Determinants of Effective Public Finance Management in the Department of Animal Health and Livestock Development, Malawi

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Abstract

Every public sector in Malawi is subject to the Public Finance Management Framework. Livestock farming not only provides food security and nutrition but also offers income-generating opportunities for rural communities. However, the successful implementation of livestock development policies and programs heavily relies on how resources are allocated, economic dynamics, and public finance management. This paper identifies factors that significantly predict public financial management and financial problems in the Department of Animal Health and Livestock Development, Malawi. The research design was cross-sectional descriptive and exploratory research with a sample size of 107 respondents. Cronbach's alpha technique was used to test the reliability of the instrument. The data collected was analyzed using descriptive and inferential statistics (Chi-Square test and regression) in SPSS version 20. The significant determinant factors of public finance management were budget, controlling officers, and use of IFMIS in the Department of Animal Health and Livestock Development. The significant problems associated with public finance management in the Department were funds misallocation, mismanagement of funds, corruption, weak policy framework, weak institutional capacity, limited finance allocation, and inadequate infrastructure. The paper recommends that more attention be paid to the budgeting process, controlling officers, and IFMIS to improve the effectiveness of public finance management.

Keywords

Public Finance Management, Government, Controlling Officers, Livestock Sector, Common Problems, Malawi

1. Introduction

The main goal of the public sector is to provide services that benefit all citizens, regardless of whether they are users or non-users (Andreason & Bladhl, 2005). The Public Finance Management (PFM) Act of 2022 of the Malawi Government was enacted to foster and enhance effective and responsible economic and financial management by the Government, including adherence to policy objectives; to provide accompanying accountability arrangements together with compliance with those arrangements; to require the Government to produce statements of proposed budget policy, confirmation of adherence to fiscal discipline, economic and fiscal statements, including economic and fiscal forecasts and updates, and performance information, including comprehensive financial statements. The PFM Act gives more power to the Minister as a political leader and controlling officer as an administrative executive of public service delivery with a clear mandate of Parliament or National Assembly (PFMA, 2022).

Carporaso and Levine argue that the government is the formal political machinery of the country, its institutions, laws, and public policies. The government has three arms: the executive, judiciary, and legislature (Parliament). In political economy, government and politics are made equal. The government is run by the executive (the President and cabinet and administrative executive), who are authoritative in the sense of being able to decide for the country as a whole and having the capacity to achieve compliance. If something occurs within government, it is political; if it doesn't, it is not (Caporaso & Levine, 1992: p. 10). The Government, through the PFM Act 2022, aims to deliver services to the public efficiently and effectively, be the instrument for generating and maintaining public confidence in the Government; be impartial, independent and permanent to enable the public to continue to receive Government services and in order that the executive functions of the Government continue uninterrupted irrespective of which political party is in power; be guided only by concerns of the public interest and of the welfare of the public in the delivery of services and the formulation and implementation of development projects; and aim to achieve and maintain the highest degree of integrity and proper conduct amongst the personnel at all grades. Controlling officers in PFM supports good governance, transparency, efficiency, accuracy, and accountability, which are crucial for effectively delivering economic development objectives in the nation (Lawson, 2012; Padilla et al., 2012; Jordaan, 2013).

CAPS 44:01 of the PFM Act 2022 defines a Controlling Officer as any person appointed by the President who is—1) the head or principal person in charge of a Ministry or Department and 2) charged with a duty to or who does collect, receive, disburse or deal in any way with any public money or a person who is charged with the purchase, receipt, custody, or disposal of, or the accounting for, any public resources or public securities.

Scholarly debates show that successful public financial management, including agriculture and livestock development, relies on the executive. Controlling

officers and public servants in the executive have an advantage over budget because they craft it to align with policies and public finance management framework (Santiso, 2005).

Various factors influence the effectiveness of public financial management such as Kendie (2018) identified budgeting, accounting and reporting, internal control, external auditing, and leadership as significant factors in Ethiopia. In Kenya, financing functions, capacity, technical skills, workforce motivation, system complexity, and ICT infrastructure complexity affect PFM performance (Karanja & Nganga, 2014; Kimwele, 2011; Terer & Ngahu, 2017). Mogues and Do Rosario (2016) found that differentiated interests among political and public servants can impact PFM effectiveness in Mozambique, while in Kenya, the adoption of risk-based internal audit in the Livestock Research Organisation was affected by the application of ICT infrastructure (Terer & Ngahu, 2017). A study by Durevall and Erlandsson (2004) found that despite being the most critical person for monitoring and accountability, the President's preferences were often ignored.

In Malawi, the government offers various goods and services through government agencies, including the Department of Animal Health and Livestock Development in the Ministry of Agriculture. The Department is headed by an appointed administrative executive, the Director, who reports to the Principal Secretary of the Ministry of Agriculture. The Minister of Agriculture is a political leader who presents the budget to parliament and oversees the budget. Malawi has a robust PFM framework, but corruption remains a significant challenge in Malawi's public finance management, with officials engaging in corrupt practices to siphon funds for personal gain. Public officials divert funds for public projects and services for personal use or to benefit their associates. The misallocation of resources hinders the country's development. Insufficient internal controls and oversight mechanisms allow public officials to manipulate financial processes for their benefit. Politicians use their influence to interfere with financial decisions, divert funds to their constituencies for political gain, or protect corrupt officials from prosecution. In Malawi, there are few studies done in PFM on determining factors fundamental for effective public financial management in general and, particularly, in the livestock sector. Within the framework of PFM Act, this research postulates and then empirically tested 8 hypotheses:

H1: Budget has a significant effect on effective PFM in the livestock sector.

H2: Accounting and reporting significantly affect effective PFM in the livestock sector.

H3: Internal control system has a significant effect on effective PFM in the livestock sector.

H4: External auditing has a significant effect on effective PFM in the livestock sector.

H5: Technical leadership has a significant effect on effective PFM in the livestock sector.

H6: Political leadership has a significant effect on effective PFM in the livestock sector.

H7: PFM framework has a significant effect on effective PFM in the livestock sector.

H8: Use of IFMIS has a significant effect on effective PFM in DAHLD in the livestock sector.

2. Methodology

Conceptual interactions were used to design a cross-sectional descriptive and explanatory research design. Gravetter and Forzano (2003) state that explanatory design connects ideas and understands cause-effect relationships. The design involves gathering data, describing the existing conditions, identifying the standards against which existing conditions can be compared, and determining the relationship between specific events (Orodho, 2005). This study describes and critically assesses determinants of effective PFM practice in Malawi's Department of Animal Health and Livestock Development.

2.1. Target Population

The study involved employees working in livestock department including different leadership and management clusters in the DAHLD Directorate & Farms, Accountant General, Ministry of Finance, Ministry of Agriculture, Treasury, National Audit Office, Economic Planning & Development, Parliament Committee for Agriculture, Parliament Committee for Budget and Finance, Blantyre ADD, to examine determinants of effective PFM and common problems in livestock sector in Malaw. Sample size calculation was based on the known population using Daniel and Cross (1999) formula, and 107 was the sample size that participated in the study (Table 1).

2.2. Data Collection Methods

Both primary and secondary sources of data were used for data collection. Primary

Table 1. Respondents sampled and interviewed.

Participants	Frequency	Participants	Frequency
Veterinary officers	12	Budget officers	5
Accountants	21	Lab technologist	3
Economists	11	Member of Parliaments	2
Auditors	5	Technical officers	14
Livestock development officers	17	Debt offers	4
Farm managers	7	Procurement officers	2
Hatchery managers	2	Human resource officers	2
		Total	**107**

data was collected directly from the selected respondents through structured questionnaire which was administered both face-to-face and online using Kobo Toolbox. The independent variables measured in the structured questionnaire were 8: Budgeting process; Accounting and Reporting; Internal control system; External Auditing; Controlling Officers; Minister of Agriculture; PFM Act; and IFMIS. All independent variables were measured using a five-point Likert scale ranging as 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, and 5 strongly agree. In contrast, the dependent variable (Effective PFM) was measured using a binary response (Yes or No).

2.3. Data Analysis

Descriptive statistics (frequency and percentages) and inferential statistics (Chi-Square test and regression) were used to analyze the data. The data collected through a questionnaire was analyzed using SPSS Version 20. Binary logistic regression analysis was used to show the relationship between independent variables and effective PFM and to test the research hypotheses.

Model Specification

The logistic regression model was used because it is well suited for this paper because there are multiple independent variables that determine public finance management (e.g., Devkota et al., 2022). For extensive formal introductions to logistic regression see Chapter Five of Agresti (2012). The X is the independent variable predicting a binary outcome of the logit (Stoltzfus, 2011), which is the PFM (i.e., $\text{Logit}(P_i) = \ln(P_i/1 - P_i)$) as follows:

$$\text{Logit}(P_i) = \ln(P_i/1 - P_i)$$
$$= \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + e$$

where:

$\ln(P_i/1 - P_i)$ = logit for Effectiveness of PFM, P_i = Effective PFM, $1 - P_i$ = Not effective, X_1 = Budgeting; X_2 = Accounting and Reporting; X_3 = Internal control system; X_4 = External Auditing; X_5 = Controlling officers; X_6 = Minister of Agriculture; X_7 = PFM Act; X_8 = Use ICT application; e = Error term; β_0 = Intercept (Constant term); β_1, β_2, β_3, β_4, β_5, β_6, β_7 and β_8 are coefficients of variables.

2.4. Reliability Test of the Instruments

Cronbach's Alpha was used to test the reliability of the instrument. As illustrated in Table 2, Cronbach's alpha coefficients of all independent variables are greater than 0.70, which means the instrument for this research is reliable.

3. Results and Discussions

3.1. Response Rate and Demographic Profile of Respondents

The data was collected and then analyzed in response to the study's objectives. 105 questionnaires were administered to selected individuals using Kobo Collect, as discussed in section 2.3, and 95 were found valid for analysis. Thus, the

Table 2. Reliability coefficients of variables.

Variables	No of items	Cronbach's Alpha coefficient
Budgeting process	77	.774
Accounting and Reporting	77	.775
Internal control system	77	.775
External auditing	77	.759
Controlling officers	77	.751
Minister of Agriculture	77	.774
PFM Act	77	.761
Use ICT	77	.731
Effective PFM	77	.763

Source: Own survey, 2023.

Table 3. Effective public finance management.

	Frequency	Percent
No	38	41.8
Yes	53	58.2
Total	91	100.0

Source: Own survey, 2023.

response rate of the study was 90.1%.

Based on the data collected, 19.2% of respondents were females, and 80.8% were males. The average age of the respondents was 42.6 years. Regarding the highest level of the respondent's education, the majority (46.5%) had a Bachelor's Degree, followed by a Master's Degree (34.3%).

3.2. PFM Status of DAHLD in Malawi

As indicated in Table 3, the majority (58.2%) of the surveyed respondents reported that PFM in DAHLD in Malawi is effective. However, 41.8% of respondents highlighted that PFM is ineffective. Thus, more should be done to improve the effectiveness of PFM in the DAHLD in Malawi.

3.2.1. Logistic Regression Analysis of Effectiveness of PFM: Binary Logistic Regression Model Fitness

Independent variables included in the model were the budgeting process, accounting and reporting, internal control system, external auditing, technocrat leadership, political leadership, and use of ICT. The Chi-Square Model was used to test the model goodness of fit for the effectiveness of PFM, and, therefore, the Chi-Square Model statistic, which is the difference between the two values of the log-likelihood functions, is 64.259. The p-value for the overall model fit statistics is less than the conventional .05 ($p < .000$) with 8 degrees freedom ($X^2 = 64.259$,

8 df, p < .000), indicating that at least one of the parameters in the equation is nonzero (see Table 4).

The descriptive measures of the goodness-of-fit, the Pseudo R Square is also positive and high, approximately .760, which supports the model fits the data well (Cox & Snell R^2 = .566 and Nagelkerke R^2 = .760), indicating that the variation in the probability of effecting PFM was explained by about 76.0% of the covariates in the logistic regression model (Table 5). Thus, 20% of the variance in the PFM was explained by other factors not in this study. Other researchers could address these factors.

3.2.2. Logistic Regression Findings and Hypothesis Testing

Regression analysis was employed to test the hypotheses of the study. The following are hypotheses tested based on the logistic regression analysis output:

According to the results in Table 6, the budgeting process significantly affects

Table 4. Omnibus tests of model coefficients.

	Chi-square	df	Sig.
Step	64.259	8	.000
Block	64.259	8	.000
Model	64.259	8	.000

Source: own survey, 2023 (SPSS output).

Table 5. Model summary.

Step	−2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	40.909[a]	.566	.760

Source: Own survey, 2023 (SPSS output).

Table 6. Logistic regression output.

	B	S.E.	Wald	df	Sig.	Exp(B)
Budgeting process	.986	.300	10.775	1	.001	2.681
Accounting and Reporting	.033	.783	.002	1	.966	1.034
Internal control system	.105	.755	.019	1	.889	1.111
External auditing	−.545	.759	.517	1	.472	.580
Controlling officers	1.920	.873	4.841	1	.028	6.821
Minister of Agriculture	−1.018	.889	1.312	1	.252	.361
PFM Act	−1.650	1.039	2.522	1	.112	.192
IFMIS	1.485	.686	4.683	1	.030	4.413
Constant	−4.052	3.312	1.497	1	.221	.017

Dependent variable: Effectiveness of PFM (1 = Effective, 0 = Not effective). Note: Significant at .05 level. Source: Own survey, 2023 (SPSS output).

the effective PFM in DAHLD in Malawi with a beta value (β = .986) and at a 1% significant level (p = 0.001). The findings supported the first hypothesis (H1) of the study. This finding is consistent with Kendie's (2018) and Munge et al. (2016) findings.

Controlling officer has a significant effect on effective PFM in DAHLD in Malawi with (β = 1.920) and ($p < 0.05$). The result confirms the acceptance of the sixth hypothesis (H6). This finding is supported by Santiso (2005), who argues that controlling officers have more advantages over PFM processes than politicians.

The use of IFMIS has a significant effect on the effective PFM of DAHLD in Malawi with (β = .1485) and ($p < 0.05$). This finding is in agreement with the eight hypotheses (H8). This finding is supported by Njonde and Kimanzi (2014), who found that IFMIS significantly positively affected budgeting and financial reporting. IFMIS was used as a vessel of cash gate by controlling officers in the Malawi Government in 2018 (Riley & Chilanga, 2018).

3.3. DAHLD Common Problem Affecting the Effectiveness of PFM

ANOVA test in Table 7 revealed that DAHLD common problems related to PFM were all significant at $p < 0.05$, suggesting that there were differences between the clusters in terms of funds misallocation, mismanagement of funds, corruption, weak policy framework, weak institutional capacity, limited finance allocation, and inadequate infrastructure. Overall, the results indicate that all the problems significantly affect public finance management. Hanif (2022) found that public finance management in the health sector in Malawi experiences resource allocation, staffing, management, procurement and supply chain management, financial management, and legislative and political challenges.

Table 7. Common problem affecting PFM at DAHLD.

	Cluster		Error		F	Sig.
	Mean Square	df	Mean Square	df		
Misallocation of funds	20.536	4	.558	83	36.817	.000
Mismanagement of funds	22.467	4	.351	83	64.033	.000
Corruption	19.196	4	.481	83	39.900	.000
Weak policy framework	24.035	4	.469	83	51.229	.000
Weak institutional capacity	17.399	4	.399	83	43.602	.000
Limited finance allocated to DAHLD	1.170	4	.298	83	3.923	.006
Inadequate infrastructure	1.021	4	.382	83	2.669	.038

4. Conclusion and Recommendation

The findings from this study showed that the determinants of effective public

finance management in the Department of Animal Health and Livestock Development in Malawi were budgeting process, technocrat leadership, and use of IFMIS. However, the study concludes that the budgeting process is the most influencing determinant of PFM in DAHLD, followed by controlling officers and IFMIS. The study also concludes that public servants (controlling officers) have more power in managing public funds in the livestock sector in Malawi. The study has established that critical actors in the livestock sector are motivated to participate in decision-making in the livestock sector to push their personal goals, such as ambition, i.e., visibility, economic goals, e.g., fringe benefits, and political goals, such as re-election. The common problems affecting PFM are funds misallocation, mismanagement of funds, corruption, weak policy framework, weak institutional capacity, limited finance allocation, and inadequate infrastructure.

The results from this study show that budget process, controlling officers, and IFMIS are critical factors in maintaining effective PFM in the Department of Animal Health and Livestock Development in Malawi. So, the PFM of the Department of Animal Health and Livestock Development in Malawi pays attention to these significant factors to deal with some of the PFM common problems of misallocation, mismanagement of funds, corruption, weak policy framework, weak institutional capacity, limited finance allocation, and inadequate infrastructure.

It is recommended that allocating resources to the livestock sector in the national budget should align with Malawi's development goals outlined in Malawi 2063. The Parliamentary Committee on Agriculture and the Committee on Agriculture should exercise their oversight by reviewing the budget to ensure it aligns with the Malawi 2063 and the Maputo Declaration on livestock investment in Malawi.

This paper recommends conducting further research to evaluate livestock sector expenditures.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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