found that there was a relatively significant influence of organization personnel and project management on VFM in construction of public buildings. VFM was explained by 29.2% and 25.3% by organizational personnel and project management respectively with significant contribution on VFM i.e. P-value 0.000 and 0.001 respectively. Organizational capital had very low influence on VFM with p-value 0.99 which is > 0.05 showing insignificant influence on VFM. The study concludes that FA has improved VFM in construction of buildings in public institutions. The study provides several recommendations including hiring of adequate engineers and allocate supervision fund in the construction budget. Also BOQs, drawings, specifications and construction budget should be prepared based on project location.
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CHAPTER ONE

1.0 Introduction

This chapter discusses the background to the problem; explain the statement of the problem, outlines research objectives. It also describes the scope of the study, the significance of the study, limitations of the study and the organization of the study.

1.1 Background to the Problem

The use of force account method has greatly increased recently in public Institutions particularly in the Local Government Authorities (LGAs) after the amendment of the Public Procurement Act (PPA), 2016 where force account is incorporated in section 64(5) of the PPA, 2011 as read together with the PPA amendments of 2016, where procuring entity (PE) uses its resources and/or cooperates with other public agencies or private to execute construction works. According to URT (2011), the use of force account or direct labor may be justified if the required works are scattered or are in remote locations for which qualified construction firms are unlikely to tender at reasonable prices; work is required to be carried out without disrupting ongoing operations; risks of unavoidable work interruption are better borne by a procuring entity or public authority than by a contractor; there are emergencies which require a prompt attention; the procuring entity has qualified personnel to carry out and supervise the required works; or the maintenance or construction is part of the routine activity of the procuring entity (Shengeza, 2018).

Force account has been used for a long time in construction works in some of the public institutions in Tanzania. TANESCO is among the biggest public institutions where force account has greatly been practiced in electricity distribution projects (PPRA, 2018). However, one important thing to be noted with TANESCO is that, TANESCO has adequate workforce which include sufficient manpower and special trucks and equipment for implementing such works and regular initiatives are made to empower those workforces. Another public institution that has been using force
account is the Tanzania Railways Limited (TRL) which performs renovations of railway infrastructures using her workforces (TPJ, 2018).

The force account method has been prominently applied in various countries. To site as an example, Uganda has implemented many and diverse roads construction project through force account (Tekka, 2017). Force account was applied in upgrading and expansion of Entebbe International Airport to accommodate current and future traffic and also to encourage services excellence (Tekka, 2017).

Force Account has been also used by the State of Michigan in construction of small portion of a project, minor utility or railroad work regardless of cost, to be completed either by a railroad or the utility, on an existing system located within the limits of the proposed project and owned by the utility or railroad, with work to be completed by that utility or railroad, subject to one of the following criteria: the utility or railroad performs the work with its own forces; the utility or railroad obtains a subcontract secured under a fully competitive bidding process; or the utility or railroad is responsible for completing the work as part of its established contract or franchise agreement with the local agency (Mendez, 2017).

In India, Nepal and Korea, force account was termed as labour contractor which was reported to be the one who is most in touch with the workers and to whom the workers look for help and guidance, not only in finding work and acquiring skills, but also in providing loans in times of emergency (Wells, 2015).

In these examples, the reality is that applicability of force account requires availability of resources including sufficient manpower and financial resources for purchase of construction materials and supplies. At this point it is important to note that when a procuring entity engages a contractor, the responsibilities of executing the works shift to the contractor, the PE role is to ensure the contractor performs works as per the terms and conditions stipulated in the contract. In this arrangement the contractor has obligation to get all construction materials and supplies, personnel and construction equipment needed for quality performance of works. The PE’s responsibilities are to supervise the contractor so that he/she executes works at the
desired quality, completion time and make eligible payments for works performed by the contractor (Ceric, 2012).

Conversely, when a public entity decides to use force account to implement construction works, it acquires the responsibilities of purchasing construction materials and supplies and ensure that they are used for construction purpose without any wastage, ensure there is sufficient construction equipment, skilled and technical manpower and ensure works are of a desired quality (TPJ, 2018). When for instance a district council has three different construction works; two of them are construction of classrooms at two schools at different villages and the third work is construction of dispensary building at another village where it has entered into contracts with three different contractors, the role of the PE still will be to supervise the contractors to perform good quality works. It is the obligation of the contractor to ensure quality works is attained. Even if when it becomes impossible to make close supervision of the contractor, its responsibility of quality works remains the same. When it comes to the notice of the PE that the works performed by contractors are of low quality the law requires to withhold the contractor’s payments and institute legal proceedings including terminating his/her contract and submit the name of the contractor to PPRA for debarment of participation in public tenders (URT, 2011).

However, when a PE decides to perform these works using force account procedures, it will require to purchase and store of construction materials and supplies needed for construction of the three projects mentioned above. It will also require to employee local skilled labor and assign works to them and supervise them to execute the works at the required quality, it will also purchase and/or hire equipment for works execution (TPJ, 2018). In this situation there should be a permanent project supervisor from the PE who will be responsible for the quality performance of the works. Experience shows that theft and pilferage of construction materials on site by the workers/laborers is one of the big challenges that exist in the construction industry in Tanzania. This is done so tactically and its impact is not seen at once. For example, when a laborer/worker decides to steal cement and mix
up concrete with poor ratios, the impact of defectives can be seen five to ten years after cracking, fracturing or collapsing of the building.

According to the Public Procurement Regulatory Authority (PPRA) and Controller and Auditor General (CAG) audit reports one of the big challenges facing public institutions, particularly the LGAs is insufficient skilled manpower compared to the number of works they are required to supervise and lack of transport facilities e. g. cars and motorcycles for project monitoring and inspection. The challenge is even more critical when projects are implemented using force account procedures instead of contractors (TPJ, 2018).

One important thing to ask in the use of force account is that “does the number of projects to be implemented through the procedure correlate with the number of manpower currently available to supervise these works?” if it is not so there is high possibility of implementing the projects at low quality, delayed completion and cause cost overrun and failure to hold anyone responsible for these mishaps (URT, 2013).

The Government has been insisting on the use of force account as the most appropriate method of contracting in public institutions projects like schools renovation projects, health centers construction etc., as a move to cut costs, empower local contractors and also facilitate attainment of best value for money (VFM) (Shengeza, 2018). The intention of using force account in executing projects is to complete the projects timely, at a realistic cost while keeping the quality (Tekka, 2017). Nevertheless, other construction methods have greatly been labeled to make corruption environment and therefore failing in achieving the value for money for the completed projects (Tekka, 2017).

As noted by PPRA audit reports, the prices charged by contractors through competitive tendering procedure are likely to be higher than those of force account because the contractor is required to offset the costs incurred in purchase of construction materials, use and mobilization of construction equipment and paying the workers. In top of those costs, the contractor has to compensate costs incurred as
a statutory requirement such as corporate taxes, withholding taxes, service levy which he/she is required to fulfill. Then after compensating these costs he/she has to add a profit margin to sustain her/his business. The composition of these costs increases the total cost of the project hence lower VFM of the project. Force account does not involve a contractor hence transaction costs, statutory costs and profit margin are not considered in force account (PPRA, 2014) and (Mamiro, 2010).

Despite the amendment of the public procurement Act, 2011 which provided a room for use of the national, international and restricted competitive tendering on fixed budget method when the procurement budget is fixed as means to reduce costs and achieve value for money in construction projects, still the government emphasizes on the use of force account procedures for implementation of the public construction projects. A method that was rarely practiced and experienced in construction projects in Tanzania especially in the LGAs. Basing on this, the researcher intends to assess on the influence of force account in achieving value for money in construction works in LGAs.

1.2 Statement of the Problem

The overall research problem addressed in this study was that despite of the amendment of the public procurement Act, 2011 which provided a room for use of the national, international and restricted competitive tendering on fixed budget method when the procurement budget is fixed as means to reduce costs and achieve value for money in construction projects, still the government emphasized on the use of force account procedures for implementation of the public construction projects (Tekka, 2017). A method that was rarely practiced and experienced in construction projects in Tanzania especially in the LGAs.

In 2016, the government started disbursing funds to implement various projects in the LGAs with instructions and guidelines to use force account procedures for execution of such projects (Shengeza, 2018). Past experiences and general perception indicated that competitive tendering method of procurement was the common used method in public procurement construction projects towards cost
reduction and value for money achievement (URT, 2013). This is because; tendering involved the advertisement of the opportunities / project to a newspaper of wide circulation which attracts and invites many renderers to compete for the tender, who are consequently screened and evaluated basing on the predetermined criteria.

For a long time there has been an outcry in public Institutions of low quality, delayed completion and high cost of construction projects resulting from poor engagement of contractors, lack of adequate supervision, opportunistic behavior, lack of funds and commitment (Memon, Rahman, Abdullah, & Azis, 2011). It is on these grounds that it has being exceedingly emphasized on the use of force account. Given this emphasis on use of force account in construction projects in Public Institutions instead of competitive tendering method, the researcher intends to make an assessment on the influence of force account in achieving value for money in construction projects in Tanzania.

Various studies have been conducted in force account. Shengeza (2018), investigated on procedures for effective application of force account for renovation and remodeling of government building projects at three teachers’ colleges (Songea, Kleruu and Tukuyu) and five technical secondary schools (Tanga, Ifunda, Musoma, Kibiti and Ifakara). Tekka (2017) examined economic empowerment of local skilled labor through force account in building renovation from selected secondary schools and teachers training colleges located in different parts of Tanzania and Well (2015) assessed on the employment of labor in the construction industry in less developed countries.

Therefore, this study bridged the present knowledge gap by assessing on the influence of force account in achieving value for money in health centers’ construction; in Bariadi Town Council.
1.3 Objectives of the study

1.3.1 The general objective

The main objective of this study was to assess on the influence of force account in achieving value for money in Health Centers’ construction projects in LGAs in Tanzania

1.3.2 Specific Objectives

i. To determine the influence of organizational personnel in achieving value for money in construction of Health centers’ buildings in Bariadi Town Council.

ii. To examine the influence of organizational capital in achieving value for money in construction of Health centers’ buildings in Bariadi Town Council.

iii. To assess the influence of project management in achieving value for money in construction of Health centers’ buildings in Bariadi Town Council.

1.4 Scope of the study

The study focused on assessing the influence of force account on achieving value for money in construction projects. There are number of factors that led to achieving value for money on construction projects these include contractor’s capabilities, top management support, cooperation between contractor and client/employer’s project teams, however the researcher dealt with force account which is determined by internal resources availability towards achievement of value for money in construction projects. The objectives included; determining the influence of personnel on costs of construction project in LGAs in Tanzania, examining the influence of capital of an organization on costs of construction projects in LGAs in Tanzania and assessing the influence of project administration on costs of construction projects. The study was carried out in Bariadi district in Simiyu region, where Bariadi Town council was involved.
1.5 Significance of the study

The findings of the study were expected to be useful to the government and all public institutions and other stakeholders. In particular, the study helped to disclose benefits accrued from the use of force account. It also improved Council management decision making as whether to continue using force account in construction of buildings or opt for other methods of procurement. Moreover, the findings revealed difficulties associated with force account procedure in implementing construction of public buildings hence recommend for further improvement. Lastly, the study envisaged contributing to potential researchers who wish to engage in deeper study of construction projects through force account.

1.6 Limitations of the study

In the course of this study the researcher encountered the following limitations.

i) Lack of cooperation to some of respondents. Some respondents that were contacted did not provide support during data collection. Some respondents rejected the questionnaires with reasons that they had no time to read and provide answers. To solve this challenge, the researcher ignored hard respondents and contacted those who supported the study.

ii) Remoteness; the study targeted to assess influence of force account in achieving value for money in health centers’ buildings construction. Most of the health centers were situated interior, which required travelling to the places to get information. This led to incurring high costs of travelling. This challenge was addressed by planning and notifying respondents in advance through mobile phones and camping at the health Centre until needed information were obtained.

iii) Time limit; only three months were set aside for data collection, this time given to conduct this study by Mzumbe University was very limited. It was very difficult to accomplish the study within the given time limited without self-initiative. The challenge was dealt by the researcher by working hard to cope with the dead line for submission.
1.7 Organization of the study

The study was organized in five chapters. Chapter one dealt with introduction and problem setting; which comprises of background, statement of the problem, objectives, scope, significance and organization of the study. Chapter two described literature review which include; theoretical part, Empirical part, conceptual framework and research model and hypothesis. Chapter three explained research methodology, chapter four dealt with presentation and discussion of findings, chapter five elucidated the summary, conclusions and policy implications.
CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter explains both, the theoretical and empirical literature review in line with the study’s objectives. Sub-section 2.1 presents the theoretical perspectives of the study including definitions of terms and an overview of the study, as well as the theory that informs the study. While, sub section 2.2 critically analyses the empirical literature drawn in line with the study’s objectives, sub section 2.3 provides the conceptual framework of the study, research gap and hypotheses.

2.1 Theoretical Literature Review

This section describes the theoretical part of the study. It explains theories related to the study.

2.1.1 Definition of Terms

2.1.1.1 Force Account

The Public Procurement Regulations, 2013 defines force account as a construction by the procuring entity itself or use of public or semi-public agencies or departments concerned, where procuring entity or the public or semi-public agency uses its own personnel and equipment or hired labor (URT, 2013). According to Tekka, (2017) force account method involves the use of the labor, equipment and machinery for the government or public or semi-public to undertake the tasks intended.

2.1.1.2 Organizational Resources

According to Barney (1991), firm resources include all assets, capabilities, organizational processes, firm attributes, information, knowledge, etc. controlled by a firm that enable the firm to perceive of and implement strategies.
2.1.1.3 Organizational personnel

According to Ekwoaba, Ikeije, & Ufoma, (2015), personnel (people) are fixed capitals just like machine because they have skills and useful abilities that has genuine cost and yields profits. People are vital to organizations as they offer perspectives, values and attributes to organizational life; and when managed effectively, these human traits can be of considerable benefits to the organization. People and their collective skills, abilities and experience, coupled with their ability to deploy these in the interests of the employing organization, are now recognized as making a significant contribution to organizational success and also constituting a significant source of competitive advantage (Armstrong, 2006).

2.1.1.4 Organizational capital

Organizational capital is the set of intangibles of explicit as implicit nature that structure and develop the organizational activity of the firm effective and efficiently (Martín-de-Castro, Emilio Navas-López, López-Sáez, & Alama-Salazar, 2006). It includes rules, norms, routines and organizational culture, that help to form a way of making the aforementioned, and takes to the development of organizational competence (González Bañales & Rodenes Adam, 2008). It is the support for the development of other types of capital, without which these cannot unfold. Organizational capital is valuable because it enables the firm in doing things for its employees, customers, suppliers and other stakeholders, and also because it allows sales increasing, wider commercial margins, and diminishing costs (González Bañales & Rodenes Adam, 2008).

2.1.1.5 Project Management

According to Walker, (2015), project management is the discipline of planning, organizing, motivating, and controlling resources to achieve specific goals. A project is a temporary endeavor designed to produce a unique product, service or result. It has a defined beginning and end (usually time-constrained, and often constrained by funding or deliverables), undertaken to meet unique goals and
objectives. The primary challenge of project management is to achieve all of the project goals and objectives while honoring the constraints on scope, time, quality and budget. Project management can be organized into functional areas, for example: managing the scope, managing the budget, managing the schedule, managing risk, etc. (Ashcroft, 2011)

2.1.1.6 Value for Money (VFM)

The VFM means the maximum benefit from goods, works or services procured with the resources available worth the cost incurred (URT, 2016). It is the buyer’s assessment of the project completed and/or services provided by the numerous project participants as it met the pre-determined objectives (Olusola, 2017). According to Baker et al. (2013) there is no common definition for the term VFM and the most quoted definition utters that VFM is ‘the best use of resources to achieve the anticipated outcomes’.

Emmi et al, (2011) defined VFM in term of the 3Es namely economy, Efficiency and effectiveness. Olusola, (2017) gave another definition of VFM, as ‘the conveyance of organization objectives at the lowest reasonable cost while attaining constant improvement with the three key components of best value which are effectiveness, efficiency and economy supported by the demonstration of continual development.

According to Ansell et al (2009), VFM entails providing best value to the buyer as; free from defects on completion; completed/delivered on time; completed/delivered within budget; fit for purpose; low construction costs; good looking/attractive to look at; short construction period; accompanied by valuable guarantees; satisfactory life of repair; low maintenance cost; minimal disruption to the public; and safety.

For the sake of this study, VFM means completing Health centers’ construction buildings timely, at minimum costs with due regards to project specifications (quality).
2.1.2 Theories of the study

This study adopted two theories namely the resource dependence theory and transaction cost economic theory.

2.1.2.1 Resource Dependence Theory

Resource Dependence Theory developed by Johnson Jr, 1995 is a theory of organization (s) that tries to describe organizational and inter-organizational conduct in terms of those important resources which an organization should have in order to survive and function. As an open-systems theory, the resource dependence argument proposes that a particular organization will respond to and become reliant on those organizations or entities in its environment that control resources which are both critical to its operations and over which it has limited control. Such dependence makes the external constraint and control of organizational behavior possible as asymmetrical exchange and power relations are created between organizations. In an attempt to maximize organizational autonomy, organizational leaders use a variety of strategies to manage these external constraints and dependencies.

Resource dependence theory thus has as its focus the following: resources; the flow or exchange of resources between organizations; those dependencies and power differentials created as a result of unequal resource exchange; the constraining effects such dependence has on organizational action; and the efforts by organizational leaders to manage dependence. With its emphasis on resource exchange, resource dependence represents a political economy model of organizational and inter-organizational behavior (Johnson Jr, 1995).

This study applied Resource Dependence Theory. The theory was applied in this study because in order organization to perform in house operations efficiently, it should possess sufficient own resources. That means, an organization should not be dependent of other organizations’ resources. This theory was considered in this study because; the study involved assessing on the influence of force account in achieving value for money in construction projects. Force account requires that an organization should possess its own resources which include fund, manpower and
equipment to run force account in implementing construction projects. Funds are needed in order to procure construction materials, pay laborers and facilitate supervision of the projects while manpower is important purposely for smooth running and implementation of the project. Manpower is required to provide technical assistance and give directions as par the project specifications. Nonetheless equipment is essential to facilitate the execution and implementation of the construction project. According to this theory an organization should perform in house function if it has sufficient resources to support the internal activities. Hence with force account that requires availability of in house resources in implementing projects is supported with resource dependence theory as it depends on internal resources rather than contracting out.

2.1.2.2 Transaction cost economic theory

Transaction Cost Economic (TCE) is the theory focusing on the organization of transactions that occur whenever a project, good or service is transferred from a provider to a user across a technologically separable interface. When transactions occur within an organization, the transaction costs can include managing and monitoring personnel and procuring inputs and capital equipment. The transaction costs of buying the same project, good or service from an external provider can include the costs of source selection, contract management, performance measurement, and dispute resolution. Thus, the organization of transactions, or “governance structure,” affects transaction costs. As against neoclassical economics, which is principally about price and output, depends on widely on marginal analysis, and defines the firm as a production function (which is a technological construction), TCE is all about the apportionment of economic activity through different modes of organization (markets, firms, bureaus, etc.), employs discrete structural analysis, and pronounces the organization as a governance structure (which is an organizational construction). The TCE was founded by Oliver E. Williamson in 1989 (Williamson, 2007).
The theory is related to this study because the study is about influence of force account in achieving value for money. Force account is the construction procedure where the procuring entity uses its own resources to undertake construction projects. On the other hands value for money involves completing a construction project in time, at a minimum/reasonable cost and with regards to user specifications (quality). At every stage of any project there are transaction costs. In force account transaction costs relates to costs of soliciting construction materials, skilled local fundi (laborers), costs of meeting and transportation of materials, fuels, car maintenance and supervision costs. These costs increase the cost of ownership of the project.

This theory was relevant and applied to this study because the study focused on force account as a means of acquiring a project, by using in house resources. In pursuing force account there are transaction costs that should be borne by the PE such as cost of managing and monitoring personnel, procuring of materials, negotiating and hiring local skilled labors and supervision costs. On the other side some of transaction costs through force account will be eliminated these include costs of advertising tenders, preparation and printing of tendering documents, tender board meeting allowance for approval of procurement and award decisions, negotiation with tenderers, etc. Hence the crucial thing that should be considered in the force account application in construction projects is the tradeoff between the amount of transaction costs incurred when force account is used and that of an alternative method of procurement. This is because high transaction costs increase the cost of ownership of the project and hence reduces the value for money.

2.2 Empirical Literature Review

Tekka (2017) conducted a study on economic empowerment of local skilled labor through force account in building renovation based on the selected secondary schools and teachers training colleges located in different parts of Tanzania. His findings disclosed that in spite of the challenges confronting the local fundi, the application of the force account method has greatly facilitated them to promote their income. Upon the training, they increased their knowledge in various areas. Furthermore, the study divulged that the local fundi were paid greater under the
force account method than when they were engaged under a contractor. Moreover, the study revealed that local skilled labors were economically empowered because of the more pay they gained in force account, which inter alia, helped them get more moneys. This was different during work under contractors. As from the study, the method has to a great extent subsidized to the economic empowerment of local fundi. Many of them were seen to have substantial changes financially leading them to great changes on their real life. All in all, the method was discovered to possess a positive impact to project participants.

Shengeza (2018) did a study on the procedures for effective application of force account for renovation and remodeling of government building projects. He derived the procedure from case study undertaken for renovation and remodeling of three teachers’ colleges and five secondary schools in different areas in Tanzania. His principle findings consisted of two parts that are problems faced by the participants for the application process of force account for renovation of government building projects and the required procedures for application of force account for renovation of government building projects. Problems faced by participants were identified as misunderstanding of the overall coverage of the projects reports, the technical reports were too general hence not easy to apply. There were no general regulations and procedures identified of how to implement force account in the projects reports, there was a lack of uniformity in how to execute the works, there was a problem of specification for some of items identified in the schedule of Materials, lack of some items required for implementation especially on services activities like plumbing and electrical installations. Moreover, he discovered that in order to apply well force account during renovation for building projects there should be prepared general technical reports before and after implementation of the force account method, budgetary schedule of materials, interpretation and understanding by both project participants of the project to be performed through force account procedure. He concluded that despite the highlighted situation attributed to best practice of force account for renovation and remodeling for government building projects and the suggested procedures in application of force account; it is important to note here that the outcome of the study was based on the detailed investigation of preliminary
reports on the reports submitted by consultants and observation for the work completed. The procedure can be flexibly used with little or no modifications for application of force account for building projects, while the best practice guidelines can be considered for effective implementation of force account as per requirement by Public Procurement Regulatory Authority.

Wells (2015) Also conducted a study on Labor Subcontracting in the construction industries of developing countries: An Assessment from Two Perspectives (Contractors and labor force). He found that labor contracting through force account offers some advantages to the workers, when compared with direct employment of contractor. The advantages include more regular work, the chance to acquire skills, the sense of belonging that comes from working as part of a group and some minimal degree of social protection, although workers have no guarantee of permanent employment and no protection against periods of unemployment.

Memon, Rahman, Asmi, & Azis, (2011) conducted a study on causative factors leading to construction cost overrun. Their results showed that poor design & delays in Design, unrealistic contract duration & requirements imposed, lack of experience, late delivery of materials & equipment, relationship between management & labor, delay preparation & approval of drawings, inadequate planning & scheduling, poor site management & supervision and mistakes during construction were most common and significant factors causing cost overrun in Malaysian construction industry as perceived by experts. Moreover, in a survey of construction projects, they concluded that cost increase is one of the effects of project delay caused by poor contractor management, financial difficulties, material purchased, lack of technical capability, and raise of material prices. Memon et al.,( 2011) also found that major factor contributing to the project time-delay and cost escalation was the shortage of money and time allocated to the project.

Memonet et al (2011) conducted another study on factors affecting construction cost in Mara large construction project. They found that Cash flow and financial problems faced by contractors, Contractor's poor site management and supervision,
Poor contractor experience, Lack of site workers and Improper planning and arrangement by contractors were more important factors affecting construction cost.

Olusola, (2017) conducted a study on achieving value for money in construction projects. The study supported that value-for-money valuation for a project should be conducted before a project is commenced and after the project is completed to determine whether or not value for money has really been provided. Olusola also put out means by which VFM can be achieved on a project site, these comprises comprehensive risk analysis and proper risk allocation, determination for earlier project completion, limitation in project cost increase, encouragement of innovation in project development, satisfactory accounting of maintenance cost, correct assessment of the cost of the project, and development of a thorough specification.

A study on delivering best value in highways major maintenance schemes conducted by Ansell et al (2009) ranked the requirements for providing best value to the buyer as; free from defects on completion; completed/delivered on time; completed/delivered within budget; fit for purpose; low construction costs; good looking/attractive to look at; short construction period; accompanied by valuable guarantees; satisfactory life of repair; low maintenance cost; minimal disruption to the public; and safety.

Aber Mohamed Almaktari, Ren Hong, (2017), conducted a study on the Factors influencing Cost Overrun on Construction Projects in Yemen. Their study found that political instability, Poor contract management, Low labor productivity, Delay in progress payments, Risk Management strategies, Poor site management and supervision, Staff training in the skill areas relevant to project, Contractors and Consultant tendering faults, Financing, and payment of completed projects Lack of materials and equipment were highly factors in Yemen. Their study contributed an understanding of the impact of the political situation to the construction industry, which also opens an area for future research on how political instability can cause cost overrun (increase).
The literature review discussed above pertains to achievement of VFM in construction projects using force account. Value for money is a measure of the 3Es which are economy, efficiency and effectiveness. The 3Es are reflected on the cost incurred in construction; if the costs are below or within the estimated budget then we say the costs are economical; likewise, when the project is completed within the estimated completion time we conclude that the project has been effectively and efficiently performed. Lastly the quality of the project complements the 3Es as measure of VFM where the total benefit from the money invested is measured in terms of fitness for purpose, specification and total satisfaction of the client. In order to achieve these, various procurement procedures may be used one of which is force account. Force account has not been so popular in public institutions particularly in the Local Government Authorities though the Public Procurement Act and Regulations recognize as one the procedures for construction projects. However, currently much emphasis is put by the government on the use of force account for construction of public projects compare to previous times. For a long time, there has been an outcry in public Institutions of low quality, delayed completion and high cost of construction projects resulting from poor engagement of contractors, high costs of completed projects, lack of adequate supervision, opportunistic behavior, lack of funds and commitment.

The CAG reports 2015/2016 found major problems in constructed projects using public fund where some of projects were abandoned uncompleted, high cost of completed projects and delayed completion of the project etc. It is on these grounds that it has being exceedingly emphasized on the use of force account. Given this emphasis on use of force account in construction projects in Public Institutions; very little has been explored on the influence of force account that is the use of organizational resources in construction of projects in view of achieving value for money. Though some authors have written on force account in management of construction projects, no literature explains the influence of force account in achieving value for money (right cost, right time and right quality) on construction projects as compared to other competitive methods of procurement. It is in this study the researcher intends to fill this gap by assessing the influence of force account in
achieving value for money on construction projects in Local Government Authorities in Tanzania.

2.3 Conceptual Framework

This described the relationships between various variables of the study. Figure 2.1 below portrays the conceptual framework for this study. The illustrations of the conceptual framework is that force account uses in house equipment, financial and personnel resources for construction projects performance which is reflected by cost performance, time performance and quality performance of the projects.

The purpose of this study was to gain the understanding of how force account procedure influences value for money in construction projects. The paper aimed to develop a testable procurement model that proposes certain relationships between force account (treated as success factors) and construction project results (treated as success criteria). This will make it possible to analyze if and how different factors and criteria interact and affect each other.
2.3.1 Operationalization of the Variables

2.3.1.1 Personnel and Value for Money

In view of force account as procedure for buildings construction in public Institutions, LGAs in particular; The Procuring Entity should have sufficient own resources in order to realize Value for Money. According to URT, (2013) force account can be applied if the procuring entity has qualified personnel to carry out and supervise the required works. Personnel are one of the resources. Personnel are people who are directly involved in design, procurement and supervision of
buildings construction. These are Civil engineers, technicians, Procurement experts and supporting staff. Civil Engineers and Technicians play the role of preparing drawings, specifications and Bills of Quantities (BOQs) for buildings. However, they also make interpretation of drawings, specifications and Bills of Quantities (BOQs) during actual construction of buildings. Achieving value for money in buildings construction requires well and clear prepared drawings, specifications and BOQs. However, clear drawings, specifications and BOQs need clear interpretation so that the buildings constructed is executed and completed as per drawings, specifications and BOQs, in order to reflect quality i.e. meeting a specification which is fit for purpose and adequate to meet the customer’s requirements, simply Value for Money.

VFM is realized when the project is completed in time, below or within the budgeted cost and according to specifications. This cannot be achieved if the PE does not have qualified personnel such as Engineers and technicians, because Engineers and Technicians are needed to control cost increase (growth) of the buildings constructed by controlling completion time of the buildings; since it has cost implication such as rise of price of construction materials if the building is not completed in time. (DeCorla-Souza, Lee, Timothy, & Mayer, 2013) noted that best value for money can be achieved when there is maximum combination of the cost, quality and sustainability to encounter customer needs. Sufficient personnel also, control variations and additional works that is change in scope of the works which increases the costs of the building being constructed consequently, reducing VFM of the building. This is in line with Olusola, (2017) that VFM, should convey organization objectives at the lowest reasonable cost while attaining constant improvement with the three key components of best value which are effectiveness, efficiency and economy supported by the demonstration of continual development.

On the other hand, procurement officers as key personnel in implementation of buildings construction through force account play a great role in achieving value for money in buildings construction. Value for money inter alia is determined by the quality of construction materials, the costs at which materials are procured and time materials are delivered. Low quality of materials results to poor quality of the
building hence no VFM and high costs of construction materials renders buildings completed at high costs hence no VFM. Also late delivery of materials delays completion of the building as construction will be waiting for materials as a result costs of the building increases as it extends its completion time, hence reducing the VFM of the building. To get rid of these problems, the PE should have qualified, experienced, competent and ethical procurement experts who will ensure buildings and construction materials are procured at low cost with high quality and delivered on time as these leads to early completion of project hence achieving VFM of the buildings. From the above statements it is apparent that Procuring Entity’s personnel contribute much in achieving value for money in buildings construction through force account.

Therefore, the researcher intends to test on the following hypothesis: -

**Null Hypothesis (Ho):** Organizational Personnel do not influence value for money in construction of health centers’ buildings in Bariadi Town Council.

**Alternate Hypothesis (Ha):** Organizational personnel influence value for money in construction of health centers’ buildings in Bariadi Town Council.

### 2.3.1.2 Capital and Value for Money

One of the resources needed for application of force account is capital. Evans, (2016) defines capital as tangible and intangible resources, such as machines, funds, patents, brands, human capital, construction processes and practices, knowledge and expertise which enable constructability and productivity.

According to URT (2013) “force account” involves construction by the procuring entity itself, where procuring entity uses its own equipment or hired labour or fund. Funds are needed for purchase of construction materials, fuel for equipment, and pay wages for laborers, pay allowances and supervision costs. Also, equipment and machineries are needed in buildings construction for facilitation of buildings construction. These pickups, excavators, compactors, concrete mixers, trucks, motor graders etc. All these together are referred as capital of the organization. Personal, Archive, Nsiah-asare, & Prempeh, (2016) support that Value for money in public
entities constructions is achieved by pursuing the lowest whole of life cost, clearly defining relevant benefits and delivering on time. This is made possible through availability of capital (funds and equipment). Therefore, Value for money in relation to capital of an organization is not about achieving the lowest initial price: rather than the optimum combination of whole life costs and quality.

Human capital is defined in the Oxford English Dictionary as “the skills the labor force possesses and is regarded as a resource or asset.” It encompasses the notion that there are investments in people (e.g., education, training, health) and that these investments increase an individual’s productivity. According to Gupta et al., (2002) human capital is the stock of skills that the labor force possesses. In order to achieve VFM in force account, human capital is mandatory as the knowledge and skills of labor in construction is needed to ensure works are constructed according to the required standards.

Ansell et al., (2009) noted that Value for money in buildings construction is determined by cost of construction, quality of construction materials and time of completion of the building. It is obvious without capital it is impossible to buy quality construction materials, to complete the works in time and within the cost of the building. Because all these requires capital i.e. funds and equipment. Funds enable timely purchase of building materials, payments of labor and administrative costs related to the project such as supervision, printing of reports, project documents, and design of the building project without which Value for money will not be achieved. Moreover, equipment as one of the capital in buildings construction has a big impact on value for money in buildings construction. Equipment are needed to facilitate supervision of the project, to bring construction materials to site such as concretes, gravels, clearing and leveling of the site, compacting of the ground etc., testing of building blocks strength. All these impact on the value for money of the buildings since lack of these instruments renders delayed completion, poor quality and cost increase of the project, hence jeopardizing VFM of the building project. Therefore, capital of an organization plays big role in achieving
value for money in buildings construction. In view of the above concepts, the study envisages to test the following hypothesis:

**Null Hypothesis (Ho):** Organizational Capital does not influence value for money in construction of health centers’ buildings in Bariadi Town Council.

**Alternative Hypothesis (Ha):** Organizational Capital influence value for money in construction of health centers’ buildings in Bariadi Town Council.

### 2.3.1.3 Project Management and Value for Money

Value for money in buildings construction is achieved when there is close monitoring and management of the project. According to Bowen (2018), buildings project management involves Project Integration Management, Scope Management, Time Management, Cost Management, Quality Management, Human Resources Management, Communications Management and Risk Management.

Project Integration management involve collection of processes required to ensure that the various elements (materials, laborers, and equipment) of the buildings projects are properly coordinated. Scope management defines work required and then making sure all of that work and only that work is done (Rashid, Beecham, & Chowdhury, 2015)

Time management is the process of planning and exercising conscious control of time spent on specific activities during construction, especially to increase effectiveness, efficiency or contractibility so that no more costs are incurred by PE due to delay of buildings completion (Rashid et al., 2015)

Cost management involves planning and controlling the budget of a building construction. Cost management allows organization to predict impending expenditures to help reduce the chance of going over budget (Rashid et al., 2015)
Quality management ensures that buildings constructionist consistent with specifications. It has four main components: quality planning, quality assurance, quality control and quality improvement. Quality management is focused also on the means to achieve it.

Human resource management (HRM or HR) is the strategic approach to the effective management of organization workers so that they help the organization gain a competitive advantage; it is designed to maximize employee performance in building construction (Rashid et al., 2015)

Risk management involves forecasting and evaluation of financial risks (cost increase) together with the identification of procedures to avoid or minimize their impact (Rashid et al., 2015)

These components of building project management are important in achievement of value for money in buildings construction. Hence, buildings project management play a crucial part in achieving value for money in construction of health centers’ buildings. In view of the above concepts, the research intends to test the following hypothesis:

**Null Hypothesis (Ho):** Project management does not influence value for money in construction of health centers’ buildings in Bariadi Town council.

**Alternative Hypothesis (Ha):** Project management influences value for money in construction of health centers’ buildings in Bariadi Town Council.
CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter covered comprehensive description of the research process that was used in this research. Research methodology is the philosophy or general principle which guides the research (Dawson, 2009). This chapter was organized in sections as described below: section one explained the research design (type of the study); section two explained the study areas; section three gave description of the study population, section four provided unit of analysis, section five described variables and their measurements, section six explained sample size and sampling techniques to be applied, section seven dealt with types, and source of data, section eight described data collection methods, while section nine described validity and reliability issues and section ten provided explanations on data processing and analysis techniques used.

3.1 Research Design

This study adopted cross-sectional survey research design to assess on the influence of force account in achieving value for money in Bariadi Town Council. The cross-sectional research design was chosen because the nature of the study was about assessment of Force Account in achieving VFM which involved gathering information about individuals at only one point in time. Moreover, researcher used hypotheses to shape and specifically focus the purpose of the study. The survey study provided a quantitative or numeric description of trends, attitudes, or opinions of a population by studying a sample of that population (Creswell, 2014). The survey study numerically explained value for money in construction projects by force account procedures and collect data at one point in time. Key features included formal and systematic measurement and the use of statistics. This means that the researcher intended to measure the relationship between resources availability (financial, equipment, human capital and capability) in force account and VFM attainment in construction projects in terms of cost, time and quality dimensions.
The research design as both a quantitative survey study and qualitative which involved assessing on the influence of force account in achieving value for money in construction projects.

3.2 Area of Study

The selected area of study was Bariadi Town Council which is found in Simiyu Region. Bariadi Town Council is located North of Tanzania and South East of Lake Victoria they lie between Latitude 2°15’ and 3°10’ South of Equator and longitude 33°40’ and 35°10’ East of Greenwich. The justification for conducting this study at this area was because, Bariadi Town Council was among the Local Government Authorities in Tanzania that had implemented projects by Force Account. Moreover, it had received funds from central government for construction of Health centers buildings with directives to use force account in implementing some projects (Shengeza, 2018). Moreover, the council had projects implemented by Force Account. Therefore, the researcher believed that relevant information (data) to support this study was available from the PEs. The study focused on construction of health centers’ buildings in the district council as shown in appendix III.

3.3 Population of the study

The target population of this study was the members of three committees involving in construction of health centers buildings through force account which are procurement committees, receiving and inspection committees and construction committees. It involved also the health management team of the health centers and ward development committee members at the council. Moreover, the population was also taken from the administration departments, works department, procurement units, internal audit units and legal services unit who are involved in day to day management of construction works. A population of 474 was used to draw a sample from Bariadi Town Council as shown on the table 3.1 below. The data from three years was used council (Bariadi DC PROFILE, 2011).
Table 3.1: Total population

<table>
<thead>
<tr>
<th>Target population</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procurement committee</td>
<td>37</td>
</tr>
<tr>
<td>Receiving and inspection committee</td>
<td>27</td>
</tr>
<tr>
<td>Construction committee</td>
<td>49</td>
</tr>
<tr>
<td>Works department</td>
<td>48</td>
</tr>
<tr>
<td>Administration department</td>
<td>48</td>
</tr>
<tr>
<td>Procurement unit</td>
<td>26</td>
</tr>
<tr>
<td>Internal Audit Unit</td>
<td>15</td>
</tr>
<tr>
<td>Legal Unit</td>
<td>14</td>
</tr>
<tr>
<td>Health management team</td>
<td>50</td>
</tr>
<tr>
<td>Ward development committee</td>
<td>160</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>474</strong></td>
</tr>
</tbody>
</table>

Source: Research database (2019)

3.4 Unit of Analysis

Unit of analysis in the study were individuals involved in construction of health centers’ buildings through force account. An individual was used as a unit of analysis because; the study focused assessing on the influence of force account in achieving value for money in construction of health centers’ buildings in Bariadi Town Council. However, each individual has a different perception and opinion on the influence of force account in achieving value for money. Hence analyzing and comparing scores of individuals would reveal information on the influence of force account in achieving value for money in construction of health centers’ buildings in Bariadi Town Council.

3.5 Variables and their measurements

The variables of the study included independent and dependent variables. The independent variables were: Organizational personnel, Organizational capital and Project management, while the dependent variable was Value for Money as summarized on table 3.2 below.
Table 3.2: Variables and measurements

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Variables</th>
<th>Type of variable</th>
<th>Source of variable</th>
<th>Measurement</th>
<th>Expected sign</th>
</tr>
</thead>
<tbody>
<tr>
<td>Influence of organizational personnel on value for money of buildings construction</td>
<td>Age of personnel (X₁)</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1=strongly agree 2=agree 3=Neutral 4=Strongly Disagree 5=disagree</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Gender of personnel (X₂)</td>
<td>Dummy/categorical</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Education level (X₃) The level of education of a worker/supervisor determines the quality of building construction</td>
<td>Dummy/categorical</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Number of personnel (X₄)</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Experience in related works(X₅)</td>
<td>Continuous</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Gender roles(X₆)</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Influence of capital on value for money of buildings construction</td>
<td>Fund availability(X₇)</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Human capital (X₈)</td>
<td>Dummy</td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Construction processes and practices (X₉)</td>
<td>Dummy</td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Knowledge and expertise (X₁₀)</td>
<td>Dummy</td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Construction equipment (X₁₁)</td>
<td>Dummy</td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Age of construction equipment (X₁₂)</td>
<td>Continuous</td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td></td>
<td>Influence of project Site meeting(X₁₃)</td>
<td>Dummy</td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Management on value for money of buildings construction</td>
<td>Site visit(X_{14})</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>--------------------------------------------------------</td>
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</tr>
<tr>
<td>Time management (X_{15})</td>
<td>Dummy</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Project Integration management(X_{16})</td>
<td>Dummy</td>
<td></td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Scope management(X_{17})</td>
<td>Dummy</td>
<td></td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Cost management(X_{18})</td>
<td>Dummy</td>
<td></td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Quality management(X_{19})</td>
<td>Dummy</td>
<td></td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Risk management(X_{20})</td>
<td>Dummy</td>
<td></td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Work program(X_{21})</td>
<td>Continuous</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Quantity of construction material (X_{22})</td>
<td>Continuous</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Quality of construction material (X_{23})</td>
<td>Dummy</td>
<td></td>
<td>Empirical</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Receiving and inspection of works/materials (X_{24})</td>
<td>Dummy</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Safe Storage of materials(X_{25})</td>
<td>Dummy</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Proper records of receipts of construction materials(X_{26})</td>
<td>Dummy</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Proper records of issues of construction materials(X_{27})</td>
<td>Dummy</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Materials (budget)</td>
<td>Dummy</td>
<td></td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
</tbody>
</table>
estimates(X38)

<table>
<thead>
<tr>
<th>Suppliers’ Evaluation (X28)</th>
<th>Dummy</th>
<th>Empirical review</th>
<th>1 to 5 Likert scale</th>
<th>+/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laborers’ evaluation(X36)</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Negotiation with suppliers/labors (X31)</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Bulky purchase of materials(X32)</td>
<td>Dummy</td>
<td>Empirical review</td>
<td>1 to 5 Likert scale</td>
<td>+/-</td>
</tr>
<tr>
<td>Value for money</td>
<td>Continuous</td>
<td>Empirical review</td>
<td>costs reduction, timely completion and conform to specifications of buildings construction</td>
<td>+/-</td>
</tr>
</tbody>
</table>

Source: Research database (2019)

3.6 Sample size and sampling technique

This part elucidates the sample size and sampling techniques used in this study.

3.6.1 Sample size

According to Saunders, (2011), the sample size is calculated using the following formula:

\[
n = \frac{N}{1 + N (e)^2}
\]

Where n = sample size,
\[N = \text{Population size} = 474\]
\[e = \text{Level of precision} = 5\%

\[
n = \frac{474}{1 + 474 (0.05)^2}
\]

\[n = 217\]
The sample size of this study was two hundred seventeen (217) respondents. This was drawn from the population of Bariadi TC with a total sample size of 217 respondents as indicated on the table 3.3 below.

### Table 3.3: Sample size distribution

<table>
<thead>
<tr>
<th>S/N</th>
<th>Targeted population</th>
<th>Designed Sample size</th>
<th>Attained Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Procurement committee members</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Receiving and inspection committee members</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>3.</td>
<td>Construction committee members</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>4.</td>
<td>Works department staff</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>5.</td>
<td>Administration department staff</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>6.</td>
<td>Procurement Management unit staff</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>7.</td>
<td>Internal Audit Unit staff</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>8.</td>
<td>Legal Unit staff</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>Health management team</td>
<td>25</td>
<td>23</td>
</tr>
<tr>
<td>10.</td>
<td>Ward development committee members</td>
<td>70</td>
<td>63</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>217</strong></td>
<td><strong>205</strong></td>
</tr>
</tbody>
</table>

**Source:** Research database (2019)

### 3.6.2 The Sampling techniques

The study used random sampling procedure and purposive sampling to select the respondents. In random sampling the researcher designed ballots labeled with numbers from 1 to 217 from the designed sample size, where respondents had equal chance of being selected by drawing the ballots. The reason for using this technique was because respondents are many in such a way that it is difficult to contact every one for the study because of time limit and financial matters.

However, in purposive sampling, the researcher used personal judgment to get respondents for the study (Tongco, 2007; Bailey, 1994). This is because the respondents had specific information and are unique or focal persons in the study. Moreover, purposive sampling was used to select the district executive director, the heads of departments, the Procurement Management Unit (PMU) staff, and the Tender Board members because there is only fixed number of members in each of these categories in the council i. e only one (1) Town Executive Director (DED), one (1) head of department, five (5) PMU staff in maximum and five (5) members of tender board in the Council. The reason for selecting these organs is because they
are the ones that they are involved in the initiations, supervision and implementation of construction projects by force account. The ward development committee members and construction committee, procurement committee, receiving and inspection committee members and health management team was randomly selected by simple random sampling because of their diversity and each respondent of the target population has the equal chance of being selected and they are representative of target population (Meeden, 2012)

3.7 Data types and Sources

The researcher used both primary and secondary data. Primary data were those data the researcher collected through direct communication with the respondents and the researcher collected it for the first time. Secondary data on the other hand were all information gathered from sources already existing or analyzed by someone else. They included text books, journal articles, documentary review, published and unpublished reports, literature reviews and others. The researcher retrieved data from different documents and information available at the district councils such as bills of quantities, project files, procurement and contract files, project progress reports, payment certificates, contract documents and other information relevant to the study. The reason for using both primary and secondary data was to enable the researcher to triangulate information which eventually led to draw conclusion of the information.

3.8 Data collection methods

The data collection methods involved questionnaires, interviews and documentary review as described below.

3.8.1 Primary data collection methods

This involved questionnaires and interviews, in this study the researcher used questionnaires and interviews to collect primary data.
(i) Questionnaires

Questionnaires were used in collecting the quantitative data. This technique was used because respondents were easily available and not so much occupied by administrative activities. According to Phellas, Bloch, & Seale, (2011), questionnaires may be used when respondents are easily attainable, dispersed over a wide area, interviewing each respondent would be excessive. The researcher designed a set of questions to generate the data necessary for accomplishing a research project's objectives (Chakravanti Rajagopalachari Kothari, 2004). A questionnaire with closed ended questions was used in data collection. The questionnaires were administered to the staff from various departments, procurement, receiving and inspection and construction committees. The questionnaire was also distributed to the health management team and ward development committee members of the district councils, where each respondent was given a time to fill and later on the researcher collected back the questionnaires. A five point likert-scale of 1 to 5 was adopted to assess the degree of significance of each course.

(i) Interviews

The researcher used interviews where face to face interview was done to ensure efficient collection of information (Phellas et al., 2011). The researcher used interview in order to get more information on construction of buildings by force account and make more elaboration on the questions. The interview guide was administered to the Health Facility Management Committee (HFMC), Health Centers’ Committees (HCC), Construction Committees (CC) and Procurement Committees (PC), because these respondents had potential information on construction of buildings by force account as they were directly engaged in construction of health centers’ buildings. The researcher prepared open ended questions that were administered to respondents in the councils so that to get more elaboration and clarifications on the subject matter. This method was used because the researcher needed more clarification on construction of buildings through force account in Health centers.
3.8.2 Secondary data collection methods

This included documents, reports and journals published in respect to this study. In this study the researcher used documentary review relevant to the study to collect the secondary data.

(i) Documentary review

The researcher reviewed both published and unpublished documents. The document to review included procurement records related to construction projects through force account in the procurement management unit and works department. These included the procurement requisitions, quotations, approval of procurement, procurement guidelines, bills of quantities, purchase documents, minutes of award, contract documents, receiving and inspection reports, project progress reports, site meeting reports, payment certificates and project handing over certificates.

Furthermore, in conducting this study, the researcher visited to sites where projects were executed through force account to observe and see how construction is being carried and status of the projects in terms of project completion time, quality of the materials and equipment used in such construction.

Table 3.4: Methods of data collection

<table>
<thead>
<tr>
<th>SN</th>
<th>Method</th>
<th>Type of respondents/source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Questionnaires</td>
<td>● Procurement committee members&lt;br&gt;● Receiving and inspection members&lt;br&gt;● Construction committee members&lt;br&gt;● Health management team members&lt;br&gt;● Ward Development Committee members</td>
</tr>
<tr>
<td>2.</td>
<td>Interviews</td>
<td>● Health facility Management Committee&lt;br&gt;● Health Centers’ Committees&lt;br&gt;● Construction Committees (CC) and&lt;br&gt;● Procurement Committees (PC)</td>
</tr>
<tr>
<td>3.</td>
<td>Documentary review</td>
<td>Books, articles, procurement requisitions, quotations, approval of procurement, procurement guidelines, bills of quantities, purchase documents, minutes of award, contract documents, receiving and inspection reports, project progress reports, site meeting reports, payment certificates and project handing over certificates</td>
</tr>
</tbody>
</table>

Source: Research database (2019)
3.9 Reliability and validity of data

Reliability and validity are the two most important quantities of any measuring instrument.

3.9.1 Reliability of data

Mohajan (2017), defines reliability as measure of how consistent the results from a test or measuring instrument are; that is the consistency with which a test measures what it is supposed to measure. It is the ability of the measurements or the degree of which instrument measures the same way each time it is used under the same condition with the same subjects. The researcher used a scientific research methodology in acquisition of data hence no doubt about the results obtained by researcher, whoever used the same procedures would obtain the same or more likely as the researcher (Mohajan, 2017).

Correlation Coefficient (r) or Cronbach’s Alpha is applied to assess the internal consistency of a questionnaire (or survey) that is made up of multiple Likert-type scales and items (Bonett & Wright, 2015). It was used to test the reliability of the questionnaire responses to measure internal consistency reliability among a group of items combined to form a single scale. It was used to test reliability of questionnaires by taking likert-type scales and items and analyzing by using the SPSS version 20. A critical point for Cronbach’s Alph indicating reliability and stability of results was taken to be 0.7.

3.9.2 Validity

This is the extent to which a research measures what it aims to measure. In this study validity of data was ensured by choosing the sample from a true representative of population, preparing a good research tools, having appropriate methods of data collection, pre-testing research instruments and proper recording of data (Mohajan, 2017).
3.10 Data processing and Analysis

This part describes data processing and analysis which include; data processing, editing, coding, classification, tabulation and statistical analysis.

3.10.1 Data processing

Qualitative and quantitative data was edited, coded, classified, and tabulated. This was followed by descriptive analysis, including determining the mean, the median, mode, and standard deviation.

3.10.1.1 Editing

The qualitative and quantitative data was examined to detect errors and omissions to correct them. The questionnaires and schedules were carefully scrutinized to assure accuracy and consistency of data. This helped to facilitate coding and tabulation. Editing of the data was done in two ways that is field editing and central editing. In field editing, the researcher reviewed reporting forms for completing (translating or rewriting) what the respondent has written in abbreviated or in illegible form at the time of recording the respondents’ responses. This type of editing was necessary in view of the fact that individual writing styles often can be difficult for others to read. This kind of editing was done immediately after the interview on the same day or the next day. In central editing, editing took place when all forms or schedules have been completed and returned or collected from respondents. This type of editing implied that all forms got a thorough editing by a single editor. The researcher corrected the obvious errors such as an entry in the wrong place; missing replies and contacts the respondent for clarification (Kothari, 2004).

3.10.1.2 Coding

The collected data was coded in numerals to facilitate analysis and reduce replies to as small number of classes which contain the critical information required for analysis (Kothari, 2004).
3.10.1.3 Classification

The large volume of raw data (responses) was reduced into homogeneous groups so that to get meaningful relationships. The researcher classified data in groups or classes basing on common characteristics such as descriptive and numerical data (Kothari, 2004).

3.10.1.4 Tabulation

The data was tabulated that is arranged in concise and logical order. The researcher summarized raw data and put them in compact form that is in form of statistical tables (columns and rows). The reasons for this were to reduce explanatory and descriptive statement, to facilitate detection of errors and omissions and provide basis for statistical computations (Kothari, 2004).

3.10.2 Data analysis

Data was analyzed using descriptive statistics such as mean, mode, and standard deviation. Also tables were used to present and analyze the data. However, prior to analysis reliability test was done to assess the instruments reliability. In order to establish the relationship between dependent and independent variables the researcher used Multiple Regression Analysis with the aid of SPSS.

3.10.2.1 Research (statistical) Model

In order to assess on the influence of force account in achieving value for money in construction of buildings in Health centers at Bariadi Town Council, the multiple linear regression analysis was used. The study was guided by the following econometric model specification of matrix notation as follows:

\[ Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 \]

**Notation**

- **Y** is the Dependent Variable
- **Xs** are Independent Variables (predictor variables)
- **a** is the **Y** intercept, where the regression line crosses the **Y** axis
\( b_1 \) is the partial slope for \( X_1 \) on \( Y \)
\( b_1 \) indicates the change in \( Y \), for one unit change in \( X_1 \), while controlling for \( X_2, X_3, X_4 \).

\( b_2 \) is the partial slope for \( X_2 \) on \( Y \)
\( b_2 \) indicates the change in \( Y \), for one unit change in \( X_2 \), for controlling for \( X_1, X_3, X_4 \)

The economic model specification of the variables is as follows.
\[ Y_i = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{15}, X_{16}, X_{17}, X_{18}, \ldots, X_{32}) \]

Where: \( Y_i \) = Value for Money measured by cost, time of completion and conformance to specifications of the project.

\( X_1 \) = Age of the personnel
\( X_2 \) = Gender of personnel
\( X_3 \) = Educational level of personnel
\( X_4 \) = Number of personnel
\( X_5 \) = Years of experience of personnel in construction works
\( X_6 \) = Gender roles
\( X_7 \) = Fund availability
\( X_8 \) = Human capital
\( X_9 \) = Construction processes and practices
\( X_{10} \) = Knowledge and expertise
\( X_{11} \) = Construction equipment
\( X_{12} \) = Age of construction equipment
\( X_{13} \) = Construction equipment
\( X_{14} \) = Site meeting
\( X_{15} \) = Site visit
\( X_{16} \) = Time management
\( X_{17} \) = Project integration management
\( X_{18} \) = Cost management
\( X_{19} \) = Quality management
\( X_{20} \) = Human resource management
\( X_{21} \) = Risk management
\( X_{22} \) = Work program/schedule
X_{22} = \text{Quantity of construction material requirement}

X_{23} = \text{Quality of material purchased/required}

X_{24} = \text{Receiving and inspection of works/material}

X_{25} = \text{Safe Storage of materials}

X_{26} = \text{Proper records of receipts of construction materials}

X_{27} = \text{Proper records of issues of materials}

X_{28} = \text{Materials (budget) estimates}

X_{29} = \text{Suppliers evaluation}

X_{30} = \text{Laborers evaluation}

X_{31} = \text{Negotiation with suppliers/laborers}

X_{32} = \text{Bulky purchase of materials}
CHAPTER FOUR

PRESENTATION AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents and discusses data from a study on assessment on influence of force account in achieving value for money in construction of public buildings at Bariadi Town Council. The objectives of this study were three folds: first, determine the influence of organizational personnel on value for money in construction of Health centers’ buildings, second, examine the influence of organizational capital on value for money in construction of Health centers’ buildings as well as assess the influence of project management on value for money in construction of Health centers’ buildings.

The presentation, analysis and discussion of data is organized under eight (8) main sections: Section 4.2 Reliability test; Section 4.3 Response rate; Section 4.4 determines the influence of organizational personnel on value for money in construction of health centers’ buildings; section 4.5 examines the influence of organizational capital on value for money in construction of health centers’ building. While section 4.6, assesses the influence of project management on value for money in construction of health centers’ buildings. Section 4.7 presents and discusses determinants of Value for money in force account, section 4.8 describes Multiple Regression Analysis and the last part, section 4.9 provides the summary of the chapter.

4.2 Reliability test

Cronbach’s Alpha was used for testing the reliability of the questionnaire responses, using SPSS software. The Alpha test was run on variables in the questionnaires. The critical point for Cronbach’s Alpha is 0.7, and in this case the average score for all variables was found to be 0.87. From the test, one can safely conclude that the results are reliable and stable, as indicated in Table 4.1 below.
Table 4.1: Case processing summary and reliability statistics

Case processing summary

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>Valid</td>
<td>193</td>
</tr>
<tr>
<td></td>
<td>Excluded</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>193</td>
</tr>
</tbody>
</table>

Reliability statistics

<table>
<thead>
<tr>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>.870</td>
<td>37</td>
</tr>
</tbody>
</table>

Source: Researcher’s database (2019)

4.3 Response/return rate

The study involved 205 respondents who were issued with questionnaires. However, only 193 respondents returned the questionnaire. In this study, return rate was 95 percent due to the fact that the research was friendly supported by respondents, also the data collection methods used attracted respondents to give information and hence the return was 95%. Also the return rate was successful due to the willingness of respondents to participate in the study. Table 4.2 presents the return rate of the respondents.

Table 4.2: Return/responsive rate of respondents

<table>
<thead>
<tr>
<th>Methods</th>
<th>Respondents</th>
<th>Sample</th>
<th>Responsive rate</th>
<th>Non responsive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Questionnaire</td>
<td>Bariadi TC staff</td>
<td>205</td>
<td>95%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Source: Researcher (2019)

4.4 The influence of organizational personnel on VFM in construction of Health centers’ buildings

The first objective was intended to determine the influence of organizational personnel on value for money in construction of buildings in health centers. The information was collected through two methods namely questionnaires and interviews. The quantitative data are presented in tables below, while qualitative information is described in cases. To be precise the objective was divided into three
sections including the number of qualified personnel required to supervise construction projects, education level and experience of personnel in construction projects.

4.4.1 **Number of personnel engaged on site determines timely completion of buildings.**

Respondents were asked to rank their choices by stating whether number of construction supervisors determined the time of completion of the buildings using the given scale. Table 4.3 summarizes the findings on influence of personnel on VFM in construction of buildings.

**Table 4.3: Influence of personnel on VFM (N=193)**

<table>
<thead>
<tr>
<th>Ranking of number of workers with respect to project completion time</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>58</td>
<td>30.1</td>
</tr>
<tr>
<td>Agree</td>
<td>80</td>
<td>41.5</td>
</tr>
<tr>
<td>Neutral</td>
<td>29</td>
<td>15.0</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>15</td>
<td>7.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>11</td>
<td>5.7</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

Table 4.3 shows that 71.6% of the respondents admitted that project completion time is influenced by the number of personnel (workers) engaged in the project using force account procedure. However only 13.4% of respondents supported that number of worker does not influence timely completion of the project. However, in an interview with respondents the following statement about the completion time of the buildings was stated:

“In Force account people who are not professional in the construction are involved in supervision of construction and procurement of materials. This cause delays in completing the buildings timely because sometimes we have to stop a while waiting for the engineer’s approval to proceed to other stages and the engineer may take one to two weeks to come and give us instruction to go on” (Interview, transcript 2)
This implies that without adequate qualified personnel in supervision of the building construction it is impossible to complete the project timely using force account. This finding agrees with Shengeza (2018) who says that in order to ensure efficient use of force account the procuring entity should have qualified personnel to carry out and supervise the required works.

CASE A: Participants in construction of buildings by force account at Bariadi District Council

The narrative information collected from respondents during interview at Ngulyati Health center provides an outline of the key participants on construction of buildings through force account. One of the respondents reported that: Construction of buildings by force account in our council is supervised by several committees: Construction committee comprising Engineer, Community development officer, ICT officer, Health officer and a community member. This committee is responsible for initiation of procurement/requirements, technical issues, monitoring quality of the work and selection of local fundi; another committee is the procurement committee made up of Procurement officer, Engineer, Health secretary, Accountant and a community member. The committee is responsible for receiving all requisition submitted for procurement, manage procurement of requirements; there is also receiving and inspection committee which include Supplies officer, Planning officer, civil technician, Town Medical Officer and Health officer, it is responsible to receive the purchased materials, to inspect the purchased materials; custody of materials and issuing materials to the construction committee and last is Monitoring committee consist of DC, TED and DSO of which is the Overall committee, to monitor all activities, to monitor schedule of the work.
However, the committees were just there but nonfunctional as it was narrated by one of the respondents during the interview, who said the following statement:

> At our health center we have completed six buildings through force account. The Health Facility Management Team (HFMT) is the one which was handling and supervising all the activities of construction including procurement of materials, we did not receive any support from the council headquarters committees, which were selected to supervise the works. The committees were there but not effective because they never appeared at all during construction. Only engineer came here during construction to supervise the works (Interview transcript 1).

This finding was supported by one of the respondents who were among the members of procurement committee who said the following statement:

> I was a member of procurement committee but we were not doing the procurement of the materials for construction of the health center’s buildings because of the transport problems as you know the Health centers are in remote areas. There are no cars and sometimes fuel is also a problem; fund given from the central government has no supervision costs it is solely for construction of the buildings. The HFMT was doing all works of procurement and supervision of the project (Interview transcript 3).

These findings show that the committees appointed to supervise the construction project are ineffective. This contravenes the circular No.AD.296/303/01/1/82 issued by PO-RALG which requires that each committee (procurement, construction and receiving and inspection) in force account should perform its function in construction projects and act independently (PO-RALG, 2017)

### 4.4.2 Influence of education level of project participants on VFM

In order to determine the influence of organization personnel on VFM in Health centers buildings at Bariadi Town Council; people were asked to give their opinions concerning the level of education of the participants as criterion to getting VFM in Health centers’ buildings as shown on table 4.4 below;
Table 4.4: Influence of education level of project participants on VFM

<table>
<thead>
<tr>
<th>Education level</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Masters</td>
<td>66</td>
<td>34.2</td>
</tr>
<tr>
<td>Graduate</td>
<td>95</td>
<td>49.2</td>
</tr>
<tr>
<td>Diploma</td>
<td>17</td>
<td>8.8</td>
</tr>
<tr>
<td>Certificate</td>
<td>5</td>
<td>2.6</td>
</tr>
<tr>
<td>Secondary</td>
<td>10</td>
<td>5.2</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

Table 4.4 above demonstrates that 83.4% of respondents supported that high level of education of the project participants influence the achievement of VFM in construction of Health centers buildings. However, 7.8% of respondents said that low level of education of participants does not influence achievement of VFM. Despite the fact that appropriate education level of project supervisors influence VFM, findings of the study show that people who are supervising construction of buildings are not to that extent qualified to supervise. This was given by one of the respondent who put it as follows:

*We are supposed to supervise construction of buildings in our organization. Yet we do not have construction management skills because we are not trained on construction profession e.g. Reading BOQs, drawings and specifications. Even our local fundi do not have such knowledge what they know is to arrange blocks in orderly manner* (Interview transcript 4)

This indicates that unqualified people are used in supervision of building construction in force account contrary to regulation 167(e) of URT (2013), where the use of force account or direct labor may be justified if the PE has qualified personnel to undertake and supervise the required works.

**CASE B: Training of participants on force account procedures for construction of buildings.**

Respondents were asked to express their views whether training was conducted to the participants on application of FA procedures in construction of buildings. The Table 4.5 indicates the opinion of respondents.
Table: 4.5: Training of participants in force account

<table>
<thead>
<tr>
<th>Were participants trained in Force Account procedures</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2</td>
<td>16.67</td>
</tr>
<tr>
<td>No</td>
<td>9</td>
<td>75.00</td>
</tr>
<tr>
<td>Not sure</td>
<td>1</td>
<td>8.33</td>
</tr>
<tr>
<td>Total</td>
<td>12</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The table 4.5 indicates that majority of respondents in an interview said training in force account procedures to construction participants was not conducted. 75% said they did not receive any training before embarking construction by force account. 16.67% agreed that training was done and 8.33% were not sure whether training was done. The findings imply that most of the members of committees involved in construction by force account were not aware of the procedure of the force account as were not trained in that procedure. This was justified by one of the respondents who affirmed that:

“As we started construction by force account we did not have any formal training but there were instructions which were received from the central government and instant training was received when experts visited to the site and give instructions” (Interview transcript 2)

4.4.3 Experience of personnel in achieving VFM in construction projects

Influence of organizational personnel on VFM was stated and justified looking on the experience of personnel in construction projects. Table 4.6 below portrays the experiences of project participants engaged in supervising construction of buildings at Bariadi Town Council.

Table 4.6: Experience of personnel in achieving VFM

<table>
<thead>
<tr>
<th>Experience of personnel in achieving value for money</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 1 year</td>
<td>51</td>
<td>26.4</td>
</tr>
<tr>
<td>2 years</td>
<td>25</td>
<td>13.0</td>
</tr>
<tr>
<td>3 years</td>
<td>28</td>
<td>14.5</td>
</tr>
<tr>
<td>4 years</td>
<td>28</td>
<td>14.5</td>
</tr>
<tr>
<td>above 4 years</td>
<td>61</td>
<td>31.6</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>
Table 4.6 shows 26.4% had experience in construction below 1 year, 13% had 2 years’ experience and 31.6% had above 4 years’ experience in construction. This implies that projects participants are a bit have knowledge and experience in construction projects. Therefore we can say VFM can be realized because participants have experience in construction projects.

This is in line with Olusola, (2017) who says that qualified, experienced, competent and ethical project supervisors will ensure proper supervision of construction leading to early completion of project hence achieving VFM of the construction project.

Generally, findings generated from Statistical analysis above demonstrated that availability of personnel exhibited a significant contribution on achievement of Value for money by 71.6%; while 83.4% demonstrated that education level has influence on Value for money; experience of project participants indicated a positive influence by 81.9% on value for money and use of own personnel showed 44.6%. This implied a moderate level of influence by organizational personnel on value for money.

The combination of personnel, education, experience and indoor personnel is termed to justify force account in construction of buildings with an intention to get the desired outcome (VFM) from the resources invested by the procuring entity. However, availability of personnel is not self sufficient to justify force account in order to achieve value for money, but personnel should be adequate depending on the number of construction buildings to be supervised, that is why findings indicated that availability of personnel moderately influence Value for money in construction of buildings by force account. These findings were in agreement with what (URT 2013) requires in construction by force account which states that the use of force account or direct labor may be justified if the procuring entity uses its own personnel or hired labor and equipment and those personnel are adequate and qualified to carry out and supervise the required works. Fleming, (2013) accorded that Force Account is usually used to execute simple works. Its use is not tied to any thresholds. It is used where; the Procuring Entity has the equipment and personnel to
undertake the works. Though the findings indicate there is influence of force account (organizational personnel) on value for money in construction of health centers’ buildings in Bariadi Town Council, it was evident that the number of technical personnel to supervise the projects was not enough. This therefore shows if no measures are taken to employee more technical personnel VFM for money may not be realized in construction of buildings.

4.5 The influence of organizational capital on VFM in construction of Health centers’ buildings

The second objective of the study was meant to examine the influence of capital on value for money. The data were collected through questionnaires and interviews from the respondents. The quantitative data were gathered through questionnaires and qualitative information was collected by interviews. The quantitative results summaries are presented on table 4.7; while the qualitative results were described in cases. Five propositions were developed, the first examined whether finance availability was the criterion for early completion of projects in force account, second surveyed whether availability of human resources was the source of timely completion of buildings, third tested whether construction processes and practices contributed to poor quality of buildings construction, fourth examined if quality of buildings could be achieved regardless of knowledge and skills of project supervisors and the last observed if presence of own equipment ensured quality of the buildings. The results were as presented below.

Table 4.7: Descriptive statistics on influence of organizational capital on VFM

<table>
<thead>
<tr>
<th></th>
<th>Availability of fund</th>
<th>Human capital</th>
<th>Construction equipment</th>
<th>Construction processes</th>
<th>Knowledge and expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>193</td>
<td>193</td>
<td>193</td>
<td>193</td>
<td>193</td>
</tr>
<tr>
<td>Valid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>1.85</td>
<td>0</td>
<td>2.77</td>
<td>3.42</td>
<td>3.51</td>
</tr>
<tr>
<td>Std. Deviation</td>
<td>.996</td>
<td>1.077</td>
<td>1.365</td>
<td>1.321</td>
<td>1.362</td>
</tr>
<tr>
<td>Minimum</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Maximum</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Source: Field data (2019)
On table 4.7, organizational capital measures, which influence achievement of VFM in FA, were arranged in an ascending order based on the mean, from availability of fund with a mean of 1.85 to knowledge and expertise with a mean of 3.51. Though the means show a relative difference of 1.66 between the lowest and the highest, the standard measure of variability (Standard deviation) around the means is 0.366 which is not significant. This means the respondents see knowledge and expertise as more influential measures of organizational capital on value for money in force account, followed by construction process with mean of 3.42, next is construction equipment with mean of 2.77 followed by human resources with a mean of 2.04 and the last is fund which had a mean of 1.85. Knowledge and expertise in construction of buildings helps to achieve VFM as all specifications and drawings will be properly followed and interpreted during construction. Other factors follow in order of merit as indicated on the table 4.7. Ranking and categorization of the influence of capital measures by respondents are described on the following sections.

4.5.1 Finance availability as the criterion for early completion of projects

Respondents were required to rank their choices by stating whether finance availability was the criterion for early completion of projects in force account. Their responses were as indicated on table 4.8.

**Table 4.8: Availability of fund as source of early completion of projects**

<table>
<thead>
<tr>
<th>Availability of fund is a criterion for timely completion of works</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>4</td>
<td>2.1</td>
</tr>
<tr>
<td>Disagree</td>
<td>8</td>
<td>4.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>23</td>
<td>11.9</td>
</tr>
<tr>
<td>Agree</td>
<td>74</td>
<td>38.3</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>84</td>
<td>43.5</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

Generally, as shown in table 4.8 above, 81.8% of the respondents recognized availability of fund as a significant condition for early completion of the construction projects, while 4.1% disagreed and 2.1% strongly disagree. This means
fund availability has a contribution to force account in achieving value for money in construction of buildings. This is justified by timely completion of the project in public organizations due to fund availability which enable timely use of the project to deliver services to the public. However, fund itself is none prima facie condition in achieving VFM in force account as affirmed by one of the respondents who said the following:

"Fund availability is not enough to cause VFM in construction of buildings by force account, it needs also adequate, qualified, competent and ethical personnel supervising the construction, purchase of quality building materials and close supervision” (Interview transcript 6)

However, findings indicated that some of buildings that were constructed by force account were not completed because of lack of fund. This was found at Matale dispensary in Bariadi Town Council where maternity ward was not completed because funds were not enough. This was testified by a respondent who said: “The maternity ward is not in use because the funds given was not enough, we were given 30 million for this building but it has been used up all leaving windows, doors and septic tanks for toilets uncompleted” (Interview transcript 7) see Appendix IV figure 4.1 which indicates the uncompleted and unused maternity ward due to inadequate of fund.

Delayed completion of project due to lack of fund has negative impact on the project because it leads to cost increase of projects hence increasing the total costs of the project, hence reduce value for money of the project. This agrees with Memon, Rahman, Asmi, et al., (2011) who said achieving project completion on time and within budget at specified quality standards is major criterion of success of project, however financial difficult of owner impends achievement of success of project since project will not be completed timely and within the budget.
4.5.2 Influence of human resources on timely completion (VFM) of construction of buildings by FA

Human capital is one of the variables that the study considered as predictor of value for money in construction of buildings in Health centers in Bariadi Town Council. The proposition sought to know whether availability of human resources with respect to construction of buildings by force account enabled timely completion of the construction. Respondents were asked to provide their responses on a 5 likert scale 1-Strongly agree, 2-Agree, 3-Neutral, 4- strongly disagree and 5- disagree. The findings are tabulated on table 4.9.

Table 4.9: Influence of human capital on timely completion (VFM) of construction of buildings by FA

<table>
<thead>
<tr>
<th>Availability of human resources helps timely completion of works</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly disagree</td>
<td>2</td>
<td>1.0</td>
</tr>
<tr>
<td>Disagree</td>
<td>14</td>
<td>7.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>25</td>
<td>13.0</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>64</td>
<td>33.2</td>
</tr>
<tr>
<td>Agree</td>
<td>88</td>
<td>45.6</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

Table 4.9 demonstrates that 78.8% of respondents affirmed that availability of human resource has significant influence on timely completion of construction buildings. 7.3% disagreed and 1.0% strongly disagreed. This suggests that availability of human resources supports timely completion of construction of buildings by Force Account. Human resources include technical personnel in construction who provide technical directives and supervision, procurement experts for procurement of right quality, at right cost, right time and from the right source. This was opined by one of respondents who said:

*We already have the fund in our account but we have not started construction because the BOQs, drawings and specifications are not ready we are waiting from the Ministry. We do not have ability to prepare BOQs and drawings and we cannot get any engineer or QS to*
Statistical analysis portrayed human capital with a mean of 2.04. However, influence of human capital on value for money indicated that 78.8% of respondents supported that human capital influences value for money in construction of buildings. Many subsequent studies consider human capital as a resource that emanates and resides in the employees, as this human capital helps to increase the productivity of the company. Eisfeldt & Papanikolaou (2013) consider human capital as a construction factor that is embodied in the company’s key talent. Eisfeldt & Papanikolaou (2013) see human capital as tacit knowledge that employees at lower levels of hierarchy who later occupy higher-level positions develop and learn. Therefore, human capital is considered as one of the predictors of force account in achieving value for money.

4.5.3 Construction processes and practices contribute to poor quality of buildings construction

Similarly, respondents were asked to rank their choices in 5 likert scale on the statement that stated whether construction processes and practice of Bariadi Town Council contributed to poor quality of buildings constructed. Construction processes and practices include mobilization, organization and coordination of resources of the Council. It involves also participants’ trait, ethics and behavior. Table 4.10 portrays the findings of the views collected by questionnaire from the respondents.

Table 4.10: Construction processes and practices contribute to poor quality of buildings

<table>
<thead>
<tr>
<th>Construction processes contribute to poor quality of works</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>18</td>
<td>9.3</td>
</tr>
<tr>
<td>Agree</td>
<td>33</td>
<td>17.1</td>
</tr>
<tr>
<td>Neutral</td>
<td>48</td>
<td>24.9</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>37</td>
<td>19.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>57</td>
<td>29.5</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)
Table 4.10 above indicates 48.7% of respondents disagreed that construction processes and practices do not influence poor quality of constructed buildings, 17.1% of respondents agreed while 9.3% strongly disagreed. This means most of respondents disagreed that construction processes and practices do not lead to poor quality of constructed buildings. According to this findings majority of respondents are not aware malpractice in construction of buildings such as personal interests and opportunistic behavior can jeopardize and infringe the quality of the buildings. However, if construction processes and practices are not effectively managed there is a risk of producing substandard works. One of respondents also said that:

*Some people at lower level where funds for construction of buildings are directly deposited to their accounts see force account as source of personal gain as they think it is a time for them to benefit from these funds. Hence they end up quarrelling and wasting time due to internal conflicts* (interview transcript 5)

The findings showed there is a danger of constructing poor quality of buildings at Bariadi Town Council, because of the personal interests by the participants. Most of the participants did not recognize that construction practices and processes could lead to poor constructed buildings.

The research study showed that construction processes and practices do not lead to poor quality of the constructed buildings. 48.7% of the respondents disagreed on the statement. Only 26.4 % of respondents supported construction processes and practices to cause poor quality of buildings constructed. This shows that processes and practices used in construction of buildings have no effect on value for money in construction of buildings. This was also agreed by Evans, (2016) that knowledge used to combine human skills and physical capital into systems for construction and delivering expected results is vested on the construction processes and practices. Hence processes and practices enable organizations to combine resources more efficiently to generate output.
4.5.4 Quality of buildings could be achieved regardless of knowledge and skills of project supervisors

In order to justify this statement, respondents were needed to indicate their responses by ranking their choices. The findings are presented on the table 4.11

Table 4.11: Knowledge and expertise of project supervisors does not influence quality of buildings

<table>
<thead>
<tr>
<th>Knowledge and expertise of project supervisors does not influence quality of works</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>19</td>
<td>9.8</td>
</tr>
<tr>
<td>Agree</td>
<td>41</td>
<td>21.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>11</td>
<td>5.7</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>66</td>
<td>34.2</td>
</tr>
<tr>
<td>Disagree</td>
<td>56</td>
<td>29.1</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data 2019

Table 4.11 shows that 34.2% of respondents strongly disagreed with the proposition, 29% disagreed, while 21.2 % agreed and 9.8% strongly supported that knowledge and expertise of project supervisors does not influence VFM in construction through force account. The findings indicate that knowledge and expertise of key project supervisors are prerequisite for quality of the constructed buildings through force account. However, this remain a challenge at Bariadi Town Council, in implementing construction of buildings by force account because most of people supervising projects through force account lack appropriate knowledge and skills in construction of buildings because of inadequate of skilled civil engineers, procurement experts and technicians. This was pronounced by respondent who declared that:

*Force account is mostly implemented in schools and dispensaries. However, in these institutions there no architect, quantity surveyors, engineers, procurement officers and accountants. These professionals are not enough and some have been shifted to TARURA. Therefore, teachers, doctors become responsible and supervisors of the projects and forget their professionals of teaching and treating people. We are*
forced to supervise works and responsibilities which are not our professionals (Interview transcript 4)

The results showed the government is channeling funds directly to the schools and dispensaries with instruction of using force account in construction of the buildings (Tekka, 2017). In reality there are no enough engineers, procurement experts and accountants to manage the projects and funds which are disbursed to these institutions. Each institution has to hire local fundi that will be under the supervision of an Engineer, but supervision becomes difficult as projects are many and Engineers are inadequate in Bariadi Town Council. This was also supported by one respondent who opined that:

Force account is good in cost saving if it is properly managed, but the problem is lack of enough engineers and procurement experts to supervise and manage the projects. It could be better if each institution to which funds are provided could have an engineer, procurement expert and accountant. In our council there is only one engineer with numerous projects from the schools and dispensaries. How can he manage to supervise all these? During the time, contractors were used in construction of public buildings engineer was just an inspector to work done by contractor. But now engineer is the implementer and supervisor of the work. Most of local fundi who are employed in these projects are not competent; they don’t know how to read and interpret the BOQs, drawings and specifications. So engineer is required to be on site all the time when local fundi are working to direct and instruct them (Interview transcript 8)

Research data showed that knowledge and expertise with mean 3.51 is the variable that influences achievement of value for money in construction of health centers’ buildings by force account in Bariadi Town Council. Findings generated from statistical analysis indicated that knowledge and expertise was considered to influence value for money in construction of buildings by 63%. This is because knowledge and expertise in construction of buildings improve supervision of construction. Construction of buildings involves technical knowledge such as ability to read and interpret specifications and drawings, skills on concrete ratios which determine the quality and durability of the buildings. The finding agrees with what Carmona-Lavado, Cuevas-Rodríguez, & Cabello-Medina, (2010) say about knowledge and expertise in relation to construction as a component of intellectual
capital and distinct from human and social capital. Organizational capital is the codified knowledge, i.e., knowledge generated within the organization through formal processes of knowledge integration, which then can be used by any other employee in the organization — examples are, construction measurement systems that transform the personnel’s experience into useful technical information. Evans, (2016), considered knowledge and expertise as facet of organizational capital that encompasses the accumulation of organization specific knowledge in relation to construction that will ensure good performance of projects.

4.5.5 Presence of own equipment ensured quality of the buildings

Also respondents were required to give their opinion on the proposition that own equipment ensured quality of the buildings rather than using contractor’s equipment in construction of buildings at Bariadi Town Council. The findings were presented on table 4.12.

Table 4.12: Own equipment ensure quality of building

<table>
<thead>
<tr>
<th>Availability of owned equipment assure quality of works</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>29</td>
<td>15.1</td>
</tr>
<tr>
<td>Agree</td>
<td>79</td>
<td>40.9</td>
</tr>
<tr>
<td>Neutral</td>
<td>32</td>
<td>16.6</td>
</tr>
<tr>
<td>strongly disagree</td>
<td>13</td>
<td>6.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>40</td>
<td>20.7</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The findings on table 4.12 above demonstrate that presence of owned equipment facilitated achievement of quality in construction of buildings at Bariadi Town Council. This is indicated by respondents in which 40.9% agreed with the statement, 15% strongly agreed, though 20.7% disagreed. Construction of buildings using own equipment is a condition of application of force account which requires use of own resources including own equipment in construction of buildings. Construction equipment includes supervision cars, concrete mixers, compactors, trucks, excavators etc. These facilitate construction in terms of time saving, cost saving and
quality of buildings. Construction equipment ensures quality in that project supervisors are enabled to access the site timely through transport. Also helps to transport materials such as concrete, water and gravels to the site. Moreover, own construction equipment is full used without restriction.

However, at Bariadi Town Council there a problem of own equipment like cars which are not enough, there is no owned concrete mixers, excavators, trucks and compactors. Even cars are very few after some of them being shifted to TARURA. Hence achieving quality of buildings is likely to be hindered. One of the respondents had this to say:

*Force account is very difficult to implement in our council because we lack construction equipment to facilitate construction; there is no supervision car, there was one in the works department but it has been taken to TARURA, so the council has been left with nothing. This situation causes us not to go to the site because most of sites are scattered and are in remote areas. What we do is just to supervise by instructions through mobile phones. We normally call the local fundi and ask the condition of the building and give them instructions. However, this means does not guarantee assurance of quality of buildings because most of local fundi we use are incompetent in construction of buildings (Interview transcript 9)*

The findings justify that availability of own construction equipment in construction of buildings by force account is mandatory to attain quality of the building. The results demonstrated that 55% of respondents with a mean of 2.77 agreed that construction equipment influence value for money in construction of buildings. The findings agree with (URT, 2013) that achieving value for money by force account requires availability of own construction equipment. Construction equipment are essential in construction of buildings as they facilitate construction processes such as transport to and from the construction areas, mobilizing construction materials like concrete, water, timber etc.
4.6 Influence of project management on VFM in construction of health centers’ buildings

The focus of the third objective was to assess influence of project management on achieving VFM in construction of buildings in public Institutions. Quantitative analysis was set where seven propositions were put forward to solicit the general view of respondents whether project management had an influence on VFM in construction of buildings table 4.13 portrays the answers from the respondents.

Table 4.13: Influence of project management on value for money in construction of health centers’ buildings (N=193)

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Scale of responses</th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you make visit to the site where construction of buildings is undertaken?</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
<td>f %</td>
</tr>
<tr>
<td>Do you conduct Site meeting during construction of buildings?</td>
<td>5 2.6</td>
<td>11 5.7</td>
<td>9 4.7</td>
<td>66 34.2</td>
<td>102 52.8</td>
<td>168</td>
<td>87</td>
</tr>
<tr>
<td>Site meeting is usually done monthly</td>
<td>5 2.6</td>
<td>29 15</td>
<td>13 6.7</td>
<td>57 29.5</td>
<td>89 46.1</td>
<td>146</td>
<td>75.6</td>
</tr>
<tr>
<td>Time management helps to acquire value for money</td>
<td>17 8.8</td>
<td>65 33.7</td>
<td>37 19.2</td>
<td>26 13.5</td>
<td>48 24.9</td>
<td>74</td>
<td>38.4</td>
</tr>
<tr>
<td>Project Integration management (collection of processes required to ensure that the materials, laborers, and equipment of the buildings projects are properly coordinated) helps to achieve value for money.</td>
<td>4 2.1</td>
<td>19 9.8</td>
<td>78 4.1</td>
<td>98 50.8</td>
<td>64 33.2</td>
<td>162</td>
<td>83.2</td>
</tr>
<tr>
<td>Defining work required and then making sure all of that work and only that work is done is a means of achieving value for money</td>
<td>4 2.1</td>
<td>14 7.3</td>
<td>16 8.3</td>
<td>92 47.7</td>
<td>67 34.7</td>
<td>159</td>
<td>82.4</td>
</tr>
<tr>
<td>Bulk purchase of building materials reduces cost of construction of buildings</td>
<td>1 0.5</td>
<td>23 11.9</td>
<td>26 13.5</td>
<td>66 34.2</td>
<td>77 39.9</td>
<td>143</td>
<td>74.1</td>
</tr>
<tr>
<td>Source: Field data (2019)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4.13 shows site visit was conducted during construction of buildings at Bariadi Town Council. This was supported by the majority of respondents (168) by 87%. Site meeting was done during construction of the buildings as the respondents (146) acknowledged by 75.6%. However, the frequency of site meeting was not known at Bariadi Town Council because there was no specific schedule for site meeting. This was proved by 42.5% (82) of respondents who disagreed with the normal site meeting schedule which was at least once per month. Only 38.4% (78) agreed that site meeting was conducted once a month. In an interview with one of the respondents, he said the following statement about the site meet: “Very rarely site meeting is done. There are no issues to discuss because local fundi are not experts, only instructions are issued to them. Reports are prepared by Engineer” (Interview transcript 6)

Also respondents were asked to rank whether time management during construction of buildings led to VFM of the buildings. 83.2% (162) of respondents supported the proposition implying that if time of construction of the project is properly managed the building will be completed within the required time hence within the budgeted costs hence VFM is realized. Time management is important because it has cost implication, as the project completion time is extended, there is a likelihood of materials price increasing due to inflation and other economic factors hence raise the cost of the project unexpectedly.

However, at Bariadi Town Council all buildings that were constructed and completed using force account were not completed in time. A sample of Ngulyati health Center buildings (maternity ward, staff house, laboratory, mortuary, X-ray and laundry) where the researcher visited revealed that all six buildings which were constructed by force account according to the program of work were to be completed within 3 months but were completed after 6 months. This implies that delay on completion of the buildings leads to delayed use of the buildings in delivering the intended services. One of respondents commented by the following statement: “The buildings have not been completed in time because initial
completion time was 3 months, January to March, but the buildings were completed after 6 months, January to June” (Interview transcript 2)

These findings corroborate the findings of Olatunde & Alao, (2017) that no construction projects in public institutions were completed within the stipulated time. This is similar to the finding of Akinsiku & Iyagba, (2014) that only 1.3% construction projects in Nigeria were completed on time schedule but shows a sharp variation in time performance as compare to the finding of Endut, Jusoh, Ali, Wan Nik, & Hassan, (2009) that only 20.5% of the public projects were completed within time. However, (Najib Al-Fadhali and Ng Kim-Soon, 2018) echoes that the time extension in construction projects has many after effects among which the main are time extension, cost overrun, disputes, arbitrations and litigations.

Despite the fact that buildings never completed in time VFM was realized in terms of quality and cost of the buildings. The figures 4.2 and 4.3 below shows the sample of Ngulyati Health Center buildings which were constructed by force account though not completed timely.

**Figure 4.1: Maternity ward at Ngulyati HC in Bariadi TC constructed by force account at total cost Tsh. 145 million**

![Maternity ward at Ngulyati HC in Bariadi TC constructed by force account at total cost Tsh. 145 million](source: Field data (2019))
Apart from time management in achieving value for money in construction of buildings, the findings disclosed that cost and quality of the buildings were major determinants of VFM by force account. This was put in the following statement by one of the respondents:

*Construction of buildings by force account achieves Value for Money in terms of cost saving and quality of the buildings. For example, we have managed to build six buildings and one bore hole (deep well) for only Tsh 450 million as follows maternity ward Tsh. 145 million, Staff house Tsh.25 million, Mortuary Tsh. 53 million, X-ray Tsh. 56 million, Laboratory Tsh. 80 million and laundry 30 million and borehole Tsh. 30 million with saving of 20 million which was used to build walk ways which were not in the plan of the buildings (Interview transcript 5)*

This implies time management as means of VFM in construction of buildings by force account is not the focus of force account. Force account is much focusing on cost reduction and saving and quality of buildings. A respondent put another statement claiming:

*VFM through force account is achieved in all aspects except time of completion is taking too long because of various reasons including unreliability of local fundi who sometimes disappear from site without apparent reasons, lack of construction materials caused by delayed procurement process, conflicts among the project supervisors, inadequate engineers to supervise construction etc. But in terms of cost it is achieved with great percentage for example Theatre building at Ngulyati Health Center which was built by contractor 4 years ago cost 270 million but we have managed to build seven buildings for only 450 million by force account (Interview transcript 5) Figure 4.3*
This findings concurs with Najib Al-Fadhali and Ng Kim-Soon, (2018) that the key controlling features of project success are time, cost, quality and safety.

**Figure 4.2:** (a) Theatre building at Ngulyati HC; (b) Maternity ward at Ngulyati HC

![Figure 4.2](image)

**Source:** Field data (2019)

Figure 4.3 (a) show a theatre building at Ngulyati HC in Bariadi Town Council which was constructed by a contractor at total cost of Tsh. 270million and figure 4.3 (b) is a maternity ward building which was constructed using force account at total cost of 145million. By comparing the two buildings you can see that maternity ward was constructed at lower cost through force account compare to the theater building which was built by a contractor at a cost twice as much of the cost of maternity ward.

The study also envisaged to assess influence of project integration, scope management and bulky purchase on VFM as shown on table 4.13 above. Project integration was acknowledged by respondents as one of the determinants in VFM in construction of buildings. This was supported by 82.4% (159) of respondents who answered the proposition. Also 74.1% (143) of respondents agreed that managing the scope of the building ensured VFM in construction of buildings. Scope management ensures VFM in that it denies variations and additional works which have cost implication of the building. These findings agree with Atkinson, Crawford, & Ward, (2006) that modifications to an agreed project scope as defined in the Work Break down Structure will require adjustments to cost, time, Quality and other project objectives.
However, Bulky purchase of construction materials was another issue that the study intended to measure. Buying in big quantity has a cost saving as prices of materials decrease as the quantity of materials are purchased in bulky. 68.4% (132) of respondents asserted that bulky purchase influences VFM by reduced prices due to big quantity purchased. The researcher verified on procedures used in construction of buildings in Bariadi Town Council whether bulky purchase of construction materials was done. The respondent in an interview said:

*As means of cost reduction, some of construction materials are bought in bulky directly from the manufacturers and other are bought from our local suppliers. For example, cement, timbers and iron sheets were bought from Dangote cement, SAO HILL and ALAF industries respectively, but the concrete, sands and paints were bought from our local suppliers* (Interview transcript 7)

### 4.7 Determination of Value for Money through force account

In order to determine whether force account is achieving value for money in construction of buildings at Bariadi Town Council, four propositions were put forward which included testing whether buildings constructed by force account were completed within the estimated costs, Cost incurred in construction of building through force account are lower than other methods of procurement, building construction is normally completed early through force account than other methods of procurement and construction of health center’s buildings through force account has improved value for money of the projects. Respondents were asked to rank the choice of their responses basing on a 1 to 5 likert scale.

#### 4.7.1 Assess whether buildings constructed by force account at Bariadi District council were completed within the estimated costs

Respondents were requested to rank their choices to a 1 to 5 scale namely 1-strongly agree, 2-Agree, 3-Neutral, 4- Strongly disagree and 5-Disagree. Table 4.14 shows the results of the findings.
Table 4.14: Completion of buildings through force account within budget

<table>
<thead>
<tr>
<th>Buildings constructed by force account are completed within the budget</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>16</td>
<td>8.3</td>
</tr>
<tr>
<td>Agree</td>
<td>68</td>
<td>35.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>54</td>
<td>28.0</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>18</td>
<td>9.3</td>
</tr>
<tr>
<td>Disagree</td>
<td>37</td>
<td>19.2</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field Data (2019)

Table 4.14 shows that 43.5% supported buildings constructed by force account were completed within the estimated costs. 28.5% did not agree with the statement. This implies the funds given from the central government were in some cases enough to complete the construction of the buildings in health centers. This was said by one respondent:

_Funds given for construction of buildings in HCs was enough in some of the Health centers, but in others was not enough for example Bunamhala Chuoni dispensary and Matale dispensary funds was not enough to complete the buildings and up to now buildings are uncompleted due to lack of funds_ (Interview transcript 9)

This result agrees with Memon, Rahman, Asmi, et al., (2011) that in a study of more than 4000 construction projects showed that projects were rarely finished within the allocated budget. These findings blend also with what Shengeza, (2018) says that construction projects are still facing major challenges in completing the construction projects within the estimated budget.

4.7.2 Costs incurred in construction of building through force account are lower than other methods of procurement

Respondents were also asked to provide their views about the costs which were incurred in force account compare to other methods of procurement. The results are as indicated on table 4.15 below;
Table 4.15: Costs incurred in FA are lower than other methods of procurement

<table>
<thead>
<tr>
<th>Cost incurred in FA are lower than other methods of procurement</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>55</td>
<td>28.5</td>
</tr>
<tr>
<td>Agree</td>
<td>79</td>
<td>40.9</td>
</tr>
<tr>
<td>neutral</td>
<td>40</td>
<td>20.7</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>11</td>
<td>5.7</td>
</tr>
<tr>
<td>Disagree</td>
<td>8</td>
<td>4.1</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

Table 4.15 indicates that 69.4% of respondents agreed that costs incurred in force account are lower than in other methods of procurement. Only 26.4% of respondents disagreed with the proposition. This demonstrates that force account reduces the cost of construction of buildings. This was supported by some of respondents during interview who were asked to provide the benefits they see in force account. The following statement was given: “Force account is beneficial because, it reduces project costs because it does not involve contractors who inflate costs through high profit margin and overheads. It also ensures that materials are purchased at market prices” (Interview transcript 4)

This finding concurs with PPDA, (2003) and Shengeza, (2018); that in order to use force account, it must be ascertained that it is cheaper to execute the works in house as compared to contracting out. Therefore, the procuring and Disposing Entity is able to deliver services at a cheaper cost. Therefore, that is why the Government has opted for Force Account in construction of public buildings as it reduces costs of construction.

4.7.3 Construction of buildings by FA are earlier completed than other methods of procurement

Respondents were sought to provide their opinion on the statement to know whether buildings were completed timely using force account. Table 4.16 below indicates the results of the findings.
The results of the survey by questionnaire of the time of completion of the buildings through force account portrayed that projects were completed timely through force account. This is opined by 56.4% of respondents. However, 18.1% did not agree with the statement. This means people recognize force account as a fast truck to timely completion of works. This finding echoes what Shengeza, (2018) says that the benefits of force account include efficiency gains where the entity is able to execute works much faster, enhancement of internal capacity of the procuring entity since works are executed and supervised by the procuring entity staff.

However, this finding contravenes with the views of respondents who were interviewed, it was noticed that most of buildings constructed at Ngulyati HC by force account were not completed on time due to some reasons like insufficient fund, interference in construction by politicians, heavy rainfall, local fundi failure, etc. Therefore, these are challenges that need be addressed to ensure construction of buildings by force account is completed timely.

4.7.4 Construction of Public buildings through force account has improved VFM.

The aim of the proposition was to know the altitude of respondents towards force account in achieving value for money. Their opinions were presented on table 4.17 below:
Table 4.17: Force account has improved VFM in construction of buildings

<table>
<thead>
<tr>
<th>Force account has improved VFM in construction works</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strongly agree</td>
<td>57</td>
<td>29.5</td>
</tr>
<tr>
<td>Agree</td>
<td>64</td>
<td>33.2</td>
</tr>
<tr>
<td>Neutral</td>
<td>34</td>
<td>17.6</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>11</td>
<td>5.7</td>
</tr>
<tr>
<td>disagree</td>
<td>27</td>
<td>14.0</td>
</tr>
<tr>
<td>Total</td>
<td>193</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: Field data (2019)

The figure above indicates that 62.7% of respondents agreed that FA has improved VFM in construction of buildings in public Institution. But only 19.7% of respondents disagreed with the proposition. Hence, force account is perceived as construction procedure which can ensure value for money in construction of public institution buildings. One of the engineers when interviewed had also the following to say:

*Force account is worthy pursuing because in our council it has greatly helped to reduce projects costs because it does not involve contractors who increase costs through profits and overheads. However, in FA we save costs by purchasing materials at market prices directly from manufacturers, even the quality of buildings is good because we are doing and supervising construction directly and we are always on site* (Interview transcript 7)

This implies that Force account has great influence in achieving VFM in construction of projects in public Institutions. The findings concur with what Tekka, (2017) said that force account was used during upgrading and expansion of Entebbe International Airport to accommodate current and future traffic and also to promote services excellence. Conversely, government of Tanzania has greatly emphasized on the application of the force account in its construction projects with the intention of accomplishing the construction work timely, under reasonable cost while maintaining the quality. However, other procurement methods have to a large extend been claimed to create corruption environment and hence failing in attaining the value for money for the completed projects.
4.8 Regression Analysis

Multiple regression analysis (MRA) was run using SPSS version 20. The analysis was done into five groups first testing of multiple regression analysis assumption (multi-collinearity), interpreting results of multiple regression analysis, presentation of MRA results and testing of hypotheses.

4.8.1 Testing multiple regression analysis assumptions

4.8.1.1 Multi-collinearity

This refers to the relationship among the independent variables. Multi-collinearity exists when the independent variables are highly correlated (r=.8 and above). These certainly don’t contribute to a good regression model. Multi-collinearity was tested by SPSS and the results are indicated on table 4.18 below.

Table 4.18: Multi-collinearity test

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
<th>95.0% Confidence Interval for B</th>
<th>Correlations</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Lower Bound</td>
<td>Upper Bound</td>
<td>Zer orde r</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.479</td>
<td>1.156</td>
<td>2.144</td>
<td>.033</td>
<td>.199</td>
<td>4.759</td>
<td></td>
</tr>
<tr>
<td>Organization personnel</td>
<td>.258</td>
<td>.068</td>
<td>2.92</td>
<td>3.789</td>
<td>.000</td>
<td>.124</td>
<td>.393</td>
</tr>
<tr>
<td>Organization capital</td>
<td>.001</td>
<td>.063</td>
<td>.001</td>
<td>.008</td>
<td>.993</td>
<td>-.123</td>
<td>.124</td>
</tr>
<tr>
<td>Project Management</td>
<td>.0073</td>
<td>.022</td>
<td>.253</td>
<td>3.381</td>
<td>.001</td>
<td>.031</td>
<td>.116</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Value for Money

Source: Researcher’s database (2019)

Multi-collinearity was tested by two tests: Variance Inflation Factor (VIF) and Tolerance. Variance Inflation Factor (VIF) – measures how much the variance of the regression coefficients is inflated by multi-collinearity problems. If VIF equals 0, there is no correlation between the independent measures. A VIF measure of 1 is an
indication of some association between predictor variables, but generally not enough to cause problems. A maximum acceptable VIF value would be 10; anything higher would indicate a problem with multicollinearity. Table 4.18 above indicates that VIF for all independent variables is below 10 i.e. 1.4 for organization personnel, 1.2 for organization capital and 1.3 for project management implying that the variables do not influence each other that is no multi-collinearity. However, tolerance – the amount of variance in an independent variable that is not explained by the other independent variables is also a measure of multi-collinearity. Thus, small values for tolerance indicate problems of multi-collinearity. The minimum cutoff value for tolerance is typically 0.20. That is, the tolerance value must be smaller than 0.20 to indicate a problem of multi-collinearity. From table 4.18 above, the tolerance value for both independent variables are higher than 0.2 that is 0.6 for organization personnel, 0.7 for organization capital and project management. Hence there are no multi-collinearity problems between independent variables.

4.8.2 Multiple regression analysis results and their interpretations

Multiple regression analysis was run on the independent variables versus dependent variables. The following outputs were produced

**Table 4.19: Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.470*</td>
<td>.221</td>
<td>.208</td>
<td>3.15738</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), Project Management, Organization capital, Organization personnel
b. Dependent Variable: Value for Money

From table 4.19 above, R-Square tells how much of the variance in the dependent variable (*Value for money*) is explained by the IVs (which include *organization personnel, organization capital, project management*). On the table the value for R-square is .221; equivalent to 22.1%. This means that the model (which includes all IVs) explains 22.1% of the variance in Value for Money. Therefore, value for money is influenced by organizational personnel, capital and project management.
by 22.1% implying that apart from these variables there are other factors in construction of buildings that influence or determine value for money.

Another impressive output produced in multiple regression analysis is shown on table 4.20 below.

**Table 4.20: ANOVA table**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>533.330</td>
<td>3</td>
<td>177.777</td>
<td>17.833</td>
<td>.000*</td>
</tr>
<tr>
<td>Residual</td>
<td>1884.152</td>
<td>189</td>
<td>9.969</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2417.482</td>
<td>192</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Value for Money
b. Predictors: (Constant), Project Management, Organization capital, Organization personnel

The ANOVA summary table tells whether the model is statistically adequate. This done by using F-value and P-Value: When P-value (Sig. Value) is less than or equal to 5%; it indicates that the regression equation is a better predictor for population values (The model can be generalized in the population). Looking at the table, F-value is 17.8; p-value<0.001. This means that the sample selected was representative of the population.

Another finding of the multiple regression analysis is the regression coefficients table 4.21 shown below.

**Table 4.21: Regression coefficients table**

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(Constant)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>.258</td>
<td>.068</td>
<td>.292</td>
<td>.3789</td>
</tr>
<tr>
<td></td>
<td>Organization personnel</td>
<td>.001</td>
<td>.063</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Organization capital</td>
<td>.073</td>
<td>.022</td>
<td>.253</td>
</tr>
<tr>
<td></td>
<td>Project Management</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Dependent Variable: Value for Money

The table 4.21 above tells which of the variables included in the model contributed to the prediction of the dependent variable. This is observed by looking in the column labeled Beta under Standardised Coefficients. In this case we are interested in comparing the contribution of each independent variable; by looking down the
Beta column and finding which beta value is the largest; the largest beta coefficient is .292, which is for organizational personnel. This means that this variable makes the strongest unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model is controlled for. The Beta value for project management variable is 0.253, and for organizational capital is 0.001. The contribution for organizational capital variable is very low.

Also the P-value (column marked Sig.) tells whether this variable is making a statistically significant unique contribution to the equation. If the P (Sig.) value is less than .05 (.01, .0001, etc.), then the variable is making a significant unique contribution to the prediction of the dependent variable. If greater than .05, then we conclude that variable is not making a significant unique contribution to the prediction of dependent variable. In table above IVs (organizational personnel and project management) make a significant contribution to value for money because their sig. values are less than 0.05 (5%) that is sig. values are 0.00 and 0.01 respectively. However, organizational capital does not contribute significantly to VFM because its sig. value is greater than 5% i.e 0.99 (99%).

4.8.3 Presentation of MRA results

The study data were analyzed by multiple regression, using IVs (personnel, capital and management) and DV (Value for money). The regression model was very poor (R-square adj = 20.8%) (Table 4.19), but the overall relationship was significant (F = 17.833, p < 0.01) (table 4.20). With other variables held constant, VFM scores were both positively related to personnel, capital and management (table 4.21), the results show that VFM was influenced by 0.292 in presence of personnel and by 0.253 for efficient management of the project and low influence on VFM by 0.001 in availability of capital. Only the effect of personnel and management was significant (t = 3.789, p < 0.01) and (t=3.381, p≤ 0.01) respectively.
4.8.4 Hypotheses testing

1a Null Hypothesis (Ho): Organizational Personnel do not influence value for money in construction of health centers’ buildings in Bariadi Town Council.

1b Alternative Hypothesis (Ha): Organizational personnel influence value for money in construction of health centers’ buildings in Bariadi Town Council.

A multiple regression analysis was carried out on the data collected to determine if there is no significant relationship between availability of personnel and value for money in construction of health centers’ buildings at Bariadi Town Council. The output is as presented in table 4.21 above. The p-value (sig. value) 0.000 for personnel< 0.05 in Table 4.21 indicated that there is significant relationship between organizational personnel and value for money in construction of health centers’ buildings in Bariadi Town Council. Hence, the null hypothesis which states that “Organizational Personnel do not influence value for money in construction of health centers’ buildings in Bariadi Town Council” was rejected and the alternate Hypothesis which states that “Organizational personnel influence value for money in construction of health centers’ buildings in Bariadi Town Council” was accepted.

2a Null Hypothesis (Ho): Organizational Capital does not influence value for money in construction of health centers’ buildings in Bariadi Town Council.

2b Alternative Hypothesis (Ha): Organizational Capital influence value for money in construction of health centers’ buildings in Bariadi Town Council.

Similarly, multiple regression analysis was carried out on the data collected to examine if there is no significant relationship between organizational capital and value for money in construction of health centers’ buildings at Bariadi Town Council. The output is as presented in table 4.21 above. The p-value (sig. value) 0.99 for capital is greater than 0.05 in Table 4.21 indicated that there is no significant relationship between organizational capital and value for money in construction of health centers’ buildings in Bariadi Town Council. Hence, the null hypothesis which states that “Organizational capital does not influence value for money in construction of health centers’ buildings in Bariadi Town Council” was accepted.
money in construction of health centers’ buildings in Bariadi Town Council” was accepted.

3a **Null Hypothesis (Ho):** Project management does not influence value for money in construction of health centers’ buildings in Bariadi Town council.

3b **Alternative Hypothesis (Ha):** Project management influences value for money in construction of health centers’ buildings in Bariadi Town council.

Multiple regression analysis was run on the data collected to assess if there is no significant relationship between project management and value for money in construction of health centers’ buildings at Bariadi Town Council. The output is as presented in table 4.21 above. The p-value (sig. value) 0.001 for management < 0.05 in Table 4.21 indicated that there is significant relationship between project management and value for money in construction of health centers’ buildings in Bariadi Town Council. Hence, the null hypothesis which states that “Project management does not influence value for money in construction of health centers’ buildings in Bariadi Town Council” was rejected and the alternate Hypothesis which states that “Project management influences value for money in construction of health centers’ buildings in Bariadi Town Council” was accepted.

4.9 **Summary of the findings**

In this chapter the findings of the three specific objectives were presented. The data were tested for reliability. The results of reliability test exhibited Cronbach's Alpha 0.87 indicating reliability of questionnaires used to collect data. However, prior to the presentation of the findings by the specific objectives, the study presented results for response rate of the participants involved in the study where response rate was 95% of respondents who responded on questionnaires. Statistical analysis results indicated that organizational personnel and project management manifested a medium positive relationship to VFM, while organizational capital showed a weak positive relationship with VFM.
Research hypotheses were tested and the results indicated that personnel and project management had significant influence on value for money in construction of health center’s buildings in Bariadi Town council. However, capital showed a non-significant influence on value for money.
CHAPTER FIVE
SUMMARY, CONCLUSIONS AND POLICY IMPLICATIONS

5.1 Introduction

This chapter presents a summary of the study, its findings and discussions. The presentation of the summary would lead to drawing of the conclusion of the study depending on the findings, and then proceed to analysis of policy implications related to the study. Finally, the study also presents some recommendations and suggests areas for further research.

5.2 Summary of the Study Findings

The study assessed on influence of force account in achieving value for money in construction of buildings in health centers. Bariadi Town Council was taken to be the case for the study. Three specific objectives were developed to answer the general objective. Specifically, the study sought to determine the influence of organizational personnel on value for money, examine influence of organization capital on value for money and lastly, assess influence of project management on VFM.

The study made a comprehensive review of both theoretical and empirical literatures on VFM and force account. The Resource Dependence and Transaction Cost Economics Theories according to Johnson Jr (1995) and Williamson (2007) respectively were adopted to explain the relationship between variables but also focus and validate the study. The survey study design was used to facilitate achievement of specific objectives. A sample of 217 respondents was designed for the study of which 95% respondents were accessed. The study applied both simple random and purposive sampling techniques to select a sample for this study. It also used questionnaire, interview and documentary review methods for data collection. The quantitative data were descriptively analyzed using SPSS version 20, whilst the qualitative data were analyzed using the content analysis. Multiple regression analysis was utilized to determine significance of relationships among variables.
The results were presented in tables and charts. The findings of the study were then presented and discussed in accordance with specific objectives.

5.2.1 Influence of organizational personnel on VFM

According to the first objective there was a relative influence of organizational personnel on VFM. The results of MRA indicated that there is positive significant relationship between organizational personnel and value for money in construction of health centers’ buildings in Bariadi Town Council where VFM was explained by 29.2% by organizational personnel which marked the strongest unique contribution to explaining the dependent variable (VFM) among the IVs. Its influence on VFM was significance at sig. value (P-value) 0.000. The analysis rejected the null hypothesis “Organizational Personnel do not influence value for money in construction of health centers’ buildings in Bariadi Town Council” and the alternate Hypothesis which states that “Organizational personnel influence value for money in construction of health centers’ buildings in Bariadi Town Council” was accepted.

5.2.2 Influence of organizational capital on VFM

The results of statistical analysis demonstrated that organizational capital insignificantly influenced on VFM with p-value (sig. value) 0.99 which is> 0.05 indicating that there is no significant relationship between organizational capital and value for money in construction of health centers’ buildings in Bariadi Town Council where VFM was explained by 0.1% by organizational capital which marked the poor contribution to explaining the dependent variable (VFM) among the IVs. Hence, the null hypothesis which states that “Organizational capital does not influence value for money in construction of health centers’ buildings in Bariadi Town Council” was accepted.

5.2.3 Influence of project management

The third objective revealed that 72% of respondents perceived that project management influenced VFM in construction of buildings in health centers. The p-value (sig. value) 0.001 for management < 0.05 in Table 4.21 indicated that there is
significant relationship between project management and value for money in construction of health centers’ buildings in Bariadi Town Council where VFM was explained by 25.3% by organizational personnel which marked the strong unique contribution to explaining the dependent variable (VFM) among the IVs. The null hypothesis which states that “Project management does not influence value for money in construction of health centers’ buildings in Bariadi Town Council” was rejected and the alternate Hypothesis which states that “Project management influences value for money in construction of health centers’ buildings in Town Council” was accepted.

5.3 Conclusion

The study assessed on influence of force account on value for money in construction of health centers in Bariadi Town Council. Quantitative and qualitative analysis were carried out on three specific objectives; influence of organizational personnel on VFM, influence of organizational capital on VFM and influence of project management on VFM using MRA and content analysis respectively. The findings indicated that force account influences achievement of value for money in construction of buildings in health centers in Bariadi Town Council. The results of MRA indicated organizational personnel and project management have significant contribution on achieving VFM in construction of buildings in health centers. Implying that attainment of VFM in construction of health centers buildings was much influenced by the people engaged in supervision of the construction and the level at which project was managed. However, analysis demonstrated insignificant contribution on VFM by capital of the organization. This implies organizational capital on VFM in construction of buildings by force account influenced little compare to personnel and management of the project.

The results obtained through interview indicated that there was positive support of force account in construction of buildings in health centers in Bariadi Town Council. Force account was perceived to reduce costs of construction, ensure quality of buildings, enhance capacity building and skills enhancement on construction to local fundi, motivate community participation, saving of public money, instilling
sense of ownership by the community, improving income of local fundi, speedy construction etc. Similarly, some respondents perceived and acknowledged that force account influence achievement of VFM but with some reservations that it has its impediments which included political interference, inadequate fund, unqualified local fundi, No one is held liable for poor quality of work, lack of supervision fund, inadequate transport, lack of capital by local fundi to initiate construction, disappearance of local fundi unexpectedly, incapacity of project supervisors, Inadequate engineers and works technicians, Long completion period, Killing of local suppliers and private sector, etc. However, there was negative perception by procurement professionals on force account that their profession is being abused as unprofessional people are doing procurement such as procurement of construction materials during construction of buildings.

5.4 Policy implications and Recommendations

Force Account was found to have great influence on achieving value for money in construction of buildings in health centers. The influence of FA on VFM based on the cost reduction as buildings were constructed and completed with minimum costs compare with other methods as revealed in survey of the projects that were constructed by force account. The cost reduction by force account was brought about by elimination of some levies and duties in the project like 18% VAT on the total price, service levies, withholding taxes and profit margin which is charged by contractor when engaged. Other things that caused reduction of costs in force account were the cost of construction materials which were bought at market prices particularly from the manufacturers, unlike contractors who add margin on quantities of materials on the market price. However, the labor costs were considered as another factor that reduced costs of buildings by force account. It was claimed that Local fundi are cheaper than the contractors.

Despite the lower costs incurred by FA, however some projects constructed were not completed because funds released was insufficient this was found at Matale dispensary where construction of maternity ward was uncompleted, the reason provided for as to why fund given did not complete the building was, the costing
and pricing of quantities in the Bill of Quantities given from the central government did not reflect the real situation of the project as it was prepared in Dar es Salaam using rates of Dar es Salaam. So during actual implementation the fund did not cater for the project.

FA was also appraised on the timely completion of the projects. There were mixed fillings among the participants of FA on completion. Some people claimed that it ensured timely completion of construction while others denied that it took long time to complete construction by FA. Those who perceived it as accelerator of timely completion argued on the ground of procurement processes where in FA there are no long procurement processes as in other construction methods, no delays in payments to local fundi as it is in the contractors because payment to local fundi is just by cash, it does not need long processes such as processing of payment vouchers and cheques. Those perceived FA as time consuming based on the ground that it does not follow program (schedule) of work, no liquidated damages to be exercised to local fundi in case of delays, insufficiency of technical personnel such as Engineers, etc.

Moreover, Force Account was assessed in term of quality of the buildings, which is built according to drawings and specifications. Quality of buildings is difficult to evaluate because quality of building begins at the early stage of project design. However, construction by force account poses some challenges on quality and sustainability of buildings as construction by FA does not guarantee compensation on poor quality of buildings since there is no defective liability period as it is in construction using contractors. Defective liability period is period that is set in the contract as period that is deemed that the building will remain free of defects on which the contractor will be held liable for any defects occurring within that period and will be required to rectify by using retention money that is deducted in each payment installment. Force account does not account on this, hence in case a building manifest defects no one will be held liable for such defects.
This study revealed that force account influences VFM; however, there are some weaknesses that need to be addressed to purely make it prosperous in construction of buildings in public institutions. This study therefore recommends the following:

(i) The government should employ more engineers, Quantity Surveyors (QS) Procurement officers, Accountants and architect at the lower level to enable efficient supervision of the project and free none professionals to supervise construction projects and concentrate with their professionals e.g. Doctors, Nurses, teachers etc. It should introduce a clash program of engineers, procurement officers, accountants and QS as it was used for teachers clash program during SEDP. This will enable to curb inadequacy of project supervisors in FA.

(ii) The Councils should register and have a database of Local fundi so that they are recognized as local fundi with capacity and knowledge of construction and if possible local fundi should be those who have attend basic technician courses.

(iii) The funds given by central government to the councils for construction of buildings by FA should include a budget for supervision. This will help project supervisors to visit sites timely, because one of big problems in FA is lack of supervision and monitoring fund.

(iv) Bill of Quantities, specifications and drawings for buildings should be prepared at the respective project area. This will enable to reflect the market price of materials required at the project area instead of preparing them in Dar es Salaam and sending them to be implemented upcountry.

(v) Force Account Committees should be independent, effective and empowered with authority to make decision without interference. One of challenges explained by respondents was interference of the project committees by politicians with counterfeit directives and orders.

(vi) There should be training on Force account procedures to the participants including local fundi to enhance common understanding.
5.5 Suggestions for Further Research Areas

This study is not an end itself; it gives a way for further studies on force account. Future researchers should conduct a research on the assessment of the quality assurance in construction of projects using Force Account. This is because in this study quality assurance of projects constructed using force account was not involved and it is a very crucial issue in construction of projects. Another proposed study area which this study recommends is a study on influence of force account in roads construction performance.
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APPENDICES

APPENDIX 1: QUESTIONNAIRE

Dear Respondent, my name is Stephen Mayani, a student at Mzumbe University. I am doing a research on the assessment on the influence of force account in achieving value for money in construction projects in Tanzania; a case of Bariadi Town Council. This research is part of fulfillment of the requirements for the award of Master of Science in Procurement and Supply Chain Management. I kindly request you to fill in this questionnaire by putting a tick (V) and explaining where required to the questions given. The information you will give will be confidential and for academic purpose.

I wish to acknowledge my thanks in advance for your response

A. Respondents Characteristics (V100)

V101. What is your Gender?
1. Male ☐  2. Female ☐

V102. What is your age? ..................

V103. What is your highest level of education you have completed?
1. Informal education ☐  2. Primary education ☐ Secondary education ☐
   4. Tertiary education ☐

V104. What is your occupation?
1. Labourer. ☐  2. Procurement Officer ☐  3. Technician ☐  4. Engineer ☐
5. Others ☐ mention ....................

V105. What is your experience in construction projects?
1. Below 1 year ☐  2. 2 years ☐  3.3 years ☐  4.4 years ☐
5. Above 4 years ☐

B. Questionnaire on variables

Select the answer by putting a tick (v) in the space given (1=strongly agree, 2=Agree, 3= Neutral, 4= strongly disagree, 5= Disagree)
<table>
<thead>
<tr>
<th>V 200</th>
<th>Organizational personnel</th>
<th>strongly agree</th>
<th>agree</th>
<th>Neutral</th>
<th>Strongly Disagree</th>
<th>disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>V201</td>
<td>The age of a person affects his/her ability to properly manage buildings construction</td>
<td></td>
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<tr>
<td>V202</td>
<td>Number of male workers is bigger than of females workers employed on building construction site</td>
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<td>V203</td>
<td>The level of education of a worker/supervisor determines the quality of building constructed</td>
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<tr>
<td>V204</td>
<td>Experience of key personnel in building construction is mandatory in achieving value for money</td>
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<tr>
<td>V205</td>
<td>The number of laborers and supervisors engaged at the building sites determines the completion time of the project</td>
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<tr>
<td>V206</td>
<td>Value for money in the construction of buildings is achieved when men and women perform the same function in the construction of buildings</td>
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<td>V207</td>
<td>Construction of buildings by using your own personnel ensure value for money rather than using contractors</td>
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<tr>
<td>V 300</td>
<td>Organizational capital (V 300)</td>
<td>strongly agree</td>
<td>agree</td>
<td>Neutral</td>
<td>Strongly Disagree</td>
<td>disagree</td>
</tr>
<tr>
<td>V301</td>
<td>Availability of finance is criterion for timely completion of construction of buildings in force account</td>
<td></td>
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<tr>
<td>V302</td>
<td>Availability of Human resources helps timely completion of construction of building project</td>
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<td>V303</td>
<td>Construction processes and practices contribute to poor quality of building construction</td>
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<td>V304</td>
<td>The quality of the building can be achieved regardless of the knowledge and skills of technicians and project managers</td>
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<tr>
<td>V305</td>
<td>Presence of owned facilities and equipment of institutions determines the quality of the buildings</td>
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<td>V306</td>
<td>The use of scrap (aged) equipment in construction leads</td>
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<tr>
<td>V (400)</td>
<td>Project management</td>
<td>strongly agree</td>
<td>agree</td>
<td>Neutral</td>
<td>Strongly Disagree</td>
<td>disagree</td>
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<td>V401(a)</td>
<td>Do you make visit to the site where construction of buildings is undertaken?</td>
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<td>V401 (b)</td>
<td>Twice a week is an appropriate time for site visit where construction is going on</td>
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<tr>
<td>V402 (a)</td>
<td>Do you conduct Site meeting during construction of buildings?</td>
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<td>V402 (b)</td>
<td>Site meeting is usually done monthly</td>
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<td>V403</td>
<td>Time management helps to acquire value for money</td>
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<tr>
<td>V405</td>
<td>Project Integration management (collection of processes required to ensure that the materials, laborers, and equipment of the buildings projects are properly coordinated) helps to achieve value for money</td>
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<td>V406</td>
<td>defining work required and then making sure all of that work and only that work is done is a means of achieving value for money</td>
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<td>V407</td>
<td>planning and controlling the budget of a building construction helps to reduce costs of buildings</td>
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<td>V408</td>
<td>Quality management ensures that buildings construction is consistent with specifications.</td>
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<td>V409</td>
<td>forecasting and evaluation of financial risks (cost increase) together with the identification of procedures to avoid or minimize their impact helps achieving value for money</td>
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<td>V410</td>
<td>Work program / schedule of work allows technicians and project managers to control time of completion of construction of building</td>
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<td>V411</td>
<td>Estimating the amount of building materials reduces the cost of building</td>
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<td>V412</td>
<td>Quality of construction materials used in construction of building</td>
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<td>V413</td>
<td>Receiving and inspection is done after completion/delivery of work/materials</td>
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<td>V414</td>
<td>Receiving and inspection committee ensures quality of procured building materials</td>
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<td>V415</td>
<td>Posting in stores ledger of purchased construction materials is done immediately after receiving and inspection</td>
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<tr>
<td>V414(a)</td>
<td>Evaluation of laborers/Suppliers’ in buildings construction is mandatory</td>
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<tr>
<td>V414(b)</td>
<td>Laborers/suppliers’ evaluation is done to ensure value for money of the building</td>
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<tr>
<td>V415</td>
<td>Negotiations with suppliers/laborers in construction of buildings can greatly reduce costs to the procuring entity</td>
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<tr>
<td>V416</td>
<td>Bulk purchase of building materials reduces cost of construction of buildings</td>
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<tr>
<td>V 500</td>
<td>Value for Money</td>
<td>strongly agree</td>
<td>agree</td>
<td>Neutral</td>
<td>Strongly Disagree</td>
<td>disagree</td>
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<tr>
<td>V501</td>
<td>The previous completed building projects have been completed as per the estimated costs</td>
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<td>V502</td>
<td>Cost incurred in construction of building through force account are lower than other methods of procurement</td>
<td></td>
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<tr>
<td>V503</td>
<td>Building construction is normally completed early through force account than other methods of procurement</td>
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<td>V504</td>
<td>Construction of buildings through force account has improved value for money of the projects</td>
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</tbody>
</table>
Dear Respondent, my name is Stephen Mayani, a student at Mzumbe University. I am doing a research on the assessment on the influence of force account in achieving value for money in construction projects in Tanzania; a case of Bariadi Town Council. I kindly request you to assist me with information on the questions that I will ask you. The information you will give will be confidential and for academic purpose.

The interview is expected to take at least 1 hour.

1. Can you introduce yourself please?
2. What can you tell about your position experience?
3. How long have you been working in this position? To review on previous experiences on the construction
4. What is your level of education
5. What do you understand by Force account? To probe of the awareness and knowledge of force account
6. Do you use force account in construction of buildings? To probe on the procedures used in construction of buildings
7. Who are the participants in construction of buildings when using force account? To probe people who are involved in force account
8. Can you explain how participants behave towards implementing construction by force account? To probe on the attitude behind force account
9. What benefits do you see in construction of buildings using force account in your organization? To probe merits of force account
10. Did the participants receive any training on how to deal with force account procedures in your organization? To probe on the ability, their reactions and number of training received? /Are people well informed and trained on how to use force account in construction of buildings?

11. Do you have enough qualified personnel to supervise construction using force account? To probe justification of force account

12. Can you mention any challenges you face in using force account in construction of projects? To probe difficulties of force account

13. Is there any contribution from community in construction of building using force account? Which kind of contribution is provided by community? To probe any assistance from the community symbolizing cost of the projects.

14. Is the fund given from the central government adequate for completion of the planned projects? If it is not enough where you do get other fund to complete the buildings? To probe any additional cost/ fund required

15. In which way can force account assist to achieve value for money in construction of buildings? To probe influence of FA in VFM

16. Do you have work program/schedule when using force account? To probe effective management of the projects.

17. Are you buildings completed within the expected time? How do you ensure timely completion of the construction? To probe cost implication related to delayed completion

18. Do you think availability of fund is the only means in achieving value for money in force account? How is it possible? / Why?

19. Do you conduct site meeting? How many times do you conduct it? To probe work progressive reports

20. What else could be done to improve weaknesses associated with force account procedure in construction of buildings?

This marks the end of my interview, In case you have any further addition or question you are welcome.

*Thank you very much for your contribution*
APPENDIX III

Location of the study area
Map of Bariadi Town Council
APPENDIX IV

Sample of uncompleted and unused maternity ward at Matale dispensary

Source: field data (2019)
A layout of Ngulyati HC buildings constructed by force account

Source: Field data (2019)