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Effects of Integrated Financial Management Information System Practices on Public Financial Management Performance in the Ministry of Finance

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Abstract

Since 2010, the Federal Republic of Ethiopia's Ministry of Finance has employed an Integrated Financial Management Information System (IFMIS) to improve the efficiency and performance of public sector financial management. As a result, the purpose of this study was to examine the effect of IFMIS on public financial management performance in the ministry of finance. 162 employees from the ministry of finance directorates who use the IFMIS were studied using an explanatory research design with a purposive sample. Primary data was gathered through a questionnaire linked to the study's specific objectives. The data were analysed using descriptive analysis and inferential analysis by SPSS version 25.0 and Excel. The investigation reveals that the IFMIS budgeting system, financial reporting system and organisational accountability mechanism all have an impact on public financial management. The study suggests that the ministry of finance should properly use the information of IFMIS to plan and formulate budgets, examine results against budgets and plans, monitor the performance of specific departments or units and make revisions and adjustments as necessary.

Keywords: Integrated Financial Management Information System, Public Financial Management, Budgeting System, Financial Reporting System, Organizational Accountability Mechanism, Optimal Resource Allocation, Ministry of Finance, Ethiopia

Introduction

A good fiscal management framework serves as a motivator for the transformation and development of the economy. It implies that the state and its components obtain, handle and utilise government resources on a proper and accountable basis. A solid legal and organisational structure, as well as professional and productive civil services, is the foundations of an efficient public finance management regime. Policy changes in public financial management have been highlighted as critical drivers of effective public service delivery, as well as the development of wealth and jobs. Governments in developing nations, such as Ethiopia, are gradually investigating ways and frameworks to modernise and enhance public financial management. One of the most prevalent financial management reform tool is Integrated Financial management Information System (IFMIS), aimed at improving effectiveness, responsibility, accountability, viability, information security and thorough financial reporting.

All government activities are supported by public financial management. It includes both revenue and spending mobilisation. Public financial management is critical to the achievement of the public sector's goals, because of its role in improving the quality of public service outcomes, operational and strategic decision-making, the long-term sustainability of public services, building public trust in

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the sector's performance and safeguarding the efficient and effective use of public funds. Optimal public financial management would also exhibit elasticity, allowing the targeted sectors to respond easily and in a preferred manner to public-sector-encouraged changes. The series of rules, regulations and systems used by sovereign states to generate income, assign government funds, conduct government expenditure and audit findings are referred to as public financial management. It encompasses a broader range of tasks than financial management and is generally thought of as a cycle that begins with policy formation and ends with external audit and evaluation Lawson (2015).

As part of the Civil Service Reform, the Ethiopian government determined that the existing accounting processes Integrated Budgetary and Expenditure needed to be changed to the new accounting system, the IFMIS. The Ethiopian government chose to update the previous accounting system after 10 years of usage owing to the hindrance of the previous accounting system and to integrate new standard features of an accounting system. This new system is a fully integrated public finance management system that is being implemented by the government of Ethiopia. The extent and capabilities of an IFMIS vary for each nation, but it is part of a large, complex, strategic reform process Chêne (2009). An IFMIS is a framework that promotes improved public financial management by assisting in the administration of public sector budgetary, financial and accounting manoeuvres. The precursor of IFMIS is public financial management, which includes a centralised register of public sector earnings and expenditures. It also provides critical information to the public sector for it to plan, execute and monitor public finance.

The IFMIS is a computerised system for recording financial occurrences and aggregating budgetary data. It encourages good reporting processes, policy decisions, legal obligations and the establishment of independently audited financial records. In its most simple form, an IFMIS is just an accounting system that is intended to function by following the demands and preferences of the context into which it is introduced. IFMIS may assist public financial management in a variety of ways, but it generally attempts to boost budget certainty and validity through more perceived broadness and clarity of information Hendriks (2012). Using an IFMIS promotes budget planning and execution by delivering timely and reliable data for fiscal administration and decision-making. The complete integration of budget execution data enables a more consistent and realistic budget development process, as well as better-quality budget execution control. An IFMIS compiles, maintains and provides simple access to financial information. An IFMIS not only contains all financial information relevant to present and previous years' expenditures but also maintains confirmed budgets for such years' specifics on income and expenses.

There is a clear idea that a fully working IFMIS may strengthen administration by delivering real-time financial information that managers can apply to properly manage activities, develop budgets and utilise resources Rodin-Brown, (2008). The importance of implementing IFMIS in public institutions cannot be overstated owing to its role in increasing effectiveness and ensuring PFM. Implementing IFMIS enables accountability and transparency as well as efficient resource management, minimise corruption and the reduction of fraud (Chuma, 2014).

The most widely used platforms are those that make a difference in the obtaining of goods and services in public offices, including federal and regional governments, as well as other financial-related activities such as cash flows (Noah, 2015). Despite these measures and intentions, budgetary control in public organisations is a challenging issue across the country, leading to poor governance, in how government funds are administered (Moses & Solomon, 2016). More importantly, weak management of government finances not just restricts economic improvement, but also undermines a state's democratic ideals and aims, causing the functioning of these institutions to deteriorate in general (Ann, 2012).

Scholars have studied IFMIS in a variety of fields, but IFMIS and financial management have not been addressed in Ethiopian public sectors, and the researcher hopes to contribute to filling this gap. As a result, the focus of this research is to analyse the effects of IFMIS practices on PFM performance in the Ministry of Finance. The study was concentrated on the following specific objectives:

- To investigate the influence of budgeting systems in IFMIS on financial management in the Ministry of Finance.

- To investigate the implications of IFMIS financial reporting systems on financial management in the Ministry of Finance.
- To determine the impact of IFMIS organisational accountability mechanisms on financial management at the Ministry of Finance.
- To determine how optimal resource allocation in IFMIS helps public financial management in the Ministry of Finance.

Literature Review

In the public sector, good financial management is a tool for accomplishing political, economic and social objectives. Many of the same tactics and approaches that allow private sector enterprises to develop and offer excellent returns to shareholders may be transferred to the public sector to maximise return on the public dollar. The stakeholders/shareholders of the public sector are seeking more effective and efficient use of public resources in an era of limited resources and rising demand for accountability and transparency in government. An "entity" rather than a functional approach to financial management is required for good public sector financial management. To complement the goal/performance focus needed of public sector organisations, an entity-based, integrated approach to financial management is necessary. When financial data is combined with other performance indicators, a better picture of an organisation's progress toward its goals and objectives emerges (Njonde & Kimanzi, 2014).

The IFMIS was created to show government expenditures and revenues, as a result of rising interest in the quality of public sector financial management and to enable public institutions to record information connected to the usage of public funds. The information in this system is made up of hardware, software, data and people procedures. IFMIS is a type of financial management data that tracks and summarises financial occurrences (Edwin, 2008).

Ethiopia's public financial management program has a comprehensive strategic plan in place to increase the government's financial management systems. In that regard, the Ethiopian government, over the ministry of finance, has the authority to monitor and help the accounting and budgeting activities in all governmental bodies. Because of the rapid progress of technology, which has become the ministry of finance plans to deploy digital instruments to assist the public finance management system, which is the best financial solution for any sector on the globe. In the early days of Ethiopia, financial and budgetary duties were carried out using a manual method, which had several drawbacks associated with information validity, performance, price, availability, as well as other evaluation metrics. Delays in providing financial information statements to higher-level entities, as well as the uncertainty in distributing more precise data, were major problems for the country's development.

In the context of public financial management, an IFMIS is the automation of public institutions' financial management systems and procedures. Thus, it includes the computerisation of the development, planning and implementation of public budgets, as well as the accounting and/or reporting of public financial data using an integrated system (Peterson, 2006). An IFMIS is a government financial solution that combines all financial management activities into a single suite of applications. It is a budgeting and accounting system based on information technology that is intended to help government bodies make fund requests, expend funds, manage and assessment on cash flows and provide services to the people reliably, successfully and affordably.

If implemented properly, IFMIS methods may lead to a variety of benefits in public procurement, including better openness and compliance, improved performance and quality and economic development (Mutui, 2014). Improved transparency in government operations will lead to improved financial controls and other expenditure management procedures, as well as the rapid execution of multiple transactions at once, the rapid compilation of data from multiple sources for improved financial analysis and decision making, and improved information consistency and checks and balances. As a result, the IFMIS will significantly increase transactions, hence boosting the state corporation's procurement performance. As a result, it will act as a driver for economic growth and development by ensuring that the government and its ministries manage public resources effectively and transparently. Similarly, the Kenyan Ministry of Finance states that IFMIS enhances public sector performance by enabling efficient resource allocation mechanisms, improving management information for decision-making, establishing effective links between key players in accounting and financial management and improving financial controls by providing reliable and timely financial information (GoK, 2015). IFMIS also strengthens development partners' confidence by improving accounting, recording and reporting by providing fast, accurate financial data. When properly implemented, the IFMIS program in the public sector enhances efficiency and effectiveness in service delivery. IFMIS users may access the system and retrieve the particular information they need to perform different activities and tasks by entering information into an integrated system that utilises common values. Balance sheets, sources, uses of funds, cost reports, returns on investment, aging of receivables and payables, cash flow estimates, budget deviations and other forms of performance reports can be created (Mwaniki, 2014).

Since 2010, The Ethiopian government has decided to acquire an IFMIS from Oracle Company and incorporate the system into the fiscal policy of the Ethiopian public planning and budgeting process. The modification was carried out by Transact Computer Technology. Modification and usability testing were carried out in the pilot sites that were chosen and the pilot location includes the Ministry of Health, Ministry of Public Service and Human Development, Ethiopian Road Authority, Ethiopian Revenue, Customs Authority, Ministry of Finance and Ministry of Education. These pilot sites were chosen based on the features and financial activity uniqueness, as well as other factors such as the difficulty of the finance system, to maintain the existence of all IFMIS features for all federal public bodies of Ethiopia. The IFMIS is being used by over 180 federal public entities, with Techno Brain Company playing the deployment role. The ministry of finance plays a major role in managing, supervising and monitoring deployment operations, as well as general acceptance and evaluation of implementation on every public entity that agrees to install an IFMIS.

There are a variety of methods in which an IFMIS could increase public financial stability, but in general, IFMIS seeks to increase budget trust and confidence through better information completeness and availability (Dorotinsky, 2003). They strive to improve budget preparation and implementation by supplying fast and reliable information for financial planning and decision-making. Through the full integration of budget execution data, IFMIS enables more uniform and realistic budget design throughout the government, while also fostering improved control over budget implementation. They also provide the separation of financial systems and activities under the overall direction of the Ministry of Finance, which improves fiscal stability and lowers functional expenditures by minimising organisational duties and the burden on public workers.

According to Simson, Sharma and Aziz (2011), financial reports seek to increase budget compliance. They enable internal and external entities to measure the effectiveness of the administration. (Thurakam, 2007) Financial statements must be important, reliable, prompt and legitimate to accomplish their function efficiently. To standardise the government financial accounting and budgeting processes, a computerised treasury management system, as well as policy framework and institutional changes, must be strictly applied. The implementation of financial systems necessitates the consolidation and rapid compilation of large amounts of data across a network of financial offices and spending units dispersed throughout the organisation, and the functional processes associated with these systems are repetitive and adhere to a set of rules. In such an environment, IFMIS offers government financial managers a set of tools to aggregate, compile and retrieve trustworthy and timely financial information for decision making.

According to Dener and Young (2013), most discussants agree that with genuine transparency, governments must not only post-budget data on websites but also ensure that the data they release is useful and provides the public with a clear view of its financial operations. (Hendriks, 2012) An IFMIS helps organisations in enhancing transparency for the installation and use of national funds, as well as in increasing the capacity and administration of public expenditure activities. Management can exert better oversight over spending and promote good governance and responsibility throughout the budgeting process by recording financial events using an automated financial system.

Chado (2015), Explored IFMIS and its effect on financial management in Kenya's public sectors. A descriptive survey research approach was used for this investigation. Kenya's National Government Ministries were the subject of the study. To obtain primary data, questionnaires and interview schedules were employed. Descriptive statistics and regression were used to analyse the data. The study's findings revealed that the dependability and flexibility of IFMIS had a favourable impact on financial management. Muigai (2012) examines the influence of IFMIS on the Kenyan government's financial administration. The survey includes 42 Kenyan public organisations and 30 accountants who utilised IFMIS were polled. Primary and secondary questionnaires were used to collect data, as well as an examination of economic surveys and statistical abstracts. According to the findings of the study, an IFMIS has significantly improved financial management in Kenya.

Kamau (2012), conducted the effects of IFMIS on the financial management of the public sector. For nations whose administrative and economic infrastructure is antiquated or has been decimated by war and years of turmoil, the IFMIS provides a key financial management solution. A properly functional IFMIS, according to most experts, may improve governance by delivering real-time financial information that financial and other managers can utilise to successfully run programs, establish budgets and manage resources. Sound IFMIS systems, along with consolidated treasury operations, may assist developing nation governments not only establish effective control over their finances but also improve openness and accountability, minimising political discretion and serving as a disincentive to corruption. According to the report, IFMIS has made a significant contribution to Kenya's financial management development. According to the report, IFMIS should be implemented in all government offices across the country.

The study by Dener and Young (2013) sought to investigate the implications of IFMIS on the publication of sound financial management data, highlight possible improvements in financial flexibility and offer direction on the successful use of IFMIS platforms to publish open budget data. To analyse the state of government websites for posting open budget data from IFMIS, the research selected 20 essential and 20 informative targets collected from the government budget portals of 198 economies. Although there were 176 FMIS systems utilised by 198 governments widespread, the study found that effective practices in providing open budget data from trustworthy IFMIS solutions are highly visible in only 24 nations (12%).

The IFMIS in Ethiopia was part of a bigger transition of its public financial management to international norms since it fitted with the four primary factors of institutional reforms: context, ownership, purpose and strategy (GoK, 2011). (GoK, 2011), suggests that public financial management reform in Kenya was successful because it established a stable and sustained plateau suitable to the local situation, rather than striving for a dangerous and irrelevant peak of international best practice. To facilitate fast government decentralisation, the reform effectively implemented, improve and sustain the strategy.

Chuma (2014) conducted a study on the effects of IFMIS on cash management in the public sector, which was prompted by the fact that the application of IFMIS in the public sector and the integration of IFMIS in the public service had been subjected to various trials, with many dependents within the public service facing challenges as some IFMIS structures were very complex, and this was also associated with dependability, plasticity and safety issues. As a result, this project was based on the contingency theory, and a conventional survey research methodology was used. It focused on 70 employees as well as the Eldoret West District Treasury's top management. The 19 main statistics were gathered through conference plans and questionnaires, which were then, evaluated using descriptive statistics, regression and correlation. The lesson revealed that IFMIS' flexibility and reliability had a favourable impact on overall management. The findings also revealed that a reliable system must be precise, appropriate, comprehensive and consistent in data collection, as well as the infrastructure that supports the IFMIS, which must be protected from damage, exploitation, illegal access and breach of privacy for establishments, particularly the County Government of Siaya, to have expertise in cash management. The flexibility of a local IFMIS concept is effective in lowering the risk of financial management failure. The deployment of IFMIS has also failed to owe to top-down management systems displayed in many firms, according to the findings. As a result, the public sector must ensure that information generated through the use of IFMIS is accurate and free of interruptions and needless variances that would require further physical assistance. Information about IFMIS should consequently be made-to-order in such a way that it cannot be tampered with by outside parties and IFMIS should also be under adequate control to limit outside intervention. The public sector should also ensure that IFMIS can be easily adapted to changes in financial management inside organisations without requiring a complete overhaul.

Methods and Materials

Research design offers the framework for the gathering and analysis of data which helps in answering the research questions. The study used an explanatory study research design that aims at analysing the effect of IFMIS practices on public financial management performance in the Ministry of Finance. The methodological approach used in undertaking this research involved a mixed approach, both qualitative and quantitative data. According to Diamantopoulos (2004), a population is a group of items that a sample will draw.

In this research, the researcher used a purposive sampling design to determine the sample size and to answer the problem statement and pertaining research objectives. The purposive sampling design was applied to selecting Ministry of Finance directorates that participate on Public Financial Management through IFMIS to define the population and develop a sampling frame. In the ministry of finance, there are around 162 employees who work on Public Financial Management through the IFMIS directly. The study collected data from both primary and secondary sources. Employees of the Ministry of Finance were provided primary data who work in Public Financial Management through an IFMIS. Different financial reports, that have been generated since the system's installation began and contain significant information that was relevant to the research study was considered secondary data.

The researcher used the Statistical Package for Social Science (SPSS) tool to assist with data interpretation. To measure the relationship between the independent variable and dependent variable multiple linear regression equation models were utilised.

$$\hat{Y}=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\beta_4X_4+\varepsilon$$

β_0 = constant
$\hat{Y}$= Public Financial Management

X_1 = Budgeting systems

X_2 = Financial Reporting systems

X_3= Organisational Accountability

X_4= Optimal resource allocations

β_1, β_2, β_3, β_4= Slopes of X1, X_2, X_3 and X_4 respectively.

Results and Discussion

The study sought to explore the effect of IFMIS practices on public financial management performance in the Ethiopian ministry of finance. Specifically, the study sought to establish if budgeting systems on IFMIS affects public financial management in the Ministry of Finance. To investigate if financial reporting system IFMIS influences public financial management performance in the Ministry of Finance. To determine if organisational accountability mechanisms on IFMIS affects financial management performance at the Ministry of Finance. To determine how optimal resource allocation in IFMIS helps public financial management in the Ministry of Finance.

The study revealed that there was timely preparation of budgets using IFMIS, and effective implementation of IFMIS had improved the successful implementation of budgeting process. This agrees with (Endale, 2019) that effective implementation of IFMIS had a greater impact on decision making and is successful in the budgeting process. The study found that financial reporting had improved due to the use of IFMIS and effective implementation of IFMIS makes financial reporting more efficient and prompter. This is in line with (Thurakam, 2007) who concluded that to properly fulfil its purposes, financial reporting must be relevant, accurate, timely and authentic.

The study found that effective implementation of IFMIS serve as a management tool in enhancing organisational accountability and transparency for improving the effective and efficiency of public expenditure program. This conforms to (Hendriks, 2012) IFMIS helps organisations in enhancing transparency for the installation and use of national funds. The study revealed that the use of IFMIS creates awareness about financial resource allocation. This conforms to a study by (Cherotich, 2016) IFMIS is useful in improving the equitable allocation of resources across all sectors of a public institution. The study also found that IFMIS had improved planning, directing, monitoring and organising of financial resources, whereas audit scrutiny remains constant through IFMIS.

The influence of the IFMIS budgeting system, financial reporting system, organisational accountability mechanisms and optimal resource allocation through IFMIS on financial management performance was investigated using multiple regression analysis. Multiple linear regressions are the most common form of linear regression analysis. The association between a dependent variable Y and a function of independent variables X and unknown parameters β is described by a regression model. The degree of variation explained by the model in the dependent variable is shown by the squared multiple correlation coefficients (R^2). The Table 1 shows the results of the multiple regression analysis.

Table 1: Model Summary

Model Summary				
Model	*R*	*R Square*	*Adjusted R Square*	*Std. Error of the Estimate*
1	.744[a]	.553	.541	.34421

Source: Own survey data, SPSS 25.

a. Predictors: (Constant), Optimal Resource Allocation through IFMIS, Organisational Accountability Mechanisms through IF-MIS, Budgeting System in IFMIS, Financial Reporting System in IFMIS.

To describe the regression's goodness-of-fit, the R–squared (R^2) value of 0.553 in the model summary table above indicates that 55.3 percent of the variation in public financial management performance can be attributed to the effect of independent variables, which can be explained by the budgeting system in IFMIS, the financial reporting system in IFMIS, organisational accountability mechanisms through IFMIS and optimal resource allocation through IFMIS. The remaining 44.7 percent of the variance in public financial management performance is related to factors that the model does not account for.

As a result, R^2 accounts for 0.553, which is more than 0.50, and then the model is well-fit for predicting the dependent variable public financial management performance.

Analysis of Variance

Table 2: Analysis of Variance

ANOVA						
Model		*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
1	Regression	21.882	4	5.471	46.172	.000[b]
	Residual	17.654	149	.118		
	Total	39.536	153			

Source: Own survey data, SPSS 25.

a. Dependent Variable: Public Financial Management.

b. Predictors: (Constant), Optimal Resource Allocation through IFMIS, Organizational Accountability Mechanisms through IF-MIS, Budgeting System in IFMIS, Financial Reporting System in IFMIS.

The above Table 2, shows that the P-value (0.000) is less than 5%, thus there is a significant linear relationship between public financial management performance and budgeting system in IFMIS, financial reporting system in IFMIS, organisational accountability mechanisms through IFMIS and optimal resource allocation through IFMIS at 95% confidence interval.

Table 3: Coefficient of Regression

	Unstandardized Coefficients		*Standardized Coefficients*			*95.0% Confidence Interval for B*
	B	*Std. Error*	*Beta*	*T*	*Sig. Lower Bound*	
(Constant)	.278	.288		.967	.335	-.291
Budgeting System in IFMIS	.423	.086	.388	4.949	.000	.254
Financial Reporting System in IFMIS	.254	.089	.236	2.857	.005	.078
Organizational Accountability Mechanisms through IFMIS	.183	.076	.169	2.402	.018	.032
Optimal Resource Allocation through IFMIS	.093	.089	.078	1.035	.302	-.084

a. Dependent Variable: Public Financial Management.

The regression equation above has established that taking all factors into account (budgeting systems, financial reporting systems, organisational accountability systems and optimal resource allocations) constant at zero public financial management will be 0.278. The data findings analysed also shows that taking all other independent variables at zero, a unit increase in budgeting system will lead to a 0.423 increase in public financial management performance in the Ministry of Finance; a unit increase in financial reporting system will lead to a 0.254 increase in public financial management performance in the ministry of finance, a unit increase in organisational accountability mechanisms will lead to a 0.183 increase in public financial management performance in the ministry of finance while a unit increase in optimal resource allocation will lead to a 0.093 increase in public financial management performance in the ministry of finance. These results infer that budgeting system contributes more to public financial management performance in the ministry of finance, followed by financial reporting system, then organisational accountability mechanisms, while optimal resource allocations contributes the least to public financial management performance in the ministry of finance. At 5% level of significance and 95% level of confidence, budgeting system had a 0.000 level of significance, financial reporting system had a 0.005 level of significance and Organisational accountability mechanisms had a 0.018 level of significance, while optimal resource allocations had a 0.302 level of significance.

Conclusions

The analysis shows that the budgeting system, financial reporting system, organisational accountability mechanisms and optimal resource allocation are the main area of the effect of an IFMIS on public financial management performance. The study concludes that budgeting systems affect public financial management performance significantly and positively. It also reveals that through IFMIS, monitoring of expenditure, preventing overpriced budgets and preventing department budget overspending play a major role in budgetary control. This implies that these are the major budgeting effects of the IFMIS on public financial management performance in the ministry of finance.

The findings of the study indicated that an IFMIS was efficient to offer real-time financial information. This was explained by 81.8% of the respondents who agreed that an IFMIS is effective in ensuring real-time reporting. This implies that an IFMIS helps in financial management because management can use the financial statements produced for decision-making. This has also led to improved efficiency in service delivery. The study also concludes that the financial reporting system in IFMIS significantly and positively affects public financial management performance.

The study reveals that the organisational accountability mechanism in IFMIS affects public financial management performance significantly and positively. The findings of the study also shows that IFMIS improves the transparency and accountability of the organisation. This was explained by 89.6% of the respondents who agreed that management can exercise better control over expenditure and improve transparency and accountability through IFMIS. This implies that an IFMIS assists management in ensuring accountability for the use of public financial resources.

Recommendations

The researcher made recommendations based on the study findings and the researcher's conclusion in this section. It is important to know that the budgeting system is a basic tool to improve the financial management of the public sectors so the ministry of finance should use properly the information from IFMIS to plan and formulate budgets, examine results against budgets and plans, monitor the performance of specific departments or units and make revisions and adjustments as necessary. The above findings show that an IFMIS offers real-time financial information and it is effective in ensuring real-time reporting, so the study recommends that public finance policymakers should focus on the scope and functionality of an IFMIS system which can vary from a basic general ledger accounting application to a comprehensive system covering budgeting, financial reporting, organisational accountability, complex procurement and optimal resource allocation. And also planning, monitoring and organising of financial resources have been improved through an IFMIS but audit scrutiny remains constant so ministry of finance should focus on improving audit scrutiny through IFMIS.

To reduce the chances of fund embezzlement, it is recommended that the integrity of the user and the system should be the priority. To make the use of financial resources to be effective, the study recommends that the management of the ministry of finance should consider intensive training and awareness of system integrity as well as ethical standards for the employees.

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