

The Effect of Budget Control on the Public Sector Effectiveness Moderated by Information and Communication

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ABSTRACT

Budget control is a crucial management accounting technique designed to plan, monitor, and adjust a company's budget to achieve its financial objectives. This study investigates the effect of budget control on public sector effectiveness, with a particular focus on the moderating role of information and communication within the Addis Ababa City Administration. The research involved thirty public sectors, comprising eleven sub-cities and nineteen additional sectors. Data were gathered using a structured Likert-scale questionnaire, which reached 368 respondents, of whom 346 completed the survey, alongside structured interviews with key informants. Utilizing a pragmatic research paradigm and a mixed-methods approach, the study integrated both qualitative and quantitative data. The research defined budgetary control as the systematic management of costs through goal-setting, performance comparison, and corrective actions. It analyzed components such as budget implementation, accounting and reporting, auditing, and monitoring as independent variables, while information and communication were treated as a mediating variable. Data analysis was performed using SPSS 26 and AMOS 23, with Structural Equation Modeling (SEM) confirming the reliability and validity of the constructs. The findings revealed significant relationships: effective budget implementation, accurate accounting, and regular audits each positively influence organizational effectiveness. The findings also indicate a negative moderating effect of information and communication, suggesting that ineffective communication can undermine the relationship between budget implementation and effectiveness. Conversely, effective communication strengthens the positive impacts of accounting and auditing. These results highlight that while budget control practices are crucial for public sector effectiveness, strategic improvement of communication systems is essential for maximizing their benefits. Recommendations include revising budgeting policies and enhancing communication frameworks. Future research should explore these dynamics across broader institutional contexts and consider longitudinal studies to evaluate long-term impacts.

Keywords: Control, effects, effectiveness, information and communication, Ethiopian public sector

1. Introduction

Budgetary control involves setting goals and standards *to evaluate actual performance against predetermined benchmarks*, enabling corrective actions for deviations. It systematically manages costs through budget preparation, departmental coordination, and performance evaluation, *aiming to maximize profitability and service quality* (Brown & Howard, 2002). According to the Institute of Cost and Management Accountants (1990), budgetary control is defined as the alignment of executive responsibilities with policy requirements, *which requires continuous comparison of actual results with budgeted figures*. Effective budgetary control requires regular performance measurement against established targets. Furthermore, accurate assessment depends on effective communication to ensure that all stakeholders understand financial plans, objectives, and constraints (Alleo.ai, 2024). Open communication fosters transparency and trust by sharing budgetary goals (FasterCapital.com, 2025). Finance officers *play a key role* in communicating complex financial information to diverse stakeholders *to promote collaboration* (Government Finance Officers Association, n.d.). Clear budget reports and regular financial updates are essential for effectively addressing budgetary concerns (Meegle.com, 2024).

Budgetary control also promotes coordination across departments, ensuring efficient resource management (Shiksha Online, 2025; Study Smarter, 2024). Establishing clear communication lines and actively listening to stakeholder input *are* crucial for setting realistic budget expectations (FasterCapital.com, 2025). Management should establish guiding goals, create targets for comparison, and implement corrective actions when deviations occur.

This article examines the key components of budgetary control—*including* budget implementation, accounting and reporting, auditing, monitoring, and evaluation—along with the mediating role of information and communication in enhancing public sector effectiveness. In Ethiopia, budgetary control faces persistent challenges that hinder efficient resource utilization and organizational performance. Public institutions often contend with weak planning, inadequate monitoring, limited managerial accountability, delays in fund disbursement, and poor coordination and communication (Abebe, 2021; Daba, 2020; Mohammed, 2021). Moreover, a shortage of skilled personnel, outdated accounting systems, and low awareness of modern budgeting techniques *undermine the reliability* of financial information for decision-making. These challenges, particularly in *the public sector*, undermine fiscal discipline, transparency, and overall performance management. (*Corrected “public sectors” to “the public sector.”*) Accordingly, this study seeks to assess how budgetary control practices affect organizational effectiveness in Ethiopian public institutions. The main research question, therefore, *is*: What are the effects of budgetary control practices on organizational effectiveness?

2. Literature review

2.1 Theoretical review

Theory of Budgeting: Budgeting serves as a tool to identify discrepancies between organizational objectives and performance, encompassing the political and social factors influencing budgetary processes (Dakurah, 2020; Kaijage, 2019; Kamau et al., 2017).

Goal Setting Theory: Organizations manage budgets to achieve goals, with budget planning, evaluation, and cost standards enhancing the probability of goal attainment (Locke & Latham, 2013).

Theories of Public Expenditures: Government policy objectives, like poverty reduction, are achieved through direct spending (budget allocations) and indirect spending (tax expenditures), with the government budget reflecting financial policies (Fan & Zhang, 2008; Schiavo & Campo, 2017).

Budgetary Control Theory: An appropriate budgetary control system is essential for utilizing the enacted budget for its intended purpose, emphasizing the dual role of government entities in providing resources and employment (Shields & Shields, 1998).

Accounting Theory: Accounting theory establishes a framework of principles to evaluate and improve accounting practices, assisting in forecasting budgetary outcomes and ensuring standard adherence (Kimani, 2014; Norton & Elson, 2011; Otley, & Pollanen, 2000).

The above theories collectively provide a robust framework for analyzing the effect of budget control on public sector performance. They are used to highlight how effective budgeting practices can address discrepancies between organizational objectives and actual outcomes, thereby fostering accountability and transparency. The theories illustrate the importance of strategic planning and goal-setting in enhancing budgetary processes, ensuring that resources are allocated efficiently to meet governmental objectives. Additionally, they emphasize the necessity of a structured budgetary control system to optimize resource utilization and fulfill public sector responsibilities. By integrating these theories, the article demonstrates how effective communication further moderates the relationship between budget control and performance, ultimately enhancing public sector effectiveness.

2.2 Empirical Review of Literature

Effective budget control mechanisms are essential for enhancing public sector performance by ensuring efficient resource use aligned with organizational objectives. According to Alade, Owabumoye, and Olowookere (2020), robust budget control practices streamline financial management and foster accountability, enabling organizations to better achieve strategic goals. Information and communication systems play a crucial role in moderating the relationship between budgetary controls and public sector effectiveness. Geletaw and Mesfin (2018) emphasize that transparent information enhances accountability and facilitates timely corrective actions, increasing the likelihood of achieving budgetary objectives.

Van Helden and Reichard (2019) highlight that effective communication strategies bridge gaps between budget planners and implementers, fostering dialogue among stakeholders. Clear communication also builds trust and engagement, ensuring financial strategies aligns with organizational goals (Meegle, 2024). Moreover, stakeholder engagement in the budgeting process enhances transparency and fairness, leading to informed decisions (Number Analytics, 2025). Prior studies show that the impact of robust budget control practices on public sector effectiveness is amplified by effective information and communication strategies. Srinivasan (2005) illustrates that stakeholder engagement leads to improved outcomes in public budgeting. The combination of strong budget controls and open communication fosters collaboration, contributing to better financial performance and organizational effectiveness. To engage stakeholders effectively, agencies must identify their interests (Number Analytics, 2025; Kogi State Government, n.d.).

2.2.1 Budget Implementation and the Public Sector Effectiveness

Budget implementation is crucial for executing planned activities and shaping outcomes. After a budget is approved, execution begins with the executive branch overseeing the process, guided by the city's finance bureau, which allocates funds to sub-cities and public sectors. In a principal-agent relationship, citizens (principals) trust government officials (agents) to align budget execution with their needs (Kathungu, 2020). However, financial constraints may lead to reductions in expenditures or reallocations to unplanned activities, risking inefficiencies. Effective budget utilization relies on adapting to macroeconomic changes and the capabilities of implementing agencies (Allen & Tommasi, 2001). A robust system should include a comprehensive accounting framework to monitor all expenditure stages.

Blumentritt (2006) found that poor budgetary control hampers goal achievement in government entities, highlighting the need for effective planning and control to ensure transparency and efficiency (Pierce, 2004). Lambe (2015) emphasized that well-executed budgeting can reduce costs and increase revenues, enhancing organizational outcomes. However, the implementation phase is challenging due to reliance on forecasts and estimates. Significant changes during this period can create discrepancies between the initial budget and actual circumstances (Gachithi, 2010).

H₁: Budget Implementation has a positive and significant effect on organizational effectiveness

2.2.2 Accounting and Reporting and Public Sector Effectiveness

Effective budget management control and oversight of organizational effectiveness heavily rely on sound budgetary accounting and reporting. Timely, accurate, and meticulous record-keeping, accounting, and reporting of budget process information are indispensable for promoting

accountability in budget management. The use of a computerized integrated accounting system streamlines the tracking of the budget process and reconciles information from various sources. Furthermore, implementing an integrated financial management information system (IFMIS) is essential for improving budget management operations. Technical weaknesses or intentional disregard for accuracy and comprehensiveness in recording transactions can lead to inaccuracies and omissions that obscure fraudulent activities, hinder auditing processes, and impede management action and control. Long (2019), mentions that it is crucial to record every transaction comprehensively, including loans, disbursements, commitments, and payments. Weaknesses in accounting practices and the reconciliation of organizational accounts introduce vulnerabilities in budget management by compromising the comprehensiveness of fiscal reports and the availability of data necessary for auditing and management control. Budgetary accounting and reporting also serve as tools of internal control for effective budget implementation, aiding in the achievement of organizational goals.

H₃: Accounting and reporting have a positive and significant effect on organizational effectiveness

2.2.3 Monitoring and Evaluation, and Public Sector Effectiveness

Effective budget utilization requires clear management rules for budget appropriations and revisions (Shawe, 2023). This includes assigning responsibilities for budget execution and policy implementation (Grossi et al., 2016). Responsibilities should align with the specific accountability areas of involved agencies (Johnson & Lee, 2021). Evaluation is crucial for assessing effectiveness (Smith, 2020). An evaluation plan helps organizations prioritize actions based on resources, timelines, and expertise (Brown & Taylor, 2019). Management's active involvement in monitoring and evaluating budget control processes enhances transparency and effectiveness.

In the public sector, collaborative evaluation plans involving stakeholders foster shared goals and contribute to effective budget control. Organizations monitor and evaluate actual results against approved budgets to inform decision-making and ensure accountability. Evaluations systematically analyze projects, programs, or policies to assess goal achievement, process efficiency, outcome effectiveness, overall impact, and sustainability (Letike, 2020).

H₅: Monitoring and evaluation have a positive and significant effect on the organizational effectiveness

2.2.4 Auditing and Public Sector Effectiveness

Key factors for ensuring organizational effectiveness include independent, high-quality audits, legal mandates defining audit scope, and follow-up actions on audit recommendations. Thorough investigations and penalties for fraud, alongside prioritizing critical areas in budget management, are essential (Dorotinsky & Pradhan, 2007). Incorporating audit recommendations enhances budget management effectiveness. Adequate staffing is vital; insufficient staffing can lead to mismanagement and undermine control mechanisms. Reddy and Chali (2019) highlight the benefits of effective auditing in public budget control, including assessing the reliability of budget reports, providing accurate program information for future allocations, detecting irregularities, and identifying control weaknesses. PEFA (2019) reports indicate a lack of stakeholder participation in the budget process, with auditors focusing mainly on compliance rather than systemic audits, which are crucial for evaluating internal controls. The report also notes skill gaps among some internal auditors.

H₇: Audits have a positive and significant effect on organizational effectiveness

2.2.5 Information and Communication and Public Sector Effectiveness

The process of information and communication involves identifying, capturing, and effectively conveying relevant information within the required timeframe to achieve the financial reporting objectives of the organization (Ajao & Oluwadamilola, 2020). An efficient information and communication system facilitates budget control within the organization by ensuring the smooth flow of information among different departments. This enables management to establish effective means of communication and obtain information from external entities that may significantly affect the organization's ability to achieve its goals (Gelinas, Dull, Wheeler & Hill, 2017).

H₂: Information and communication moderate between Budget utilization and organizational effectiveness.

H₄: Information and communication moderates between accounting and reporting and organizational effectiveness

H₆: Information and communication moderate between Monitoring and evaluation and organizational effectiveness

H₈: Information and communication moderate between audit and organizational effectiveness

H₉: Information and communication have a positive and significant effect on organizational effectiveness

3. Research Design and Methodology

3.1 Description of the Study Area

The Addis Ababa City Administration manages the finances of public sector entities in Ethiopia's capital, playing a crucial role in delivering services and developing infrastructure. Effective financial management is essential for addressing the diverse needs of residents and enhancing public sector effectiveness. A study by Poister et al. (2024) highlighted areas for improvement in budget management practices, emphasizing its effect on organizational effectiveness and public service delivery.

3.2 Research Methods

This study utilized an explanatory research design with a mixed-methods approach to explore causal relationships among variables. The target population included 48 public sectors, categorized into two levels based on factors like annual budget and project count, as detailed in the city administration's Business Process Reengineering (BPR) document (2021). The focus was on employees from finance, audit, planning, and related directorates. A total of thirty public sectors were selected for the study, including nine first-level sectors, all eleven sub-cities, and ten second-level sectors, chosen based on their longevity. The sample included 368 respondents, calculated using Yamane's formula.

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

Where:

n = sample size

N = Total population size

e = allowance of random error

Calculating yields:

$$n = \frac{4,580.00}{1 + 4,580.00(0.05)^2}$$

$$n = \frac{4,580.00}{1 + 11.45}$$

$$n = 368$$

3.3 Methods of Data Analysis

Data analysis involved refining and modeling data to derive insights (Sharma, 2018). SPSS-26 and Amos-23 software were used to analyze data from the public sectors. Structural Equation Modeling (SEM) tested the hypothesized model's compatibility (Byrne, 2013). Model validity

was assessed using fit indices like χ^2/df , CFI, NFI, and RMSEA (Hair et al., 2010). Out of 368 questionnaires, 350 were returned (95% response rate), with 346 (94%) suitable for analysis. A response rate above 50% is deemed sufficient for conclusions (Nulty, 2008). Measurement models met fit criteria, leading to hypothesis testing, which supported the research hypotheses and provided insights for further study.

4. Data Presentation data and analysis

Data was collected from the public sectors of the Addis Ababa City Administration and analyzed using structural equation modeling (SEM) with SPSS-26 and Amos-23. The maximum likelihood estimation technique was employed to assess the models, yielding reliable results even when data do not fully satisfy the assumptions of structural equation modeling, such as normal distribution and large sample sizes (Chou & Bentler, 1995; Hoyle & Panter, 1995). The methodology includes a confirmatory factor analysis (CFA) and SEM for path analysis, providing detailed results of reliability and validity analysis.

The study incorporated four main constructs: strategic planning, budgetary preparation, budgetary approval, and human resources competence, along with one moderating variable and one dependent variable related to operational effectiveness. Measurement models were developed to demonstrate compliance with model fit criteria. Subsequently, structural models were created and identified to facilitate testing of the research hypotheses. In the final section, the author illustrates how the results support and explain the proposed research hypotheses outlined in the previous chapter.

4.1 Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy/Bartlett's Test of Sphericity

Before extracting factors, it is crucial to conduct several tests to evaluate the suitability of the respondent data for the factor analysis. These tests encompass the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and Bartlett's Test of Sphericity (Bartlett, 2010). A KMO value of at least 0.50 indicates that the data is appropriate for factor analysis. Additionally, Bartlett's Test of Sphericity should yield a significant result, with a p-value less than .05, for the analysis to be considered suitable (Tabachnick, 2007; Awang, 2014).

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.972
Bartlett's Test of Sphericity	Approx. Chi-Square	19976.446
	Df	861
	Sig.	.000

Source: SPSS output (2024)

As shown in Table 1, the KMO value is 0.972, indicating a strong result as it exceeds the minimum threshold of 0.5. Additionally, Bartlett's Test of Sphericity yielded a significant p-value of 0.000, which is below the 0.05 significance level, suggesting that the correlation matrix contains meaningful information.

4.2 Measurement Model

A robust measurement model should have all items loading above 0.70. Additionally, the traditional method using Cronbach's alpha requires a minimum threshold of 0.70. This criterion is similarly applied to Composite Reliability, which also has a threshold of 0.70. Furthermore, the Average Variance Extracted (AVE) should meet a minimum threshold of 0.50 (Awang, 2014; Heller et al., 2015).

The researcher uses the reflective model of confirmatory factor analysis with constructs. Six constructs were observed: budgetary implementation (BUIM), accounting and reporting (ACRE), Monitoring and Evaluation (MEOV), auditing (AUDI), information and communication (INCO), and public sector effectiveness (OREF). In the confirmatory factor analysis, all factor loadings exceed the minimum threshold of 0.70. Additionally, the results for Chi-square, Chi-square/DF, Incremental Fit Index, Comparative Fit Index, Normed Fit Index, Tucker-Lewis Index, and Root Mean Square Error of Approximation all meet the established standards. This indicates that the model is a good fit. The detailed results are provided below.

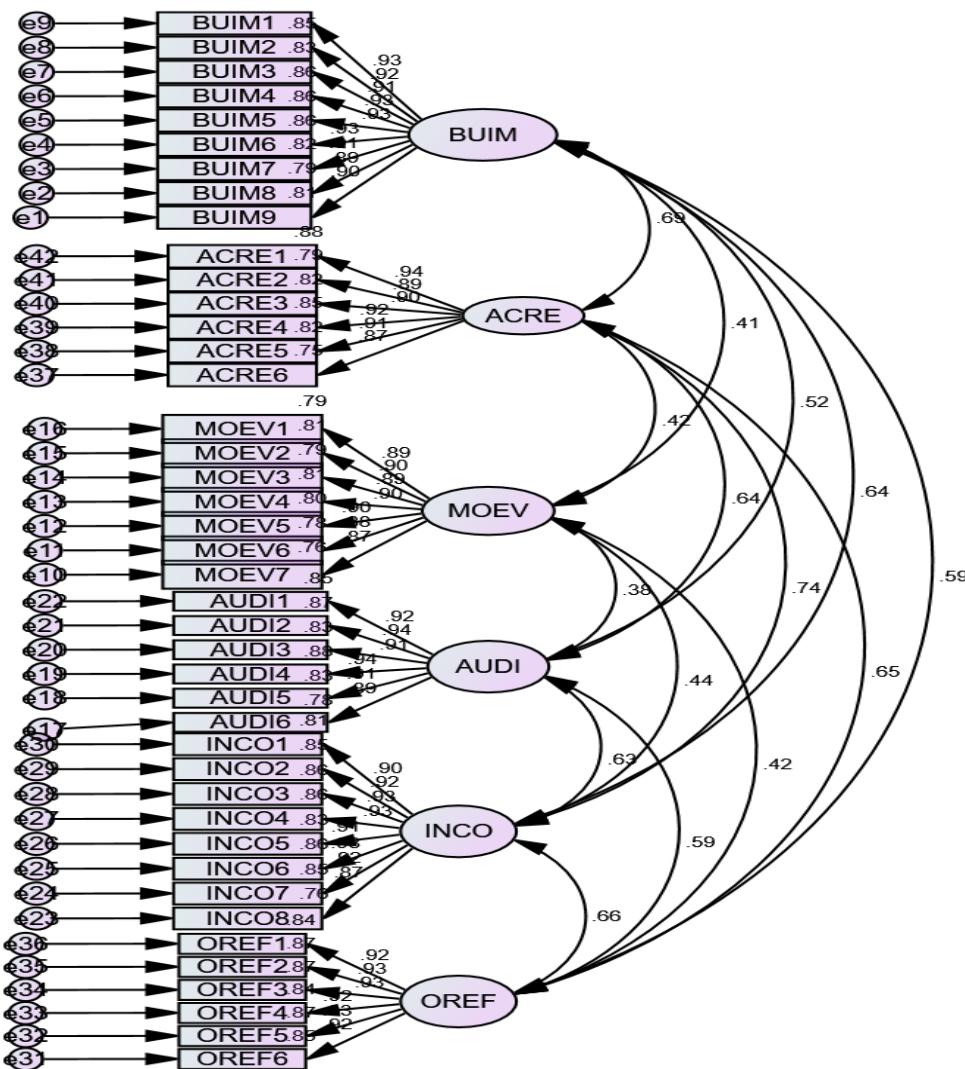


Figure 1: measurement Model Results

4.3 Standardized loading

In SPSS AMOS (Analysis of Moment Structures), factor loading represents the estimated coefficients that reflect the strength and direction of the relationship between observed variables and latent (unobserved) factors in a structural equation model (SEM). This metric quantifies how much each observed variable contributes to its respective latent factor. Table 2 displays the standardized factor loadings for the measurement models.

Table 2: The standardized loading factors

			Estimate
BUIM9	<---	BUIM	.898
BUIM8	<---	BUIM	.887
BUIM7	<---	BUIM	.906
BUIM6	<---	BUIM	.929
BUIM5	<---	BUIM	.927
BUIM4	<---	BUIM	.926
BUIM3	<---	BUIM	.914
BUIM2	<---	BUIM	.924
BUIM1	<---	BUIM	.931
MOEV7	<---	MOEV	.869
MOEV6	<---	MOEV	.881
MOEV5	<---	MOEV	.896
MOEV4	<---	MOEV	.901
MOEV3	<---	MOEV	.886
MOEV2	<---	MOEV	.902
MOEV1	<---	MOEV	.890
AUDI6	<---	AUDI	.885
AUDI5	<---	AUDI	.908
AUDI4	<---	AUDI	.939
AUDI3	<---	AUDI	.910
AUDI2	<---	AUDI	.935
AUDI1	<---	AUDI	.924
INCO8	<---	INCO	.872
INCO7	<---	INCO	.921
INCO6	<---	INCO	.927
INCO5	<---	INCO	.912
INCO4	<---	INCO	.930
INCO3	<---	INCO	.929
INCO2	<---	INCO	.922
INCO1	<---	INCO	.899
OREF6	<---	OREF	.921
OREF5	<---	OREF	.931
OREF4	<---	OREF	.919
OREF3	<---	OREF	.934
OREF2	<---	OREF	.934
OREF1	<---	OREF	.917
ACRE6	<---	ACRE	.866
ACRE5	<---	ACRE	.905
ACRE4	<---	ACRE	.920
ACRE3	<---	ACRE	.904
ACRE2	<---	ACRE	.892

ACRE1	<---	ACRE	.940
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Source: SPSS-AMOS output (2024)

From Table 2 above the loading factor of the measurement, the variable is listed and all the loadings are greater than .70. In the table above nine variables from budgetary utilization (BUIM), five variables from accounting and reporting (ACRE), six variables from audit (AUDI), eight variables from information and communication (INCO), seven variables from monitoring and evaluation (MOEV) and six variables from organizational effectiveness (OREF) analyzed. All variables meet the minimum threshold in measuring the latent variables.

4.4 Model Fit

In AMOS, model fit evaluates how well a structural equation model (SEM) aligns with observed data using fit indices like chi-square, Comparative Fit Index (CFI), RMSEA, SRMR, and Tucker-Lewis Index (TLI). Results are shown in the following tables, with thresholds in Table 3.

Table 3 Model Fit

Measure	Threshold	Result	Interpretation
Chi-square	Insignificant	.000	Not a Good fit, it is expected for large samples
Chi-square/DF (889.889/546)	Between 1 and 3	1.569	Good fit
Incremental fit index (IFI)	>.95	.977	Good fit
Comparative fit index (CFI)	>.95	.977	Good fit
Normed fit index (NFI)	>.90	.940	Good fit
Tucker Lewis index (TLI)	>.95	.976	Good fit
root mean square error of approximation (RMSEA)	<.08	.041	Good fit

Source: Hair et al. (2010) and Source: SPSS-AMOS output (2024)

Table 3 indicates that all model fit measures meet the minimum criteria or thresholds. Because of this, our model does satisfy this measure of fit.

4.5 Construct Reliability and Construct Validity Analysis

4.5.1 Construct Reliability

Reliability measures the internal consistency of constructs. According to Hair et al. (2010), it serves as an indicator of convergent validity. High reliability indicates that measures represent the same latent construct. This study evaluates reliability using Cronbach's alpha and Composite Reliability.

4.5.2 Cronbach's alpha

Hair et al. (2010) define a construct as reliable if the alpha (α) value exceeds .70. Reliability was assessed using Cronbach's Alpha, yielding the following results: strategic planning ($\alpha = .944$), budgetary preparation ($\alpha = .933$), budgetary approval ($\alpha = .964$), participative budgeting ($\alpha = .974$), human resources competence ($\alpha = .957$), and organizational effectiveness ($\alpha = .969$). Table 7 summarizes these reliability results.

Table 4 Reliability Analysis (Cronbach's alpha)

s/n	Constructs	Number of items	Cronbach's Alpha
1	Budgetary Utilization	9	.979
2	Accounting and Reporting	6	.963
3	Performance Audit	6	.969
4	Monitoring and Evaluation	7	.963
5	Information and communication	8	.976
6	Operational Effectiveness	6	.973

Source: SPSS-AMOS output (2024)

The Cronbach alpha values indicate that all constructs are reliable, with scores above 0.7. Reliability ranges from .963 (accounting and reporting, monitoring and evaluation) to .979 (budgetary utilization).

4.6 Composite Reliability

Composite reliability measures the internal consistency of indicator variables for a latent variable, with scores above 0.7 indicating shared variance. Straub, Boudreau, and Gefen (2004) highlight its role in assessing a variable's consistency. Table 8 shows all composite reliability (CR) values exceed 0.7: budgetary utilization (0.979), monitoring and evaluation (0.964), audit (0.969), information and communication (0.976), public sector effectiveness (0.973), and accounting and reporting (0.964), confirming no validity concerns.

Table 5 Reliability and Validity Measures

	CR	AVE	MSV	MaxR(H)	BUIM	MOEV	AUDI	INCO	OREF	ACRE
BUIM	0.979	0.839	0.483	0.980	0.916					
MOEV	0.964	0.791	0.189	0.964	0.408***	0.889				
AUDI	0.969	0.841	0.412	0.971	0.523***	0.376***	0.917			
INCO	0.976	0.835	0.545	0.977	0.645***	0.435***	0.626***	0.914		
OREF	0.973	0.858	0.434	0.973	0.587***	0.422***	0.591***	0.659***	0.926	
ACRE	0.964	0.818	0.545	0.967	0.695***	0.422***	0.642***	0.738***	0.653***	0.905

Source: SPSS-AMOS output (2024)

Significance of Correlations:

† $p < 0.100$, * $p < 0.050$, ** $p < 0.010$, *** $p < 0.001$

4.7 Construct Validity

Validity refers to a scale's ability to accurately measure what it intends (Hair et al., 2010). It assesses how well selected items represent the construct. Construct validity confirms a network of related hypotheses based on theory and indicates the relationship between multiple measures of a construct (Gofen, Straub & Boudreau, 2000). It is established through convergent validity (correlation with similar scales) and discriminant validity (distinctiveness from related scales).

4.7.1 Convergent Validity

Convergent validity occurs when multiple indicators of the same construct are associated. Hair et al. (2010) define it as the positive correlation between a scale and other measures of the same construct. Fornell and Larcker (1981) suggest that it is established when the variance extracted value exceeds 0.5. Table 6.8 shows the variance extracted values (VAE) for all constructs: budget implementation (0.839), monitoring and evaluation (0.791), auditing (0.841), information and communication (0.835), public sector effectiveness (0.858), and accounting and reporting (0.818). Since all values exceed 0.5, validity concerns are alleviated.

4.7.2 Discriminant Validity

Discriminant validity measures the distinctness of constructs, ensuring that constructs that should not be highly correlated remain separate (Hair, 2010). To assess this, pairwise correlations between constructs were compared with their variance extracted estimates. Following the Fornell-Larcker criterion, the average variance extracted (VAE) for each construct should exceed the maximum shared variance (MSV) with others. In this study, six constructs (budgetary utilization, monitoring and evaluation, audit, information and communication, organizational effectiveness, and accounting and reporting) have MSV values below their respective VAEs.

Table 6 shows that the square root of each VAE exceeds its correlations with other variables, confirming discriminant validity. Recent research (Henseler et al., 2015) questions the sensitivity of shared variance tests. The Heterotrait-Monotrait ratio (HTMT) provides a more robust assessment by comparing between-trait to within-trait correlations. Henseler, Ringle, and Sarstedt (2015) state that if the HTMT value is below 0.90, discriminant validity is established. This study utilizes the HTMT method as an additional measure of discriminant validity.

Table 6 Table Hetrotrait-Monotrait ratio discriminant validity

Constructs	OREF	INCO	AUDI	MOEV	ACRE	BUIM
OREF						
INCO	0.65918439					
AUDI	0.59062374	0.62563683				
MOEV	0.42174222	0.43524033	0.37589698			
ACRE	0.64360915	0.73847294	0.64159272	0.42231564		
BUIM	0.58709274	0.64485425	0.52301149	0.40819389	0.69485542	

Source: SPSS-AMOS output (2024)

The table indicates that the Heterotrait-Monotrait ratio is below the 0.90 threshold, establishing discriminant validity. Thus, both the Fornell-Larcker criterion and the Heterotrait-Monotrait ratio confirm that discriminant validity is met.

4.8 The Fitted structural model

Based on the good fit of the measurement model, the author developed a structural model to test the hypotheses. To clarify, a simple plot using the Jeremy Dawson formula illustrates the moderating effect. Figure 2 shows that budgetary utilization (BUIM), accounting and reporting (ACRE), monitoring and evaluation (MOEV), and audit (AUDI) directly affect public sector effectiveness (OREF), with information and communication (INCO) mediating these constructs.

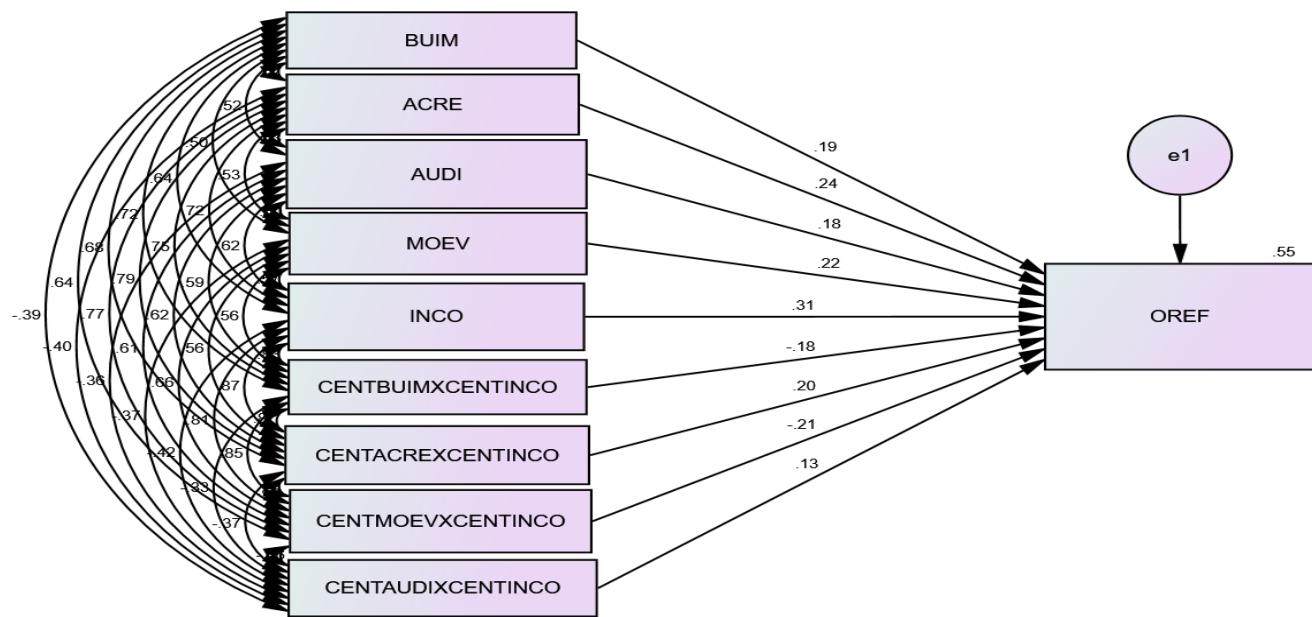


Figure 2: Fitted structural model

Source: SPSS-AMOS Output

Based on the fitted model, the following AMOS outputs are available for hypothesis testing:

4.8.1 Hypothesis Testing

This section presents the total, indirect, and direct effects of the independent, mediating, and dependent variables.

4.8.2 SPSS-AMOS Output

The SPSS-AMOS output includes the direct and moderating effects as indicated in the Regression Weights.

Table 7 Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
BUIM	→	OREF	.194	.056	3.461	***
ACRE	→	OREF	.266	.074	3.610	***
AUDI	→	OREF	.192	.052	3.726	***
MOEV	→	OREF	.296	.067	4.448	***
INCO	→	OREF	.311	.081	3.830	***
BUIM*INCO	→	OREF	-.095	.046	-2.077	.038
ACRE*INCO	→	OREF	.105	.050	2.123	.034
MOEV*INCO	→	OREF	-.107	.043	-2.504	.012
AUDI*INCO	→	OREF	.235	.075	3.144	.002

Source: SPSS-AMOS output (2024)

Hypothesis One (H_1) and two (H_2)

The study aimed to assess the direct effect of budget implementation on organizational effectiveness and the moderating effect of information and communication (INCO) in this relationship. Results show a significant positive direct effect ($b = 0.194$, $t = 3.461$, $p = 0.001$), strongly supporting Hypothesis 1. This suggests that effective budget implementation substantially enhances organizational effectiveness. Additionally, there is a significant negative moderating effect of INCO on the relationship between budget implementation (BUIM) and organizational effectiveness (OREF) ($b = -0.095$, $t = -2.077$, $p = 0.038$), supporting Hypothesis 2. This indicates that effective information and communication may reduce the positive impact of budget implementation on effectiveness. These findings align with prior research (Baumler, 2012; Pierce, 2004; Lambe, 2015). In summary, while budget implementation positively affects organizational effectiveness, effective information and communication practices can weaken this relationship. A slope diagram is provided below for clarity.

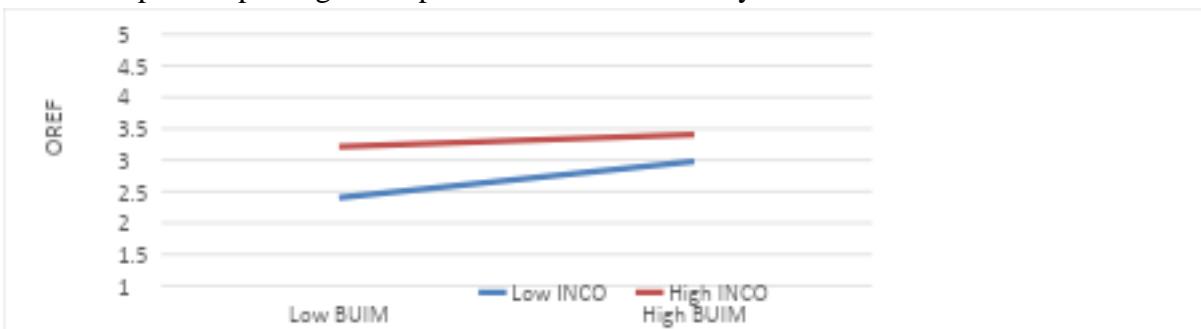


Figure 3: Simple slope showing the moderating role INCO between BUIM and OREF

Source: survey data (2024)

Figure 3 illustrates the moderating role of information and communication (INCO) on the relationship between budget implementation (BUIM) and organizational effectiveness (OREF).

It shows that as INCO increases, the positive connection between BUIM and OREF weakens, indicating that effective information and communication dampens this relationship.

Hypothesis three (H₃) and four (H₄)

The study assessed the direct effect of accounting and reporting on organizational effectiveness and the moderating role of information and communication (INCO). Results indicate a significant positive direct effect ($b = 0.266$, $t = 3.610$, $p = 0.001$), supporting Hypothesis 3. This shows that effective accounting and reporting enhance organizational effectiveness. INCO also has a significant positive moderating effect on the relationship between accounting and reporting (ACRE) and organizational effectiveness (OREF) ($b = 0.105$, $t = 2.123$, $p = 0.034$), supporting Hypothesis 4. This suggests that effective communication strengthens the impact of accounting and reporting. These findings align with prior research (Geletaw, 2019; Geleta, Mohd & Shagufta, 2020; Mahroqi et al., 2021). In summary, effective accounting and reporting practices improve organizational effectiveness, and strong information and communication further enhance this relationship. Organizations that prioritize both are likely to achieve greater effectiveness and performance. The graph below illustrates these results.

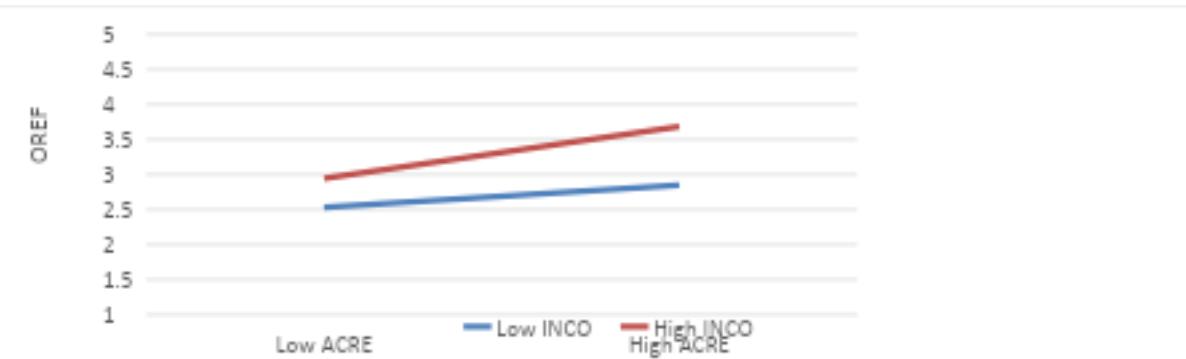


Figure 4: Simple slope showing the moderating role of INCO between ACRE and OREF

Source: survey data (2024)

Figure 4 depicts the moderating effect of information and communication (INCO) on the relationship between accounting and reporting (ACRE) and organizational effectiveness (OREF). The results demonstrate that greater information and communication (INCO) enhances the connection between accounting and reporting (ACRE) and organizational effectiveness (OREF), thereby reinforcing their positive relationship.

Hypothesis five (H₅) and six (H₆)

The study investigated the relationship between audit practices and organizational effectiveness, considering the moderating role of information and communication (INCO). The findings indicate a significant positive direct effect of audits on organizational effectiveness, with a

coefficient (b) of 0.192, a t-value of 3.726, and a p-value of 0.000, confirming its significance. Additionally, INCO positively moderates this relationship, with a coefficient of 0.235, a t-value of 3.144, and a p-value of 0.002, indicating statistical significance.

These results support hypotheses H5 and H6, highlighting the critical role of audits in enhancing organizational effectiveness and the importance of robust information and communication systems in maximizing the benefits of audits. This is consistent with findings from Geletaw (2019). A slope diagram below visually represents these results.

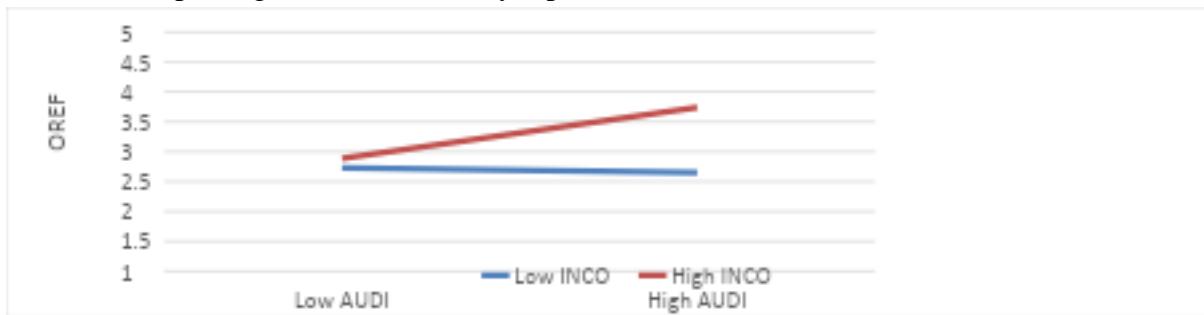


Figure 5 Simple slope showing the moderating role of INCO between AUDI on OREF

Source: survey data (2024)

Figure 5 illustrates the moderating role of information and communication (INCO) on the relationship between audit (AUDI) and organizational effectiveness (OREF). It shows that increased INCO strengthens the connection between AUDI and OREF, enhancing the positive relationship between the two.

Hypothesis seven (H₇) and eight (H₈)

The study examined the direct effect of monitoring and evaluation (MOEV) on organizational effectiveness (OREF), while considering the moderating role of information and communication (INCO). Findings revealed a significant positive effect of monitoring and evaluation on organizational effectiveness, with a coefficient (b) of 0.296, a t-value of 4.448, and a p-value of 0.000, supporting hypothesis H7. However, INCO exhibited a significant negative moderating effect, with a coefficient of -0.107, a t-value of -2.504, and a p-value of 0.012, supporting hypothesis H8. This indicates that effective information and communication systems weaken the relationship between monitoring and evaluation and organizational effectiveness. Overall, while monitoring and evaluation positively influence organizational effectiveness, effective INCO can diminish this effect. Organizations should consider the role of information and communication in their monitoring and evaluation efforts. A simple slope diagram is provided below to illustrate these results.

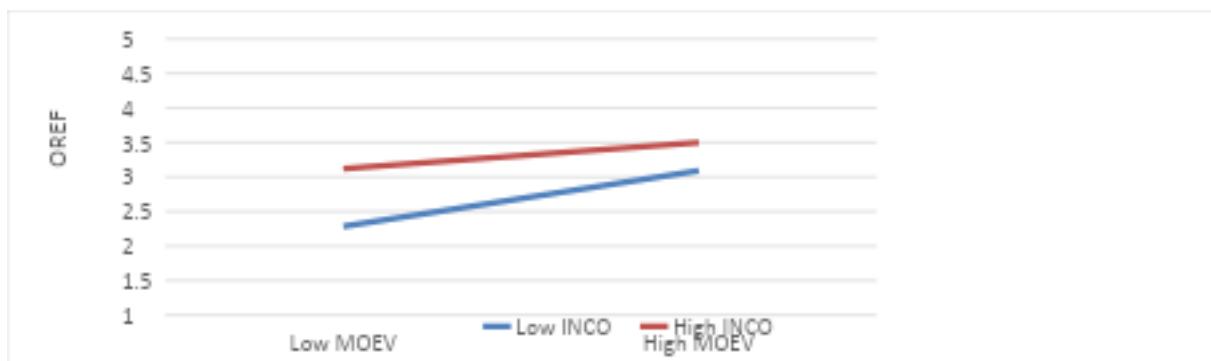


Figure 6 Simple slope showing the moderating role of INCO between MOEV and OREF

Source: survey data (2024)

Figure 6 illustrates the moderating effect of information and communication (INCO) on the relationship between Monitoring and Evaluation (MOEV) and organizational effectiveness (OREF). It shows that increased INCO weakens the connection between MOEV and OREF, dampening their positive relationship. The study also evaluated the direct effect of information and communication on organizational effectiveness, finding a significant positive effect ($b = 0.311$, $t = 3.830$, $p = 0.000$), supporting Hypothesis 9. This indicates that effective information and communication substantially enhance organizational effectiveness.

5. Summary, conclusion, and Recommendation

5.1 Summary of the Major Findings of the Study

The study explored the effect of budget control on public sector effectiveness, moderated by information and communication within the Addis Ababa City Administration. The findings related to strategic planning, budget preparation, budget approval, budget implementation, monitoring and evaluation, audit, accounting, and reporting on organizational effectiveness are summarized as follows:

The study investigated the direct effect of budget implementation on organizational effectiveness, along with the moderating role of information and communication (INCO) in this relationship. The results indicated that budget implementation has a significant positive direct effect on organizational effectiveness, suggesting that effective budget execution enhances organizational performance. However, the study also revealed a significant negative moderating effect of information and communication on the relationship between budget implementation and organizational effectiveness. This implies that strong information and communication practices may weaken the positive impact of budget implementation on organizational effectiveness.

Additionally, the study examined the direct effect of accounting and reporting on organizational effectiveness, considering the moderating role of INCO. The findings showed a significant positive direct effect of accounting and reporting on organizational effectiveness, indicating that accurate and transparent accounting practices positively influence organizational performance. Furthermore, there was a positive and significant moderating effect of information and communication, suggesting that effective communication practices amplify the benefits of accounting and reporting on organizational effectiveness.

The study also explored the relationship between audit practices and organizational effectiveness, assessing the moderating role of INCO. The results demonstrated a significant positive direct effect of audits on organizational effectiveness, indicating that conducting audits contributes positively to overall performance. Additionally, a positive and significant moderating effect of information and communication was found, suggesting that effective communication systems enhance the positive impact of audits on organizational effectiveness.

Lastly, the study examined the direct effect of monitoring and evaluation on organizational effectiveness, while considering the moderating role of INCO. The findings revealed a significant positive direct effect of monitoring and evaluation on organizational effectiveness, indicating that robust practices in this area improve performance. However, the study also identified a significant negative moderating effect of information and communication on the relationship between monitoring and evaluation and organizational effectiveness, suggesting that effective information and communication systems may weaken the positive influence of monitoring and evaluation on organizational performance.

5.2 Conclusion

This study highlights the direct effects of various factors on organizational effectiveness and explores the moderating role of information and communication. Budget control (budget implementation, accounting and reporting, audits, and monitoring and evaluation practices) was found to positively influence organizational effectiveness. Furthermore, the presence of effective information and communication systems has a moderating effect between the dependent variables (budget implementation, accounting and reporting, audits, and monitoring and evaluation practices) and the organizational effectiveness. Optimizing information and communication practices is crucial for maximizing the benefits derived from these factors and enhancing overall organizational effectiveness.

5.3 Recommendations

The findings indicate that effective budget control practices, such as budget implementation and monitoring, positively affect organizational effectiveness. However, the influence of these practices can be amplified or diminished depending on the effectiveness of information and communication systems. Therefore, public sectors should consider optimizing information and communication practices as essential to maximize the benefits and improve overall organizational effectiveness.

Budgeting policies and procedures play a crucial role in the budget management of public sectors. Well-formulated and effective budgeting policies give a framework for planning and controlling the allocation of resources, ensuring that funds are allocated to priority areas and used efficiently. In the context of the current study, which focuses on the public sectors in Addis Ababa city administration, it suggests that the existing line-item budgeting system needs revision. The study findings indicate that exploring alternative budgeting methods could be beneficial in improving resource allocation and accountability.

Additionally, the study suggests revising the purchase and project management procedures, because effective procurement and project management procedures are essential for ensuring transparency, accountability, and value for money in public sector spending. By reviewing and enhancing these procedures, the public sector can improve the efficiency and effectiveness of its procurement processes, reduce the risk of corruption, and ensure the delivered of projects on time and within the budget.

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