ANALYSIS OF PLANNING, BUDGETING AND ACCOUNTING FUNCTIONS OF INTEGRATED FINANCIAL MANAGEMENT INFORMATION SYSTEMS (IFMIS) AND PUBLIC FUNDS MANAGEMENT IN THE LOCAL GOVERNMENT - THE CASE OF NYAMASHEKE DISTRICT, RWANDA

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Abstract:

The study entitled "Analysis of planning, budgeting and accounting functions of Integrated Financial Management Information Systems (IFMIS) and public funds management in the local government. Case of Nyamasheke District, Rwanda (2015-2022)" was conducted to achieve three specific objectives such as: to analyze the significance of IFMIS planning function on public fund management in Nyamasheke District, to assess the significance of IFMIS budgeting function on public fund management in Nyamasheke District and to examine the significance of IFMIS accounting function on public fund management in Nyamasheke District. To achieve study objectives, the study used descriptive, quantitative, and correlative research designs. Primary data and secondary data also were used. Primary data were collected from 152 staff in Nyamasheke district who have relation to the IFMIs use and management from different entities from district to sector level. Data collection was done using a questionnaire and documentation. Data analysis was done with the support of

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SPSS version 20 to generate a linear regression model and bivariate correlation model as well as descriptive statistics. The study findings show that the model had an F ratio of 42.474 and the P value was 0.000<0.000, signifying that the F ratio was statistically significant, therefore the overall regression model for all the variables tested was statistically significant and can be used for prediction at 5% significant level. This further indicates that the predictor variables (Planning (P), Budgeting (B), and Accounting (A) used in this study as IFMIS functions are statistically significant to the public fund management in Nyamasheke District. Therefore, the formulated Null Hypothesis stating that there is no significant influence of IFMIS planning, budgeting, and accounting IFMIS functions on the public fund management in Nyamasheke District, failed to be accepted in favor of the alternative hypothesis or its opposite. The conclusion of the study relies on the acceptance or failure to accept study hypothesizes. Based on the H0 or Null Hypothesis "There is no significant influence of IFMIS planning, budgeting, and accounting IFMIS functions on the performance of public fund management in Nyamasheke District" the results show that the planning, budgeting, and accounting as IFMIS functions each contribute 68% to the implementation of public funds management in the local government, case of Nyamasheke District. Due to that, the conclusion relies on the rejection of the Null Hypothesis and considers the alternative hypothesis or its opposite.

JEL: M10; M40; M41

Keywords: analysis; planning, budgeting, accounting; Integrated Financial Management Information Systems (IFMIS) functions; public funds management; local government entities; Nyamasheke District

1. Introduction

Over the years, there has been an introduction of the Integrated Financial Management Information System (IFMIS) as one of the most common financial management reform practices, aimed at the promotion of efficiency, effectiveness, accountability, transparency, security of data management, and comprehensive financial reporting. The scope and functionality of an IFMIS varies across countries, but normally it represents an enormous, complex, strategic reform process (Chuma, 2022). This paper is made with the statement of the problem, empirical review, study methodology which includes research design, population and sample of the study, conceptual framework of the study, data sources and data collection tools, data processing, and data analysis methods. In the end, the study gives results and shows the recommendations after the conclusion.

2. Statement of the Problem

In Rwanda, IFMIS use has led to significant achievements implementation of IFMIS In-house from scratch, which covers the whole PFM Cycle, proper integration of planning, budgeting, payments, revenue, and accounting that trigger timely financial reporting, automated bank reconciliation, and consolidation of government accounts, interfacing of IFMIS with the Central Bank to achieve cash-less payments in all central, government and some local government entities. Perfect implementation of budget control and treasury cash plan management (Reneau, 2016). Automated system control of foreign missions' calculation, and usage of debit cards by all government officials while outside Rwanda soil, IFMIS is easy to use based on a lot of built-in system controls and intelligence that doesn't require users to have knowledge of accounting and other complicated PFM domain-specific procedures, less than 12 hours for preparation, verification and payment or payrolls by budget agencies and central treasury through system interfaces and IFMIS paper-less and cash-less processes, and IFMIS that can be expanded in terms of functionalities and usage with little staff cost of paying staff salaries and training cost only (Grabski, 2016).

In recent years, 2022 to 2023, IFMIS use has challenged by increased cybersecurity attacks during COVID-19 lockdown, balancing between convenience, system growth, security and need of government to cover revenue management and expenditure in all spending government entities, standard way of using digital signature: signing PDF documents or signing transactional data and lack IFMIS industry standard that can be used as basis for benchmarking In-house IFMIS product (Ministry of Finance Report, 2023). The mission of Nyamasheke District is to ensure the socio-economic development of its population through its active participation in the planning as well as the implementation of programs related to the promotion of good governance, education for all, agriculture, breeding and environment protection, trade, basic infrastructures, and tourism. This is difficult to achieve while Nyamasheke District audited around 70 million Rwandan franc's weakness amounts in the financial year 2022/15 (amount without supported documents, wasteful, fraudulent, and overstated) reduced by 15% by the financial year 2015/16 and in the same period the percentage of district expenditure decreased from 0.56% to 0.45% respectively (TIR, 2018).

In the last two decades in Rwanda, many local authorities were imprisoned due to poor management of public funds such as public procurement embezzlements, public fund embezzlements, wasting public funds, fraud, insufficient skills, corruption, and poor auditing. This poor management could not help the country develop its economy as planned and many projects failed because of embezzlement, insufficient skills, fraud, corruption, poor auditing, and poor public spending management (IRES, 2018). This gap was observed in various government public institutions in Rwanda, measure was taken to handle it, thus in other words, this study also intends to assess whether the use of IFMIS has made a change toward proper public funds management.

It was discovered that the problems of accountability make it impossible for the set objectives of an organization to be achieved (IRES, 2018). This thesis intends to test of significance of integrated financial management system (IFMIS) on public funds management. A case study of Nyamasheke District 2015-2022. Nyamasheke District is in the Western Province of Rwanda. It borders Karongi District in the North, Rusizi District in the South, Nyamagabe District of the Southern Province in the East, and the Democratic Republic of Congo in the West (TIR, 2018). The district aims at the well-being of its population, by the noticeable reduction of poverty, through obvious food security and the development of community tourism, sustained by good governance and quality education centered on science and technology. Thus, this study intends to assess the significance of IFMIS in reducing the poor use of public funds. Note that poor use of public funds negatively affects a nation's economic development. The reference was taken to Nyamasheke District mainly on the performance counted from 2015 to 2022 (7 financial years 2015/16 to 2019/22).

3. Empirical Review

As reported by Altunel, et al. (2022), the Integrated Financial Management Information System (IFMIS) is an information system that enables the integration of central systems developed for the execution of financial transactions within the body of the Central Government as well as the management information systems under the responsibility of other institutions in line with the principles of interoperability and this allows them to work together. IFMIS entered into force in Turkey with the Prime Ministry Circular No. 2017/7, and it has been implemented as of January 2018. This study includes the evaluation of the use of the IFMIS project in Turkey. This research was carried out primarily for Higher Education Institutions in the context of the current list of universities in Turkey as of 2021. Then, the authors determined whether the Department of Strategy Development in these universities used IFMIS or not. The relevant interview form was sent to the universities that used IFMIS in the Strategy Development Department. In addition, since the Ministry of Treasury and Finance knows about the transition process to the IFMIS application, opinions were received from a limited number of officials in the Ministry about the IFMIS application. As a result, the IFMIS application is in its infancy in Turkey. In this sense, training should be given to the users to develop the content of the system, to understand the system more clearly, and to determine the needs of the system correctly (Altunel, et al., 2022).

The study done by Chikwanda, (2023) on Public Financial Management Reform Strategy for the Government of the Republic of Zambia (2023-2015), showed that: good practices in public financial management indicate that sound economic, fiscal, and budget policies are critical for making effective use of domestic revenue, domestic and external debt and foreign grants. This is vital not only to attaining the goals identified in our medium and long-term development plans but also to achieving internationally agreed targets such as the Millennium Development Goals (MDGs).

According to the study of Nesta (2023), Government of Rwanda is increasingly exploring methods and systems to modernize and improve public financial management. So far, there has been an introduction of the Integrated Financial Management Information System (IFMIS) as one of the common financial management reform practices, aimed at the promotion of efficiency, effectiveness, accountability, transparency, security of data management, and comprehensive financial reporting. Accountability in public institutions involves giving a proper account of government funds and resources. Moreover, it implies an obligation on the part of the persons handling resources or holding public office or any other position of trust, to report on the intended and actual use of the resources. It was discovered that the problems of accountability make it impossible for the set objectives of an organization to be achieved.

Nesta's (2023) study aims at studying Integrated Financial Management Information System and accountability in public institutions in Rwanda. The subject covered all aspects of Public Finance Management such as planning, budgeting, accounting, reporting, and accountability. Undertaking research in this field consolidated the theory background and equipped the researcher with practical experience. Finally, the study served the Ministry of Finance to take informed decisions for further improvements as the views of the key stakeholders were the heart of this study. The research was carried out, and data was collected from secondary and primary sources. The research questionnaire was designed and distributed to IFMIS stakeholders involved in Public Financial Management to analyze IFMIS and accountability in public institutions in Rwanda. The researcher found out the contribution of an Integrated Financial Management Information system that it had brought in addressing accountability challenges within public institutions in Rwanda. The study recommended providing a clear vision and implementation strategy for IFMIS; to restructure IFMIS design so that it can integrate other financial systems and procedures documentation so that users can use the system effectively (Nesta, 2023).

The study of Karanja (2022) carried on the effect of public financial management reforms in the effective management of public funds in Kenya: a case study of the national treasury. The public sector was rampant with corruption and inefficiencies and therefore poor management of public funds; this therefore called for reforms in the public sector. PFM reforms introduced not just a different way of managing public services, but also the need for different financial management tools and techniques. This study sought to establish the effect of reforms in budgeting, enhanced revenue collection, revision of procurement laws, and IFMIS reform in the management of public funds in Kenya National Treasury. The study used a descriptive research design. The study targeted employees in top managers, middle-level managers, and lower-level managers. The study adopted a stratified random sampling approach to get a study sample of 30% from within each stratum.

According to Hove and Wynne (2022), an IFMIS assists management in ensuring accountability for the deployment and use of public resources and in improving the effectiveness and efficiency of public expenditure programmes. By tracking financial

events through an automated financial system, management can exercise improved control over expenditures and improve transparency and accountability in the budget cycle. Diamond and Khemani (2006) argue further that, as a management tool, an IFMIS should support the management of change. As such, it should be viewed as part of the broader financial reforms of the government, such as budget reforms.

As a management tool, IFMIS also enables management to do the following (Barata & Cain, 2001): Control aggregate spending and the deficit; Prioritize expenditure across policies, programmes, and projects to achieve efficiency and equity in the allocation of resources; Make better use of budgeted resources, namely, to achieve outcomes and produce outputs at the lowest possible cost (Mugenda, 2023).

Bosco (2017) has assessed the contribution of the adoption of IFMIS on the performance of public institutions in Rwanda. The study was carried out during the period 2022-2016. The study was descriptive in nature where raw data was used. Data were collected from 51 out of 197 total population sampled based on available respondents. Methods such as questionnaires, observations, interviews, and documents were used together with both primary and secondary data. Findings revealed that IFMIS was fully adopted in MINECOFIN with a mean of 4.05 indicating that respondents strongly agree that IFMIS was adopted fully in MINECOFIN: the implementation of the system was done following all required steps, (mean of 3.86 and standard deviation of .721) and it was also increased the capacity building of its personnel by offering the necessary training (with mean of 4.43 and standard deviation of .7). The adoption of IFMIS helped in budgeting system (mean of 3.990, cash management (with mean of 4.15), financial reporting (with mean of 4.02) and internal control system (with mean of 4.16).

This affected positively the performance of the organization where the correlation between the adoption of IFMIS and the performance of MINECOFIN was .976 means the perfect correlation. In conclusion, we confirm the research of Rodin (2008) and (Diamond and Khemani, 2006), that they are significant contributions of integrated financial management information systems on the performance of public institutions in Rwanda, where it generates timely, accurate information for the management decision making (Bosco, 2017).

According to Chris (2022), Integrated Financial Management Information Systems (IFMIS) can improve public sector management by providing real-time financial information to managers to enhance their decision-making capabilities. The South African Public Service is currently busy with the implementation of an IFMIS. However, the implementation of such a project has proved to be a very demanding undertaking and has not been met with resounding success. The research was conducted to identify the challenges and risks that are involved in the implementation of the IFMIS in South Africa.

After identification of the challenges and risks, solutions or guidelines were developed that may make the implementation more successful. The methodology that was used is that of a literature study where theories were explored and used to solve a research problem. The results indicated that there are several challenges involved with

the implementation of an IFMIS. A set of best practice guidelines was developed that may make the implementation more successful. The sheer size and complexity of an IFMIS pose significant challenges and several risks to the implementation process. There are, however, critical success factors or best practices that can be used for the project to succeed. It is recommended that these best practices be used by the South African Public Service (Chris, 2022).

4. Materials and Methods

This section consists of the important methods and techniques used toward the acquisition of valuable data on the hypotheses and objectives assessed.

4.1 Research Design
From the objectives, it is evident that the research is both of a descriptive, quantitative, qualitative, and correlative design. This is because the study intends to obtain accurate information on the contributions of IFMIS to public fund management.

Quantitative design was applied while the researcher intended to collect quantitative data from secondary sources of data and primary sources of data using closed-ended questions within the questionnaire.

Qualitative data were collected from both primary and secondary sources of data as an assessment of personnel views and opinions on specific items. This data is correlative as the intends to assess correlational significance between IFMIS planning, budgeting and accounting functions, and public funds management.

4.2 Population and Sampling
The study targeted Nyamasheke District staff who have a direct relation to the use of IFMIS in services as well as staff who have a direct impact and decision on the use of public funds. The total population is 245 staff who daily operate services with IFMIS, and they include 1 staff at the district level, 1 staff of the district pharmacy, 203 staff from primary, secondary, and TVET schools, 20 staff from health facilities, and 15 staff at sector level.

$$n = \frac{N}{1+N*(e)^2} = \frac{245}{1+245*(0.05)^2} = 151.938 \approx 152$$

Where "n" means sample size, "N" means total population, and "e" is the error margin. For this study, the researcher has preferred to use a 95% level of significance which led to a 0.05 margin error. Thus, the sample size is 152 persons to be selected from 245 targeted persons. This study has adopted a purposive sampling of the non-probability sampling category. Only staff of the district who have direct work related to the use of IFMIS.
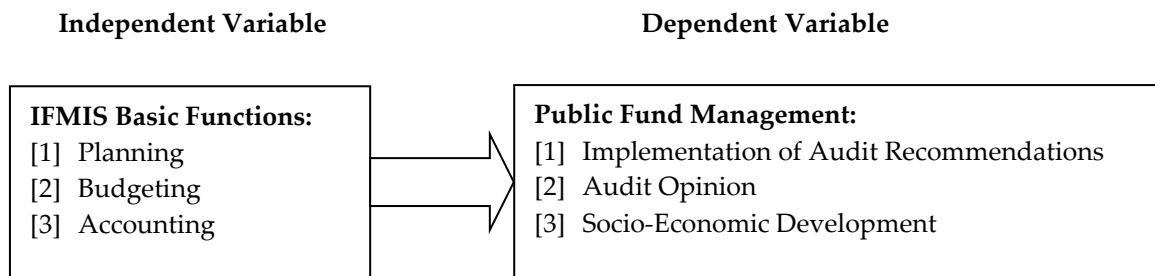
4.3 Conceptual Framework of the Study

Independent Variable   **Dependent Variable**

Figure 1: Conceptual Framework

4.4 Data Collection Tools and Treatment

Data collection was supported by a list of questions on the questionnaire for primary data collection. Secondary data collection was made using documentation. The interview also was conducted to manage relations between the data collector and the respondent. After data collection, data coding was made, editing, and tabulation.

4.5 Data Analysis

Data analysis was performed using both descriptive and inferential statistics. Descriptive statistics were delivered from codes assigned to the respondent perception (Strongly Agree coded 5, 4 Agree, 3 Not Sure, 2 Disagree and 1 Strongly Disagree).

Mean was calculated for each item assessed under each indicator evaluated (see the conceptual framework), and standard deviation. For inferential statistics bivariate correlation and linear regression model were tested. Bivariate correlation was for testing Pearson correlation (r) and Sig.(2-tailed). r=+-1 meaning either a positive or negative association between two tested variables. A level of significance of 5% or 0.05 is the best parameter used to test whether the association between tested indicators is statistically significant ($p<=0.05$) or not ($p>0.05$). The multilinear regression Equation [2] assumed the following form:

$$\hat{Y}_{1;2; \&3} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:
$\hat{Y}_{1;2; \&3}$ = Public fund management represented by 3 indicators such as; Implementation of Audit recommendations, Audit Opinion; and Socio-Economic Development.
β_0 = Constant,
X_1 = Planning,
X_2 = Budgeting,
X_3 = Accounting, and
$\beta_{1, 2, 3, 4}$ = Slopes associated with X_1, X_2, X_3, X_4 and X_5, respectively. (X1 to X3 are selected basic functions of IFMIS).
ε = Error term or the random disturbance term.

4.6 Null Hypothesis

There is no significant influence of IFMIS planning, budgeting, and accounting IFMIS functions on the performance of public fund management in Nyamasheke District.

5. Study Results

Results were made in the form of descriptive and inferential statistics per each indicator as defined in the conceptual framework.

5.1 Effective Use of Planning, Budgeting, and Accounting Functions of IFMIS in Nyamasheke District

The researcher has assessed the effectiveness use of IFMIS basic functions toward public funds management in local government entities more specifically Nyamasheke District. Among others, the selected functions are planning, budgeting, and accounting. The mean categories were into 3 (mean ranged between 1.00-1.49 weak mean: 2.50-2.99 moderate mean and 3.00-4.00 strong mean). The standard deviation categories were defined in two cases one is for standard deviation (Stdv.) less or equal to 0.5 meaning homogeneity standard deviation and that greater than 0.5 heterogeneity standard deviation.

Table 1: Effectiveness of IFMIS Planning Function in Nyamasheke District

Planning Functions in IFMIS	N	Min	Max	Mean	Stdv.
IFMIS is the best tool for project budget planning and allocation per project activities.	152	2	4	3.43	.658
IFMIS seeks to design planned activities and related budget with settled time for implementation.	152	2	4	3.10	.427
With IFMIS none can modify the scope of activities as registered from the planning phases and this stool keeps records for all information received and remains useful for future planning.	152	2	4	3.34	.565
Nyamasheke District staff and management are aware about the IFMIS planning function and regular use of it.	152	3	4	3.51	.501
Nyamasheke District has capable staff for using IFMIS in planning each year.	152	2	4	3.53	.586
IFMIS facilitates non-budget agencies' performance and monitoring management of donors' funds as well.	152	2	4	3.91	.421
Valid N (listwise)/ Average	**152**	**2**	**4**	**3.47**	**.526**

Source: Primary data, 2023.

In Table 1, the study findings show that Nyamasheke District staff and management agreed that IFMIS is well supporting the planning functions for the effective and efficiency of public funds management (for overall assessment the minimum choice of perception was Disagree (2), maximum was Strongly Agree (4), mean was 3.47, and

standard deviation was 0). This means that the planning function for public fund management is well-ensured via IFMIS.

Table 2: Effectiveness of IFMIS Budgeting Function in Nyamasheke District

Budgeting Functions in IFMIS	N	Min	Max	Mean	Stdv.
IFMIS facilitates monitoring the budget of non-budget agencies in public institutions (for example FONERWA projects in Nyamasheke District).	152	3	4	3.20	.404
IFMIS enables prompt and efficient access to reliable financial data and helps strengthen government financial controls, improving the provision of government services, raising the budget process to higher levels of transparency and accountability, and expediting government operations.	152	3	4	3.57	.497
IFMIS seeks to improve budget planning by providing timely and accurate data for budget management and decision-making	152	2	4	3.35	.712
IFMIS seeks to enhance the confidence and credibility of the budget through greater comprehensiveness of information	152	2	4	2.99	.438
IFMIS seeks to improve execution by providing timely and accurate data for budget management and decision-making	152	2	4	3.14	.569
FMIS makes it easy to monitor and evaluate the institutional plans and budget.	152	3	4	3.42	.495
Valid N (listwise)/ Average	**152**	**2**	**4**	**3.28**	**.519**

Source: Primary data, 2023.

In Table 2, the study findings show that Nyamasheke District staff and management agreed that IFMIS is well supporting the budgeting functions for the effective and efficiency of public funds management (for overall assessment the minimum choice of perception was Disagree (2), maximum was Strongly Agree (4), mean was 3.28, and standard deviation was 0.519). This means that the budgeting function for public fund management is well-ensured via IFMIS.

In Table 3, the study findings show that Nyamasheke District staff and management agreed that IFMIS is supporting the accounting function for the effective and efficiency of public funds management (for overall assessment the minimum choice of perception was Disagree (2), maximum was Strongly Agree (4), mean was 3.38, and standard deviation was 0.391). This means that the accounting function for the public fund management is well ensured via IFMIS.

Table 3: Effectiveness of IFMIS Accounting Function in Nyamasheke District

Accounting Functions in IFMIS	N	Min	Max	Mean	Stdv.
IFMIS makes easy ordering and purchasing materials in the procurement process.	152	2	4	3.61	.663
IFMIS facilitates for reception of materials within public institutions' procurement process.	152	4	4	4.00	.000
IFMIS facilitates contract management and payment for markets offered to other stakeholders within public institutions.	152	3	3	3.00	.000
Through IFMIS, I can reconcile transaction data in real time.	152	3	4	3.52	.501
IFMIS enables me to understand the true cost of service delivered per activity.	152	2	4	3.00	.691
I can easily extract and present data from IFMIS in ways that facilitate analysis.	152	3	4	3.29	.455
There are built-in analytical tools within IFMIS that enable trend analysis of various elements of fiscal operations in the office.	152	3	4	3.24	.427
Valid N (listwise)/ Average	**152**	**2**	**4**	**3.38**	**.391**

Source: Primary data, 2023.

5.2 Public Fund Management Ensured by Nyamasheke District as an Outcome of Effective Use of IFMIS Planning, Budgeting, and Accounting Functions

In this section, the study has assessed the performance made in public funds management in Nyamasheke District as an outcome of IFMIS use. The assessment was made on three indicators such as implementation of audit recommendations, audit opinion, and socio-economic development. Public funds management in local governments was historically criticized but later after the introduction of IFMIS improvements were observed.

Table 4: Implementation of Audit Recommendations

Implementation of Audit Recommendations in Nyamasheke District	N	Min	Max	Mean	Stdv.
IFMIS has supported addressing corruption audit findings from previous years.	152	2	4	2.90	.427
IFMIS has supported to address financial mismanagement as reported by the audit.	152	2	4	3.29	.706
Due to IFMIS transparency was ensured regarding procurement services and project management services in public institutions as all aspects became automated.	152	2	4	3.34	.837
IFMIS has contributed to revenue collection for public administration stakeholders (for example private business and other projects under district territory).	152	2	4	2.66	.565
Valid N (listwise)/ Average	**152**	**2**	**4**	**3.05**	**.634**

Source: Primary data, 2023.

In Table 4, it was seen that due to the effective use of IFMIS functions, Nyamasheke District has made a good performance in the implementation of audit recommendations, and this later resulted in best performance in public funds management (the minimum choice was Disagree (2), maximum was strongly agreed (4), 3.05 mean, and 0.634 standard deviation). It confirmed that Nyamasheke has made a good performance in the implementation of audit recommendations due to the best practices ensured in IFMIS function use.

Table 5: Audit Opinion

Audit Opinion in Nyamasheke District	N	Min	Max	Mean	Stdv.
IFMIS has contributed to Nyamasheke District staff for responding and respecting auditor generals' comments on Nyamasheke District financial statements from previous years.	152	2	4	2.99	.755
IFMIS is a basic tool for responding to the auditor general's money values opinions.	152	2	4	2.99	.534
IFMIS has contributed to district staff for compliance with laws and regulations as recommended by the auditor general vis a vis the district services to the communities.	152	2	4	3.37	.726
Valid N (listwise)/ Average	**152**	**2**	**4**	**3.12**	**.672**

Source: Primary data, 2023.

In Table 5, due to the effective use of IFMIS functions, Nyamasheke District has made a good performance in the use of audit opinions, and this resulted in the best performance in public funds management (the minimum choice was Disagree (2), maximum was Strongly Agree (4), 3.12 mean, and 0.672 standard deviation). It confirmed that Nyamasheke has made a good performance in audit opinion due to the best practices ensured in IFMIS function use.

Table 6: Socio-Economic Development

Socio-Economic Development in Nyamasheke District	N	Min	Max	Mean	Stdv.
Due to the use of IFMIS government institutions achieved yearly selected goals.	152	2	4	3.66	.718
Due to the use of IFMIS government institutions achieved poverty reduction.	152	2	4	2.90	.427
Due to the use of IFMIS Nyamasheke District has achieved infrastructure development.	152	2	4	3.24	.688
Due to the use of IFMIS Nyamasheke District has used public funds in public interest activities and the district has improved its socio-economic performance level (Imihigo Performance).	152	2	4	3.39	.652
Valid N (listwise)/ Average	**152**	**2**	**4**	**3.30**	**.621**

Source: Primary data, 2023.

In Table 6, due to the effective use of IFMIS functions, Nyamasheke District has made a good performance in socio-economic development as an indicator of best practices on

public funds management (the minimum choice was Disagree (2), the maximum was Strongly Agree (4), 3.12 mean, and 0.672 standard deviation). It confirmed that Nyamasheke has made a good performance in socio-economic development as an outcome of the best practices ensured in IFMIS function use.

5.3 Bivariate Correlation Matrix Analysis

In this section, the study assesses correlation for each assessed indicator in the conceptual framework from independent to dependent variables 3 to 3 indicators.

Table 7: Bivariate correlation analysis indicator to indicator

Tested Indicators		Implementation of Audit recommendations	Audit Opinion	Socio-economic Development
Planning	Pearson Correlation	.224	.224	.173*
	Sig. (2-tailed)	.005	.006	.033
	N	152	152	152
Budgeting	Pearson Correlation	.015	.156	.091
	Sig. (2-tailed)	.005	.004	.006
	N	152	152	152
Accounting	Pearson Correlation	.231	.323	.368
	Sig. (2-tailed)	.004	.000	.000
	N	152	152	152

Note: Correlation is significant at the 0.05 level (2-tailed).
Source: Primary data, 2023.

Table 7 shows that Planning as an IFMIS function is influencing 22.4% of the implementation of Audit recommendations, 22.4% in audit opinion, and 17.3% in socio-economic development. Budgeting as an IFMIS function is influencing 1.5% of the implementation of Audit recommendations, 15.6% of the audit opinion, and 9.1% of socio-economic development. Accounting as an IFMIS function is influencing 23.1% in the implementation of Audit recommendations, 32.3% of the audit opinion, and 36.8% of socio-economic development.

5.4 Linear Regression Model

Test of the study hypothesis led to the following findings:

Table 8: Model summary

Model Summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.680a	.463	.452	.1515192
a. Predictors: (Constant), Accounting., Budgeting. , Planning.				

Source: Primary data, 2023.

From Table 8, an (R^2) of 1 indicates that the regression predictions perfectly fit the data. This shows that, the analyzed model feet at 46.3% as (R^2) is equal to 0.463. R is also equal to 0.680 meaning that, planning, budgeting, and accounting as IFMIS functions each contribute 68% to the implementation of public funds management in the local government, case of Nyamasheke District.

Table 9: ANOVA Table for the tested variables

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	2.925	3	.975	42.474	.000[b]
	Residual	3.398	148	.023		
	Total	6.323	151			
a. Dependent Variable: Public fund Management						
b. Predictors: (Constant), Accounting., Budgeting. , Planning.						

Source: Primary data, 2023.

In Table 9, the results show that the model had an F ratio of 42.474 and the P value was 0.000<0.000, signifying that the F ratio was statistically significant, therefore the overall regression model for all the variables tested was statistically significant and can be used for prediction at 5% significant level. This further indicates that the predictor variables (Planning (P), Budgeting (B), and Accounting (A) used in this study as IFMIS functions are statistically significant to the public fund management in Nyamasheke District. Therefore, the formulated Null Hypothesis stating that there is no significant influence of IFMIS planning, budgeting, and accounting IFMIS functions on the public fund management in Nyamasheke District, failed to be accepted in favor of the alternative hypothesis or its opposite.

Table 10: Coefficients table for linear regression analysis

Coefficients[a]						
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
		B	**Std. Error**	**Beta**		
1	(Constant)	2.464	.415		5.935	.000
	Planning	.391	.077	.381	5.107	.000
	Budgeting	.723	.075	.645	9.581	.000
	Accounting	.008	.105	.005	.072	.043
a. Dependent Variable: Public Fund Management						

Source: Primary data, 2023.

Table 10 gives the following linear equation:

$$IAR = 2.464 + 0.391P + 0.723B + 0.008A$$

This means that there is a positive correlation between Planning (P), Budgeting (B), and Accounting (A) toward the performance of public fund management in Nyamasheke District (Implementation of Audit recommendations or IAR, Audit Opinion or AO, Socio-Economic Development or SED)). In other words, one unit change from the one above indicators (3 listed above) leads to a change of 0.391; 0.723 and 0.008 change times the additional value to the current units of the public fund management. In other words, once indicators of independent variables are absolute, the public fund management in local government entities is equal to 2.464 units. In conclusion the Null Hypothesis: There is no significant influence of IFMIS planning, budgeting, and accounting IFMIS functions on the performance of public fund management in Nyamasheke District" is rejected in favor of the alternative hypothesis "There is a significant influence of IFMIS planning, budgeting, and accounting IFMIS functions on the performance of public fund management in Nyamasheke District".

5.2 Conclusion

The conclusion of the study relies on the acceptance or failure to accept study hypotheses. Based on the H_0 or Null Hypothesis "There is no significant influence of IFMIS planning, budgeting, and accounting IFMIS functions on the performance of public fund management in Nyamasheke District" the results show that the planning, budgeting, and accounting as IFMIS functions each contribute 68% to the implementation of public funds management in the local government, case of Nyamasheke District. Due to that, the conclusion relies on the rejection of the Null Hypothesis and considers the alternative hypothesis or its opposite.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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