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ADDIS ABABA UNIVERSITY,

COLLEGE OF BUSINESS AND ECONOMICS

IMPACT OF ETHIOPIA'S INTEGRATED BUDGET AND EXPENDITURE ACCOUNTING INFORMATION SYSTEM ON FINANCIAL MANAGEMENT OF DONOR FUNDED GOVERNMENT PROJECTS IN ETHIOPIA

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APPROVAL SHEET

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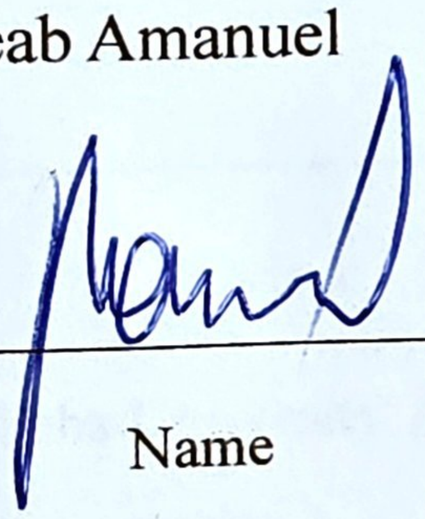
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DECLARATION

I, the undersigned, declare that this thesis proposal is my original work, prepared under the guidance of Kelifa Srmolo (Ph.D.). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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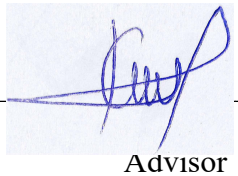
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ENDORSEMENT

This thesis has been submitted to Addis Ababa University, School of Business and Economics for examination with my approval as a university advisor.

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The Researcher,

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ACRONYMS AND ABBREVIATIONS

ACCA – Association of Chartered Certified Accountants

AfDB – African Development Bank

DOI – Diffusion of Innovations

EEAS – European External Action Service

ERP – Enterprise Resource Planning

GIFMIS – Ghana Integrated Financial Management Information System

IBEX – Integrated Budget and Expenditure Accounting System

ICT – Information and Communication Technology

IFMIS – Integrated Financial Management Information System

MoF – Ministry of Finance (Ethiopia)

OECD – Organisation for Economic Co-operation and Development

PFM – Public Financial Management

TOE – Technology–Organization–Environment framework

PSNP-5 – Productive Safety net Program Phase five

UPSNJP – Urban Productive Safety net and Jobs project

FCDO - Foreign, Commonwealth and Development office

ABSTRACT

This study investigated the impact of Ethiopia's Integrated Budget and Expenditure Accounting System (IBEX) on the financial management of donor-funded government projects. Agency Theory, Stewardship Theory, Diffusion of Innovations Theory, and TOE Framework were utilized to propose an understanding of IBEX as a multidimensional construct involving such IBEX characteristics as transparency, efficiency, compliance, integration, usability, and credibility. The research methodology involved a quantitative cross-sectional survey design with data being collected from 236 project stakeholders, including project managers, finance officers, accountants, and budget officers ,working on donor-funded projects within different regions in Ethiopia. According to the multiple regression results, six IBEX characteristics together accounted for 62.3% of the variance in the project financial management performance ($R^2 = 0.623$, $p < .001$). In particular, system efficiency showed the greatest impact on the outcome ($\beta = 0.271$, $p < .001$), whereas credibility came second ($\beta = 0.215$, $p < .001$). Transparency ($\beta = 0.198$, $p = .001$), compliance ($\beta = 0.176$, $p = .002$), integration ($\beta = 0.148$, $p = .008$), and usability ($\beta = 0.123$, $p = .038$) demonstrated lower yet statistically significant relationships with the financial management outcome. Overall, the paper proved that IBEX has substantially contributed to the transformation of Ethiopian public financial management especially concerning the increase of transparency, compliance, and credibility. At the same time, some issues regarding system integration, usability, and donor confidence should be addressed further. Based on the results obtained, recommendations were formulated concerning improving system efficiency, strengthening technical support, accelerating IBEX integration of donor-funded projects, and developing IBEX donor compliance features.

Keywords: IBEX, Public Financial Management, Donor-Funded Projects, Financial Management Outcomes, System Efficiency, System Credibility, System Integration

CHAPTER ONE:
1. INTRODUCTION

1.1. Background of the Study

Public financial management (PFM) is one of the major pillars of governance and is particularly vital in developing countries, where efficient allocation of resources and prudent management of government finances determine the social and economic development of the country. In particular, public financial management means the institutions, mechanisms, and policies governments employ when mobilizing resources, budgeting, expending public finances, and maintaining accountability in dealing with them (Mlawasi, 2025). Besides, effective PFM systems do not represent technical measures, but are the sources of credibility and thus the foundation of country's reputation that enables donor financing and sustainable development (Association of Chartered Certified Accountants, 2024). In the context of fiscal scarcity, growing levels of external debt, and the demand for inclusiveness in development in Sub-Saharan Africa, strong PFM systems are prerequisites to achieving the national and sustainable development goals.

Firstly, effective development aid requires proper alignment of the donor resources with the budget frameworks in the country. Country ownership, attention to results, partnership, and mutual accountability are four factors recognized as the hallmarks of effective development aid management (Organisation for Economic Co-operation and Development, 2011). However, studies reveal that failure to incorporate donor money in the budget process leads to various reporting and coordination issues in many developing countries. Fragmented monitoring, duplicated reporting procedures lead to reduced transparency, longer time required to generate reports, and low country ownership in development projects. Ethiopia is one of the biggest recipients of development funding in Sub-Saharan Africa and suffers from various problems arising from budgeting of development assistance.

Until now, the public financial management sector in Ethiopia included two frameworks: the national PFM system and financial management systems of donor-funded projects (AfDB, 2022). Though separation allowed for quick disbursals of the aid, it created overlapping and inefficient processes as well as poor monitoring of fiscal measures. According to the studies performed for a sample of federal government agencies, reforms in public accounting in Ethiopia faced difficulties in timely reconciliation, poor internal control, and inability to generate timely financial reports

(Lemma, 2018). This affected efficient implementation of development projects and raised doubts in sustainable delivery of results of the assistance.

To tackle the problem of managing development assistance, Ethiopia implemented reforms in PFM sector. Namely, Ethiopia developed Public Financial Management Reform Strategy for 2023-2028 with the aim to foster fiscal transparency, budget credibility, and proper financial reporting (Ministry of Finance – MoF, 2023). One of the major initiatives foreseen in the strategy was the implementation of the Integrated Budget and Expenditure Accounting System (IBEX) for better and automated management of development assistance projects through PFM system (EEAS, 2025). This system implies integrated budgeting, accounting, and reporting with real-time control over revenue and expenditure flows. Most importantly, IBEX intends to integrate donor-funded projects into the national budget process and control the grant and loan money provided by donors. The reform includes tracking the funds and proper monitoring (MoF, 2023; EEAS, 2025).

Among the major programs for social protection in Ethiopia directed to food security and poverty reduction is the Productive Safety Net Program Phase Five (PSNP-5). According to this program, in order to reduce the level of poverty and help vulnerable communities recover their financial stability, stable financial support and development assistance will be provided (World Bank, 2020; Ministry of Agriculture, 2024). In order to monitor the process, all actions are coordinated through a special digital tool called IBEX in all districts/woredas in Ethiopia. Thus, the goal of the current study is to conduct an examination of how the application of IBEX influences budgeting in donor-funded public projects. PSNP-5 is selected as an example of development projects that will be used to test the efficacy of the PFM system (IMF, 2021).

It is necessary to conduct comparative analysis in order to learn how to successfully modernize the PFM framework. While implementations of GIFMIS and IFMIS in Ghana and Kenya respectively succeeded in improving the problem with fiscal reporting, they had some limitations related to capacity development, resistance to changes, and decentralization (Kinyua, 2003; Mohammed, 2017). The situation in Ethiopia is quite similar because IBEX should overcome various challenges related to federalism, heterogeneous development level of regions, lack of ICT resources at regional bureaus, and practice of reporting in accordance with donor standards. Nevertheless, IBEX is a result of international commitment because it fosters country ownership and transparency (Dipama, 2024).

However, the current reform is partially implemented and has certain problems. For example, according to studies, IBEX faces various challenges related to donors' involvement in the system and reporting processes. Thus, reporting is delayed, reliability of the information generated within the system is questionable, and financial accounting lacks harmonization (MoF, 2023). Consequently, problems with implementation of the system despite its successful modernization can be considered the major issue that needs investigation. This is because while Ethiopia conducts reforms in the sphere of PFM systems, it still faces significant challenges.

1.2. Statement of the Problem

Though the PFM reform has already been conducted in Ethiopia via introduction of IBEX, the move can be viewed as revolution aimed at promoting fiscal transparency and efficiency as well as integration of donor-funded projects into the national budgeting process. IBEX is believed to improve donors' and the state's reputation, which will encourage donors to provide foreign assistance (AfDB, 2022). However, despite such promising prospects, data concerning practical impact of IBEX system on the process of budgeting for donor-assisted projects at the operational level are scarce, inconsistent, and anecdotal (MoF, 2023). This means that current lack of empirical research concerning IBEX constitutes an actual problem.

Literature available on PFM reform in Ethiopia mainly covers issues associated with fiscal aspects of the problem and compliancy of budget process with aid effectiveness principles by OECD (OECD, 2011; Dipama, 2024). Even though it provides useful information, it does not include opinions of people who are directly working with the system. Users' opinions are crucial in this case because they demonstrate the extent of possible benefits that can be delivered while managing donor-funded projects with the help of IBEX. For example, improvements in the reporting process may enhance budgeting as far as users have sufficient skills. At the same time, automation of the process will contribute to efficiency only in case there are no technical problems (Lemma, 2018; Mohammed, 2017).

Experience gained by comparison with other countries in Sub-Saharan Africa demonstrates that introduction of a system similar to IBEX helped Ghana and Kenya improve their fiscal reporting process. However, both countries continued facing serious problems of user resistance and non-uniform introduction because of poor availability of ICT (Kinyua, 2003; Mlawasi, 2025). Considering federal structure of the country and heterogeneity of the administrative capacity of

different regions, one might doubt the possibility of successful IBEX functioning in all parts of Ethiopia. Thus, the need for conducting survey-based research and revealing relationships between the IBEX features and financial outcomes of donor-assisted projects constitutes another issue.

The identified lack of systematic research raises serious concerns concerning development of efficient public policies by the MoF related to IBEX. International development partners who have been advised to transfer assistance through the national system need to have the empirically supported evidence that IBEX contributes to protection of their aid in Ethiopia. Project managers should be aware of the proper functioning of IBEX system in order to guarantee appropriate implementation of projects and maximization of financial benefits. Thus, the research in question aims at filling this gap.

1.3. Research Questions /Hypothesis/

This study is guided by the following research questions/hypothesis:

How does system transparency affect the financial management of donor-funded public projects in Ethiopia?

- How does system efficiency influence the financial management of donor-funded public projects in Ethiopia?
- What is the effect of system compliance (with donor-specific and national financial reporting standards) on the financial management of donor-funded public projects in Ethiopia?
- How does system integration affect financial management of donor-funded public projects in Ethiopia?
- How does system credibility affect the financial management of donor-funded public projects in Ethiopia?
- H6: System credibility has a significant positive effect on the financial management of donor-funded government projects in Ethiopia.

1.4. Objectives of the Study

1.4.1. General Objective

To investigate the impact of Ethiopia's Integrated Budget and Expenditure Accounting System on enhancing the financial management of donor-funded government projects in regions of Ethiopia.

1.4.2. Specific Objectives

The specific objectives of this study are:

- To examine the effect of system transparency on financial management of donor-funded projects.
- To evaluate the effect of process efficiency on financial management of donor-funded projects.
- To analyze the effect of system compliance on financial management of donor-funded projects.
- To examine the role of system integration on the financial management of donor-funded projects.
- To examine how system perceived usability on financial management of donor-funded projects.
- To evaluate the effect of system credibility on financial management of donor-funded projects.

1.5. Significance of the Study

This study should have various implications on several fronts:

Firstly, from the perspective of academic community, the research will make valuable contributions to literature on PFM in developing countries by operationalizing a complex information system as IBEX in several dimensions. Conducting an empirical study concerning the relationships between identified dimensions (such as transparency, efficiency, compliance, and so forth) and financial management will result in a comprehensive theoretical model that may be further applied in similar situations, such as IFMIS.

Secondly, results obtained during the study will help practitioners managing donor-funded projects to understand what specific dimension of IBEX affects financial management and then optimize system usage in order to enhance budgeting, reporting, and project management.

Thirdly, the results is valuable for Ethiopian policymakers responsible for implementing the Public Financial Management Reform Strategy as they inform on how much investments should be made to improve IBEX, train its users, and support change management. International development partners investing in Ethiopia will receive independent confirmation of the effectiveness of using nationally owned systems, which is consistent with the Development Partners Group-Ethiopia 2024 plan. Finally, results obtained during the study inspire future study in the field - it enables one to compare experiences in East African countries, where the same or similar information system was introduced. Second, longitudinal study helps track the dynamics of impact of IBEX on financial performance.

1.6. Scope of the Study

This study is confined to a single geographical area, the Federal Democratic Republic of Ethiopia. The scope covers only donor-funded government projects implemented at the regional level. Projects in question can be justified for selection as they use IBEX in their financial operations and include many experienced users of the system.

Regarding the variables, emphasis is placed on investigating the relationships between IBEX system and financial management. In terms of operationalization, the independent variable (IBEX system) includes six factors: transparency, efficiency, compliance, integration, usability, and credibility. In terms of the dependent variable, the financial management is operationalized through project-related variables, including timeliness of financial reporting, stakeholder satisfaction, capacity building, and decision support. The framework is based on the literature on PFM and IFMIS success factors.

With regard to methodology, this current research uses quantitative approach based on the cross-sectional survey design. The data are gathered through a structured survey addressed to project managers, finance officers, and accountants working with donor-funded projects within IBEX. This methodological choice allows collecting enough perceptual data from a relatively large sample size, enabling further statistical analysis. Inferential and descriptive statistics is used to analyze data and make conclusions on the entire population. Quantitative approach is used because the effect of IBEX on financial performance is going to be measured.

1.7. Limitation of the Study

Alike many other academic articles, this study has also a number of limitations. Among others, the financial management outcome measures were perceived by respondents only and not based on objective criteria such as auditing processes, efficiency of transactions, or levels of donor satisfaction. A second limitation of the research is related to the cross-sectional nature of the survey approach used. This limited causal inference due to simultaneous measurement of relationships among the constructs under investigation. While some statistically significant relationships were found using regressions analysis, their causality cannot be determined within a cross-sectional study. Third, the current study did not examine other important predictors of financial management performance such as organizational culture, management commitment, ICT quality, and economic climate.

1.8. Organization of the study

The paper is organized into five chapters. Chapter One introduces the reader to the topic under investigation and outlines its background, problem, research questions, objectives, significance, scope, and definitions. The second chapter is devoted to reviewing the existing literature and presenting the conceptual framework. It presents theoretical and empirical backgrounds of PFM and IBEX systems and develops a conceptual framework of hypothesis to test in this study. In Chapter Three, methodology, including methodology choice, population and sampling, data collection, and analysis is described. The fourth chapter presents collected data, analyzes it, and draws conclusions.

CHAPTER TWO

2. LITERATURE REVIEW

This chapter gives a critical review of the existing literature regarding the effect of Ethiopia's IBEX system on financial management in government projects implemented with donor funds. This review provides a theoretical and empirical base for the current investigation and is divided into sections. First, different theoretical bases for the study, including the problem under scrutiny and technology adoption processes, are introduced. Further, basic concepts used throughout the thesis, i.e., IBEX system and financial management of donor-funded projects, are defined. Then, the empirical evidence from global, regional, and Ethiopian context is critically reviewed. An important

feature of this chapter is formulating research hypotheses related to the proposed linkages between system attributes and financial management measures. The chapter closes with identifying a research gap and presenting the conceptual model for subsequent investigation.

2.1. Theoretical Foundation

To analyze the effect of a technology-based accounting system such as IBEX on financial management performance, various theoretical approaches should be considered simultaneously since no one specific theory alone gives enough explanation to the complex set of issues under discussion such as public finance reform, innovation adoption, human motivation and behaviors. Agency, Stewardship and Diffusion of Innovations Theories are combined to offer an adequate theoretical framework for analysis of the relationships between system attributes and the dependent variables: Agency Theory, Stewardship Theory and Diffusion of Innovations Theory.

2.1.1. Agency Theory

Agency theory that serves as the foundation of the corporate governance theory and public administration studies defines a relationship between a principal and his/her agent(s) who execute(s) delegated tasks (Jensen & Meckling, 1976). The principal-agent relationship can be defined in the case of donor-funded government projects as follows: the international donor organization is the principal that transfers funds for the project implementation, and Ethiopian government (representing the Ministry of Finance) is the agent receiving and managing resources. In the case of Ethiopia, a hierarchical structure emerges wherein the Ministry of Finance as the steward of resources becomes the principal for further delegation of tasks to respective ministry/ministries or other organizations implementing the projects. Thus, agency relationships are multi-layered in nature.

The major problem analyzed by agency theory is the possible conflict of interests between a principal and his/her agent(s). The principal may be interested in maximizing value-for- money and expects resources to be utilized for the intended purpose as stipulated on the financing agreement while the agent, in his/her/their turn, may be concerned about personal benefit (which is often the case in corrupt public sectors). Moreover, the agent might know more than the principal about his/her actions and the results they produce, which creates a danger of the moral hazard. In

response, the principal needs to invest in monitoring the agent and develop some mechanisms to incentivize him/her (Jensen & Meckling, 1976).

As for IBEX system, it might be viewed as an effective mechanism of overcoming the problem of information asymmetry. Through real-time reporting and tracking of financial transactions, the principal receives unbiased and standardized information about spending. For example, if a donor organization gets access to all necessary financial data provided through IBEX, he/she cannot rely only on the self-reported data from the agent, and any deviations become apparent immediately. As reported by Dipama (2024), strong PFM systems play a key role in the operationalization of aid effectiveness principles of mutual accountability and transparency. Yet, the agent could be reluctant to use IBEX in the process of monitoring since he/she might consider it an additional burden. This issue has been confirmed by Ethiopian experience: user resistance was found to be a factor adversely influencing IFMIS effectiveness (Haile, 2025).

2.1.2. Stewardship Theory

Another way of viewing the relationship between the principal and agent discussed above can be provided by stewardship theory according to which a manager acts on behalf of and in the best interests of the owner(s) or society (Davis, Schoorman, & Donaldson, 1997). The stewards are collectivists and pro-organizational and trustworthy by nature, and their utilities are maximized when organizational goals and missions are achieved, as opposed to private gains. Thus, stewardship theory is quite relevant to public sector institutions in which many employees are intrinsically motivated and are eager to serve and contribute to societal well-being and economic development.

Stewardship theory suggests that a technological intervention such as IBEX should be implemented primarily to help stewards of the resources perform their duties better and more efficiently. Indeed, as a unified system of financial management, it helps remove any bureaucratic barriers, reduce the risk of mistakes, and obtain accurate information to enable managers to do their work properly. Therefore, in the case of IBEX, successful adoption should depend not only on coercive forces, but also on the willingness of the agent to see this innovation as an important tool that makes him/her work as a real steward of the state. If the stewards find IBEX complicated and non-transparent, they may face difficulties in executing their responsibilities. In such circumstances, system attributes of credibility and usability become of primary importance for its success (Mlawasi, 2025). As shown

in the recent research carried out in Kenya, the user competence and attitude towards the system are key factors of success in IFMIS implementation (Njau & Kinoti, 2020; Maasai Mara University, 2025).

2.1.3. Diffusion of Innovations (DOI) Theory

Agency Theory and Stewardship Theory shed light on the motivations and relations between different actors in the process, Diffusion of Innovations (DOI) theory, formulated by Rogers (2003) in its most complete form, provides a broader perspective of adoption and diffusion of technological interventions, e.g., innovative solutions. As applied to IBEX adoption, DOI theory is especially useful due to its focus on users' perceptions and the process itself.

According to DOI theory, there are five key attributes of innovations that determine their adoption rate: relative advantage (in comparison with existing practices or solutions), compatibility (with the organization's culture and the needs of the users), complexity (difficulties in comprehension and use of the innovation), trialability (possibilities for experimentation with the innovation), and observability (of visible results produced by the innovation).

As far as the current study is concerned, DOI theory is instrumental in the construction of the independent variable. Specifically, it was decided to apply the six-dimensional concept of IBEX system based on the following attributes: transparency, efficiency, compliance, integration, usability, and credibility (see Table 4). As it was noted above, these attributes reflect the five elements of DOI theory (complexity is substituted by its opposite which is usability): efficiency and transparency correspond to relative advantage, integration stands for compatibility, and the remaining attributes (transparency, trialability, and observability) were incorporated in the research construct.

In sum, previous studies have validated the usefulness of DOI theory in the context of public sector innovations. For example, as demonstrated by Tetteh et al. (2022), innovation diffusion theory has proved helpful in studying IFMIS adoption in Ghanaian local governments. Adopting the DOI theory in this study is another step forward as it enables the researcher to apply it to a new geographical region.

2.1.4. Technological-Organizational-Environmental (TOE) Framework

To supplement DOI theory, the framework of Technological-Organizational-Environment (TOE) developed by Tornatzky & Fleischer (1990) is applied in this study. According to TOE framework, technological innovation adoption and the outcomes generated by it are influenced by three contextual dimensions: technological context (both internal and external technologies available to the organization), organizational context (characteristics of the organization such as management and resource capacities), and environmental context (institutional, industry-related, governmental regulations, external support).

Chalu (2019) demonstrated the applicability of the theoretical pluralism in the context of studying IFMIS adoption and implementation by applying four theories – innovation diffusion theory, TOE, task-technology fit model, and DeLone & McLean's IS Success Model. In particular, the application of TOE framework allows considering IFMIS implementation success not only from the perspective of internal technology, but also as influenced by organizational and environmental determinants. As indicated by Haile (2025) in a study carried out in the Ministry of Finance of Ethiopia, commitment of top management, competence of staff, and ICT infrastructure are among those factors affecting IFMIS implementation success.

Summing up, it can be stated that in combination with the previous three theories, the application of TOE framework allows building a sound theoretical foundation of the current research. Indeed, agency theory offers a framework for explaining the role of IBEX as an instrument for overcoming the problem of information asymmetry, while stewardship theory provides an understanding of the role of users' intrinsic motivation in adopting the innovation. DOI theory offers a perspective for assessing the relative importance of different attributes of technological innovation.

2.2. Basic Concepts of Technology Adoption and Financial Management

Having laid the groundwork for theoretical analysis, now it is possible to introduce the core concepts under investigation and review existing definitions and measures used in prior studies. Hypotheses corresponding to relationships proposed in this study are offered for discussion.

2.2.1. The IBEX System as a Multidimensional Construct

The present research does not treat IBEX as one indivisible construct but takes a more nuanced approach recognizing that the efficiency of the innovation is contingent upon the perceptions of

users regarding various attributes of the system. Six distinct dimensions of IBEX have been identified through literature review:

Transparency - In the current case, the term stands for visibility of information on financial operations including allocations, funds, payments, expenditure reports. It indicates that the financial processes are not hidden but transparent and auditable. The transparency attribute is critical for building trust with donors and internal oversight (ACCA, 2024). Financial management transparency facilitates verification that funds are used for the intended purposes and minimizes the possibility of corruption and misuse (Gil-Garcia, Gasco-Hernandez, & Pardo, 2020). Awudu et al. (2024) found that technological infrastructure and government policies were the factors influencing financial transparency during Ghana's GIFMIS implementation. Similarly, an Addis Ababa University study (2024) confirmed that Ethiopia's IFMIS increased financial transparency and accountability in government offices by providing financial data access in real-time, which reduced fraudulent activities. Measurement: Transparency is evaluated based on user agreement to statements about data clarity and accessibility in IBEX on a Likert scale.

Efficiency - - It refers to the system's ability to speed up financial processes. It covers such aspects as speed, accuracy, and the reduction in manual efforts to perform tasks related to making payments, reporting, and reconciling accounts. An efficient system means decreased transaction costs and leaves more space for performing more sophisticated tasks (Mohammed, 2017). Efficiency in the area of public financial management is critical for timely project implementation and service delivery (Shin & Jhee, 2021). Sikabanga & Haabazoka (2025) found that IFMIS in Zambia had a positive impact on the accuracy of financial reporting and processes related to budget, reduced unauthorized spending and delays, although regular system downtimes and a lack of technical assistance had somewhat limited its efficiency. Measurement: Efficiency is assessed through user perceptions of saving time and streamlining of processes. Sample items: "IBEX has shortened time required for making payments," "IBEX has minimized manual entry of data and reconciliation," "IBEX facilitates fast reporting."

Compliance - It denotes the system's potential to regulate and control financial processes related to complying with rules, regulations, and standards. It covers both national regulations (e.g., procurement policy, financial proclamations) and donor's own requirements for project management (reporting format, eligible spending categories). Compliance attributes serve as an embedded

internal control tool that minimizes any risks of accidental and deliberate rule violations (Lemma, 2018). Compliance is particularly important for donor-financed projects where many accountability requirements are to be met. Nhial, Shiku, and Siwale (2025) discovered significant associations between IFMIS implementation and internal control systems in South Sudan's Ministry of Finance ($p = 0.003$), which shows the role played by the system in fostering compliance. Oketcho (2024) also noted that IFMIS internal controls positively impacted the financial management in Uganda's public administration. Measurement: Compliance is measured based on users' perception of the system's role in guaranteeing rule compliance. Sample items: "IBEX ensures the compliance of transactions with financial regulations of the government," "IBEX makes it easier to comply with donor reporting requirements," and "IBEX minimizes the risk of procedure violations."

Integration - This dimension measures the extent to which donor-funded project finances are fully integrated into the national IBEX system and do not require being separately managed via off-system channels. Integration is an important goal of public financial management reforms since it increases fiscal control, creates a holistic overview of public finances, and ensures national ownership of projects (de Renzio, Andrews, & Mills, 2010). Integration also avoids duplicates and makes sure that project-related financial data fit national fiscal reporting. In a study by Tetteh et al. (2022), integration of IFMIS in Ghanaian local governments proved to be dependent on regulatory, environmental, and organizational aspects, while technical attributes and socio-cultural features require addressing. In Ethiopia, integration of donor-funded projects into IBEX continues to be a problem since parallel reporting persists in certain sectors (MoF, 2023). Measurement: Integration is assessed based on user evaluations regarding how much budgeting, executing, and reporting for projects occur within IBEX. Sample items: "All financial transactions in my project go through IBEX," "Project budgeting is fully incorporated into the national budget through IBEX," "IBEX eliminates the need for parallel financial reporting for donors."

Usability - This attribute characterizes ease of learning to use the system and successfully perform financial tasks via it. Usability of a system includes such aspects as intuitive interface and workflow design, and sufficient training and assistance for users. Usability directly impacts user acceptability and effective use of system capabilities (Kinyua, 2003). According to Technology Acceptance Model, ease of use is the determinant of technology adoption (Davis, 1989). Sikabanga & Haabazoka (2025) mentioned that end-user resistance was a critical challenge to the full-scale

adoption of IFMIS in Zambia caused by inadequate training and capacity-building. Haile (2025) identified staff resistance, low capacity, and lack of technical skills as IFMIS performance inhibitors in Ethiopia's Ministry of Finance. In Kenya, counties stress the need for continued training in IFMIS for management and users as crucial to IFMIS implementation (Maasai Mara University, 2025).

Measurement: Usability is assessed by user perceptions of system friendliness and the availability of assistance and training materials. Sample items: "IBEX has a friendly, intuitive interface," "I had enough training for efficient usage of IBEX," "Technical assistance is always at hand for me," and "IBEX simplifies complicated financial processes."

Credibility - It measures the trust that users have in the accuracy and reliability of financial information created by IBEX. Such credibility makes financial information useful for further analysis and decision-making. Donors' lack of trust in IBEX reports could lead to their requirement for parallel reporting, which would contradict the integration aim. Credibility is created through constant accuracy of information, auditability, and timely provision of information required by users. Chalu (2019) found that IFMIS adoption in Tanzania improved the reliability of financial reporting but had no statistically significant effect on its relevance. The Addis Ababa University study (2024) found that IFMIS in Ethiopia enhanced the accuracy and speed of financial reporting and decision-making.

Measurement: Credibility is assumed based on users' assessment of donor satisfaction with and trust in IBEX information. Sample items: "Donors have confidence in financial reports generated by IBEX," "IBEX reports are accurate and reliable," "Auditors rely on information from IBEX," and "IBEX has increased the trust in project finance management."

2.2.2. Financial Management of Donor-Funded Projects: The relationship between IBEX attributes and Financial Management

The management of project finance involves much more than mere bookkeeping as the process entails the efficient, responsible, and effective management of finances. Within this research, financial management of donor-funded projects is analyzed as a multi-dimensional concept using four indicators:

1) Timeliness of Financial Reporting – The first dimension of financial management covers reporting. It involves the creation and submission of financial reports (such as interim reports, audits, and completion reports) in accordance with the requirements set forth by donor organizations and other interested parties. The failure to provide timely reporting means poor financial management and, hence, dissatisfaction on the part of development partners (MoF, 2023). Timely creation and submission of financial reports are important not only for efficient project monitoring and evaluation but also for good relations with donors. According to Sikabanga and Haabazoka (2025), IFMIS usage in Zambia allows budget execution on time but real-time tracking is hindered due to infrastructural constraints. Timeliness of reporting is measured based on perceptions of the influence that IBEX has on the timely reporting. Possible survey questions: "IBEX facilitates reporting of financial information to donors in time," "IBEX makes our project's reporting quicker," "IBEX facilitates audit reporting."

2) Stakeholder Satisfaction – This dimension speaks about satisfaction of stakeholders with the quality and completeness of financial information reported by a project. This measure illustrates to what degree financial information prepared by a project satisfies the expectations of its users. In the opinion of DPG-Ethiopia (2024), stakeholders' satisfaction with the information is crucial in demonstrating the effectiveness of project management. Based on Oketcho (2024)'s findings, organizational-level accountability associated with IFMIS positively impacts financial management in Uganda. Therefore, it may be argued that stakeholders' satisfaction with information supplied by the tool may be inferred from this variable. Satisfaction of stakeholders with financial information can be measured based on their feedback regarding the quality of information provided. Survey questions: "Donors are satisfied with our project financial information," "Project managers trust IBEX reports' accuracy," "Project oversight committees value information obtained via IBEX."

3) Capacity Building – This factor is related to how IBEX-based financial management increases people's competencies in this domain. A well-managed project will leave a capable finance team and good finance management practices behind. This dimension reflects the ability of the management to create sustainable effects. According to Sikabanga and Haabazoka (2025), capacity-building measures can solve challenges in IFMIS implementation as proper system operation is contingent upon the users' level of competency. Haile (2025) mentions that technical competencies of employees positively affect IFMIS performance in Ethiopia. Capacity building is evaluated based on perceptions of the users about the enhancement of competencies and processes facilitated by

IBEX. Relevant survey questions: "Using IBEX develops my finance management abilities," "IBEX contributes to finance management process improvement," "IBEX promotes financial accountability know-how development," "IBEX helps us develop finance team competence."

4) Decision Support – This factor is linked to the usage of information provided to make decisions regarding budget reallocation, activities planning, and resource mobilization. Such an analysis is a key element of project decision support as it reflects how the information obtained from management information systems can be applied to the process of strategic project management. Decision support is considered the ultimate purpose of any decision support system. According to Chalu (2019), the introduction of IFMIS in Tanzania significantly boosts the understandability and reliability of financial information needed for decision support. Oketcho (2024) identifies a range of uses of IFMIS including budgeting (planning and formulation), budget compliance monitoring, cash balance management, debt management, asset management, and departmental performance assessment. Decision support can be evaluated on the basis of perceptions about the role of IBEX in supporting financial decisions. Relevant survey questions: "Data available in IBEX assist me in making decisions on budget reallocation," "I monitor my project performance against budget using IBEX information," "IBEX helps me identify financial problems at an early stage," "IBEX assists me in making resource mobilization decisions."

2.2.3. Relationship Between IBEX Attributes and Financial Management Outcomes

Each of the attributes of IBEX system is expected to affect financial management indicators in different ways, which is described below in theoretical context and supported by the empirical evidence. Agency theory implies that transparency reduces the gap between the information available to principals (donors) and agents (implementing agencies) and enables better control and incentives for improving financial management practices. Transparent, accessible financial information allows to discover inconsistencies and discrepancies and make sure that the funds have been used properly, which increases donors' satisfaction and trust. At the same time, transparency is instrumental in financial decision-making as managers are able to get an overall picture of the financial situation.

Efficiency of financial management processes positively impacts all financial management outcomes. Fast processing and reporting make it possible to meet stakeholders' demands and provide relevant information for timely decision-making. Moreover, efficient processes mean less

manual labor, which allows performing control activities instead. According to DOI Theory, efficiency predicts technology adoption and its effective usage.

Compliance attributes act as embedded internal controls within the system. These attributes reduce the risks of both unintentional and intentional non-compliance of projects' managers with financial procedures, which positively affects the integrity of financial management practices. Integration of projects into the financial management system of the country increases fiscal transparency, ensures comprehensive information about government's finances, and builds up the national ownership of projects. The integrated project finance reporting allows for compliance with national regulation and consistency in reconciliation processes, as well as the use of a unified data source for reporting.

The more user-friendly the interface is, the higher is user motivation to adopt the technology, learn to use it efficiently, and make more accurate reporting as the number of user errors decreases. Usability also reduces cognitive load that allows analyzing information and making management decisions based on it. Finally, high system credibility, or trust and confidence of users in the accuracy of information, acts as the mediator between financial management practices and outcomes. High credibility makes users more likely to rely on the information provided by the system and therefore, minimize the number of requests for parallel reports and thus improve the efficiency. As one can see, IBEX attributes could have synergistic interactions and their cumulative effect could be larger than the individual effects.

2.2.4. Perspectives - Public Financial Management

Globally, over the last two decades, there have been reforms aimed at tightening the control over government spending and improving aid effectiveness by better fiscal management. The transition from paper-based and cash accounting to computerized and accrual accounting represents one of the key changes made to public financial management systems (PFMs). The other notable trend is the introduction of the integrated financial management information systems (IFMIS) as a comprehensive way of managing budgeting, accounting, procurement, and reporting processes. Among the advantages of using IFMISs, scholars mention strengthened control of public funds, improved budget credibility, decreased opportunities for corruption, and decision support in public policy decisions (ACCA, 2024). Busan Partnership for Effective Development Cooperation encouraged the use of country's financial management systems where appropriate and made such

systems the default method of aid delivery (OECD, 2011). Therefore, the effective use of IFMIS plays a crucial role in achieving aid effectiveness.

However, experience of countries that introduced IFMIS shows that technology itself does not ensure successful implementation. In their article dedicated to the usage of IFMIS in the course of Turkey's fight against COVID-19, Kardeş, Yeşilçelebi, & Altunel (2022) emphasized the importance of flexibility and adaptability of the system. The authors of the study by Martínez-Vázquez, Sanz-Arcega, & Martín (2023) investigated tax revenue management in the digital era and mentioned the particular problems associated with the implementation of IFMIS in developing countries.

Regional Experiences with IFMIS - Sub-Saharan Africa - Implementation of IFMIS in Sub-Saharan Africa resulted in mixed outcomes, but yielded valuable insights for this study.

Tanzania: - In long-term research (11 years: 2003/2004 – 2013/2014) that explored the use of IFMIS in Tanzanian LGAs, Chalu (2019) analyzed 163 LGAs employing the methods of paired t-tests and generalized linear models. The study revealed that the introduction of IFMIS led to improved understanding and reliability of financial information, whereas no improvement in the relevance was observed. Besides, the reliability of financial information was increased only when IFMIS was used along with strong utilization capability and effective internal auditing.

Ghana: - Extensive research has been done on the impact of GIFMIS on Ghana's finances. According to Mohammed (2017), positive effects in financial consolidation and timely financial reporting in centralized units were observed thanks to the consolidation capability of the system, whereas various problems such as IT problems, staff resistance, and inability of decentralized entities to cope with the implementation of IFMIS have been highlighted. The study conducted by Tetteh et al. (2022) revealed that regulatory, environmental, and organizational factors contributed to successful IFMIS usage, whereas technological and socio-cultural obstacles were encountered during IFMIS implementation in Ghanaian LGA. The results obtained by Awudu et al. (2024) show that in case of MMDA's in Ghana, technological infrastructure, availability of resources, organizational culture, and government policies had a positive impact, whereas poor user acceptance and training had a negative effect.

Kenya: - Numerous studies of IFMIS usage in Kenya revealed that ICT equipment shortage and network failures were significant barriers to service delivery in the country, whereas IFMIS was considered to be very efficient, had appropriate management support, and required training (Maasai Mara University, 2025). Njau and Kinoti (2020) agree that capabilities and attitude to the new technology played an important role in the implementation process.

Uganda: - In the study that focused on IFMIS usage and financial reporting in Tororo District Local Government, Oketcho (2024) identified organizational accountability systems, cash management and budgeting systems, internal control systems, and financial reporting systems as key determinants of positive and statistically significant impact of PFM. He suggests that managers use the information provided by IFMIS for planning and budgeting as well as for decision-making.

Zambia: - The results of the study by Sikabanga & Haabazoka (2025), which involved IFMIS usage in government ministries, demonstrate that the system made financial reporting more accurate and ensured strict compliance with the budgeting process. IFMIS made it possible to avoid unauthorized expenses and any delays in financial process. At the same time, the disadvantages of the system are the system downtime, lack of technical support, and reluctance of staff to adopt the system because of their poor training.

South Sudan: - In order to identify the impact of IFMIS on internal audit functions in the Ministry of Finance, Nhial, Shiku & Siwale (2025) used correlation analysis. It demonstrated that there was a statistical significance between IFMIS and internal control ($p=0.003$), organizational accountability ($p=0.011$), and financial reporting ($p=0.024$). No significant relationships were observed between IFMIS and cash management and budgeting, which means that the system affects partially only internal audit activities.

Ethiopian PFM Reform History and IBEX - In the history of PFM reforms in Ethiopia, it can be noticed that the situation in the country followed the regional trend, being determined by the federal system of government, developmental-state approach, and reliance on international donors. In the past, the Ethiopian landscape of PFM was extremely fragmented with donor-funded initiatives using parallel financial accounting, manual systems, and late financial reporting, which was the cause of donor dissatisfaction and inefficiencies in financial management (Muhammed, 2014).

The present Public Financial Management Reform Strategy (2023–2028) and IBEX implementation imply an attempt of overcoming these difficulties. IBEX, as a cornerstone of the new financial framework, is expected to integrate all public finances, including the aid money, into the system. The introduction of IFMIS is considered to promote national ownership and transparency and enable instant decision-making on public finances (EEAS, 2025; AfDB, 2022).

Various Ethiopian publications of recent time provide additional information about IFMIS implementation in the country. Haile (2025) examined factors that influenced the performance of IFMIS in the Ministry of Finance, revealing such barriers to its adoption and operation as the lack of monitoring and evaluation of the system, staff resistance, poor capabilities, inadequate technical skills, complicated system ICT infrastructure, and lack of infrastructure. The author gives the following recommendations: increase awareness about IFMIS among managers and staff, enhance infrastructure, and increase employees' technical skills.

Another study (Addis Ababa University, 2024) assessing IFMIS in governmental organizations of Ethiopia states that the implementation of IFMIS promotes financial transparency and accountability because of timely access to data and reports, preventing fraud and malpractice. Recommendations include integration of software, training of staff, provision of technical assistance, collaboration, and participation.

From the above-mentioned publications, it can be inferred that IBEX will greatly benefit Ethiopia's PFM and that there may be certain organizational and infrastructural impediments to the efficient usage of IBEX. A missing link in the studies analyzed above is the lack of research focused on the impact of IBEX on donor-funded projects and the need of multi-dimensional analysis of system's attributes.

2.3. Review of Empirical Studies

In this section, the discussion includes the review of empirical studies on the topic under consideration.

2.3.1. Studies on Transparency and Financial Management

Consistently, transparency emerges as an important aspect of better financial performance. For instance, Dipama (2024) examines the issue of the effectiveness of aid flows in Sub-Saharan Africa and concludes that the existence of transparent public financial management (PFM) practices helps

donors become more confident and predictable in providing funds. The author uses cross-country regression analysis and identifies transparency mechanisms as a way to minimize information asymmetry and build trust relations between development partners and recipient states.

Awudu et al. (2024) examine the factors impacting financial transparency and accountability in Ghanaian local governments using ordinary least squares regression. According to the authors, the technological base, availability of resources, organizational culture, and policy measures positively affect financial transparency and accountability. Importantly, decentralization acts as a moderating variable and diminishes the positive impact of the independent variables. This is an important point since Ethiopia has adopted a federal system.

Furthermore, Lemma (2018) investigates accounting reforms in Ethiopia's federal bodies and implicitly points to transparency as a necessity for effective forecasting and implementation of plans. Also, according to the Addis Ababa University study (2024), IBEX enhances transparency in the Ethiopian government agencies as employees get real-time information about financial activities. Still, few empirical studies examine the issue of system-based transparency as an independent variable that impacts financial performance. That is why this study hypothesizes:

Hypothesis 1 (H1): System transparency has a significant positive effect on the financial management of donor-funded government projects in Ethiopia.

2.3.2. Studies on Efficiency and System Performance

Process automation is a factor that influences efficiency of the work done. Mohammed (2017) finds that introduction of GIFMIS in Ghana decreased the time required to conduct payments in the central treasury of the state. At the same time, the efficiency gains differ depending on a governmental level.

According to Mlawasi (2025), efficiency depends on the quality of ICT infrastructure and user knowledge. Using a qualitative study on the issue of IFMIS adoption in Kenyan counties, the author concludes that efficiency is the result of an interaction between the system and the external environment, not merely its inherent quality.

Sikabanga & Haabazoka (2025) confirm that IFMIS adoption in Zambian counties increased the accuracy of financial reporting and compliance with the budget process requirements. As a result, the misuse of budget resources and delays in money flow were minimized. But, as the researchers

highlight, frequent system outages, lack of technical support, and reluctance of employees to implement all proposed changes negatively impacted efficiency of the introduced system.

Using longitudinal analysis and ordinary least squares regression with six control variables, Chalu (2019) explores the impact of IFMIS adoption on financial reporting in Tanzania. As a result, the study proves that IFMIS adoption increases the understandability and reliability of financial reporting which are directly related to the efficiency of the process conducted. Therefore, it seems reasonable to hypothesize:

Hypothesis 2 (H2): System efficiency has a significant positive effect on the financial management of donor-funded government projects in Ethiopia.

2.3.3. Studies on Compliance and Financial Management

Research on the influence of IFMIS adoption on internal controls indicates that the implementation of such system is effective. Nhial, Shiku, and Siwale (2025) note significant correlation between IFMIS implementation and internal control systems ($p = 0.003$) in the Ministry of Finance of South Sudan. Additionally, they find connection between IFMIS and financial reporting systems ($p = 0.024$).

As for Oketcho (2024), in her qualitative study on IFMIS adoption and financial reporting effectiveness in Uganda, the author identifies internal control systems inside the system as a crucial determinant for the successful implementation. According to Lemma (2018), internal control failures and non-compliance with financial standards and procedures are among common issues during reforms in Ethiopia.

That suggests that introduction of an advanced and comprehensive financial information system with built-in compliance controls (IBEX) will have positive results. Research on the effectiveness of IFMIS in Kenya (Kinyua, 2003) shows that it is an effective ex-ante control that decreases procedural mistakes and improves financial reporting. Therefore, this study hypothesizes:

Hypothesis 3 (H3): System compliance has a significant positive effect on the financial management of donor-funded government projects in Ethiopia.

2.3.4. Studies on Integration and Financial Management

Integration of donor contributions into national systems is an important part of the PFM reforms and aid effectiveness agenda. For instance, de Renzio, Andrews, and Mills (2010) criticize

fragmented aid architectures that require development of a parallel system that undermines future capabilities and country ownership. The authors conduct a cross-country study and argue that integration contributes to efficient fiscal oversight and comprehensive analysis of the state budget.

According to Tetteh et al. (2022), integration is a possible outcome of IFMIS adoption in Ghanaian local governments. A qualitative case study conducted by the researchers suggests that integration becomes possible due to regulatory, environmental, and organizational conditions. Still, it is important to emphasize that role of the socio-cultural factor should not be ignored.

The Ministry of Finance (2023) of Ethiopia identifies full integration of donor contributions into the IBEX as one of the main priorities of PFM Reform Strategy. Moreover, as the authors emphasize, unevenness of integration processes in different sectors should be noticed, as well as some parallel reporting systems that have remained despite adoption of IFMIS. Thus, the hypothesis suggested by this study is as follows:

Hypothesis 4 (H4): System integration has a significant positive effect on the financial management of donor-funded government projects in Ethiopia.

2.3.5. Studies on Usability and Financial Management

Usability and acceptability of the tool remain two of the most important determinants of successful IFMIS implementation. For instance, Technology Acceptance Model of Davis (1989) is based on the idea that perceived ease-of-use and usefulness are necessary preconditions for adoption of any software solution.

The study conducted by Haile (2025) examines the problem of factors influencing IFMIS implementation in the Ministry of Finance of Ethiopia. According to the author, resistance to change, low capacity and skills of employees, complex IT system, and insufficient infrastructure become obstacles that prevent proper functioning of the introduced tool. In conclusion, the author proposes measures to overcome these difficulties.

Moreover, as research of Kenyan county treasuries shows, continuous training of managers and users plays a crucial role in successful implementation. Particularly, Haile (2025) recommends engaging users into conducting training needs analysis, which will improve its efficiency. This assumption is supported by Njau & Kinoti (2020) who consider user competence and acceptance of IFMIS as success factors.

Finally, Awudu et al. (2024) report a counter-intuitive finding that user acceptance and training decrease system efficiency. This unexpected result might appear due to poorly organized training and resistance to change. That is why it is extremely important to measure users' attitudes towards the introduced system. Based on these assumptions, the following hypothesis can be formulated:

Hypothesis 5 (H5): System usability has a significant positive effect on the financial management of donor-funded government projects in Ethiopia.

2.3.6. Studies on Credibility and Financial Management

Finally, credibility as a degree of trust of stakeholders in the information produced by the system plays an important role in achieving desired results. If the information produced is unreliable, then donors ask for parallel reporting to avoid risks, what contradicts the idea of integration and minimizes the expected benefits.

Chalu (2019) conducts a study aimed to investigate the impact of IFMIS adoption on financial reporting quality in Tanzania. As a result, the author identifies that the system improves reliability of reports while quality of relevance does not show significant improvement.

Also, Addis Ababa University (2024) claims that the introduced IFMIS in Ethiopia helped improve reporting accuracy and speed, which in turn contributed to the credibility of the system. Furthermore, OECD (2011) notes that the credibility of financial information is crucial for mutual accountability between donors and partner countries. Therefore, the hypothesis tested by this study is the following:

Hypothesis 6 (H6): System credibility has a significant positive effect on the financial management of donor-funded government projects in Ethiopia.

2.3.7. Research Gap

Based on the findings above, a research gap can be outlined. First, although the body of literature concerning IFMIS implementation is substantial, a few issues need to be addressed:

A Macro-Level Focus: Particularly, many studies on the topic concentrate either on macro-level fiscal parameters, national budget credibility, or the framework for reforms in the field (Muhammed, 2014; MoF, 2023). This top-down perspective is highly useful yet fails to acknowledge the experience of frontline users who interact with IFMIS on a regular basis. Haile

(2025) and Addis Ababa University (2024) partially explore this issue but do not mention donor-funded projects.

Anecdotal Nature of Challenges: Issues related to IBEX usage (e.g., problems with credibility, delays in reporting, parallel system introduction) are mentioned in various papers only in a descriptive manner or in internal governmental documents. Lack of empirical evidence that systematically measures influence of particular system attributes on financial performance is notable. The study conducted by Gebremedhin & Mulugeta (2025) is the exception.

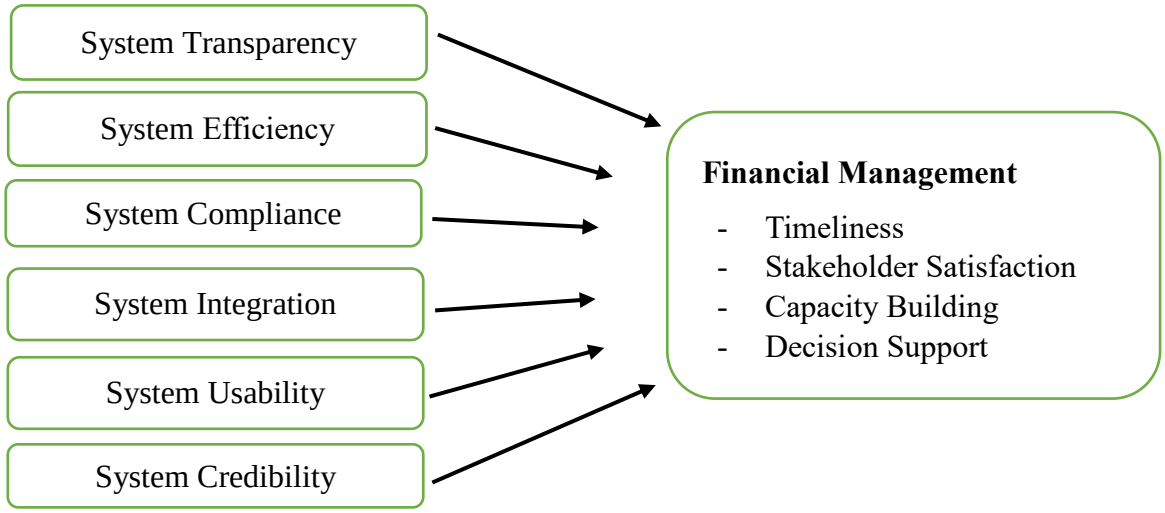
One-Dimensional Perception of IFMIS: The vast majority of studies discuss IFMIS in a simple binary way, identifying whether the system is adopted in an organization or not. Chalu (2019); Nhial et al. (2025); and Oketcho (2024) adopt multidimensional perception of IFMIS and prove that different attributes produce diverse results. This study adopts a multi-dimensional perception of IBEX, analyzing transparency, efficiency, compliance, integration, usability, and credibility, and measuring user's perceptions.

No Special Attention Is Paid to Donor-Funded Projects: As mentioned before, PFM reforms aim at increasing efficiency and effectiveness of financial operations. However, very little research is conducted to examine the influence of particular system attributes on the financial management of donor-funded projects as a unit of analysis. Such projects face special challenges (e.g., requirements of different donors, fixed implementation deadlines).

2.4. Conceptual Framework

The suggested linear framework identifies direct predictive relationships between the IBEX attributes and the desired financial management outcomes. Such an approach fits well into the theoretical perspectives introduced in the first part of this section. In accordance with agency theory, the transparency, compliance, and credibility pathways receive support since they help to minimize information asymmetries between principals and agents. Meanwhile, stewards who are motivated to perform actions beneficial for organizations receive extra power in the context of the usability and efficiency pathways as stipulated by stewardship theory. The Diffusion of Innovations (DOI) theory provides additional support for the six IBEX attributes identified above as being relevant from a perception standpoint. Finally, the Technology–Organization–Environment (TOE) framework puts these relationships in a larger context of organizational and environmental variables, which are intended to act as control variables in the empirical part of this study.

Figure 1: Conceptual Framework of the Study



The proposed framework is verified quantitatively by estimating relationships between each IBEX attribute and the composite measure of financial management. In addition to obtaining results regarding the general importance of IBEX attributes, the hypothesis-testing framework will make it possible to determine which IBEX attributes are the most important predictors of system success. By weaving together several theoretical perspectives into a simple linear model, the framework provides an elegant means of investigating the research question in-depth.

So far, there is a lack of systematic study of the relationship between specific IBEX attributes and financial management outcomes in the context of donor-funded projects in Ethiopia. This study intends to bridge this research gap by testing seven hypotheses derived from theoretical assumptions and empirical evidence. The hypothesis-testing paradigm allows making causal inferences about the studied phenomenon, which is very important for practical purposes.

Concluding the review of relevant literature, it can be summarized that four key theoretical perspectives have been considered in detail, including Agency Theory, Stewardship Theory, Diffusion of Innovations Theory, and the TOE framework. IBEX attributes and financial management outcomes have been conceptualized and identified accordingly. In addition, six hypotheses relevant for testing relationships between IBEX attributes and financial management outcomes have been formulated, taking into account both theoretical considerations and empirical evidence. In turn, the review of global, regional, and local contexts has shown some progress but also revealed several problems associated with IFMIS implementation in Ethiopia. Among them,

there was one major research gap, which consists in the lack of systematic study of the impact of specific IBEX attributes on donor-funded projects in Ethiopia.

CHAPTER THREE:

3. RESEARCH METHODOLOGY

The methodology chapter provides an in-depth discussion on the research methods employed in the assessment of how Ethiopia's Integrated Budget and Expenditure Accounting System (IBEX) influences financial management of the government-run, donor-funded projects. Specifically, it covers research approach and design, population, sampling strategies and sampling size determination, sources of data, data collection instruments and procedures, data analysis methods, model specification and ethical considerations.

3.1. Research Approach

The chosen approach for this paper is the quantitative approach to determine how the attributes of Ethiopia's IBEX impact the financial management of the government-funded projects. Quantitative approach will enable to empirically validate the relationships among six variables, such as transparency, efficiency, compliance, integration and scope, usability, and credibility of IBEX and the financial management outcomes (Saunders et al., 2019).

Quantitative approach is particularly effective for systematic gathering of numerical data from professionals engaged in financial management of projects in the scope of IBEX. This research approach allows hypothesis testing and identification of relationships among variables as well as generalizations from a sample to a population (Bryman & Bell, 2015). Since the purpose of this research is to determine the extent to which each of the six IBEX attributes affects the one variable, numerical data, which is suitable for regression analysis, needs to be collected.

Thus, the choice of quantitative research approach allows researchers to conduct objective data collection and analysis by employing statistical tools. It will minimize possible subjectivity in the data collection and analysis as well as help to generalize research findings to other environments, where similar phenomena take place. In addition, unlike qualitative approaches, where the results

are expressed thematically, quantitative methods allow collecting data quantitatively through conducting surveys (Punch, 2013).

3.2. Research Design

An explanatory research design was employed to investigate the relationships between IBEX attributes and financial management outcomes of the government-funded projects. Explanatory research is suitable in case, when the relationships between the variables should be explored and causes and effects identified (De Vaus, 2014; Kothari, 2004). Thus, it will help researchers to integrate all research components systematically and test hypothesis about the relationships of IBEX variables and their financial management outcomes. Using this design allows identifying empirical evidence as to how the improvements in the attributes of IBEX impact the financial management of the government projects.

In contrast to qualitative designs that allow generating hypotheses and describing trends in the phenomena, explanatory design helps to test hypotheses and establish the relationships between independent and dependent variables (Saunders et al., 2019). The use of statistical methods for data analysis and especially multiple regressions will help to measure the degree of the relationships among IBEX attributes and financial management outcomes. Cross-sectional survey design is appropriate for this research since it allows to collect a certain amount of data at a specific point in time from relevant individuals. It is preferable to longitudinal design considering the time and resources required for collecting data and a large number of respondents (Field, 2018).

3.3. Study Population

As mentioned above, the research is designed to explore how IBEX attributes impact the financial management of the donor-funded projects, implemented by the government. The focus of the study is made on the regions operating projects in Addis Ababa, Oromia, Amhara, South Ethiopia, Somali, Afar, Tigray, Gambella, Benishangul, Harar, Sidama, South West Ethiopia, Central Ethiopia, and Dire Dawa City Council. These regions are administered by the Ministry of Finance that uses IBEX for managing budgets, expenditures, and accounting processes of donor-funded projects.

Population of interest represents the professionals involved in the management of these projects and using IBEX. These might include, but not be limited to, project managers, finance officers,

accountants, budget officers and others, involved in performing financial operations and activities in accordance with IBEX in the course of managing donor-funded projects.

Approximately seven ongoing donor-funded projects (including PSNP and UPSNJP) are managed by these regions and Addis Ababa city administration (Channel One Program Coordinating Directorate, MoF website). These projects are supported by different development partners, such as the World Bank, United Nations agencies (UNDP, FAO, etc.), EU, FCDO, Irish Aid and others. Hence, the population is about 620 people (MoF, 2025). There are two to five finance and accounting professionals working at each project in woreda, cities, regional agencies and even development partner's offices. Consequently, the population is estimated at 620 professionals. Each of them has the necessary experience and knowledge in managing donor-funded projects within IBEX system.

3.4. Sample Size

Sampling refers to the selection of a portion of units in the specified population (Zikmund, Babin, Carr, & Griffin, 2013). Since the full coverage of the population is unfeasible in terms of time, cost and availability of respondents, it is preferable to gather data from a representative sample of the population. Considering the size of the population, which equals to 620 finance and accounting professionals, the sample size of respondents was determined proportionally using the formula proposed by Yamane (1967):

$$\boldsymbol{n = \frac{N}{1+Ne^2} = \frac{620}{1+(620*0.05^2)} \cong 243} \text{ Respondents}$$

Where:

- N = Total number of population (620)
- e = Maximum variability or margin of error 5% (0.05)
- n = Computed sample size

Moreover, in order to avoid losing the data validity due to possible non-responses, it is important to add an additional 10%. Therefore, the approximate sample size will be equal to 267 respondents (1.1*243).

3.5. Sampling Technique

Since there are certain differences in regions and donor funds, stratified random sampling technique was employed in order to get the representative sample of individuals. Two criteria were considered in stratifying the population: 1) regions implementing projects, 2) major donors supporting projects.

Table 1. Stratification Strategy and Proportional Allocation (n = 267)

Stratum Criteria	**Sub-Strata**	**Description**	**Proportion = 620 (%)**	**Sample Size (n)**
Regional Agency	Regional and Woreda Bureau of Finances	Institutions responsible for executing donor-funded projects using IBEX.	453 (73%)	195
Line Ministry and Major Donor Funding Source and	The Ministry of Finance, World Bank, UN agencies (WFP, UNICEF etc), European Union, Bilateral Donors (e.g., FCDO, IRISH AID), Other donors and	Line Ministry responsible for IBEX in Ethiopia and key external funding partners whose requirements may influence IBEX utilization and reporting practices and the	167 (27%)	72
Total			**620 (100%)**	**267**

Source: CSOs Database, 2025

For this study, as seen from table 1, stratified sampling and then simple random sampling of each stratum were conducted. In this way, it was guaranteed that different donor-funded projects would be involved in the study as well as different funding sources.

3.6. Sources of Data

Primary data were collected since they are most relevant and allow getting the necessary insights directly from respondents, being involved in the problem under consideration. Professionals involved in the management and execution of the donor-funded projects, which utilize IBEX, represent the target population for the research since they can provide the most relevant answers and insights concerning the impact of IBEX on the problem under discussion. Primary data reflect the current state of things and allow controlling other variables in order to eliminate possible biases. Besides, documents on IBEX were used as additional data sources, including project financial reports, instructions and requirements of donors, and documents related to public financial management reform.

3.7. Data Collection Instrument

In this research, in order to get information on the effect of IBEX attributes on financial management outcomes, the questionnaire was employed as a data collection tool. Due to the requirement to have consistent answers of the respondents who worked on PSNP and UPSNJP, financed by different donors and implemented in different regions, it is important to apply uniform wording and ordering of questions, which will exclude any inconsistencies caused by linguistic peculiarities (Hair et al., 2019; DeVellis, 2017). Based on a literature review in relation to public financial management, IFMIS implementation and IT adoption, the instrument is designed using validated measures taken from existing scales in this field. Informed by the Diffusion of Innovations theory (Rogers, 2003), the instrument comprises three major parts:

- The first part collects demographic and organizational data on respondents, including number of years of working experience in finance, degree level achieved, professional qualifications acquired, types of projects (whether commercial or donor-financed), funding sources used in their work, and importantly, the evidence on their experience of working with an IBEX system.
- Part B of the instrument contains measures of the IBEX system attributes (independent variables) that include transparency, efficiency, compliance, integration, usability and credibility of the system. It includes statements validated in the literature in relation to each attribute of the system (Mohammed, 2017; Mlawasi, 2025; Gebremedhin & Mulugeta, 2025; ACCA, 2024).
- Finally, section C focuses on the financial management outcomes (dependent variables), which will include timely reporting, stakeholder satisfaction, capacity building and decision-making assistance measured using validated measures adapted to the Ethiopian situation based on previous studies on PFM.

Each question was assessed using a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). Thus, mean scores were calculated for each construct using respondents' answers. Moreover, the data collection tool was pre-tested, and more than one item per construct was used to improve its validity and reliability (Hair et al., 2019; Nunnally & Bernstein, 1994).

3.8. Data Collection Procedure

The procedure of data collection was systematic and focused on testing the relationships between attributes of IBEX and financial management outcomes. Data were gathered from the project managers, finance officers, accountants, budget officers, and financial management specialists from the partner organizations who worked in donor-funded regional projects. First, necessary approvals from the Ministry of Finance and partners were received before starting data collection. Then, questionnaires were distributed manually and electronically.

Brief information about the study's purpose and confidentiality assurance was provided for the respondents together with questionnaires. Besides, instructions, which described the purpose of the study, confidentiality assurance, time to complete the questionnaire (approximately 15-20 min), and procedure of sending back the filled-out questionnaire, were provided for each respondent. Two weeks were allowed for the response. Afterwards, completed questionnaires were collected manually and electronically, checked for accuracy and consistency, and then coded for analysis.

Although it cannot be denied that the use of self-reported data can be biased, necessary precautions were taken in the form of conducting a pre-test of the questionnaire and checking internal consistency. In addition, a standardized procedure of data collection provided researchers with consistent and reproducible data on the relationships between IBEX attributes and financial management outcomes in Ethiopia's donor-funded projects.

3.9. Data Analysis and Presentation

Descriptive and inferential statistical techniques were used to analyze the effect of various attributes of IBEX system on financial management outcome. The data obtained were then coded and entered into Statistical Package for Social Sciences (SPSS) software to permit systematized analysis, and increase reproducibility.

Descriptive Statistics: Descriptive statistics, including frequencies, percentages, mean scores and standard deviations were computed for summarizing respondent characteristics and overview of response patterns across important variables. These early indicators became the baseline knowledge of IBEX attributes perceptions and outcome evaluations for financial management among project managers, finance officers, and accountants in donor-funded projects.

Hypothesis and Causality Testing: Inferential statistics to test the hypotheses was then employed to line up relationships and causation between the six independent variables (transparency,

efficiency, compliance, integration, usability, credibility) and financial management outcomes as dependent variable. The analysis includes:

- **Correlation** - Pearson correlation coefficients were used to compute the strength and the direction of linear relationships between each IBEX characteristic and financial management outcomes. As noted by Hair et al. (2019), these coefficients can move between –1.00 and +1.00, with 0 representing no association.
- **Assumption Test** - This also entails the performance of assumption tests such as normality, linearity, homoscedasticity and multicollinearity to ensure that the data is suitable for regression analysis. Multicollinearity will be evaluated using the Variance Inflation Factor (VIF), with VIF values less than 10 indicating acceptable levels of multicollinearity (Field, 2018).

Regression Analysis - Then Multiple linear regression is conducted to analyze the predictive power of the six attributes of IBEX in relation with financial management results. This procedure is suitable for consider when the study seeks to explore the joint and singular impacts of several predictors on a continuous outcome (Tabachnick & Fidell, 2019).

Measurement of Variable: The study variables (independent variable & dependent variable) are being measured in such a way that:

Dependent Variable: Financial Management Outcomes (FMO) – Financial management underlies identified through 4 major indicators which are timeliness of financial reporting, stakeholder satisfaction, capacity building and decision support. The variable is operationalized as a composite score constructed from respondent assessments of items capturing each indicator that were adapted from previous public financial management studies (ACCA, 2024; MoF, 2023; DPG-Ethiopia, 2024).

Independent Variables:

- Transparency – Assessed using items measuring the extent to which financial information (budget allocations, expenditures and reports) is open, visible and accessible to legitimate users and stakeholders in the IBEX ecosystem.

- Efficiency – Item scale of perceived speed and accuracy with which financial transactions are processed in IBEX, as well as reduction of manual effort spent on financial management tasks.
- Compliance – Assessed through items examining how IBEX encourages compliance with national financial laws, and regulations, as well as those of select donor countries.
- Integration — As assessed by items evaluating the extent of integration of financial project data from donor-funded projects into the national IBEX system vs separate, parallel systems
- Usability: items that evaluate the degree of ease with which users can learn and operate the IBEX system to achieve their financial management needs, like perceptions of user-friendly (easy-to-use) and adequacy (sufficient training and support).
- Credibility – Quantified by items determining the trustworthiness and confidence of stakeholders, especially donators in the financial data and reports generated through IBEX.

The independent and dependent variables use 5-point Likert type scale starting with (1 = Strongly Disagree; 5 = Strongly Agree). Mean scores for each construct are calculated by taking the average of responses to individual items.

Model Specification – The model specification is to evaluate how the six attributes of IBEX impact financial management results for government projects financed by donors. The analysis facilitates the code to summary of models (R^2 value), model significance in terms of F-statistic, p-value for the significance of each relationship and Beta coefficients.

To evaluate the relationship, the multiple linear regression analysis for testing the formulated hypotheses is specified as:

$$\mathbf{FMO = \beta_0 + \beta_1 TR + \beta_2 EF + \beta_3 CM + \beta_4 IN + \beta_5 US + \beta_6 CR + \varepsilon}$$

Where:

- FMO = Financial Management Outcomes (composite measure of timeliness of reporting, stakeholder satisfaction, capacity building, and decision support)
- TR = Transparency; EF = Efficiency; CM = Compliance; IN = Integration; US = Usability
- CR = Credibility; β_0 = Constant term; β_1, β_2, β_3, β_4, β_5, β_6 = Coefficient terms; ε = Error term

The regression analysis tests the hypotheses formulated based on the theoretical framework. Hypotheses were tested at the 0.05 significance level, with p-values less than 0.05 indicating statistical significance. The coefficient of determination (R^2) indicates the proportion of variance in financial management outcomes explained by the six independent variables collectively.

3.10. Validity Test

Validity represented the extent to which the research instrument measured what it should have measured in actuality. Firstly, content validity assured that all measures included in the questionnaire really related to IBEX attributes and financial management outcomes. Secondly, the questionnaire was reviewed by the academic supervisor as well as public financial management specialists, who worked on IBEX projects, in order to align with the purpose of the research. Construct validity testing ensured that the items under each construct of the variables measured consistently, based on perspectives and scales used in earlier validated studies. The instrument was informed by items drawn from previously validated studies incorporated into public financial management requirements and IFMIS implementation research, as well as field research conducted by technology centers.

To triangulate the validity and clarity of the developed instrument, a pilot study was carried out among 30 finance and accounting professionals working on organized donor-funded projects but not included in the main sample. This activity was pertinent for identifying ambiguity, inconsistencies, or problematic wording, and for modifying the questionnaire to achieve accurate measurement before final distribution.

3.11. Reliability Test

Reliability referred to the consistency and stability of measurement, indicating the extent to which the instrument produced similar results under consistent conditions (Pallant, 2020). In this study, Cronbach's Alpha coefficient was used to assess the internal consistency of the research instrument, measuring how well items within each construct were related to each other.

Table 2. Reliability Test Results

Variables	No. of Items	Cronbach's Alpha
System Transparency	5	0.862
System Efficiency	5	0.845
System Compliance	5	0.838
System Integration	5	0.829
System Usability	5	0.817
System Credibility	5	0.856
Financial Management Outcomes	5	0.874
Overall Reliability	35	**0.941**

Source: Pilot Survey, 2026

Cronbach's Alpha (α) values ranged between 0 and 1, with higher values indicating greater internal consistency. According to Hair et al. (2019), scales with alpha values between 0.60 and 0.70 indicated acceptable reliability, while a coefficient of 0.70 or higher was considered good. Nunnally and Bernstein (1994) recommended a minimum threshold of 0.70 for established scales, though values above 0.60 were acceptable for exploratory research. Reliability testing was performed on each construct separately and on the overall survey instrument to ensure measurement consistency. If any construct had demonstrated inadequate reliability ($\alpha < 0.60$) during pilot testing, problematic items would have been identified through item-total correlation analysis and either revised or removed to improve internal consistency before final administration.

All constructs recorded Cronbach's Alpha values greater than 0.70, confirming acceptable to excellent internal consistency. The overall reliability coefficient for all 35 items in the questionnaire was 0.941, which fell within the "excellent" range. This result validated that the instrument was highly cohesive and dependable, ensuring that subsequent analyses were based on robust and trustworthy measures.

3.12. Ethical Considerations

This research complied with ethical guidelines in order to protect the interests of participants. Firstly, they were informed about the goals of the study, its risks and benefits as well as their rights regarding participation and withdrawal. Information on these matters was provided along with each

questionnaire. Secondly, personal information was protected since no names were collected and data was presented in aggregate form only. Lastly, data collection process started only upon obtaining formal approvals from the Ministry of Finance.

CHAPTER FOUR:

4. DATA PRESENTATION, ANALYSIS, AND INTERPRETATION

This section presents the collected data, results of the data analyses and their interpretations. The analyses are summarized under descriptive and inferential statistics. The former describes the demographic profile of respondents and analysis of responses for each IBEX system attribute (transparency, efficiency, compliance, integration, usability, and credibility); while the later - inferential statistics comprised correlation tests, assumptions for the multiple regression analysis.

4.1. Response Rate

Table 3. Response Rate

Questionnaires	Frequency	Percentage (%)
Total distributed	267	100.0%
Unreturned questionnaires	19	7.1%
Returned questionnaires	248	92.9%
Response errors	12	4.5%
Total valid and usable	236	88.4%

Source: Own Survey 2026

As shown in table 3, the response rate for the questionnaires distributed to the respondents involved in finance and accounting on donor-funded government projects in Ethiopia was relatively high. A total of 267 questionnaires were sent out to respondents, of which 248 were returned (92.9%). On the other hand, 19 questionnaires were never returned to the researcher for analysis (7.1%). Out of the returned questionnaires, twelve (4.5%) were found unsuitable for analysis either because of incomplete responses or straight-lining or contradictions. These left 236 responses as the number of questionnaires suitable for analysis and interpretation, making an effective response rate of 88.4%. High response rates have been facilitated by the approach taken by the researcher for the survey. Online interactions as well as departmental contacts and follow-ups have led to a relatively high rate. According to Saunders et al. (2019), the acceptable minimum for self-administrated surveys in

organizations is 70%. Therefore, the 88.4% response rate obtained is quite good. Besides, the data is complete and therefore reliable for statistical analyses. For regression analysis, a sample size of 236 responses is appropriate for identifying medium and large effects.

4.2. General Information about the Respondents

Table 4. Demographic Characteristics of Respondents (n = 236)

Characteristic	**Category**	**N**	**%**
Gender	Male	139	58.9
	Female	97	41.1
Age	21–30 years	54	22.9
	31–40 years	103	43.6
	41–50 years	51	21.6
	51–60 years	23	9.7
	More than 60 years	5	2.1
Education	Diploma	18	7.6
	Bachelor's Degree	137	58
	Master's Degree	81	34.3
Professional Certification	None	180	76.3
	ACCA	12	5.1
	Other	44	18.6
Years of Experience	Less than 5 years	41	17.4
	5–10 years	87	36.9
	11–15 years	68	28.8
	More than 15 years	40	16.9
Years with IBEX	Less than 3 years	63	26.7
	4–6 years	112	47.5
	7–9 years	41	17.4
	10 years or more	20	8.5
Current Role	Project Manager	52	22.0
	Finance Officer/Accountant	118	50.0

	Budget Officer	38	16.1
	Internal Auditor	28	11.9

Table 5. Demographic Characteristics of Respondents (n = 236) …Continued

Federal, Regional and Woreda bureaus and other stake holders	Regional Bureau of finance	11	5%
	Woreda Bureau of finance	153	65%
	Bureau of Agriculture	11	5%
	Ministry of Finance	49	21%
	Other Stakeholders	12	5%

Source: Own Survey, 2026

From the tables 4 and 5 above, it can be seen that the male gender constituted slightly more respondents (58.9%, n=139) compared to female respondents (41.1%, n=97).

Also, the highest age group among the sample (43.6%, n=103) was 31-40 years, followed by 21-30 years (22.9%, n=54), then 41-50 years (21.6%, n=51). Most respondents are relatively young, having a total of 66.5% below 40 years. Therefore, it is fair to conclude that the respondents belong to productive age groups suitable for the use of information technology and IBEX system.

Educationally, most respondents hold a bachelor's degree (58%, n=137), followed by master's degree holders (34.3%, n=81) and diploma holders (7.6%, n=18). Thus, it can be argued that over 92% of the sample had at least either a bachelor or master's degree, indicating high levels of intelligence and cognitive ability to understand IBEX attributes and financial management outcomes. The majority of the respondents had no professional certification (76.3%, n=180), with others holding ACCA certifications (5.1%, n=12) and other professional certifications (18.6%, n=44).

Concerning years of experience, most respondents had either 5-10 years (36.9%, n=87) or 11-15 years (28.8%, n=68). Additionally, 40 respondents had more than 15 years (16.9%) while the remaining 17.4% (n=41) had less than five years of professional experience. Hence, more than 80% of the respondents are experienced in their profession, implying maturity of the samples in terms of skills.

With regard to years of experience with the IBEX system, a majority (47.5%, n=112) of the respondents had 4-6 years' experience with the IBEX software. On the other hand, those with less than three years of IBEX usage (26.7%, n=63) made up almost half of the sample. Again, this is in line with the implementation timeline of IBEX software under the Public Financial Management Reform Strategy (2023–2028).

In respect to current positions, the sample was equally distributed with 50.0% (n=118) of the respondents being finance officers/accountants, followed by project managers (22.0%, n=52), budget officers (16.1%, n=38), and internal auditors (11.9%, n=28). Hence, the sample involved respondents with diverse occupations in the field of finances.

Finally, looking at the woreda level frontline workers involved in project implementation, it can be observed that the sample was predominantly made up of 65% (n=153) woreda level finance management officials. Other regional level bureau of finance respondents (n=11), regional Bureau of Agricultures (n=11), the ministry of finance (n=49), and other stakeholders (development partners) (n=12). Therefore, it is concluded that the sample involves highly educated and experienced personnel with varied expertise.

4.3. IBEX System Attributes Affecting Financial Management

This section provides a detailed descriptive analysis of the independent variables used in the study. Six IBEX attributes (transparency, efficiency, compliance, integration, usability, and credibility) and the dependent variables (financial management outcomes) were examined in relation to their effects on financial management. Respondents' views were analyzed based on the mean and standard deviation. The interpretation of the variables was done according to Best (2005)'s interpretation scale, whereby, mean values ranging between 1.01-1.80 indicated strong disagreement; 1.81-2.60 disagreement; 2.61-3.40 neutral; 3.41-4.20 agreement; and 4.21-5.00 strong agreement. Furthermore, standard deviations values over 1.000 show considerable difference in opinions.

4.3.1. System Transparency

Table 6. Descriptive Statistics for System Transparency (n = 236)

Statement	Mean	STD
IBEX provides clear visibility of budget allocations for my project	3.92	1.124
I could easily track expenditure transactions through IBEX	3.78	1.201

IBEX enabled donors to access financial information directly	3.45	1.342
Financial processes in IBEX were traceable and auditable	3.81	1.156
IBEX made financial information open and accessible to authorized users	3.68	1.289
Grand Mean	**3.73**	**0.986**

Source: Field Survey, 2026

According to the findings shown in Table 6, most of the participants agreed that IBEX improves the level of system transparency. When it comes to different transparency dimensions, the one that got the greatest approval from the participants was the dimension related to the visibility of budget allocations, and its highest score is equal to M = 3.92 with SD = 1.124. This means that the system helps users to understand how project budgets are allocated.

Another positive rating that received the dimension related to tracking expenditure transactions, and the mean of such evaluation equals M = 3.78, and SD = 1.201. However, the dimension associated with donor access to financial information got lower scores and, thus, the corresponding mean is equal to M = 3.45, and SD = 1.342. This means that even though the system provides high levels of transparency, donors may have difficulties accessing the necessary information.

Referring to the dimensions associated with the process of auditing and tracing of financial information, it is important to state that their mean was calculated as M = 3.81, and the corresponding SD is 1.156. The same concerns financial information being open for authorized users and getting M = 3.68 and SD = 1.289. Overall, the grand mean is 3.73 with SD = 0.986.

Therefore, it is possible to state that system transparency receives a lot of approval. The results show that IBEX indeed improves financial system transparency and accountability as far as users can easily track transactions, audit them and get financial reports that are understandable and relevant. However, it is still necessary to improve the system in terms of providing donors with more accessible information and increasing its openness.

4.3.2. System Efficiency

Table 7. Descriptive Statistics for System Efficiency (n = 236)

Statement	Mean	STD
IBEX reduced the time required to process payments	3.54	1.287
IBEX minimized manual data entry and reconciliation efforts	3.38	1.356
IBEX enabled faster generation of financial reports	3.82	1.192
IBEX processed transactions with high accuracy	3.71	1.223
IBEX streamlined financial workflows in my project	3.49	1.341
Grand Mean	**3.59**	**1.043**

Source: Field Survey, 2026

Table 7 shows that respondents, on the whole, showed moderately favorable attitudes towards the influence of the use of IBEX in increasing efficiency. As can be seen from Table 6, the average value of ratings among all respondents amounted to 3.59, and the standard deviation reached 1.043. Therefore, efficiency did improve, but the improvement could not be considered very significant. Efficiency gains were somewhat less pronounced compared to the aspect of transparency, meaning that further strengthening would be required to balance out differences between efficiency and transparency in terms of their influence on project development.

As regards particular items, the highest rating in Table 6 is observed for quicker preparation of financial reports (mean = 3.82; SD = 1.192). This is explained by the fact that the software enables generating donor-required financial statements much faster. High marks have also been awarded for transaction accuracy (mean = 3.71; SD = 1.223). Clearly, users trust the system in terms of handling financial transactions. Less highly rated were payment processing (mean = 3.54; SD = 1.287) and streamlining the work process (mean = 3.49; SD = 1.341) - implies that there are some problems with using IBEX for these purposes. The least favorable attitude towards the contribution of the software to efficiency is observed for the reduction of manual entries (mean = 3.38; SD = 1.356).

Given the substantial values of standard deviations, there are considerable discrepancies in ratings among users of IBEX, which, no doubt, results from variations in the quality of ICT infrastructure and user experience in operating the technology. Overall, efficiency is assessed quite favorably, but, at the same time, the obtained grand mean (3.59; SD = 1.043) suggests that efficiency gains cannot

be considered very significant. Thus, IBEX proved to be efficient in terms of the speed of reporting and transaction processing but had little effect on reducing the need for manual entries and making work processes more streamlined.

4.3.3. System Compliance

Based on the descriptive statistics provided in Table 8 below, the respondents strongly agreed that IBEX ensures compliance to both regulatory and procedural requirements with a grand mean of 3.78 and a standard deviation of 0.979. This attribute turned out to be the highest in comparison to other five attributes of IBEX. Compliance was clearly the strongest attribute of the system. In relation to compliance, the top item was compliance to government financial regulations with mean of 3.96 and standard deviation of 1.108. These demonstrate that respondents have a great deal of confidence in compliance capability of IBEX in terms of ensuring compliance to national rules.

Table 8. Descriptive Statistics for System Compliance (n = 236)

Statement	**Mean**	**STD**
IBEX ensured that transactions complied with government financial regulations	3.96	1.108
IBEX facilitated adherence to donor-specific reporting requirements	3.51	1.324
IBEX reduced the risk of procedural violations	3.83	1.167
IBEX helped prevent ineligible expenditures	3.74	1.235
IBEX enforced compliance with procurement laws and financial proclamations	3.88	1.146
Grand Mean	**3.78**	**0.979**

Source: Field Survey, 2026

Enforcing procurement laws and financial proclamations followed with high mean (3.88) and standard deviation (1.146). Therefore, this shows that IBEX successfully minimizes risks in connection with regulatory violation. Some compliance attributes have been rated moderately such as the enforcement of measures to minimize procedural violations (3.83) and preventing ineligible expenditures (3.74) with relatively higher standard deviations (1.167 and 1.235 respectively).

The lowest rating in the compliance category was achieved by the enforcement of measures to comply with reporting requirements of donor organizations (3.51, SD = 1.324). This finding correlates with the previously discussed issue of low accessibility by donor organizations. Hence,

despite that IBEX efficiently enforces Ethiopian government regulations, it still lacks capability to adjust to the needs of donor organizations.

On average (grand mean of 3.78), compliance has become the most important attribute of IBEX. At the same time, the gap between national regulatory compliance and donor reporting compliance shows that despite IBEX being efficient in the first case, there is still room for improvements concerning external donors.

4.3.4. System Integration

The results revealed in Table 9 reveal that on average respondents gave moderate responses to the system integration attribute. Specifically, the grand mean stands at 3.31 with a standard deviation of 1.126, making this the second lowest value among the six IBEX attributes evaluated. The findings imply that integrating donor-funded projects within IBEX remains a significant challenge.

Table 9. Descriptive Statistics for System Integration (n = 236)

Statement	**Mean**	**STD**
All financial transactions for my project were processed through IBEX	3.34	1.401
Project budgets were fully integrated into the national budget system via IBEX	3.52	1.298
IBEX eliminated the need for parallel financial records for donor reporting	2.98	1.452
Financial data from my project was fully incorporated into national systems	3.41	1.356
IBEX enabled seamless data flow between project and central systems	3.28	1.387
Grand Mean	**3.31**	**1.126**

Source: Field Survey, 2026

As shown above, the highest mean score for the system integration attribute stood at 3.52 with a standard deviation of 1.298, representing the integration of project budgets into the national budget system via IBEX. The integration of financial data into the national financial framework received a mean score of 3.41 (SD=1.356). The integration of all financial transactions within the project into IBEX recorded a mean of 3.34 (SD=1.401). On the other hand, the integration of data flow between the project and central systems received the fourth highest mean score of 3.28 with a standard deviation of 1.387.

The least response went to the statement regarding the ability of IBEX to eliminate parallel financial records created for donor reporting, receiving a mean score of 2.98 with a standard deviation of 1.452. The score below the neutral point implies that donors' requirements have made it necessary for organizations implementing projects funded by donors to maintain financial records parallel to IBEX. The wide ranges of the standard deviation scores (between 1.298 and 1.452) suggest that the experiences of respondents are diverse and vary considerably. This variance might stem from the inconsistency with which projects have been implemented and integrated within the national financial framework through IBEX.

In sum, the grand mean score of 3.31 implies that while IBEX has managed to integrate project budgets and financial data within the national financial framework partially, the system has not achieved total success in integrating the projects. Thus, the findings imply that more attention needs to be devoted to harmonizing the donor reporting framework with IBEX and strengthening ICT infrastructure and adoption in the line ministries.

4.3.5. System Usability

Table 10 shows that the respondents had a moderate agreement regarding IBEX system usability (GM = 3.20; SD = 1.142). Such a result places the attribute last in terms of respondents' ratings compared to the other five IBEX characteristics. Thus, it highlights the importance of usability as a significant area of improvement that must be given adequate attention. Of all the items listed above, the highest score (M = 3.36; SD = 1.342) was recorded for the system's potential to reduce the complexity of financial operations. Although usability issues persist, users believe that the software has enormous potential in making such processes easier and manageable.

Table 10. Descriptive Statistics for System Usability (n = 236)

Statement	**Mean**	**STD**
IBEX had an intuitive and easy-to-navigate interface	3.23	1.378
I received adequate training to use IBEX effectively	3.18	1.456
Technical support was readily available when I encountered problems with IBEX	2.95	1.521
IBEX simplified complex financial processes	3.36	1.342
I could easily learn new features of IBEX when they were introduced	3.29	1.389
Grand Mean	**3.20**	**1.142**

Source: Field Survey, 2026

Other items received the following ratings: learning new features (M = 3.29; SD = 1.389); navigation through the system (M = 3.23; SD = 1.378); and availability of training materials (M = 3.18; SD = 1.456). However, the lowest score was obtained for the availability of technical support (M = 2.95; SD = 1.521), a value that is less than 3. Therefore, the data suggest that users have a negative attitude toward the presence of technical assistance while using the system. In addition, it is worth noting that all of the SDs reported above are relatively high, particularly for the last item (SD = 1.521). This observation is consistent with Ethiopian research findings on factors affecting IFMIS performance (Haile, 2025).

Finally, the grand mean value of 3.20 suggests that the respondents agree that IBEX has some degree of usability. While they acknowledge the system's ability to make complex tasks easier, they are dissatisfied with its insufficient training and lack of technical support. Thus, it becomes evident that the issue of usability may negatively affect the overall performance of the system. Improving this problem may lead to positive changes in user satisfaction levels, enhance adoption, and maximize efficiency and transparency gains associated with the other five IBEX attributes.

4.3.6. System Credibility

The descriptive statistics in Table 11 showed that respondents agreed IBEX was credible, with a grand mean of 3.64 (SD = 1.031). This placed credibility third among the six IBEX attributes, behind compliance (3.78) and transparency (3.73), highlighting it as a notable strength of the system. The highest-rated item was management trust in IBEX financial information (M = 3.76, SD = 1.185), reflecting strong internal confidence in the system. Accuracy and reliability of reports (M = 3.71, SD = 1.206) and auditor reliance on IBEX data (M = 3.65, SD = 1.278) also scored highly, reinforcing the perception that IBEX produced dependable outputs.

Table 11. Descriptive Statistics for System Credibility (n = 236)

Statement	**Mean**	**STD**
Donors expressed confidence in financial reports generated from IBEX	3.48	1.323
IBEX reports were consistently accurate and reliable	3.71	1.206
Auditors relied on data extracted from IBEX	3.65	1.278
IBEX enhanced stakeholder trust in project financial management	3.59	1.291
Financial information from IBEX was considered trustworthy by management	3.76	1.185
Grand Mean	**3.64**	**1.031**

Source: Field Survey, 2026

Stakeholder trust in project financial management was moderately rated (M = 3.59, SD = 1.291), while donor confidence in IBEX reports received the lowest score (M = 3.48, SD = 1.323). Although still within the agreement range, this finding suggested that external stakeholders were slightly less convinced of IBEX's credibility compared to internal users. This result was consistent with earlier findings on transparency and compliance, which highlighted limited donor access and challenges in adapting to donor-specific requirements.

The grand mean of 3.64 implied that credibility was a well-established attribute of IBEX, particularly among internal stakeholders such as management and auditors. However, the relatively lower donor confidence score indicated that building external trust remained a work in progress. This interpretation suggested that while IBEX had achieved strong internal credibility, further efforts were needed to enhance donor confidence through improved access, tailored reporting, and harmonization with donor requirements. Strengthening these areas would ensure that credibility extended beyond internal stakeholders to encompass the broader donor community, thereby reinforcing IBEX's role as a trusted financial management system.

4.3.7. Financial Management Outcomes

Table 11 provides insight into how participants felt about the influence of IBEX on financial management outcomes. With the grand mean of 3.68 (SD = 0.987), one can state that people were largely satisfied with this aspect. Thus, respondents viewed IBEX as an excellent means of increasing the efficiency of donor-funded projects in terms of financial management. Among other items, it is possible to mention monitoring performance and discovering the issues on time (M = 3.83, SD = 1.156), which is one of the most essential activities in this context. Receiving timely and reliable information to manage projects properly (M = 3.75, SD = 1.178) and developing capacities via improving processes and training staff (M = 3.71, SD = 1.192) are also quite significant results.

Table 12. Descriptive Statistics for Financial Management Outcomes (n = 236)

Statement	Mean	STD
IBEX enabled our project to submit financial reports to donors on time	3.62	1.234
Donor representatives and senior management expressed satisfaction with IBEX-generated reports	3.48	1.287

Working with IBEX strengthened our project's financial management processes and enhanced staff skills	3.71	1.192
I regularly used IBEX data to monitor performance against plans and identify potential financial problems early	3.83	1.156
Overall, IBEX provided reliable, timely information that supported effective project management and decision-making	3.75	1.178
Grand Mean	**3.68**	**0.987**

Source: Field Survey, 2026

As for providing timely donor reports, one may admit that it had a rather average effect (M = 3.62, SD = 1.234), meaning that although some improvements were achieved, problems with the provision of reports remained relevant. In turn, the lowest rating in this section belongs to donor satisfaction and satisfaction of the management (M = 3.48, SD = 1.287). These results correlate well with the findings related to credibility and transparency in that external participants' opinions were less positive than those expressed by internal actors.

Therefore, based on the information provided in Table 11, one may state that, on average, IBEX influenced financial management outcomes positively. More specifically, the system managed to improve internal processes and increase staff competencies, thus making the use of the collected information effective. At the same time, there was still some space for improvement concerning external stakeholders' satisfaction and reporting quality.

4.4. Inferential Analysis

The inferential statistics enable the researcher to not only describe but also make generalizations about the study findings from the sample of 236 participants to the entire population of donor-sponsored projects. The analysis involves correlation test, assumption checks, and multiple regression analysis in that order.

4.4.1. Correlation Test

To examine if there were any significant associations among the variables of the IBEX framework and the financial management-related outcome measures, the Pearson product–moment correlation coefficient was used. As explained by Field (2005), relationship strength is classified based on the following criteria: when correlation coefficients range between 0.10 and 0.29, it means that there

exists a weak relationship; when correlation coefficients range between 0.30 and 0.49, it means that there exists a moderate relationship; and when correlation coefficients equal or exceed 0.50, it means that there exists a strong relationship.

According to Table 13, there is a very strong positive correlation between all the attributes of the system under consideration and FMO. The correlations between all of the attributes mentioned and the dependent variable reached significance at the 0.01 level. Thus, the influence of all six attributes of the IBEX system on the dependent variable was found to be statistically significant.

It should be noted that Efficiency proved to be the attribute with the strongest correlation to FMO ($r = .621$, $p < .01$). However, there were several other highly correlated attributes, including Credibility ($r = .598$, $p < .01$) and Transparency ($r = .587$, $p < .01$). Compliance ($r = .568$, $p < .01$) was also identified as an attribute significantly influencing FMO. There were also two moderately high correlations, which involved Integration ($r = .542$, $p < .01$) and Usability ($r = .509$, $p < .01$).

Table 13. Correlation Matrix

	TR	EF	CM	IN	US	CR	FMO
TR - Transparency	1						
EF - Efficiency	.482**	1					
CM - Compliance	.395**	.412**	1				
IN - Integration	.367**	.445**	.388**	1			
US - Usability	.423**	.501**	.356**	.472**	1		
CR - Credibility	.458**	.439**	.478**	.421**	.387**	1	
FMO - Financial Management Outcomes	.587**	.621**	.568**	.542**	.509**	.598**	1

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

Source: Field Survey, 2026

Some significant correlations can be observed between independent variables as well, which could be explained by their being the measures of different aspects of one information system. Namely, such high correlations as those between Efficiency and Usability ($r = .501$, $p < .01$) or Transparency and Efficiency ($r = .482$, $p < .01$) were observed. However, they did not suggest multicollinearity because no VIF values exceeded 3.

Strong association between Efficiency and FMO ($r = .621$) suggests that respondents reporting high efficiency of transactions processing and report generation in the IBEX system were also prone to

report positive financial management outcomes. At the same time, very strong correlation between Credibility and FMO (r = .598) means that increased system credibility is associated with enhanced financial management results.

4.4.2. Assumptions for Regression Model Test

Before conducting the regression analysis, the four primary assumptions of ordinary least squares (OLS) regression were tested. These assumptions include tests for multicollinearity, normality, linearity, and homoscedasticity to guarantee the robustness of the regression model.

- **Multicollinearity Test**

Table 14. Collinearity Statistics

Model	Tolerance	VIF
TR - Transparency	.621	1.610
EF - Efficiency	.541	1.848
CM - Compliance	.628	1.592
IN - Integration	.587	1.704
US - Usability	.559	1.789
CR - Credibility	.603	1.658

Dependent Variable: FMO

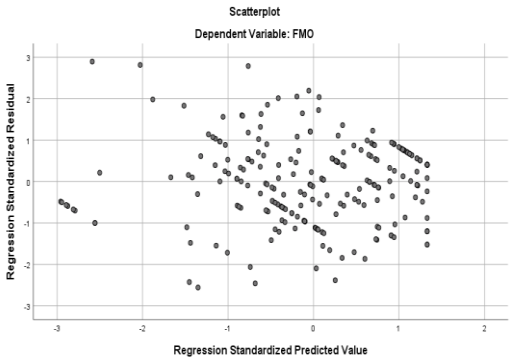
As indicated in Table 14, the VIF values ranged from 1.592 to 1.848, all well below the standard maximum threshold value of 10 and even below 5. Likewise, tolerance statistics ranged from 0.541 to 0.628, which is significantly greater than the minimum tolerance required of 0.2. Thus, no evidence of high multicollinearity was found among any of the independent variables (transparency, efficiency, compliance, integration, usability, and credibility).

One can conclude that none of the predictor variables is collinear with other variables, meaning there is no redundant variance among them. When using the predictor variables in regression analysis, each variable contributes uniquely to explaining variance in the dependent variable. The results show no multicollinearity issues, and therefore the predictor variables are suitable for performing further regression analysis without problems of multicollinearity biasing the regression results.

- **Linearity and Homoscedasticity Test**

To verify the linearity assumption, the scatterplot of standardized residuals against standardized predicted values was examined. Residuals were found to be randomly scattered around zero without any visible pattern. If the residuals were systematically scattered, it would have indicated a problem with the linear relationship between the independent variables and financial management outcomes. Based on the obtained result, the assumption of linearity was met.

Figure 2: Scatterplot of Standardized Residuals



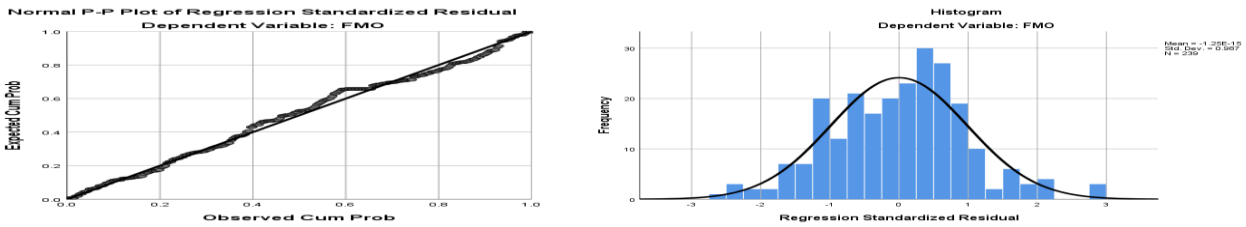
To check the homoscedasticity assumption, the scatterplot of residuals against standardized predicted values was analyzed. The graph showed residuals randomly scattered across the whole range of predicted values without any sign of increasing or decreasing variances. Additionally, the Breusch-Pagan test yielded a p-value over 0.05, confirming that homoscedasticity was not violated.

Fulfillment of linearity and homoscedasticity is crucial for research methodology and results interpretation since it allows claiming that coefficients are unbiased and efficient, while their standard errors are accurate and consistent. If one or both assumptions are violated, coefficients would be biased and standard errors would not accurately measure sampling variance. The results confirm that linearity and homoscedasticity assumptions are fulfilled, contributing to the credibility of the findings.

- **Normality Test**

Tests for normality of the residuals were performed via graphical tools and statistical techniques.

Figure 3: Normal P-P Plot and Histogram



Based on the histogram plot of the standardized residuals, no large differences were observed between the frequencies and the normal curve. The mean value of the residuals was approximately equal to zero (2.34E-16), while the standard deviation of standardized residuals was close to one (0.967). The Normal Q-Q Plot showed points tending to coincide with the reference line, indicating almost no difference between observed and expected probabilities of data points.

Table 15. Skewness and Kurtosis

Variable	N	Skewness	Std. Error	Kurtosis	Std. Error
Transparency	236	-.452	.158	-.687	.316
Efficiency	236	-.387	.158	-.523	.316
Compliance	236	-.512	.158	-.421	.316
Integration	236	-.298	.158	-.789	.316
Usability	236	-.234	.158	-.912	.316
Credibility	236	-.468	.158	-.534	.316
Financial Management Outcomes	236	-.389	.158	-.623	.316

Source: Field Survey, 2026

Table 15 shows that skewness values ranged from -0.512 to -0.234, all within ±2, and kurtosis values ranged from -0.912 to -0.421, all within ±7. These values indicate that the data are approximately normally distributed, satisfying the normality assumption for regression.

According to the assumptions of regression analysis, normality is a basic condition for this technique. Regression coefficients can be estimated accurately only if residuals are normally distributed. Following the assumption of normality suggests that all regression tests are statistically sound. Thus, normality tests performed on residuals provide sufficient grounds to assert that this assumption holds, ensuring that the conclusions drawn are based on credible information.

4.4.3. Regression Analysis

To determine whether there is an influence of the selected attributes on financial management outcomes, a multiple regression analysis was used. With the help of regression, we were able to consider several variables at the same time to see how they predict the dependent variable in terms of financial management.

Table 16. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.789a	.623	.613	.40215

a. Predictors: (Constant), CR, US, CM, IN, TR, EF

According to Table 16, the value of the multiple correlation coefficient equals 0.789. This means that there is a strong positive correlation between all of the predictors in our analysis. The coefficient of determination is 0.623, which shows that there is a considerable influence of the six predictors on the dependent variable and its outcomes because they explain 62.3% of the variances. Another 37.7% are determined by external environmental factors. The value of the adjusted R^2 is 0.613, which means that after adjustments, predictors explain 61.3% of the variances. The model's significance was assessed through the F-statistic, as presented in Table 16.

Table 17. ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	62.847	6	10.475	64.782	.000b
	Residual	37.982	229	.166		
	Total	100.829	235			

a. *Dependent Variable: FMO*

b. *Predictors: (Constant), CR, US, CM, IN, TR, EF*

The ANOVA results (Table 17) show that the regression model is statistically significant ($F = 64.782$, $p < .001$). The regression sum of squares (62.847) constitutes a large portion of the total sum of squares (100.829), while the residual sum of squares (37.982) is relatively low. This confirms that the six IBEX attributes jointly affect financial management outcomes and that the model is reliable for interpretation.

Table 18. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.412	.198		2.081	.038
Transparency	.156	.048	.198	3.250	.001
Efficiency	.234	.052	.271	4.500	.000
Compliance	.142	.046	.176	3.087	.002
Integration	.118	.044	.148	2.682	.008
Usability	.098	.047	.123	2.085	.038
Credibility	.178	.049	.215	3.633	.000

a. Dependent Variable: FMO

According to Table 18, all predictors in the regression model have significant impacts on the value of the dependent variable ($p < 0.05$). The obtained results mean that improving predictors leads to better financial management outcomes. Efficiency turned out to be the strongest determinant ($\beta = 0.271$, $p < .001$). This means that the speed and quality of work are highly important. Credibility ranked second ($\beta = 0.215$, $p < .001$) because stakeholder trust plays a crucial role in financial management. Transparency came third ($\beta = 0.198$, $p = 0.001$). Compliance followed ($\beta = 0.176$, $p = 0.002$), and then, Integration ($\beta = 0.148$, $p = 0.008$) and Usability ($\beta = 0.123$, $p = 0.038$).

The constant ($B = 0.412$, $p = 0.038$) reflects the baseline level of financial management outcomes when all predictor variables are zero. Based on the unstandardized coefficients, the following regression equation was formed:

FMO = 0.412 + 0.156(TR) + 0.234(EF) + 0.142(CM) + 0.118(IN) + 0.098(US) + 0.178(CR)

This equation indicates the extent to which each predictor influences financial management outcomes and provides a tool to guide managers and policymakers. For example, improving system efficiency by one unit increases financial management outcomes by 0.234 units, representing the greatest contribution among predictors. Based on the regression analyses, all study objectives were addressed. The test results of the hypotheses are summarized below:

Table 19: Summary of Hypotheses

Code	Alternative Hypothesis	Significance	Decision
H1	System transparency has a significant positive effect on financial management	β = .198, p = .001	Supported
H2	System efficiency has a significant positive effect on financial management	β = .271, p < .001	Supported
H3	System compliance has a significant positive effect on financial management	β = .176, p = .002	Supported
H4	System integration has a significant positive effect on financial management	β = .148, p = .008	Supported
H5	System usability has a significant positive effect on financial management	β = .123, p = .038	Supported
H6	System credibility has a significant positive effect on financial management	β = .215, p < .001	Supported

4.4.4. Discussion of Findings

Implications of the statistical results obtained in the course of the study for the purpose of the research project are provided. When discussing findings, theoretical perspectives adopted during the study process and results from previous empirical research are considered.

First of all, it was established that efficiency of the system was the attribute having the biggest influence on the financial management outcomes (β = 0.271, p < 0.001). Such finding correlates with previous studies. For example, the adoption of the GIFMIS system in Ghana shortened payment processing time in the country's central treasury, according to Mohammed (2017). Sikabanga and Haabazoka (2025) also found that the adoption of the IFMIS in Zambia enhanced accuracy of financial reports and increased adherence to budgetary processes. As a result, funds could be disbursed more efficiently.

Descriptive statistics suggests that both items "IBEX enables faster generation of financial reports" (M = 3.82) and "IBEX processes transactions with high accuracy" (M = 3.71) had relatively high mean scores, proving the important role played by efficiency in the process. Contrariwise, "IBEX has minimized manual data entry and reconciliation efforts" (M = 3.38) had the lowest mean score indicating that manual procedures remain regardless of the system introduction. This assumption is

supported by the findings of Mlawasi (2025), who claims that efficiency in IFMIS operation depends on ICT capabilities and users' competencies.

Such result can also be associated with the Diffusion of Innovations theory by Rogers (2003), according to which relative advantage of innovations serves as one of the most significant predictors of their successful implementation. Apart from that, such finding can be associated with the Agency theory since efficiency reduces information asymmetry between donors and implementers of their programs.

Credibility of the system turned out to be another important determinant ($\beta = 0.215$, $p < 0.001$). Such result is confirmed by the findings of Chalu (2019) who proved that implementation of IFMIS system in Tanzania increased credibility of financial reporting in the region. Additionally, the study conducted in 2024 at Addis Ababa University suggests that implementation of IFMIS in Ethiopia improved accuracy and timeliness of financial information and decision-making in finance.

According to descriptive statistics, items "The financial information from IBEX is considered trustworthy by management" ($M = 3.76$) and "IBEX reports are consistently accurate and reliable" ($M = 3.71$) have the highest mean scores, while "Donors express confidence in financial reports generated from IBEX" ($M = 3.48$) – the lowest. It means that some issues might occur regarding building credibility of IBEX in terms of its external users. Such assumption can be made considering that the OECD (2011) report emphasized the importance of credibility of financial information for mutual accountability in development cooperation. Such result can be explained by the Stewardship theory according to which credible financial systems allow stewards to apply their expertise and knowledge.

Transparency of the system was the next factor influencing financial management outcomes ($\beta = 0.198$, $p = 0.001$). Such finding was confirmed by Dipama (2024) who claims that transparency of PFM systems contributes to donor confidence. Awudu et al. (2024) proved that technological infrastructure and governmental policies promote financial transparency during GIFMIS implementation in Ghana.

According to descriptive statistics, item "IBEX provides clear visibility of budget allocations for my project" ($M = 3.92$) has the highest mean score, while "IBEX enables donors to access financial information directly" ($M = 3.45$) has the lowest. According to the Agency theory, transparency helps

to overcome information asymmetry between donors and implementing agencies and promotes efficient financial management.

Compliance with regulatory and donor requirements appeared to have a considerable impact on financial management outcomes ($\beta = 0.176$, $p = 0.002$). Such finding proves the assumption put forward by Nhial, Shiku, and Siwale (2025) about significant correlation between compliance with internal control systems and IFMIS system performance ($p = 0.003$). Oketcho (2024) also confirmed that internal control within IFMIS positively affects financial management in Uganda.

According to descriptive statistics, "IBEX complies with the governmental financial regulations" ($M = 3.96$) has a higher score compared to "IBEX complies with donor-specific financial regulations" ($M = 3.51$). Such difference is justified considering the difficulties described in the literature about matching the systems' requirements of different donors (de Renzio, Andrews, & Mills, 2010).

Integration of the system was positively correlated with financial management outcomes ($\beta = 0.148$, $p = 0.008$). Such finding proves the findings of Tetteh et al. (2022) who claimed that regulatory, environmental, and organizational factors influence IFMIS integration into operations of local governments in Ghana. Nonetheless, descriptive statistics shows that "IBEX eliminates the need for parallel financial records for donor reporting" ($M = 2.98$) received the lowest mean score, indicating that parallel reporting structures remain despite the system implementation. Such result can be considered the evidence for filling the gap indicated in the problem statement.

Finally, Usability of the System had a positive effect on financial management outcomes ($\beta = 0.123$, $p = 0.038$). Such finding corroborates the findings made by Haile (2025), according to which staff resistance, capacity and technical skills deficit, and ICT complexity contribute to poor performance of IFMIS in Ethiopia's Ministry of Finance. Descriptive statistics shows that "Technical support is readily available when I encounter problems with IBEX" ($M = 2.95$) has the lowest mean score.

Having considered that one of the main predictors of innovation diffusion suggested by Rogers (2003) is complexity, the obtained result can be justified. Attributes such as efficiency and credibility seem to be of more significance than usability in the case of IBEX.

In summary, it is possible to state that all six hypotheses posed in the present study were proven and the six attributes of Ethiopia's IBEX explained 62.3% of the variance in financial management

outcomes. Efficiency (β = 0.271) proved to be the most influential attribute, followed by credibility (β = 0.215), transparency (β = 0.198), compliance (β = 0.176), integration (β = 0.148), and usability (β = 0.123). The obtained findings can be applied when allocating resources.

CHAPTER FIVE:

5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter synthesizes the findings from the descriptive and inferential analyses. Based on the evidence presented, it emphasizes the relative importance of each IBEX system attribute for financial management outcomes in donor-funded projects. In addition to discussing managerial and theoretical implications, this chapter provides specific recommendations for the Ministry of Finance, development partners, and project managers.

5.1. Summary of Major Findings

The findings cover descriptive and inferential statistics for understanding the impact of IBEX system attributes on financial management outcomes at donor-funded government projects.

Objective 1 – Effect of System Transparency on Financial Management

- System transparency had a grand mean of 3.73 (high agreement), with "IBEX provides clear visibility of budget allocations" rated highest (M = 3.92) and "IBEX enables donors to access financial information directly" rated lowest (M = 3.45).
- Transparency had a strong positive correlation with financial management outcomes ($r = .587$, $p < .01$) and a significant standardized regression effect (β = 0.198, $p = .001$).

Objective 2 – Effect of System Efficiency on Financial Management

- System efficiency had a grand mean of 3.59 (high agreement), with "IBEX enables faster generation of financial reports" rated highest (M = 3.82) and "IBEX has minimized manual data entry and reconciliation efforts" rated lowest (M = 3.38).
- Efficiency had the strongest correlation with financial management outcomes ($r = .621$, $p < .01$) and the strongest regression effect (β = 0.271, $p < .001$).

Objective 3 – Effect of System Compliance on Financial Management

- System compliance had a grand mean of 3.78 (high agreement), the highest among all attributes. "IBEX ensures that transactions comply with government financial regulations" rated highest (M = 3.96), while "IBEX facilitates adherence to donor-specific reporting requirements" rated lowest (M = 3.51).
- Compliance had a strong positive correlation with financial management outcomes ($r = .568$, $p < .01$) and a significant regression effect ($\beta = 0.176$, $p = .002$).

Objective 4 – Effect of System Integration on Financial Management

- System integration had a grand mean of 3.31 (moderate agreement), the second lowest among attributes. "Project budgets are fully integrated into the national budget system via IBEX" rated highest (M = 3.52), while "IBEX eliminates the need for parallel financial records for donor reporting" rated lowest (M = 2.98)—the only item falling below the neutral midpoint.
- Integration had a strong positive correlation with financial management outcomes ($r = .542$, $p < .01$) and a significant regression effect ($\beta = 0.148$, $p = .008$).

Objective 5 – Effect of System Usability on Financial Management

- System usability had a grand mean of 3.20 (moderate agreement), the lowest among all attributes. "IBEX simplifies complex financial processes" rated highest (M = 3.36), while "Technical support is readily available when I encounter problems with IBEX" rated lowest (M = 2.95).
- Usability had a strong positive correlation with financial management outcomes ($r = .509$, $p < .01$) and a significant but modest regression effect ($\beta = 0.123$, $p = .038$).

Objective 6 – Effect of System Credibility on Financial Management

- System credibility had a grand mean of 3.64 (high agreement). "The financial information from IBEX is considered trustworthy by management" rated highest (M = 3.76), while "Donors express confidence in financial reports generated from IBEX" rated lowest (M = 3.48).
- Credibility had a strong positive correlation with financial management outcomes ($r = .598$, $p < .01$) and the second strongest regression effect ($\beta = 0.215$, $p < .001$).

Overall Findings

The six IBEX system attributes collectively explained 62.3% of the variance in financial management outcomes ($R^2 = 0.623$, adjusted $R^2 = 0.613$, $F(6,229) = 64.782$, $p < .001$). The most important attribute was efficiency ($\beta = 0.271$), followed by credibility ($\beta = 0.215$), transparency ($\beta = 0.198$), compliance ($\beta = 0.176$), integration ($\beta = 0.148$), and usability ($\beta = 0.123$). All six hypotheses were supported.

5.2. Conclusion

According to empirical findings, these conclusions are drawn concerning the role played by the IBEX system in the process of managing finances of donor-assisted projects. Such essential features of the system as transparency, efficiency, compliance, integration, usability, and credibility were proven to greatly affect financial management outcomes of the organization under study. Specifically, these outcomes were measured using such variables as timely reporting, satisfaction of stakeholders, capacity development, and provision of quality information to inform decisions of project managers.

The IBEX system is making great progress in achieving its goals stated in the Ethiopian Public Financial Management Reform Strategy 2023-2028. First, the system is increasingly becoming perceived by users as a means of achieving transparency in budgeting, fast report creation, conformity to financial law, and reliable provision of information to project managers. At the same time, certain challenges exist, the identification of which will make it possible to enhance the operation of the system. In particular, one of such problems is a lack of integration. As has been shown in the current study, records are still made parallelly for the sake of donor reporting (average score, $M = 2.98$). Similar conclusions can be made using the data from the Ministry of Finance 2023 report and the literature review (de Renzio et al., 2010). Specifically, in the context of aid effectiveness literature, the use of parallel systems for donor reporting does not help enhance the effectiveness of donor assistance because it is associated with high transaction costs.

Another weakness identified during the analysis was usability, which has been revealed to be the poorest attribute among those analyzed ($M = 2.95$). Similar results obtained in the current study coincide with the results reported by Haile (2025), according to whom such factors as resistance to change on the part of staff members, lack of capacity, and insufficient infrastructure negatively

impacted IBEX'S' performance in Ethiopia. The fact that an average level of training has been achieved proves that capacity development actions have been taken (M = 3.18). However, compliance with international donor standards (M = 3.51) and donor trust in the accuracy of the reports produced by the system (M = 3.48) turned out to be weaker when compared to the same characteristics in relation to the state. Apparently, the problem of harmonization of a national system with different international partners remains.

Theoretically, the findings obtained in this study can be used as an example illustrating the integrated theory that includes the ideas of Agency Theory, Stewardship Theory, Diffusion of Innovations Theory, and TOE framework. According to the first theory, transparency, compliance, and credibility help reduce information asymmetry between the donors and project implementers. Also, the findings obtained prove the validity of Stewardship Theory since the system was positively evaluated by users as an instrument enabling the fulfillment of their public mandate. Lastly, the influence exerted by six attributes on financial management outcomes proves the applicability of Diffusion of Innovations Theory.

Importantly, two particular attributes, namely efficiency ($\beta = 0.271$) and credibility ($\beta = 0.215$), have been revealed to have particularly large coefficients. This fact suggests that for donor-assisted projects whose completion requires tight schedules, process speed and stakeholders' trust become more important than others. Overall, the current research showed that IBEX is making a great contribution to the transformation of PFM in Ethiopia. In order to achieve greater success in this area, efforts are needed to improve the system's integration, usability, and donor relationships.

5.3. Recommendations

Based on the findings, recommendations are presented below to the Ministry of Finance, development partners, project managers, and researchers who will undertake future research in this field. The recommendations are aimed at improving the effectiveness of financial management outcomes by taking the advantage of findings, keeping the same topic, message, and critical information unchanged. Recommendations for the Ministry of Finance and Policymakers

Emphasizing Improvements of Efficiency

- Since efficiency was the attribute which showed the most significant correlation with financial management outcomes (beta = 0.271), the Ministry is recommended to invest efforts in further optimization of IBEX transaction processing, reduction of payment processing time, and improvement of report generation capability. The recommendations are: upgrade the IT infrastructure to increase the speed of processing, add automated reconciliation function to save time of the manual one (currently, its evaluation is low M = 3.38), and define Service Level Agreements that would specify what is the acceptable processing time.

Improving Technical Support and Training Programs

- Since usability got the lowest rating score (M = 2.95), the recommendation is to establish a separate IBEX helpdesk operating during extended hours, develop tiered support (levels 1, 2, and 3) and an online knowledge base with instructions and troubleshooting guidelines. The recommendations regarding training are to require from the users to complete the refresher course of IBEX training, develop role-specific training programs (project manager, finance officer, budget officer, auditor), and organize a train-the-trainer program.

Promoting Full Integration of Donor-Funded Projects

- As the finding that parallel reporting persists (M = 2.98) suggests that integration is not completed yet, the recommendation is to develop a directive mandating all donor-funded projects to integrate their financial transaction through IBEX within a specified period, design IBEX modules for addressing specific reporting needs of donors, and provide technical support in completing full integration.

Improving Donor-Specific Compliance Functions and Enhancing Donors' Confidence

- Taking into account that both donor compliance (M = 3.51) and donors' confidence (M = 3.48) got relatively low scores, the recommendation is to set up a Donor Advisory Group, design configurable reports based on specific donor criteria, and to develop donor dashboards with access restricted only to the donor representatives.

Setting up the Process of Continuous Improvement

- With almost 38% of the variance remained unexplained, the Ministry should understand that there are many factors affecting the outcome other than those described above. Hence, recommendations are to conduct annual surveys measuring the user satisfaction with IBEX functions, set up an Internet portal through which the users could submit issues and propose improvements, and hold quarterly forums involving line ministries and donors.

For Development Partners

- In order to minimize the cost related to parallel reporting, the partners are advised to align their reporting requirements with IBEX generated outputs, whenever it is possible. Additionally, they can provide technical assistance in customizing the system and improving user capacity.
- The partners should engage themselves in conducting joint IBEX system audit, providing feedback about needed improvements to the Ministry, and recognizing achievements in integration of donors' funds into IBEX.

For Project Managers and Finance Officers

- Given that decision support function gets the highest rating (M = 3.83), the managers are advised to hold regular project review meetings based on IBEX reports, teach project staff to analyze IBEX information, and to make use of IBEX alerts for detecting budget discrepancies.
- As indicated by high variability of experiences across projects, project managers should submit to the Ministry information about specific challenges related to IBEX and participate in system updating through the user acceptance testing process.

Future Research Directions

- Comparative studies should examine how IBEX affects financial management of government-funded core activities in different regions of Ethiopia, and compare it with experience of IBEX usage for donor-funded projects as proposed initially in research plan. Additionally, comparative studies should be conducted in other East African countries, for example, Kenya (IFMIS) and Tanzania (IFMIS).
- Qualitative methods should be used to identify and understand the nature of challenges in using IBEX functions, factors preventing the use of the system, and organizational factors enabling its successful implementation.
- Objective performance measures, like the ratings of audit reports, timeliness of submitting reports to the auditors, budget execution rates, and donors' satisfaction survey results, should also be taken into account.

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Appendix

Survey Questionnaire

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

Dear Participant,

You are invited to participate in a postgraduate research study titled "Impact of Ethiopia's Integrated Budget and Expenditure Accounting Information System on Financial Management of Donor Funded Government Projects in Ethiopia." This research seeks to explore how six critical dimensions of the IBEX system namely transparency, efficiency, compliance, integration, usability, and credibility, shape the quality of financial management within donor-funded projects in Ethiopia.

Given that IBEX has been implemented as a flagship intervention under Ethiopia's Public Financial Management Reform Strategy (2023–2028), and that the Productive Safety Net Program (PSNP-5) and other donor-funded projects rely on this system for financial operations, your professional insights as a project manager, finance officer, accountant, or budget officer are invaluable in assessing both the progress achieved and the challenges encountered.

Participation is entirely voluntary, and strict confidentiality is assured: the questionnaire is anonymous, requires no personal identifiers, and responses will be aggregated and reported only in summary form. The survey is designed to take approximately **15–20 minutes**, with flexibility to skip any question you find sensitive or uncomfortable. Completed forms may be returned either in person or via email within the specified timeframe.

Thank you for your valuable time and contribution to this research.

Yours faithfully,

Sebhatleab Amanuel
Postgraduate Student, Addis Ababa University

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INSTRUCTIONS

Please answer all questions as honestly and accurately as possible based on your experience working with donor-funded government projects that utilize the IBEX system. For each statement, tick (✓) or circle the number that best represents your level of agreement using the following scale:

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

PART A: BACKGROUND INFORMATION

This information will be used only for statistical classification purposes.

A1. Gender:

☐ Male ☐ Female

A2. Age:

☐ 21 – 30 years ☐ 31 – 40 years

☐ 41 – 50 years ☐ 51 - 60 years

☐ More than 60 years

A3. Highest Educational Qualification:

☐ Diploma ☐ Bachelor's Degree

☐ Master's Degree ☐ Doctorate (PhD)

A4. Professional Certification in Accounting/Finance (if any):

☐ None

☐ CPA (Certified Public Accountant)

☐ ACCA (Association of Chartered Certified Accountants)

☐ CFA (Chartered Financial Analyst)

☐ Other (Please specify): _____

A5. Years of Professional Experience in Finance/Accounting:

☐ Less than 5 years ☐ 5 – 10 years

☐ 11 – 15 years ☐ More than 15 years

A6. Years of Direct Involvement with IBEX System:

☐ Less than 3 years ☐ 4 – 6 years

☐ 7 – 9 years ☐ 10 years or more

A7. Current Department/Division/Project Role:

☐ Project Manager ☐ Finance Officer / Accountant

☐ Budget Officer ☐ Internal Auditor

☐ Other (Please specify): _____

A8. Line Ministry/Agency:

☐ Ministry of Agriculture ☐ Regional Bureau of Finance

☐ Regional Bureau of Agriculture ☐ Ministry of Finance

☐ Other (Please specify): _____

PART B: IBEX SYSTEM ATTRIBUTES

Please indicate your level of agreement with the following statements about the IBEX system.

B1. TRANSPARENCY	1	2	3	4	5
IBEX provides clear visibility of budget allocations for my project					
I can easily track expenditure transactions through IBEX					
IBEX enables donors to access financial information directly					
Financial processes in IBEX are traceable and auditable					
IBEX makes financial information open and accessible to authorized users					
B2. EFFICIENCY	1	2	3	4	5
IBEX has reduced the time required to process payments					
IBEX has minimized manual data entry and reconciliation efforts					
IBEX enables faster generation of financial reports					
IBEX processes transactions with high accuracy					
IBEX has streamlined financial workflows in my project					
B3. COMPLIANCE	1	2	3	4	5
IBEX ensures that transactions comply with government financial regulations					
IBEX facilitates adherence to donor-specific reporting requirements					
IBEX reduces the risk of procedural violations					
IBEX helps prevent ineligible expenditures					
IBEX enforces compliance with procurement laws and financial proclamations					
B4. INTEGRATION	1	2	3	4	5
All financial transactions for my project are processed through IBEX					
Project budgets are fully integrated into the national budget system via IBEX					
IBEX eliminates the need for parallel financial records for donor reporting					
Financial data from my project is fully incorporated into national systems					
IBEX enables seamless data flow between project and central systems					

B5. USABILITY	1	2	3	4	5
IBEX has an intuitive and easy-to-navigate interface					
I received adequate training to use IBEX effectively					
Technical support is readily available when I encounter problems with IBEX					
IBEX simplifies complex financial processes					
I can easily learn new features of IBEX when they are introduced					
B6. CREDIBILITY	1	2	3	4	5
Donor expresses confidence in financial reports generated from IBEX					
IBEX reports are consistently accurate and reliable					
Auditors rely on data extracted from IBEX					
IBEX has enhanced stakeholder trust in project financial management					
The financial information from IBEX is considered trustworthy by management					

PART C: FINANCIAL MANAGEMENT OUTCOMES

Please indicate your level of agreement with the following statements about financial management outcomes in your project.

Statement	1	2	3	4	5
IBEX enables our project to submit financial reports to donors on time and without delays.	1	2	3	4	5
Donor representatives and senior management express satisfaction with the accuracy and clarity of IBEX-generated reports.	1	2	3	4	5
Working with IBEX has strengthened our project's financial management processes and enhanced staff skills.	1	2	3	4	5
I regularly use IBEX data to monitor performance against plans and to identify potential financial problems early.	1	2	3	4	5
Overall, IBEX provides reliable, timely information that supports effective project management and decision-making.	1	2	3	4	5

THANK YOU FOR YOUR PARTICIPATION!

Please return the completed questionnaire to the researcher in person or via email.