

Effectiveness of Force Account on Implementation of Construction Projects in Health Sector in Tanzania: A Case of Mbeya Regional Hospital

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Abstract

This study examines the effectiveness of the force account method in implementing construction projects within Tanzania's health sector, specifically at Mbeya Regional Hospital (MRH). Using a pragmatic research philosophy and a mixed-methods approach, the study employed a descriptive design with a sample of 144 respondents selected through stratified random and purposive sampling. Primary data were gathered via questionnaires and interviews, while secondary data were collected through document reviews. The findings revealed strong agreement on the timely completion of projects (mean = 3.7364), the quality of work exceeding traditional methods (mean = 4.4000), and more efficient resource utilization (mean = 3.9455). The study concludes that the force account method is effective in enhancing project timelines, quality, and resource efficiency in healthcare construction. Recommendations include training project teams, improving resource allocation, establishing monitoring frameworks, and engaging local communities to further optimize the effectiveness of force account implementation.

NG Journal of Social Development

Vol. 15 Issue 1 (2024)

ISSN(p) 0189-5958

ISSN (e) 2814-1105

Home page

<https://www.ajol.info/index.php/ngisd>

ARTICLE INFO:

Keyword

Force account, Construction projects, Health sector

Article History

Received: 24th September 2024

Accepted: 7th November 2024

DOI:*<https://dx.doi.org/10.4314/ngisd.v15i1.2>*

1. Introduction

Economic escalation has impacted global sectors, including procurement in the construction industry. The force account, or direct labor method, is widely used in government sectors to expedite construction processes and reduce costs (Coleman & Tipter, 2016). This approach enhances transparency in cost control and assigns clear responsibilities. Europe and North America have adopted similar procurement practices, supported by robust documentation policies, with Japan being particularly noted for its effective application of the force account in achieving efficient construction outcomes (Schaufelberger & Holm, 2017). According to Ismaeel & Kassim (2023), the method is advantageous due to its alignment with actual market prices for materials and equipment, ensuring that project expenses reflect genuine costs.

In Tanzania, force account has gained traction as a method for the renovation and construction of essential public infrastructure (Massawe, 2023). The government has strategically allocated budgets to incorporate this method, aiming to curtail costs and expedite project timelines. By promoting the use of force account, authorities seek to ensure that crucial infrastructure, including healthcare facilities, is developed promptly to meet the growing needs of society. Despite its potential, several challenges undermine its success, including non-compliance with legal frameworks, a shortage of skilled personnel, and insufficient resources (PPRA, 2020; Massawe, 2023). Addressing these issues is critical to achieving the desired efficiency and cost-effectiveness in construction projects. These challenges emphasize the need for targeted measures to enhance the efficacy of force account projects, including standardized regulations and technical oversight (Massawe, 2023).

The force account's effectiveness is not only a technical concern but deeply intertwined with broader socio-economic factors, notably poverty. Persistent poverty impacts workforce capabilities, with limited access to education and training translating to a shortage of skilled labor crucial for force account projects. This exacerbates the challenges of project execution and compromises quality and timelines. In rural and economically disadvantaged areas, resource constraints due to poverty hinder the ability of local entities to support construction initiatives effectively (Kitole & Sesabo, 2024; Dimoso & Andrew, 2021). Furthermore, poverty can limit community participation and the local economic stimulation often anticipated with public construction projects, thereby diminishing the positive impact on livelihoods and perpetuating socio-economic disparities.

Achieving sustainable development and improving livelihoods are central to justifying the adoption of the force account in public sector projects. The United Nations' Sustainable Development Goals (SDGs) emphasize the importance of building resilient infrastructure and promoting inclusive and sustainable industrialization (Utouh & Kitole, 2024). In the context of healthcare infrastructure in Tanzania, employing effective procurement methods like the force account can directly contribute to these goals by fostering local employment, boosting skills development, and enhancing access to quality health services. Proper implementation of force account projects can lead to improved

infrastructure that supports better healthcare outcomes, ultimately uplifting the well-being of communities and contributing to sustainable economic growth.

According to the Public Procurement Act of 2011, force account involves the use of a procuring entity's personnel and resources or hired labor for construction work. Since 2015, the Tanzanian government has actively prioritized force account as a cost-effective solution for public construction (PPRA, 2020). However, various studies, such as those by Shengeza (2018), Mayani (2019), and Tekka (2019), have identified persistent obstacles, including weak governance, non-standardized practices, and insufficient technical expertise. Addressing these challenges is essential to optimize the benefits and avoid potential inefficiencies that could hinder progress in essential sectors like healthcare.

Mbeya Regional Hospital serves as an illustrative case for examining the effectiveness of the force account method. Allocations such as TZS 673,639,825.00 for the Emergency Medicine building (2017/2022) and TZS 3,971,218,460 for new surgical facilities (2022/2023) reflect substantial investments in force account-driven projects (Massawe, 2023). Nonetheless, the effective deployment of these funds remains a challenge due to the aforementioned deficiencies in governance and technical capacity. Thus, assessing the cost-effectiveness of force account compared to traditional contracting methods is crucial for determining its viability in addressing healthcare infrastructure needs.

This study aims to fill the existing research gap by analyzing the cost-effectiveness of force account implementation versus traditional contracting, focusing on healthcare projects at Mbeya Regional Hospital. The findings intend to provide evidence that can inform policy adjustments, optimize resource allocation, and ultimately improve project outcomes, contributing to better health service delivery and socio-economic benefits for the broader community.

2. Theoretical Literature Review

This study draws upon two primary theoretical frameworks: the Resource-Based View (RBV) theory and Project Management theory, to analyze the effectiveness of the force account method in health sector construction projects. The RBV theory, established by Jay Barney in the 1980s and formalized in 1991, suggests that a firm's competitive advantage arises from its unique resources and capabilities, which must be valuable, rare, inimitable, and non-substitutable (VRIN). These resources, which can range from tangible assets like machinery to intangible assets like skilled labor and local expertise, provide firms with a sustained competitive edge (Freeman et al., 2021). The RBV contrasts with traditional perspectives by focusing on internal firm capabilities rather than external market conditions, emphasizing the role of resources that can contribute to a firm's superior performance (Heriyanto & Weli, 2023). For this study, the RBV framework is applied to assess how resources such as the workforce, management practices, and local knowledge at Mbeya Regional Hospital contribute to successful construction project

outcomes, thereby fostering a competitive advantage in the execution of health infrastructure projects.

Complementing RBV, Project Management theory provides essential insights into the effective planning and execution of projects. Pioneered by Henry Gantt in the early 20th century and further developed with modern methodologies like the PMBOK and agile approaches, this theory emphasizes the importance of clear objectives, resource allocation, risk management, and stakeholder engagement (Niknazar & Bourgault, 2017). Project management theory aligns with the study's investigation into how force account practices facilitate structured project execution while maintaining flexibility to adapt to the health sector's unique challenges. The application of modern project management principles ensures that construction projects in the health sector are completed on time, within budget, and to the desired quality standards, even in the face of unforeseen issues (Conforto et al., 2016). Together, these frameworks provide a comprehensive lens through which to evaluate the force account method's impact on construction projects in the health sector.

2.3. Empirical Review

Stephen (2021) conducted a study on the implementation of the force account method in Tanzania, revealing that less than 50% of construction projects in the country were executed using this approach. The study attributed this low adoption rate to technical difficulties such as low-skilled labor and poor adherence to procurement laws. These challenges result in public dissatisfaction, which undermines trust in the force account method as an effective mechanism for enhancing community participation and reducing costs in construction projects. The findings suggest that while the force account method may offer potential advantages, such as local involvement and cost savings, these benefits are often offset by systemic challenges in its implementation.

Similarly, Mbabazi and Mugurusi (2019) examined the use of force account procedures in road repair operations in Uganda. Their study found that 75% of respondents reported that their organizations lacked the necessary tools to carry out force account activities effectively. Furthermore, the study highlighted the absence of adequately trained technical staff to supervise and monitor the projects, which led to compromised quality. Additionally, only 32% of respondents had received training in force account procedures, underscoring a significant gap in capacity building. Despite these challenges, the study showed that many respondents did not perceive the force account method as a cost-saving measure, suggesting a need for more robust evaluation of its financial implications.

Mayani (2019) assessed the impact of force account methods on achieving value for money (VFM) in the construction of health center buildings in Bariadi Town Council, Tanzania. The study found that the expertise of organizational personnel and effective project management played significant roles in realizing VFM, with 29.2% of VFM attributed to staff experience and 25.3% to project management practices. These factors had a statistically significant contribution to the achievement of VFM in construction projects, highlighting the importance of professional staff and sound project management

frameworks in ensuring that force account methods contribute to the successful delivery of public sector construction projects.

In a similar vein, Massawe (2023) explored the challenges and effectiveness of the force account method in public construction projects in Tanzania, specifically at Mbeya Regional Hospital. The study identified several operational hurdles, including limited technical expertise and the lack of sufficient resources for managing projects effectively. Massawe's study emphasized the importance of strengthening the capacity of project teams to ensure that force account projects meet the required standards of quality, time, and cost. The research also pointed to the need for better coordination and monitoring to ensure that projects implemented through force account methods deliver the anticipated benefits.

Tekka (2019) also contributed to the discourse by assessing the effectiveness of force account procurement in East Africa, specifically in Tanzania. Tekka's findings indicated that while the force account method could be an effective procurement tool in specific contexts, its implementation often faced difficulties such as poor project monitoring and inadequate training for project managers. These limitations could lead to cost overruns, delays, and poor-quality outcomes, thereby questioning the method's viability for large-scale public infrastructure projects. Tekka called for reforms that would address these operational gaps, including enhanced capacity-building programs and stricter adherence to procurement regulations.

A study by Shengeza (2018) on the challenges of implementing force account in public procurement in Tanzania revealed that the method's success largely depends on the commitment of all stakeholders involved, including government agencies, contractors, and local communities. The study highlighted issues such as poor communication between stakeholders, inconsistent regulatory frameworks, and lack of transparency, which hindered the full potential of the force account method. Shengeza argued that greater collaboration and clear guidelines for the execution of force account projects could mitigate these challenges, ensuring better project outcomes and increased public confidence in the approach.

Finally, the Public Procurement and Disposal of Public Assets Authority (PPDA, 2018) provided comprehensive guidelines on the use of force account methods in public construction projects in Tanzania. The guidelines stressed the need for strict adherence to procurement laws, proper budgeting, and transparent project execution to ensure the method's success. However, they also acknowledged the challenges identified in previous studies, particularly regarding inadequate capacity and training of personnel, and recommended regular training and capacity-building initiatives to improve the effectiveness of force account in public procurement. These insights were crucial for understanding the broader context of force account implementation and its implications for public sector construction projects in Tanzania.

Collectively, these empirical studies suggest that while the force account method has the potential to improve the efficiency and quality of public sector construction projects, its

effectiveness is often undermined by various challenges. These include inadequate technical expertise, lack of proper tools and resources, insufficient training, and poor adherence to procurement laws. To improve its outcomes, it is essential to address these operational and institutional constraints through targeted interventions and capacity-building efforts.

3. Methodology

This study adopted a pragmatic research philosophy to ensure its findings are both relevant and applicable to the effectiveness of force account in the implementation of construction projects in the health sector. By prioritizing practical applicability, the research aimed to generate actionable insights that could improve project execution and resource management. This approach enables stakeholders to make informed decisions based on evidence, ultimately enhancing the quality and efficiency of healthcare infrastructure development.

A mixed-methods approach was employed, integrating both quantitative and qualitative data to provide a comprehensive analysis. Quantitative data were collected through surveys, which focused on assessing the cost-effectiveness of force account methods and allowed for statistical analysis of performance metrics. In parallel, qualitative data were gathered through interviews with stakeholders, offering deeper insights into their experiences and perceptions regarding the implementation of force account. This combination of data types enriched the analysis, providing a holistic understanding of the challenges and successes associated with force account practices.

The study was conducted at Mbeya Regional Hospital, a significant healthcare provider in Tanzania. Located in Mbeya City, the hospital serves over 1.9 million residents and provides a range of services, including outpatient and inpatient care. The research targeted a population of 224 respondents, including heads of departments, unit leaders, and junior staff from various hospital departments and units. A sample size of 144 respondents was selected using Yamane's formula, ensuring a representative distribution of perspectives across key hospital functions. The data collected through both surveys and interviews facilitated a nuanced evaluation of the effectiveness of force account methods in the context of healthcare infrastructure projects.

4. Results

This section provides the results of the study on effectiveness of force account on implementation of construction projects in health sector in Tanzania, a case of Mbeya Regional Hospital with a specific objective; to analyze the cost-effectiveness of utilizing force account versus traditional contracting methods at Mbeya Regional Hospital.

4.1 Descriptive Results for Cost-effectiveness

Results from Table 1 indicated that completion of projects within the expected timeframe, 60.0% of respondents agreed, while only 1.8% strongly disagreed, indicating a general consensus on timely project delivery (mean = 3.7364). In terms of quality, a remarkable

73.6% of participants strongly agreed that the quality achieved through the force account method met or exceeded standards set by traditional contracting methods, with only 3.6% expressing strong disagreement (mean = 4.4000). When evaluating resource utilization, 75.5% either strongly agreed or agreed that it was more efficient with the force account method, suggesting a favorable view toward resource efficiency. However, there were some uncertainties, with 20.0% unsure about timely completion and a smaller portion expressing disagreement regarding efficiency (mean = 3.9455). These findings collectively highlight a positive perception of the force account method in terms of time management, quality, and resource utilization in construction projects.

Table 1: Descriptive Results for Cost-effectiveness

	Mean	Std. Deviation
The force account method allowed the project to be completed within the expected timeframe.	3.7364	0.82035
The quality of work achieved through the force account method met or exceeded the standards set by traditional contracting methods.	4.4000	1.11865
Resource utilization was more efficient with the force account method compared to traditional contracting methods.	3.9455	1.15605

Source: Field Data (2024)

One key informant responded that:

“In my experience, the force account method significantly enhances project completion time compared to traditional contracting methods at Mbeya Regional Hospital. Direct management of labor and materials allows for quicker decision-making and immediate adjustments to unforeseen challenges, leading to timely project delivery. This agility proves particularly beneficial in healthcare construction, where delays can adversely affect service provision.”

“Regarding resource utilization, the force account method enables more efficient use of local resources. Leveraging community labor and materials reduces transportation costs and engages local suppliers, fostering economic development. However, ensuring staff members receive adequate training to manage resources effectively is crucial. In cases where skills are lacking, inefficiencies can arise, potentially negating the benefits of this approach.”

4.2 Correlation analysis

The analysis in Table 2, reveals a strong positive correlation between cost-effectiveness and effective construction project implementation, with a Pearson correlation coefficient of 0.877. This high correlation indicates that as cost-effectiveness increases, so does the effectiveness of project implementation. The significance level of 0.000 suggests that this relationship is statistically significant at the 0.01 level (2-tailed), meaning the likelihood

of this correlation occurring by chance is minimal. The study involved 120 participants, ensuring a robust sample size to validate these findings. Such strong correlations emphasize the importance of prioritizing cost-effective strategies in construction projects, as they directly contribute to achieving successful implementation outcomes.

Table 2: Correlation analysis

		Cost-effectiveness	Effective construction project implementation
Cost-effectiveness	Pearson Correlation	1	0.877**
	Sig. (2-tailed)		0.000
	N	110	110
Effective construction project implementation	Pearson Correlation	0.877**	1
	Sig. (2-tailed)	0.000	
	N	120	120

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

4.3 Regression analysis

The study employed regression analysis to analyze the cost-effectiveness of utilizing force account versus traditional contracting methods at Mbeya Regional Hospital. This statistical method allowed for the evaluation of the relationships between variables, providing insights into how variations in cost-effectiveness influence project outcomes. By utilizing regression analysis, the study identified key factors contributing to successful project implementation, highlighting the significance of financial efficiency in optimizing construction processes in the health sector.

The model summary in Table 3, indicates a strong relationship between cost-effectiveness and effective construction project implementation at Mbeya Regional Hospital. The correlation coefficient (R) is 0.877, suggesting a robust positive association. The R Square value of 0.768 implies that approximately 76.8% of the variance in project implementation effectiveness can be explained by cost-effectiveness. The Adjusted R Square value of 0.766 accounts for the number of predictors, indicating that the model remains reliable even when considering potential overfitting. The Standard Error of the Estimate is 0.87998, reflecting the average deviation of observed values from the predicted values, which is relatively low, signifying accurate predictions.

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.877 ^a	.768	.766	.87998

a. Predictors: (Constant), Cost-effectiveness

5.4 Anova

The ANOVA Table 4 evaluates the overall significance of the regression model predicting effective construction project implementation based on cost-effectiveness. The F-value of 358.085 suggests a highly significant relationship between the independent variable and

the dependent variable, as evidenced by a p-value of 0.000, which is less than 0.05. This strong significance indicates that cost-effectiveness is a critical predictor of effective construction project implementation at Mbeya Regional Hospital.

Table 4: ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	277.287	1	277.287	358.085	.000 ^b
	Residual	83.631	108	.774		
	Total	360.918	109			

a. Dependent Variable: Effective construction project implementation

b. Predictors: (Constant), Cost-effectiveness

The regression output presents the coefficients for the model predicting effective construction project implementation based on cost-effectiveness. The unstandardized coefficient (B) for the constant is 5.425, indicating the baseline level of project implementation when cost-effectiveness is zero. The coefficient for cost-effectiveness is 0.577, suggesting that for each unit increase in cost-effectiveness, project implementation effectiveness increases by 0.577 units. The standardized coefficient (Beta) of 0.877 indicates a strong relationship between the two variables. The t-values for both coefficients are highly significant, with p-values of 0.000, confirming the statistical significance of the predictors in the model as shown in Table 5.

Table 5: Regression coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.425	0.379		14.297	0.000
	Cost-effectiveness	0.577	0.030	0.877	18.923	0.000

a. Dependent Variable: Effective Construction Project Implementation

5. Discussion

The results indicated that completion of projects within the expected timeframe received strong agreement from the respondents, reflecting a general consensus on timely project delivery. Stephen (2021) noted that despite less than 50% of projects in Tanzania utilizing the force account method due to technical difficulties, those that effectively employed this approach demonstrated potential for meeting deadlines. Similarly, Mbabazi & Mugurusi (2019) highlighted that stakeholder in Uganda viewed the force account favorably for certain projects, suggesting timely delivery when adequately supported. Mayani (2019) also emphasized the significant influence of experienced personnel and project management on achieving Value for Money (VFM), which often correlates with timely project completion. Collectively, these studies support the finding that effective implementation of the force account method can facilitate timely project delivery in the health sector.

In terms of quality, a significant portion of participants strongly agreed that the quality achieved through the force account method met or exceeded the standards set by traditional contracting methods. This finding resonates with Mayani (2019), who assessed

the influence of force accounts on Value for Money (VFM) in health center construction, revealing that experienced personnel and effective project management significantly enhanced project quality. Similarly, Mbabazi & Mugurusi (2019) found that stakeholders perceived the force account method favorably in certain contexts, suggesting that adequate resources and skilled oversight are crucial for maintaining high-quality standards. Additionally, Stephen (2021) highlighted instances where successful force account projects demonstrated quality outcomes despite facing challenges, further reinforcing the notion that with the right conditions, the force account method can deliver superior quality compared to traditional contracting approaches.

When evaluating resource utilization, many respondents either strongly agreed or agreed that it was more efficient with the force account method, suggesting a favorable view toward resource efficiency. This aligns with findings from Stephen (2021), which noted that effective resource management within force account projects could enhance community participation and trust. Additionally, Mbabazi & Mugurusi (2019) pointed out that when stakeholders recognized the potential of force accounts to optimize resource use, it led to improved perceptions of project implementation. However, the study also highlighted challenges, such as the lack of tools and technical staff, that could hinder resource efficiency. Mayani (2019) further supports this notion, indicating that effective project management directly influences resource utilization, reinforcing the idea that well-executed force account methods can lead to better outcomes in resource efficiency compared to traditional contracting methods.

6. Conclusion

In conclusion, this study underscores the effectiveness of the force account method in the implementation of construction projects within the health sector, specifically at Mbeya Regional Hospital. The findings reveal that force account practices facilitate timely project completion, ensure higher quality outcomes, and lead to more efficient resource utilization compared to traditional contracting methods. This approach proves to be especially beneficial in addressing the challenges of budget constraints, project delays, and resource allocation often encountered in public health infrastructure projects. The study's results suggest that when effectively implemented, force account can optimize both the speed and quality of construction, ultimately improving healthcare delivery for local communities. Given these advantages, it is crucial for policymakers to actively promote the adoption of the force account method in health sector projects across Tanzania to enhance the country's healthcare infrastructure.

To further improve the effectiveness of the force account method, several recommendations are proposed. First, conducting regular training programs for project management teams and technical staff on the principles and practices of force account will ensure that all involved parties are well-equipped to handle the complexities of such projects. Additionally, allocating sufficient resources, including the necessary tools, technology, and expertise, will support the smooth execution of force account projects. Establishing a robust monitoring and evaluation framework is also essential to track

progress, identify challenges early, and ensure that projects are completed on time and within budget. Moreover, fostering active engagement with local communities and stakeholders throughout the project lifecycle can promote transparency, build trust, and ensure that community needs and expectations are met. By implementing these recommendations in a structured and strategic manner, Tanzania can enhance the sustainability and quality of its healthcare infrastructure, contributing to the long-term well-being of its population.

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