

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

SCHOOL OF COMMERCE

INSTITUTIONAL DETERMINANTS AND OPERATIONAL PERFORMANCE OF PUBLIC ORGANIZATIONS: MEDIATING ROLE OF ENTERPRISE RESOURCE PLANNING ADOPTION

BY

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APPROVAL SHEET

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DECLARATION

I hereby declare that the thesis entitled "INSTITUTIONAL DETERMINANTS AND OPERATIONAL PERFORMANCE OF PUBLIC ORGANIZATIONS: MEDIATING ROLE OF ENTERPRISE RESOURCE PLANNING ADOPTION" is the result of my original research and work, conducted under the supervision of Meshesha L. (Ph.D.). All references and sources utilized in the preparation of this thesis have been appropriately cited and acknowledged. I also affirm that this thesis has not been submitted, either wholly or partially, to any other academic institution for the award of any degree or diploma.

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Name	Signature
Addis Ababa University	June 2026

ENDORSEMENT

This thesis has been submitted to Addis Ababa University for examination with my approval as a university advisor.

Meshesha Legesse (Ph.D.)

Advisor	Signature
Addis Ababa University	June 2026

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The Researcher!

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ACRONYMS AND ABBREVIATIONS

API	Application Programming Interface
BLUE	Best Linear Unbiased Estimator
CI	Confidence Interval
DEFF	Design Effect
EFA	Exploratory Factor Analysis
ERP	Enterprise Resource Planning
HR	Human Resources
IBEX	Integrated Budget and Expenditure Accounting System
ICT	Information and Communication Technology
IFMIS	Integrated Financial Management Information System
IT	Information Technology
MoF	Ministry of Finance
MRP II	Manufacturing Resource Planning II
MRP	Material Requirements Planning
OECD	Organisation for Economic Co-operation and Development
PFM	Public Financial Management
RBV	Resource-Based View
SaaS	Software as a Service
SPSS	Statistical Package for the Social Sciences
TOE	Technology–Organization–Environment Framework
UNDP	United Nations Development Programme
VIF	Variance Inflation Factor
VRIN	Valuable, Rare, Inimitable, Non-substitutable

ABSTRACT

This study examines the mediating role of Enterprise Resource Planning adoption in the relationship between institutional determinants and operational performance in public organizations based in Addis Ababa, Ethiopia. Based on Technology-Organization-Environment framework, Resource-Based View, and Institutional Theory, the study focuses on five institutional determinants such as leadership commitment, organizational culture, institutional capacity, regulatory frameworks, and resource availability. A quantitative research methodology and explanatory design were adopted focusing on 440 employees from 88 public organizations to address the objectives. Stratified random sampling was used to obtain 188 valid responses (response rate is 89.5%), which were gathered by using structured questionnaires. The collected data were analyzed using descriptive statistics, Pearson correlation, and multiple regression analysis with the help of SPSS version 26. Mediation was tested using the PROCESS macro for SPSS with 5,000 bootstrap resamples. The findings show that all five institutional determinants have a significant impact on operational performance, accounting for 69.9% of its variance ($R^2 = 0.699$). The strongest predictor of operational performance is regulatory frameworks ($\beta = 0.357$), followed by organizational culture ($\beta = 0.240$), leadership commitment ($\beta = 0.197$), institutional capacity ($\beta = 0.159$), and resource availability ($\beta = 0.121$). ERP adoption plays a mediating role in the relationship between institutional determinants and operational performance that amounts to 0.108 (95% CI: 0.037–0.179). The findings supported its statistically significant partial mediation effect, as the direct effect of institutional determinants remained significant ($\beta = 0.719$, $p < 0.001$) after mediation. It highlights the need to strengthen regulatory frameworks, enhance organizational culture, and address resource constraints to improve operational performance in Ethiopia's public organizations.

Keywords: Enterprise Resource Planning adoption, institutional determinants, operational performance, public organizations, Ethiopia, TOE framework, mediation analysis

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Enterprise resource planning (ERP) systems have been instrumental tools of organizational transformation throughout the world. With their help, integrated decision making is made possible in areas such as finance, human resources, procurement and logistics that worked separately before. Providing organizations with real-time information, minimizing redundant tasks and aligning departments' objectives with organization's strategy, ERP systems increase organization's agility (Andrew, 2023). Beyond simple technical improvements, they emphasize the importance of accountability, innovation and competitiveness through seamless integration of processes and decision making based on data (Kanbiro, 2022). However, ERP adoption in developing countries, especially in African public sector, depends much more on organizational and institutional factors rather than just technological ones (Fissha, 2024; Kanbiro, 2022).

While ERP adoption brought evident benefits for organizations operating in developed countries, multinational corporations use them to navigate complexities and react promptly to changes in markets (Kanbiro, 2022), Africa is facing its own set of challenges. Studies conducted in South Africa, Kenya and Ethiopia demonstrate that successful ERP adoption requires active commitment of leaders, specific organizational culture, organizational capacity, supportive regulations and availability of resources (Andrew, 2023; Shimange & Pillay, 2023). Organizations often face such problems as lack of commitment, lack of training, bureaucratic inertia and ineffective change management – all of them contribute significantly to unsuccessful ERP adoption (Andrew, 2023).

The situation is particularly acute in the case of Ethiopia because of the public sector's history of inefficiency, excessive bureaucracy, poor inter-departmental coordination and accountability issues (World Bank, 2023). In order to resolve these problems, the government has put emphasis on digital transformation, considering ERP systems to be the key solutions for the modernization of public service delivery (MoF, 2023). Several examples of ERP initiatives in Ethiopia can be provided. Ethio-Telecom deployed ERP systems to improve reporting and management of operations but the adoption was marred with the opposition caused by the lack of training and problematic organizational culture (Solomon, 2022). The Integrated Budget and Expenditure Accounting System (IBEX), implemented by the Ministry of Finance, is the biggest ERP initiative in Ethiopia – it aims to provide integrated

financial management of federal and regional organizations (MoF, 2023). ERP systems were adopted by several public hospitals located in certain regions for the purpose of management of medical supplies and inventory but only partial success was achieved due to organizational capacity issues (Dawit, 2024). At the same time, some public universities started to implement ERP systems to facilitate administrative and educational processes but they made significant progress only partially (Fekadu & Lessa, 2022).

Even with such efforts in the field and the existence of the Public Financial Management Reform Strategy (2023-2028) that calls for integrated financial management systems, ERP adoption results in Ethiopia turned out to be inconsistent and did not meet the requirements of the policy (Tamirat, 2024; Dawit, 2024). Organizations still have to deal with fragmented workflows, manual operations, insufficient accountability mechanisms and lack of organizational capacity for digital transformation (World Bank, 2023; MoF, 2023). Therefore, it becomes important to investigate institutional factors influencing ERP adoption process in the Ethiopian public sector.

However, most of ERP studies conducted in Ethiopia focused on technical problems, such as compatibility, hardware availability and selection of vendors, underestimating institutional factors responsible for ERP adoption results (Msganaw, 2018). Studies that have considered institutional determinants used either descriptive statistics or single-case designs without consideration of mediation mechanism (Gezahegn, 2020; Orkaido, 2022). Thus, little evidence exists on how such institutional factors as leadership commitment, organizational culture, organizational capacity, supportive regulations and availability of resources influence ERP adoption and organizational performance of Ethiopian organizations through the mediation of ERP adoption process.

This study, thus, addresses the gap in ERP literature by investigating the mediating role of ERP adoption in the impact of institutional factors on organizational performance of public organizations located in Addis Ababa, Ethiopia. It will be based on Technology-Organization-Environment (TOE) framework, Resource-Based View (RBV) and Institutional Theory and will consider how five institutional factors affect organizational performance both directly and through ERP adoption.

1.2. Statement of the Problem

Despite the investment by the Ethiopian government in ERP systems of over $50 million since 2020 (World Bank, 2024), public institutions in Ethiopia are facing inefficiencies in service delivery, extensive bureaucratic procedures, low cross-department coordination, and limited accountability.

According to the Public Financial Management Reform Strategy by the Ethiopian Ministry of Finance (2023), there are "incomplete system integration" and "many organizations keep manual parallel processing along with the use of digital systems."

The problem has been extensively covered empirically. According to the World Bank (2023), Ethiopian public institutions have average service delivery time of 45-60 days, which significantly exceeds the 14-day target. Audit findings of the Office of the Federal Auditor General (2024) report that 67% of public organizations fail to submit financial reports timely, which is explained by the fragmentation of information systems. Only 23% of ERP implementations reach full functional integration in the first three years after implementation (Tamirat, 2024). As per the Ministry of Finance (2023), inefficient manual processes cost the public sector 2.3% of GDP annually.

With the right implementation of ERP technology, service delivery will be simplified, organizational strategies and goals of different departments will be aligned, accountability will increase, and innovations will be facilitated (Kanbiro, 2022; Sisay & Lemma, 2021). The same trends have been seen in other countries where ERP implementations resulted in improving organizational performance in case of proper technological infrastructure, committed leadership, and relevant regulation (Fissha, 2024). ERP systems have been used successfully in multinational corporations in developed countries to cope with complexity of remote branches providing real-time information (Kanbiro, 2022). ERP implementations have proven to increase organizational response to market changes across Europe and Asia (Sisay & Lemma, 2020).

In Ethiopian public sector, ERP systems such as IBEX and IFMIS are supposed to provide integration of financial management processes, optimize procurement, and increase reporting accuracy addressing efficiency and accountability problems (MoF, 2023). ERP adoption is associated with efficiency gains, increased transparency and simplification of processes keeping organizations flexible in a competitive environment (Kanbiro, 2022). ERP is not just a technological change – it is an alignment of departmental objectives with organizational strategy increasing accountability and promoting innovations.

Failure to bridge the gap between current level of performance and ERP benefits leads to significant negative consequences. For citizens, inefficient and bureaucratic service delivery causes distrust of public organizations and creates obstacles for getting necessary services. For the government, 2.3% of GDP wasted due to inefficient manual processes means resources that could have been used for

education, health care, and infrastructural projects (Ministry of Finance, 2023). For organizations, inefficiently integrated information systems lead to fragmented processes, poor coordination, and lack of accountability preventing performance monitoring, fraud detection, and adjustment to changes (World Bank, 2023).

Employees are frustrated by working with parallel manual and digital systems causing their burnout, and managers lack timely and accurate data for making decisions (Tamirat, 2024). Damage to reputation caused by audit failures and financial mismanagement negatively impacts Ethiopia's image as a country with international development partners who provide significant financial and technological assistance (World Bank, 2024). In case such problems remain unresolved, Ethiopia faces failure to make a successful step forward in digital transformation losing efficiency and trust of its population in government organizations.

This study addresses several theoretical, empirical and methodological gaps and investigates mediating effect of ERP adoption on the relationship between institutional factors and operational performance of public organizations in Addis Ababa. Applying the Technology-Organization-Environment (TOE) framework, Resource-Based View (RBV) and Institutional theory, it explores five institutional determinants including leadership commitment, organizational culture, institutional capacity, regulatory frameworks and resource availability and their impact on operational performance directly and indirectly through ERP adoption.

ERP implementation in Ethiopia has been studied predominantly in the aspect of technical difficulties including compatibility issues, hardware shortage, and choice of vendor (Msganaw, 2018). The institutional factors influencing ERP adoption have not been studied much. Moreover, the existing literature uses mostly descriptive statistics and cases without mediation mechanism test (Gezahegn, 2020; Orkaido, 2022). It is important to understand if ERP adoption is a mediator variable in order to understand whether the impact of institutional determinants on operational performance takes place directly or through their influence on ERP adoption. If the impact of institutional determinants on operational performance is direct, interventions should support such determinants. If the impact is mediated through ERP adoption, interventions should also address the problem of ERP adoption under these institutional conditions.

Studying ERP adoption under institutional conditions in Ethiopia, the study improves theoretical knowledge in the field of digital transformation in a developing country and provides practical

recommendations for policymakers, managers and international development partners related to digital transformation of Ethiopia.

1.3. Research Questions

1. What are the effects of institutional determinants on operational performance of public organizations?
2. How do institutional determinants influence enterprise resource planning adoption in public organizations?
3. What is the relationship between enterprise resource planning adoption and operational performance of public organizations?
4. What is the mediating role of enterprise resource planning adoption in the relationship between institutional determinants and operational performance?

1.4. Objectives of the Study

1.4.1. General Objective

To examine the mediating role of enterprise resource planning adoption in the relationship between institutional determinants and operational performance of public organizations in Addis Ababa.

1.4.2. Specific Objectives

- To examine the association between institutional determinants and operational performance of public organizations.
- To determine the influence of institutional determinants on enterprise resource planning adoption.
- To assess the relationship between enterprise resource planning adoption and operational performance.
- To evaluate the mediating role of enterprise resource planning adoption in linking institutional determinants to operational performance.

1.5. Significance of the Study

Similar to other research works, the current study has significant theoretical, practical, policy, and future research implications. Theoretically, the current study uses the Technology-Organization-Environment (TOE) model by incorporating institutional factors and the mediating effect of Enterprise Resource Planning (ERP) adoption in a developing country context. While the ERP literature has traditionally underscored the importance of technological readiness, it is argued here that institutional factors are equally important in determining operational performance.

Practically, the study has implications for managers of public organizations in Ethiopia. The study demonstrates the importance of institutional support in ERP adoption. The study also provides a clear explanation of the role of institutional factors in ERP adoption, which is critical in providing a clear strategy to public managers.

From a policy perspective, the study has implications for Ethiopia's digital transformation strategy. The study provides policy implications and recommendations for ERP adoption in public organizations. The study demonstrates the need for government intervention in ERP adoption, which is beyond technological solutions. The study underscores the need to develop a leadership culture, IT infrastructure, and an innovation culture to enhance public service delivery.

The study has implications for future research. The study opens avenues for future research through a foundation for comparative analysis of public and private sectors, as well as a foundation for cross-cultural analysis of ERP adoption in different African countries. This study could be a foundation to investigate whether institutional factors are equally important in different contexts or if different cultures produce different results.

1.6. Scope of the Study

Geographically, this study is limited to public organizations operating in Addis Ababa, Ethiopia. This city was selected since it hosts public organizations in different forms like ministries, SOEs, and agencies among others. This city is therefore an appropriate environment in which the ERP adoption issue can be studied because of the diverse range of public organizations present here.

The target population of this research includes employees working in the above-mentioned public organizations. Since the adoption of ERPs is experienced by management and IT staff members, then data would be collected from these respondents. It is these people who make decisions concerning

systems implementation and operations in the organizations. In other words, the accessible population is limited to management and IT staff members. While the total population of this study includes all employees in public organizations, it is believed that management and IT staff members are more capable of providing relevant information than others.

The conceptual framework of the current study includes three main components; they include: (1) institutional factors such as commitment of top management, organizational culture, capacity, regulations, and resources; (2) adoption of ERPs as the intervening variables; and (3) operational performance outcomes such as efficiency, reduction in costs, service delivery quality and decision-making effectiveness.

1.7. Operationalization of Key Terms and Concepts

The Institutional Determinants of ERP implementation involve internal and external factors that affect the process of success. They include leadership commitment, organizational culture, institutional capacity, regulatory framework, and resource availability. The factors are considered crucial determinants of ERP in the literature by virtue of being the key influencers of organizational readiness and sustainability of ERP (Egdair et al., 2024).

- Leadership Commitment involves support shown by senior management toward ERP implementation through resource allocation and emphasis on an ERP-driven strategy. Being a crucial organizational factor, it influences not only ERP readiness but also employee adoption (Egdair et al., 2024).
- Organizational Culture entails values, processes, and norms characterizing openness to ERP adoption in an institution. Openness helps achieve successful ERP implementation; rigid culture hinders it (Bhagat, 2023).
- Institutional Capacity refers to the availability of trained personnel, processes, and expertise allowing the implementation of ERP. In developing nations, capacity has become one of the most important institutional factors determining the success of ERP implementation by public sector organizations (Egdair et al., 2024).
- Regulatory Framework includes legal/policy environment influencing ERP implementation. The existence of a conducive framework affects public-sector ERP implementation considerably (Bhagat, 2023).

- Resource Availability implies the presence of financial and technological resources required for ERP implementation. The presence of adequate resources is a precondition for achieving a successful outcome (Egdair et al., 2024).
- ERP Adoption involves actions taken to facilitate ERP implementation. It comprises a number of activities associated with ERP deployment and is seen as a multi-faceted process (Bhagat, 2023).
- Operational Performance embraces such concepts as operational efficiency, cost savings, service quality and decision-making effectiveness of public institutions. Despite the anticipated increase in efficiency and availability of real-time data due to ERP, its adoption and other institutional factors have their impact on it (Egdair et al., 2024).
- Public Organizations pertain to state-owned organizations operating in Addis Ababa and providing various services to the population. These entities perform programs and initiatives of the government and thus become key players in digitalization in Ethiopia (Bhagat, 2023).

1.8. Organization of the Study

The study is divided into five chapters. Chapter 1 contains an introductory background, problem statement, research questions, objectives, significance, scope, and definition of terms. Chapter 2 contains an extensive literature review, covering theoretical backgrounds, PFM and IFMIS studies, and the conceptual framework for this study. Chapter 3 contains an explanation of research methodology, research design, population and sample, data collection instruments, and data analysis. Chapter 4 contains an analysis and interpretation of field data, while Chapter 5 contains an integration of major study findings, conclusions, and recommendations based on study results.

CHAPTER TWO:
2. REVIEW OF THE RELATED LITERATURE

Literature review forms the intellectual basis of the current research since it highlights various theories, concepts, and empirical observations concerning institutional determinants, ERP adoption, and performance within public organizations. The review does not only entail description; rather, it critically appraises existing studies and formulates gaps, thus establishing the theoretical and empirical grounds for conducting the research. In line with this approach, the literature review begins with theoretical assessment, proceeds with conceptual analysis, further includes empirical evaluation, and finally concludes with the formulation of the conceptual framework and hypotheses.

2.1. Theoretical Review

This section examines three major theories - Technology-Organization-Environment (TOE) model, Resource-Based View (RBV), and Institutional theory - in order to understand why a combination of all of them is essential to analyze ERP adoption in Ethiopian public sector organizations.

2.1.1. Theoretical Foundation

Technology-Organization-Environment Model - First developed by Tornatzky and Fleischer (1990), the Technology-Organization-Environment (TOE) approach continues to be among the prominent theoretical frameworks used to investigate the process of technological innovation adoption. The TOE model states that technology adoption depends on three interlinked contexts, namely technological (such aspects as relative advantage, compatibility and complexity), organizational (such factors as size, scope, organizational structure, leadership and resources), and environmental (industrial dynamics, competition, regulations and relations with technology suppliers).

While many theories of adoption consider technological readiness to be the key determinant of the success of an adoption process, the TOE approach denies this assumption. According to TOE, the success or failure of technology adoption can only be predicted through consideration of both organizational and environmental aspects in addition to technological (Baker, 2012; Awa et al., 2024). In this way, TOE rejects technological determinism, which suggests that more advanced technologies will inevitably diffuse and generate benefits for their adopters. In particular, according to TOE, adoption outcomes arise from interaction between technological, organizational and environmental

requirements (Zhu & Kraemer, 2022). For example, TOE can serve as a taxonomy to differentiate institutional factors: organizational culture and leadership commitment (organizational context), institutional capacity and resources (technological context broadly understood) and regulatory regimes (environmental context).

There are two important limitations to the TOE model. First, it does not provide much information on the process that mediates the influence of adoption-related variables on organizational performance. Secondly, and most importantly, the model treats the three contexts as distinct, while in practice, they are related. For instance, regulations of the government affect the priorities of organizations and, consequently, their perceptions about compatibility of new technologies. This problem is largely ignored in the original TOE model (Zhu & Kraemer, 2022). Most importantly, TOE neither predicts nor explains mediation effects; the determinants are seen as direct predictors of adoption outcomes without sufficient attention paid to the mediating role of adoption process itself.

Resource-Based View - An alternative view on the issue is the Resource-Based View (RBV) of strategy, first proposed to strategic management by Barney in 1991. According to RBV, organizations are regarded as portfolios of resources and capabilities. Organizations gain competitive advantages due to their possession of valuable, rare, inimitable and non-substitutable resources (VRIN). When applied to information systems, ERP systems themselves cannot be seen as the sources of differentiated advantage since any organization that is able to afford an investment in ERP system can get it. The true source of competitive advantage is the set of complementary resources – people, processes and leadership – that allows for effective and successful ERP implementation (Melville et al., 2024).

One of the questions that TOE model cannot answer is why organizations with identical technologies demonstrate different performance levels. High performance results from efficient use of complementary resources and, thus, more benefits from ERP investment. This means that RBV theory can help to complement TOE and to explain ERP heterogeneity and performance difference. In the current research, RBV theory can be used to study the impact of institutional determinants on ERP performance through adoption as a strategic capability in a form of a mediation hypothesis (H4).

One of the most obvious limitations of RBV is the lack of emphasis on the external environment. Being focused on the internal determinants of adoption, it ignores external coercive forces like governments' regulations, donors' requirements, etc. In case of Ethiopia, ERP adoption is largely

motivated by the government's policy to implement the Integrated Budget and Expenditure Accounting System (IBEX) and the conditions imposed by international donors (MoF, 2023; World Bank, 2024). RBV does not account for why some organizations with low institutional capacity choose to adopt ERP although they cannot use it efficiently (e.g. in public hospitals and bureaus of Ethiopia), and it lacks a framework of external drivers of ERP adoption.

Institutional Theory - Finally, the last theoretical background of ERP adoption is the Institutional Theory, formulated initially by DiMaggio & Powell (1983) and developed further by Scott (2014). According to Scott, organizations exist in the institutional environment and act according to the norms set forth in order to get rewards and avoid punishment for the violation of these norms.

Institutional Theory can help a lot in understanding the reasons for ERP adoption in public administration when efficiency is not enough to explain the motivation for such changes. ERP adoption can be caused by a necessity to meet the expectations of legitimate actors and conform to the industry standards. Ethiopian experience shows how relevant it is: hierarchies, development partners and international benchmarks put pressure on government organizations, and the Public Financial Management Reform Strategy (2023-2028) recommends integrated financial management systems. Development partners also link digital transformation to financing and thus institutional motives to adopt ERP become clear (MoF, 2023). So, Institutional Theory helps to understand ERP adoption process even if the institutional determinants are not optimal, since legitimacy and control motivate adoption very effectively.

However, there are some reservations. Emphasis on isomorphism and legitimacy can overshadow organizational initiative, strategic decision-making and their effect on performance and innovation (Greenwood et al., 2022). Most importantly, Institutional Theory does not explain the impact of ERP adoption done purely for ritualistic purposes on performance in terms of how it affects organizations from various industries. While the theory can describe the process, its focus on resources does not allow to reveal all the mechanisms involved in it.

Theoretical Integration - The preceding analysis demonstrates that no single framework adequately addresses the research question of how institutional determinants affect operational performance through ERP adoption in Ethiopian public organizations. Table 1 synthesizes the comparative assessment.

Table 1. Comparative Assessment of Theoretical Frameworks

Framework	What It Explains Well	What It Fails to Explain	Relevance to This Study
TOE	Provides comprehensive taxonomy of adoption determinants (technological, organizational, environmental)	Does not explain *how* determinants translate into performance outcomes; no mediation mechanism	Identifies *which* institutional determinants matter (leadership, culture, capacity, regulation, resources)
RBV	Explains why organizations with similar technologies achieve different performance levels; emphasizes complementary resources	Downplays external coercive pressures (donor mandates, government regulations)	Explains *how* institutional determinants enable ERP adoption as a strategic capability that generates performance gains
Institutional Theory	Accounts for externally driven adoption even when internal conditions are weak; explains legitimacy pressures	Offers limited guidance on performance variation among compliant organizations; neglects agency	Explains *why* Ethiopian public organizations adopt ERP under coercive pressures (MoF reforms, donor conditionalities)

(Source: Literature Review this study)

The The three theoretical approaches capture different elements of the chain from the institutional context to organizational performance. Actually, these approaches support each other by highlighting the different stages and parts of the same mechanism. Institutional Theory illuminates the driving forces coming from the external environment - the coercion resulting from the policy changes initiated by the Ministry of Finance, demands of donor agencies and national policies for digitization. Still, the TOE framework offers a taxonomy of institutional factors contributing to the success of adoption – leadership commitment, organizational culture, institutional capabilities, regulation, and resources. The Resource-Based View of the firm illustrates how these institutional factors become the enablers of performance through influencing the adoption and implementing ERP into a strategic capability such as skilled labor availability and evidence-based decision-making.

Hypothesis on the mediating effect of adoption can be justified only by the integrative perspective outlined above and cannot be substantiated by any single framework. Separately, TOE framework would not provide the concept of mediation as it presumes the direct link between the institutional factors and the outcome. RBV, when considered individually, presumes the link between resources and performance but ignores adoption. Institutional Theory focuses on legitimacy rather than mediation when employed separately. However, the combined use of the three frameworks demonstrates the mediation: institutional theory explains adoption, TOE identifies what institutional factors determine its successful implementation, and RBV demonstrates how adoption becomes the source of improved operational performance through the process automation and improved data access and other factors. In other words, INST→ERP→OP is the theoretical basis of the mediating role of adoption.

The five institutional determinants included in this study have been selected due to their theoretical significance and empirical importance for ERP adoption literature, especially regarding the developing countries.

- Leadership Commitment is defined by the TOE framework as an important organizational context factor in adoption (Tornatzky & Fleischer, 1990), while RBV regards leadership as a significant resource contributing to the development of strategic capabilities (Barney & Wright, 2023). For Ethiopian public organizations, the leadership commitment has been identified as a critical factor of success (Gezahegn, 2020; Orkaido, 2022).
- Organizational Culture is identified by Institutional Theory as an important determinant that shapes the response to the technological changes in terms of norms and values (Scott, 2014). Culture becomes highly important in the case of bureaucratic public organizations (Gebreyohannes & Alemu, 2025).
- Institutional Capacity is recognized by the RBV as skills and competence that are needed for technology exploitation (Wade & Hulland, 2004); capacity problems have been identified as an obstacle in the ERP adoption in Ethiopian public organizations (World Bank, 2024).
- Regulatory Frameworks are explained by the coercive isomorphism mechanism in Institutional Theory as a driver of adoption in terms of policies and regulations (DiMaggio & Powell, 1983); Ethiopia's PFM Reform Strategy (2023-2028) recognizes regulatory frameworks as important facilitators of digital transformation. Resource Availability is

recognized as a basic precondition for adoption by both TOE and RBV frameworks; resource shortages have been found as a permanent obstacle in ERP adoption in Ethiopian public organizations (Alemu, 2022; Tesfaye & Mekonnen, 2021).

Although the three theories complement each other, there are certain tensions in their application. TOE focuses on the organizational readiness as a necessary prerequisite for the adoption, implying that adoption should be postponed until the institutional determinants are strong. In contrast, according to the Institutional Theory, coercion (ministry mandate and donor conditionality) can push the organization to adopt despite the low level of readiness (World Bank, 2023). This creates a question – whether the ERP adoption by the Ethiopian public organizations is voluntary or enforced. The mediation framework proposed in this study allows checking if institutional determinants affect the success of adoption despite the coercive pressure.

2.1.2. Basic Concept of Institutional Determinants

The institution determinants refer to the organizational and situational variables that influence ERP adoption and implementation one way or another. Drawing from Institutional Theory, they combine formal aspects such as policies, laws, and resource allocation processes with informal ones like organizational culture and leadership style (Scott, 2014). They become especially significant in the context of development since public sectors in developing countries are characterized by long administrative traditions. Therefore, institutional determinants become very important factors influencing ERP adoption in such countries (Waema & Achieng, 2022). In this paper, five institutional determinants have been identified and considered as a holistic phenomenon.

Leadership Commitment refers to the degree to which top management supports the ERP implementation process and adopts an ERP-driven strategy. Leadership commitment can be revealed by the allocation of both human and financial resources, advocating the use of ERP system, active participation in solving challenges related to its implementation, etc. (Alvarenga et al., 2023; Egdair et al., 2024). In Ethiopia, leadership commitment towards ERP is demonstrated by attempts to advance the ERP agenda in the field of public policy and ensure accountability in subordinates (Tadesse & Worku, 2024).

Organizational Culture is defined as a set of shared values, beliefs, assumptions, and behavioral patterns that define the organization's readiness for innovation and experimenting with new solutions. Organizational cultures that value cooperation, risk-taking, and continuous learning contribute to ERP

adoption, while the ones that are conservative, hierarchical, norm-dependent, and risk-averse make it more difficult (Hartl & Hess, 2023). Hierarchical organizational culture is quite typical for Ethiopian public organizations and makes it more challenging to adopt the ERP because of low system openness (Gebreyohannes & Alemu, 2025).

Institutional Capacity can be defined as the set of humans, technical, and organizational capacities required for successful ERP implementation and operation. They include IT and project management skills (human capacity), hardware, software, networks, and technical support (technical capacity), as well as institutional structures, coordination mechanisms, and adaptability (organizational capacity) (Mothibi & Mnkandla, 2022; Egdair et al., 2024). Challenges that the Ethiopian public sector faces in this regard include high turnover rate, geographical imbalance in terms of expertise, lack of ERP training programs, ineffective knowledge transfer, and difficulties in the maintenance stage (World Bank, 2024).

Regulatory Framework is formed by laws, policies, directives, guidelines, and other norms defining the environment in which ERP is adopted. An enabling framework promotes the acceleration of digital transformation through establishing mandatory standards, clarifying responsibilities, ensuring interoperability and accountability (Ndou, 2022; Bhagat, 2023). Public sector of Ethiopia operates in a dynamically changing regulatory framework that includes digital strategies and guidelines for adoption of e-government. However, there are challenges related to the formulation of efficient and universal guidelines and adaptability in the context of rapid changes in technology (MoF, 2023).

Resource Availability means access to financial resources, technologies, and infrastructural facilities for ERP implementation. It implies license fee, purchase cost, customization and configuration, training, and support (financial resources); hardware, software, networks, and technical support (technology resources); and electricity and internet connection (infrastructural resources) (Egdair et al., 2024). In Ethiopian organizations, the challenge of resource scarcity becomes apparent both at federal and regional levels, especially regional bureaus and woreda offices. The feasibility of ERP implementation also depends on the perceived value of the ERP for the government.

2.1.3. Operational Performance

Operational performance becomes the study's dependent variable. It includes the efficiency, effectiveness, and quality of the processes and their results carried out within organizations. For public sector organizations, it implies multiple aspects including efficient resource utilization, cost

savings, quick services delivery, quality of outputs produced, accuracy of information, and decision-making effectiveness (Romney & Steinbart, 2021; Sedera et al., 2022). An introduction of ERP should improve operational performance due to unification of disconnected processes, their automation, provision of a real-time insight, facilitation of process analysis, and coordination between organizational units (Romney & Steinbart, 2021; Sedera et al., 2022).

Mechanisms that provide a rationale for why one can expect positive relationship between ERP adoption and operational performance include the following. First, ERP systems eliminate duplications and inconsistencies in information due to unification and integration of different organizational units. Second, automation allows for minimizing errors. Third, ERP systems introduce standardized processes in organizations. Fourth, real-time insight into organizational processes is possible. Finally, ERP systems allow for analysis of processes. Altogether, these mechanisms make it possible to improve both efficiency (how effectively something is done), effectiveness (what is being done), and accountability (how efficiency and effectiveness can be demonstrated).

The operational performance of public organizations acquires special significance for public sector organizations in Ethiopia because of their focus on improved service delivery, increased transparency, and accountability within the framework of national development. According to the PFM Reform Strategy (2023-2028), it is mentioned that "integrated systems will enable improved execution of the budget, reporting and oversight" (MoF, 2023). However, the success of such initiatives completely depends on success of ERP adoption, which is determined by the institutional nature of the adoption process. As a result, organizations managing to adopt ERP across technological, user and procedural levels have more chances of achieving better performance outcomes than those experiencing difficulties in doing so.

However, one needs to keep in mind that a relationship between ERP adoption and improved performance is not necessarily direct and immediate. Performance gains could become evident after users' adaptation period. Even during the initial stages, when the so-called implementation dip occurs, performance may actually deteriorate as argued by Fullan (2007). Operational performance becomes a measure of ERP users' efforts to learn and adapt. Implementation dip plays a significant role in linking ERP and performance. ERP success proves to be vital for improvement of performance although it emerges only after the emergence of ERP adoption success according to Strong & Volkoff (2023).

2.1.4. Institutional Determinants and Operational Performance

In all studies under analysis, institutional determinants of performance were found to be highly significant predictors, despite the unclear mechanisms through which this effect occurs. For instance, leadership commitment has been proven to enhance performance through the establishment of vision, provision of resources and motivation of employees (Gezahegn, 2020; Orkaido, 2022). At the same time, while some sources state that leadership has a direct impact on efficiency and accountability, others claim that leadership influence occurs indirectly, via regulatory compliance and organizational culture (Sisay & Lemma, 2021). This implies that the relationship between leadership and performance appears to be more complex and multileveled than a simple direct one.

The association between organizational culture and performance in the analyzed studies is consistent but varies depending on the specific cultural dimension involved. In particular, while studies in developed countries identify innovation and risk-taking as the key culture-based predictors of performance (Hartl & Hess, 2023), public sector studies in developing countries identify transparency, accountability and collaboration as more prominent predictors (Gezahegn, 2020; Egdair et al., 2024). In turn, hierarchical and bureaucratic structure of Ethiopian public organizations could moderate the culture-performance relationship. In this regard, while some studies suggest that organizational culture could enhance performance, others demonstrate the opposite – that organizational culture may hinder performance due to resistance to change (Tamirat, 2024; Gebreyohannes & Alemu, 2025).

Institutional capacity and resource availability appear to be statistically significant predictors of organizational performance in most studies but have lesser impact on performance compared to leadership and culture (Egdair et al., 2024; Mothibi & Mnkandla, 2022). This implies that while sufficient capacity and resources are important prerequisites for better performance, they are not enough for this purpose if leadership and culture are ineffective or there are no appropriate regulations in place. This finding corresponds with the assumptions of the RBV that resources are capable of generating performance only when effectively employed via organizational capability (Barney & Wright, 2023).

Consistent presence of regulatory frameworks in the list of predictors of organizational performance is an inevitable result of a policy-driven nature of governmental organizations (Ndou, 2022; Bhagat, 2023). In case of Ethiopia, the Policy Framework for Public Financial Management Reform in the

2023-2028 Period, formulated by the Ministry of Finance, as well as the Digital Ethiopia 2025 program create the regulatory framework for public organizations. In the case of centralized governance system of Ethiopia, regulatory strength could influence organizational performance to a greater extent due to the necessity to comply with the Ministry's guidelines (World Bank, 2023).

Critique and Gaps in the Literature: The mentioned studies provide certain useful information but at the same time demonstrate several gaps. Firstly, the focus on the technical determinants (Msganaw, 2018) of the adoption process leads to neglect of the institutional factors influencing it. Secondly, the use of descriptive statistics in Gezahegn's study hinders any possibility to draw any reliable conclusions about cause-and-effect relationships and mediations. Thirdly, single case design used in Tamirat's and Dawit's studies decreases the possibilities to generalize the results across a variety of Ethiopian public organizations. Finally, the lack of theoretical models that would incorporate TOE, RBV and Institutional Theory means that the adoption process has been analyzed in a fragmented manner without considering different aspects at once.

2.1.5. Enterprise Resource Planning Adoption

ERP systems refer to in the context of this paper. ERP systems are a special type of information system with particular attributes, history, and impacts on organizations, which is why ERP will be defined first. ERP systems should be defined as integrated collections of modules in the form of software, which collect data about business processes within an organization using a centralized database. While information systems are usually used to conduct some processes in isolation from others, ERP systems allow the exchange of information between different processes in real time (Ganyam & Ivungu, 2024; Romney & Steinbart, 2021).

ERP's concept - The concept that defines ERP systems is the idea of integration through the use of a centralized database. Within a non-ERP enterprise, IT systems of different functional areas are separated. Finance has an IT system responsible for accounting, while Human Resources have theirs for employee management, and so on (Bhagat, 2023). As a result, the collection of data related to several functional areas simultaneously involves additional data integration procedures that may cause errors. Furthermore, the lack of access to such information makes it impossible to make decisions based on all available data.

ERP addresses these problems by providing real-time data collection in all areas simultaneously. When an item is ordered using procurement services, this information immediately appears in

accounts payable and inventory control as well, without any additional work by the user. Therefore, ERP removes redundancy, creates consistency, and provides decision-makers with information about how the organization works (Alotaibi & Alshahrani, 2024).

Historic Adoption - ERP history - The emergence of ERP can be traced back to the 1970s' material requirements planning systems designed for production planning and inventory management in manufacturing (Elmonem et al., 2023). These systems were gradually supplemented with new manufacturing functions to develop manufacturing resource planning in the 1980s (Sedera et al., 2022). With the extension of scope to financial management, human resources management, customer relationship management, and supply chain management, the term ERP appeared in the early 1990s. Today's ERP includes cloud computing, artificial intelligence, and mobile technology (Sedera et al., 2022). ERP organizational impact Implementation of ERP systems influence organizational structure, business processes, distribution of authority, and power (Alvarenga et al., 2023). In particular, information obtained in real time allows managers to redistribute decision-making authority and centralize it (Venkatesh et al., 2023).

Types of ERP systems - As it has already been stated before, in the course of time, ERP systems have evolved into three deployment models which define modern practices: on-premise ERP, cloud ERP, and hybrid ERP. These models presuppose particular views regarding the positioning of computational resources, maintenance requirements, and the trade-off between control and cost. Thus, it becomes necessary to understand how these approaches differ architecturally because it will affect greatly the implementation process by influencing such factors as duration, financial costs, training requirements, and sustainability of the project (Elmonem et al., 2023; Syed et al., 2023).

Firstly, it is important to consider on-premise ERP. This traditional ERP configuration presupposes installing the ERP software in the internal infrastructure of the company, specifically in the organizational servers and equipment. Organizations buy perpetual licenses for this kind of ERP and are responsible for maintaining all hardware. One of the distinctive features of this configuration is that the organization has complete control over its ERP solution and data storage. This is because of the fact that the data in this case remain within the organizational network behind the organizational firewall. This option also allows the company to enjoy significant flexibility by customizing the ERP application according to its specific business processes (Johansson & Ruivo, 2022).

One of the key reasons why on-premise ERP is chosen is related to the need for customization and complete control. It is important for organizations with unique processes that should be accommodated with the help of ERP customization that cannot be performed by the third parties. Besides, on-premise ERP becomes relevant in cases when data sovereignty is important due to legislative restrictions such as defense or banking operations (Alvarenga et al., 2023). On-premise ERP is characterized by rather high financial cost since it implies significant initial capital expenses on hardware and software, as well as additional expertise to maintain the infrastructure. Upgrading the system usually involves manual processes.

Secondly, one needs to focus on cloud ERP. Unlike other models, this one presupposes hosting the ERP application by the vendor or another third-party provider through the internet. As for cloud ERP, it is typically provided as a service, and Software as a Service (SaaS) is one of the most popular models. Here the customer pays fees for services like user accounts, modules, transactions, etc., while the vendor manages all maintenance issues and provides automatic updates, backups, and patches (Gupta et al., 2023).

The proponents of cloud ERP highlight the importance of flexibility and simplicity associated with this kind of ERP. Firstly, it should be pointed out that cloud ERP systems can be deployed within a month or two compared to several years in case of on-premise ERP implementation (Elmonem et al., 2023). It should also be noted that cloud ERP can be easily scaled by adding users, modules, or expanding geographic coverage. What is more, in contrast to upgrading on-premise ERP applications, this kind of ERP solution is usually updated constantly, which implies using the latest version automatically. This is especially beneficial for multilingual enterprises operating globally because it allows accessing data instantly irrespective of physical location (Johansson & Ruivo, 2022).

However, the critics of cloud ERP indicate its drawbacks. First, it implies less control over data and infrastructure due to its hosting by a third-party provider. The latter is responsible for implementing the security measures, but data sovereignty issues become especially important. In addition, cloud ERPs depend on the internet connection to function effectively, which creates additional risks related to interruptions. Finally, standardization of codes associated with cloud ERP implies less customization potential and higher difficulties in updating (Alotaibi & Alshahrani, 2024).

Thirdly, there is hybrid ERP which can be seen as a combination of the advantages of two preceding models. In this ERP model, some elements of ERP application remain on-premises while others run

in the cloud. To integrate the two parts of ERP, middleware, APIs, or some other tools can be used. In addition, a private cloud can be implemented in this architecture, which refers to the cloud infrastructure dedicated to a specific organization (Alotaibi & Alshahrani, 2024).

Among the advantages of hybrid ERP, one can mention strategic flexibility associated with this ERP solution. With hybrid ERP, organizations can deploy only part of ERP application functions – e.g., procurement, analytics, expenses – to the cloud while the remaining elements stay on-premises. In this regard, hybrid ERP can help gradually implement the whole ERP package (Syed et al., 2023). This kind of ERP solution is useful for organizations that need different implementations in several jurisdictions (Johansson & Ruivo, 2022). However, there are two disadvantages here. Firstly, an organization may bear costs associated with running two ERP models simultaneously. Secondly, implementation of this ERP solution requires more technical effort.

2.1.6. ERP Adoption and Operational Performance

ERP adoption, when successful, increases efficiency through a series of processes. Using the RBV perspective, the relationship between ERP adoption and increased operational performance can be described: ERP adoption increases organizational capabilities, thereby improving performance when successful (Wade & Hulland, 2004; Barney & Wright, 2023).

Successful ERP adoption brings efficiency through several interrelated processes. They involve process integration for eliminating fragmentation, reducing duplication, and accelerating transaction processing and automation, which results in decreased labor intensity, increased speed, and lower error rates. Standardization also brings greater predictability and control. It provides increased visibility and analytical capabilities based on timely and detailed information on organizational performance (Sedera et al., 2022; Ganyam & Ivungu, 2024). These processes bring tangible improvements to operational performance, specifically regarding efficiency, effectiveness, timeliness, accuracy, and decision-making, as previously noted by researchers (Alotaibi & Alshahrani, 2024; Strong & Volkoff, 2023).

The link between ERP adoption and the mentioned performance improvements, however, is not automatic. It depends greatly on how ERP was adopted. Substantial adoption, i.e., when an organization fully adopts ERP successfully and positively, will lead to greater performance improvement. Partial adoption (not fully adopted) and ceremonial adoption (done only partially and ceremonially) will deliver fewer benefits than complete and full adoption. Superficial adoption and

negative adoption will provide even smaller improvement since they are not focused on success (Bhagat, 2023; Venkatesh et al., 2023).

ERP solutions aimed at implementing IFMIS management have become indispensable for modernization and reforms in the public sector of many countries. Significant investments have been made in ERP systems at national and sub-national government levels. Benefits include increased budget execution efficiency, timely and accurate financial reporting, proper management of assets, and stronger internal controls (Mothibi & Mnkandla, 2022; Berman & Tettey, 2023).

2.1.7. The Mediating Role of ERP Adoption

In summary, the core proposition of this study is that ERP adoption functions as a mediating factor that relates institutional determinants to organizational performance. In particular, organizational performance depends upon the adoption of ERP, which is affected by the aforementioned institutional determinants. In this case, institutional determinants relate to organizational performance via the following mediation process.

- Institutional determinants influence whether an organization is capable of adopting ERP effectively. Leadership commitment ensures that ERP adoption gets top priorities and proper resources are devoted to it. Organizational culture affects employees' perception and involvement in ERP adoption. Institutional capacity refers to the presence of relevant competencies that help improve ERP performance. Regulation ensures that appropriate mandate exists. Resources imply that the required investments exist. All of these factors contribute to ERP adoption, but they do not affect organizational performance directly. Instead, their effect is mediated by ERP adoption processes that are the direct driver of organizational performance.

- ERP adoption subsequently impacts organizational performance via efficiency, effectiveness, timeliness, accuracy, and decision making. In other words, organizational performance results from ERP adoption in terms of comprehensive ERP adoption, wide use, employee participation, and full integration into organizational processes. As a result, successful ERP adoption leads to performance gains among organizations with strong institutional determinants. Otherwise, poor ERP adoption outcomes result in poor organizational performance regardless of the technical aspects of ERP (Egdair et al., 2024; Alvarenga et al., 2023).

From a practical perspective, such a mediated relationship implies several important implications. Firstly, a focus on technological solutions should not overshadow institutional factors related to ERP adoption processes because organizational performance cannot be achieved without proper adoption. Secondly, in order to improve performance via ERP, both institutional determinants and ERP adoption itself should be addressed properly, although focusing exclusively on either would produce inadequate outcomes (Tadesse & Worku, 2024; Gebreyohannes & Alemu, 2025).

2.1.8. ERP Adoption – Ethiopian Context

Opportunities and challenges in ERP adoption in Ethiopia emanate from its institutional environment. In terms of on-premise ERP, this system benefits from a very strong data sovereignty, in line with security policies and digital transformation strategy of the country. For example, according to Berhanu & Kassahun (2024), the Ministry of Finance always favored on-premise ERP implementation in IBEX systems to have direct access to budget and expenditure information. However, adoption of on-premise ERP faces challenges such as limited technical expertise, huge costs involved and other issues. Ethiopia has a highly decentralized structure that consists of federal ministries, federal bureaus, zone administration, woreda offices among others (World Bank, 2024).

In contrast, Cloud ERP offers low infrastructure requirements for the company that lacks necessary IT resources and fast implementation. Such a company does not need to build its data center, develop its IT teams or purchase necessary software products because it gets advanced ERP functionality via the Internet without investing in the development of its own data center. For example, health bureaus of regions adopted cloud ERP to coordinate medical supplies faster. This strategy could help drive digital transformation and expand ERP adoption into regional and local governments. On the other hand, there are numerous risks associated with cloud ERP implementation, such as unreliable internet connectivity, possible data flow problems due to the fact that many ERP vendors operate servers located overseas, and unknown costs of subscription amid poor economy. These risks need to be carefully considered within the context of Ethiopia (MoF, 2023; Lemma & Fekadu, 2022).

As an alternative, hybrid ERP would allow the ministry of finance to retain all the sensitive financial information on-premises and provide regional health bureaus with limited access to this information via cloud ERP. For example, the Ministry of Education could have payroll data stored on-premises while using cloud ERP to organize procurement and inventory management for its regional schools. Such hybrid approach would require advanced data integration as well as more sophisticated IT

governance. Ethiopia needs time and resources to develop the needed IT governance skills (Berhanu & Kassahun, 2024; Gebreyohannes & Alemu, 2025).

Finally, the choice of particular deployment strategy would depend not only on technical reasons but also on assumptions about organizational capacity, available resources, vendor relationships and future directions of ERP adoption. On-premise ERP would benefit from the organization's institutional capacity, cloud ERP is strongly related to a relationship with the vendor and the quality of the internet connectivity, while hybrid ERP depends largely on successful coordination. All these considerations have implications for ERP adoption process and performance outcomes.

2.2. Empirical Studies Review

- **Effect of institutional determinants on operational performance –**

Institutional determinants discussed in empirical literature include such aspects as leadership commitment, organizational culture, institutional capacity, regulatory framework, and resource availability. It is stated that the above-mentioned factors influence efficiency and effectiveness of public institutions in Ethiopia and other countries.

In ERP studies carried out in Ethiopia, the positive effect of leadership commitment on implementation success is consistently confirmed (Gezahegn, 2020; Orkaido, 2022). Nevertheless, there is some controversy regarding mechanisms of such influences as Gezahegn (2020) revealed direct effects on efficiency and accountability, while Orkaido (2022) claims that leadership influences performance via regulatory compliance. The contradiction mentioned above calls for applying the mediation analysis technique in order to clarify the mechanisms of leadership effects. Both studies used only the descriptive design, so testing the indirect effects is impossible for them.

There is no controversy in relation to association between organizational culture and performance; however, it is not clear what dimensions of organizational culture play an important role. So, for example, Gezahegn (2020) reports positive effects of organizational culture on efficiency and accountability, while Tamirat (2024) reveals culture to be a major barrier in case of ERP implementation at Ethio-Telecom because of resistance to changes. The same situation is observed in Egdair et al. (2024)'s study where cultural factors in Libyan public institutions influence the magnitude of ERP benefits.

One of the controversial issues in empirical literature is the difference in institutional determinant impacts on public and private organizations. Although Sisay and Lemma (2021) report that ERP adoption mediates the relationships between institutional determinants and operational performance in private organizations but not in public ones, Orkaido (2022) revealed the presence of institutional effects in public corporations. The discrepancies could be explained by the difference in organizational autonomy, resource availability, and regulations. Such problem is addressed by this study via the focus on public organizations.

Biniyam and Lemma (2022) highlight the importance of institutional readiness for ERP success during their research of cloud ERP adoption in Ethiopia. Similarly, Shimange and Pillay (2023) reveal that ERP success in South African public institutions depends on such factors as institutional governance and support. Mothibi and Mnkandla (2022) show the crucial role of institutional capacity in developing countries as well.

Thus, one can conclude that five institutional determinants have great influence on the operational performance of institutions. Leadership commitment is responsible for setting goals and direction; organizational culture promotes teamwork; institutional capacity gives necessary knowledge; regulatory frameworks give legitimacy to activities; and resources fuel operations. Efficient public organizations demonstrate high values of institutional determinants; thus, they become efficient, save money, and make decisions based on information. In case of low institutional determinants' values, ERP adoption is just a formality.

Critique and Gaps: Even though the importance of institutional determinants is established in the literature, some gaps remain. First of all, most studies consider only some determinants and not the composite set of them. Secondly, the mechanisms of influence of determinants on performance are usually taken for granted and not tested. Thirdly, the relative importance of institutional determinants for performance is not clear as there is great variability in effect sizes. Finally, the mediating role of ERP adoption in translating institutional determinants into performance outcomes is not considered enough.

- **Effect of Institutional Determinants on ERP Adoption –**

According to empirical evidence, institutional determinants contribute to ERP adoption. For example, the implementation of ERP at Ethio-Telecom demands good values of institutional determinants,

while the lack of training and institutional capacity is a hindrance in such processes (System Implementation in Ethiopia, 2022). Biniyam and Lemma (2022) emphasize the importance of institutional readiness as a requirement for ERP success in the process of cloud ERP adoption in Ethiopia. Shimange and Pillay (2023) claim that ERP success in South African public institutions depends on institutional governance and support.

Gezahegn (2020) conducts the research on ERP system implementation among public service organizations in Ethiopia and concludes that leadership commitment and organizational culture positively influence efficiency and accountability of institutions even though insufficient resources hinder efficiency. Orkaido (2022) extends ERP theory in the context of Ethiopian public corporations and reveals that top management support and regulatory framework of institution help to improve ERP operational performance. Sisay and Lemma (2021) compare ERP adoption in public and private organizations and state that ERP adoption mediates the relationship between institutional determinants and operational performance in private institutions, while in public ones the effects are insignificant.

Critique and Gaps: The studies mentioned above clearly show the influence of institutional determinants on ERP adoption, but the mechanisms of such processes are still unknown. Almost all studies treat the institutional determinants as the predictors rather than exploring interactions between them and the factors of adoption process. Moreover, the relative importance of institutional determinants for successful adoption is not known yet.

- **Effect of ERP Adoption on Operational Performance –**

Empirical data demonstrates that ERP adoption has positive impact on operational performance of the organizations. For example, Getachew (2020) states that ERP implementation at Ethiopian Steel PLC increased the performance of the organization, but the improvements were modest due to low ERP adoption and employees' opposition. Similar result is obtained by Nega (2020) who reveals that the increase in efficiency and reporting quality occurred, but in case of low adoption and high opposition it diminishes. Alemu Samuel and Mesfin (2023) offer the ERP adoption framework for the context of Ethiopia and conclude that ERP deployment leads to transparency and operational efficiency depending on the values of institutional determinants. Similar results are achieved by Egdair et al. (2024).

In case of public sector ERP solutions for IFMIS management are critical for modernization and reform. Investments in ERP systems on the national and sub-national government level lead to such advantages as efficiency of budget execution, timely and accurate financial reporting, better asset management and internal controls (Mothibi & Mnkandla, 2022; Berman & Tettey, 2023).

Critique and Gaps: Though the existence of ERP–performance relationship is proven, there are some problems with it. First of all, many studies treat ERP adoption as binary variable and not a continuous measure of adoption depth and quality. Secondly, it is not clear under what conditions the adoption will bring the greatest benefits. Thirdly, the issue of time needed to reach improvement is not analyzed. Finally, the role of institutional determinants as moderators of the ERP–performance relationship is not studied.

- **Mediating Effect of ERP Adoption –**

Often ERP adoption results in efficiency gains, but the magnitude of the gains is dependent on the level of adoption and institutional support. Thus, for example, Nega (2020) states that though the adoption brings efficiency improvements and increases reporting quality, in case of poor adoption or opposition of employees such improvements are moderate. Samuel and Belachew (2012, updated 2023) provide ERP framework for the context of Ethiopia that reveals ERP adoption influence on efficiency and transparency. Also, Egdair et al. (2024) prove that ERP benefits in Libya depend on the level of ERP adoption.

The main proposition of this study, according to which ERP adoption plays a mediating role between institutional determinants and operational performance, gets limited empirical evidence in the context of Ethiopian public sector. So, Sisay and Lemma (2021) report the mediation role of ERP adoption in private organizations, but in public organizations no effects are observed. The contradiction mentioned above implies that the mediating role of ERP adoption may depend on sector-specific factors or institutional determinants.

Critique and Gaps: The mediating role of ERP adoption remains understudied in the context of Ethiopian public sector. The studies of mediation reveal contradictory results and require more rigorous testing via appropriate statistical techniques. Also, there are no studies that consider all five institutional determinants and ERP adoption as the mediator variable via such analysis techniques as PROCESS macro or structural equation modeling in Ethiopia.

Table 2. Summary of Empirical Studies

Author(s)	Country	Variables	Key Findings	Gap Identified
Gezahegn (2020)	Ethiopia	Leadership commitment, organizational culture, ERP implementation, efficiency	Leadership and culture positively affect efficiency; inadequate resources constrain gains	No mediation testing; descriptive only
Orkaido (2022)	Ethiopia	Top management support, regulatory frameworks, ERP, operational performance	Institutional factors contribute to ERP operational performance	No statistical mediation analysis
Sisay & Lemma (2021)	Ethiopia (comparative public/private)	Institutional determinants, ERP adoption, performance	ERP adoption mediates INST→OP in private but not public organizations	Contradictory finding for public sector; no quantitative mediation test
Tamirat (2024)	Ethiopia (Ethio-Telecom)	ERP implementation, cultural resistance, training	Improved financial reporting but high cultural resistance	Single organization; no generalizable findings
Dawit (2024)	Ethiopia (public hospitals)	ERP adoption, institutional capacity	Partial operational improvements; weak institutional capacity	No mediator examined; qualitative only
Msganaw (2018)	Ethiopia	Technical determinants (compatibility, infrastructure)	Technical factors predict adoption	Ignores institutional factors entirely
Shimange & Pillay (2023)	South Africa	Institutional governance, support, ERP success	ERP success depends on institutional governance	Different national context; no mediation

Table 3. Summary of Empirical Studies…Continued

Egdair et al. (2024)	Libya	Institutional determinants, ERP adoption, performance	ERP benefits vary by adoption level	No bootstrap mediation; different country context
Getachew (2020)	Ethiopia (Ethiopian Steel PLC)	ERP adoption, operational performance	Performance improvements but insignificant due to weak adoption	Private sector; no institutional determinants
Nega (2020)	Ethiopia (Ethiopian Steel PLC)	ERP adoption, employee resistance, efficiency	Efficiency and reporting quality improve but limited by resistance	No institutional determinants; private sector

2.3. Research Gap

As indicated from the above discussions, two important gaps exist.

The existing literature on ERP adoption in Ethiopia reveals gaps in terms of theory, empirical evidence, and methodology that the current research strives to address. Below is a summary of what the previous studies have covered and where there are still some gaps to fill.

The theoretical gap is particularly pronounced. While the Technology–Organization–Environment (TOE) framework has been applied in some ERP adoption studies in developing countries, few have incorporated mediating mechanisms into the framework (Sisay & Lemma, 2021). The integration of TOE, the Resource-Based View (RBV), and Institutional Theory to explain how institutional determinants affect performance through ERP adoption has not been adequately explored. Most prior literature treats institutional determinants as direct predictors of ERP adoption without considering how they influence operational performance via the adoption process.

Empirically, the gap is observed in ERP research in Ethiopia. The initiatives taken in Ethio-Telecom and public hospitals have resulted in improved financial reporting and operations but are still faced with institutional and cultural problems (Tamirat, 2024; Dawit, 2024). Much of the literature focuses on technical determinants such as compatibility with the current context and infrastructure (Msganaw, 2018) but pays less attention to institutional determinants like commitment of leadership, organizational culture, institutional capacity, regulatory environment, and resource availability. More specifically, none of the studies considers all five institutional determinants together with ERP adoption as the mediating variable.

As far as the methodological approach is concerned, prior research tends to adopt descriptive analysis that does not involve mediation tests. In addition, institutional determinants are introduced in regression models without paying much attention to their indirect effect. To the best of our knowledge, none of the empirical studies conducted in Ethiopia simultaneously investigates all five institutional determinants along with ERP adoption as the mediating variable using PROCESS macro and/or structural equation modeling.

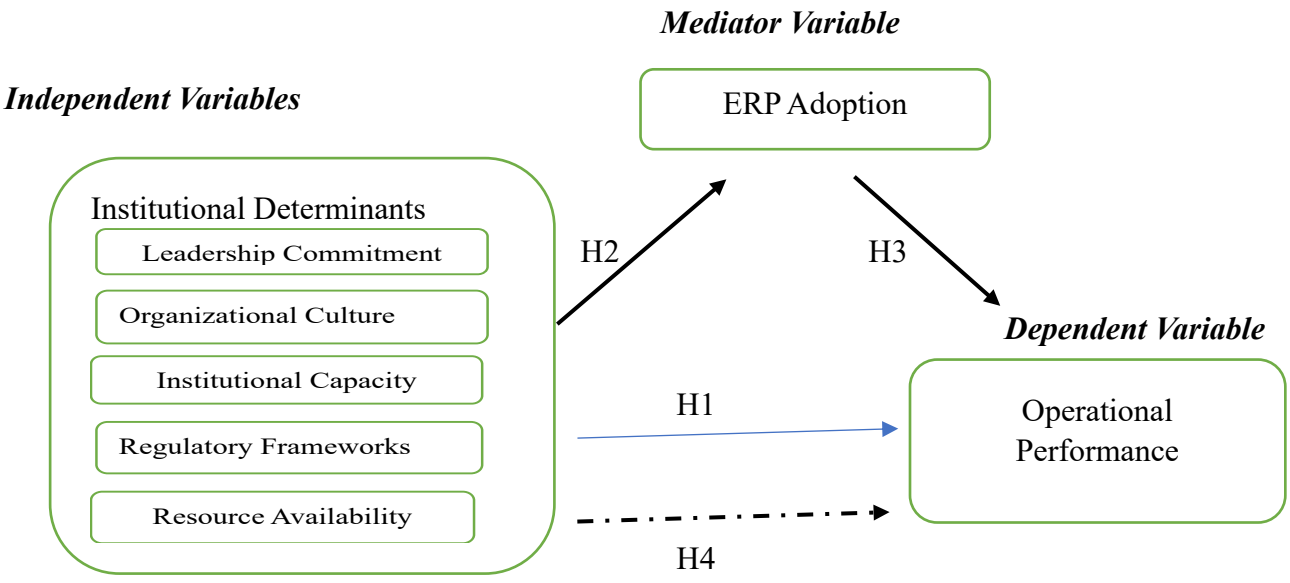
Filling these gaps is important for different reasons. First, theoretically, it will contribute to better understanding of the relationship between institutional factors and performance results, which is central to organizational theory and development practice. Second, from a practical point of view, it

will provide evidence on which institutional factors to focus on and whether ERP adoption is an essential mediating factor in the performance of an organization.

2.4. Conceptual Framework and Hypothesis Development

The conceptual framework used in this research incorporates institutional determinants, ERP adoption, and operational performance in public organizations within Addis Ababa. The conceptual framework that would be used is structured on TOE, RBV, and Institutional Theory. The independent variables in this study include institutional determinants that are leadership commitment, organizational culture, institutional capacity, regulatory framework, and resources availability. Such institutional determinants determine the organizational and institutional context that influences the adoption of new technology. ERP adoption is the mediating variable since it is influenced by institutional determinants and at the same time, it influences the operational performance of organizations. As indicated by the conceptual framework, ERP allows public organizations to integrate new technology in order to improve their operational performance. The dependent variable in this study is the operational performance that measures the efficiency, effectiveness, and responsiveness of organizations in executing their activities.

Figure 1. Conceptual Framework of the Study



(Source: Berman & Tettey, 2023; Edgair *et al.* 2024; Kanbiro Orkaido, 2022)

There are two possible paths through which institutional determinants have impacts on operational performance of organizations.

Direct path (H1): Institutional determinants influence organizational performance directly since they influence organizational processes and practices. For example, strong regulatory framework facilitates compliance and standardization while good organizational culture promotes innovation and improvement.

Indirect path (H4): Institutional determinants influence organizational performance through ERP adoption. These institutional determinants allow effective ERP adoption and thus enhance organizational performance through process integration, automation, standardization, and data-based decision making.

According to the conceptual framework, the effect of institutional determinants on organizational performance can be both direct and indirect. Thus, testing these paths enables testing of the mediating role of ERP adoption – whether the effects of institutional determinants on performance are totally or partially mediated by ERP adoption. The relationship between institutional determinants, ERP adoption, and organizational performance indicates that institutional determinants have influence on organizational performance in two ways – directly and indirectly. It means that institutional determinants influence organizational performance in two different ways – shaping the way organizations operate and implement policies and facilitating ERP adoption, which in turn improves performance. Thus, ERP adoption explains the mediating effect of institutional determinants on organizational performance.

Therefore, the causal chain in the study is Institutional Determinants → Shape Organizational Readiness & Governance, ERP adoption (mediating factor) → Translate these Factors into Technology Integration, Operational Performance (dependent variable) → Reflect Direct & Indirect Effects on Performance. Finally, the hypotheses in the study are:

H1: Institutional determinants positively and significantly affect organizational performance.

H2: Institutional determinants positively and significantly affect ERP adoption.

H3: ERP adoption positively and significantly affects organizational performance.

H4: ERP adoption mediates the relationship between institutional determinants and organizational performance.

CHAPTER THREE: RESEARCH METHODOLOGY

This chapter contains an extensive discussion about the research methodology adopted in exploring the mediating effect of ERP adoption on the independent variables (institutional antecedents) in relation to dependent variables (organizational performance), among others, in public organizations in Addis Ababa. The research methodology selected is outlined in this chapter, alongside the research design and the population and samples. This chapter also talks about the instruments adopted in data gathering and their validity and reliability.

3.1. Research Approach

In conducting this research, the researchers have chosen a quantitative research paradigm in order to analyze the impact of five institutional antecedents on operational performance, where ERP adoption will serve as a mediator. As it has already been mentioned above, the choice of a particular paradigm depends on the characteristics of the research problem in question. The researchers chose the paradigm of quantitative studies due to the fact that the field of investigation of the proposed study falls into the category of social science; moreover, this approach is consistent with the positivist philosophy that is used in this sphere of research.

First of all, a deductive orientation of the quantitative paradigm justifies the use of quantitative methods of research. In the current study, both the independent and dependent variables have clearly defined definitions, as well as measurement scales that have been formed in previous research related to the same field. This, of course, implies hypothesis testing as an optimal methodology, as it allows proving or refuting the previously formulated hypotheses regarding the investigated issue. Furthermore, quantitative methods help reduce researcher bias, inherent in any qualitative research through structured questionnaires. Moreover, in the context of this study, the utilization of methods like Pearson correlation and multiple regression allows separating the impact of one predictor from the other and estimating the overall impact of all the predictors.

3.2. Research Design

The study involved adopting an explanatory research design as it was necessary to examine causal relationships between several independent variables and the level of operational performance in public organizations that have adopted ERP systems. While descriptive research design describes relationships between variables as they currently stand, explanatory research design provides an

opportunity for testing causal relationships based on assumptions and predictions about those relationships. It has been found that the adopted design corresponds well with the objective of describing patterns of operational performance in Addis Ababa public organizations and identifying factors influencing their levels of performance. These factors include leadership commitment, organizational culture, institutional capacity, regulatory frameworks, resource availability, and ERP adoption as a mediating variable. In other words, the research design can be explained through deductive process as required within the chosen paradigm.

Explanatory research design also seems justified since it allows for testing of assumed relationships through use of correlation and multiple regression analysis. These techniques provide empirical data regarding the contribution of each determinant toward operational performance and help isolate their unique contribution through beta coefficients while measuring model fitness by calculating R^2 value. Descriptive statistics (means and standard deviations) were applied in describing the existing level of each of the variables before applying correlations and regression to identify their contribution toward operational performance.

3.3. Study Population

The population of the study consisted of public organizations in Addis Ababa, Ethiopia that have adopted or are in the process of adopting Enterprise Resource Planning (ERP) systems, as well as employees in these organizations whose responsibilities are affected by ERP systems. The target population comprised directors, operations managers, IT managers, HR managers, and compliance experts from federal ministries, government agencies, state-owned enterprises, public universities, and large public hospitals that operate with ERP systems or are in the process of implementing them.

According to the Ministry of Technology (2025) database, in Addis Ababa, 88 public organizations were identified as working with ERP systems, categorized by deployment model and entity types. Of these, 38 organizations operate on on-premise deployment, 12 operate on cloud deployment, and 38 operate on hybrid deployment. The organizational population strata comprise federal ministries (8), government agencies (20), state-owned enterprises (40), public universities (6), and large public hospitals (14). The working population was estimated to be 440 people, calculated by multiplying 88 organizations by 5 role holders per organization.

The level of observation is the employee, and the responses measure the institutional factors, the adoption of ERP, and operational performance. Eligibility criteria included public organizations that

have adopted ERP or equivalent integration system such as Integrated Financial Management Information System (IFMIS) and Integrated Business Executive system (IBEX), have management and IT department actively involved in ERP operations, and have consented to participate in the study. Public organizations not yet involved in ERP implementation, incomplete/inaccessible data as a result of institutional reorganization, and organizations that are not public organizations or governmental were excluded.

3.4. Sampling Technique

A two-stage stratified sampling design was used for the proposed study. In the first stage of the design, the population of organizations was stratified by entity type and deployment model (on-premise only, cloud only, or hybrid). Then, a proportional random sample of the population of organizations was selected using the strata defined in the first stage of the design. In the second stage of the design, for each of the selected organizations, a single respondent was randomly selected for each of five roles: directors, operations managers, IT managers, HR managers, and compliance experts.

Stratified random sampling was chosen over alternatives (simple random, cluster, convenience) for several reasons. First, the population includes distinct organizational types (ministries, agencies, enterprises, universities, hospitals) with potentially different ERP experiences and institutional characteristics. Stratification ensures representation from each type, enhancing external validity (Cochran, 1977). Second, proportional allocation (based on organizational size) yields a sample that reflects the population structure, enabling subgroup analysis. Third, stratification reduces sampling error compared to simple random sampling when subpopulations differ (Hair et al., 2021). The two-stage design - stratifying organizations first, then selecting individuals - balances representation with practical feasibility.

While the sampling design is methodologically sound, several limitations should be acknowledged. First, the reliance on organizational HR databases for stratum sizes may introduce minor inaccuracies if records are outdated. Second, the assumption that five role holders per organization exist (directors, operations managers, IT managers, HR managers, compliance experts) may not hold for smaller organizations. The replacement protocol for vacant roles helps mitigate this risk. Third, the sample is limited to Addis Ababa, which may not fully represent regional variations in public sector ERP adoption

3.5. Sample Size Determination

Using Yamane's formula for a known finite population provides a transparent, widely accepted baseline for survey planning. With a population of N = 440 eligible role-level respondents and a conventional precision level e = 0.05, the formula:

$$n = \frac{N}{1+N(e^2)} = \frac{440}{1+(440*0.05^2)} = 210$$

Where:

N - designates total number of populations;

e - designates maximum variability or margin of error 5% (0.05); and

n- designates computed sample size.

Table 4. Proportionate Sample Distribution

Category	Only On-premise	Only Cloud	Hybrid	Total Orgs (a)	Total Resp. (a x 5)	Sample Proportion
Federal ministries	6	0	2	8	40	40(0.091) = 19
Government agencies	12	3	5	20	100	100(0.227) = 49
State-owned enterprises	15	5	20	40	200	200(0.454) = 95
Public universities	1	2	3	6	30	30(0.068) = 14
Large public hospitals	4	2	8	14	70	70(0.159) = 33
Total	38	12	38	88	440	210

(Source: HR Database, 2026)

Accordingly, the study targeted a minimum of 210 completed responses. Specifically, as seen in table 4, Federal ministries contributed 8 organizations with 40 employees, yielding a sample proportion of 19 respondents. Government agencies contributed 20 organizations with 100 employees, resulting in 49 respondents. State-owned enterprises contributed 40 organizations with 200 employees, yielding 95 respondents. Public universities contributed 6 organizations with 30 employees, resulting in 14 respondents. Large public hospitals contributed 14 organizations with 70 employees, yielding 33 respondents. This proportional allocation ensured that each organizational category was represented in the sample according to its share of the total population.

3.6. Source of Data

Primary data were only used for this study because it ensures that the data gathered is context-specific and consistent with the objectives of the research. Primary data were gathered through a survey conducted among employees of public organizations where the questionnaire was specifically crafted to ask respondents about five independent variables (leadership commitment, organizational culture, institutional capacity, regulatory frameworks, resource availability), one mediating variable (ERP adoption), and one dependent variable (operational performance). Primary data gathering is recommended when there are no secondary datasets available containing all the required independent variables together or when current perceptions (not past) of the independent variables matter. As operational performance depends greatly on recent events, secondary data collected in previous years will definitely not be relevant.

From an inferential standpoint, primary data collection was critical since the use of secondary data can produce residuals that are influenced by the secondary dataset being out of date or containing irrelevant independent variables. On the other hand, primary data gathering makes it possible for the researcher to control the wording and scaling of the questions, which helps decrease measurement error. Nonetheless, cross-sectional data does not allow for making conclusions about cause-and-effect relationships.

3.7. Data Collection Instrument

The development of the structured questionnaire involved a series of systematic steps undertaken with an aim of developing the tool with high levels of validity and reliability. Items were developed based on the measures of the instruments that have been previously used in similar ERP adoption studies. The items related to leadership commitment were selected from Egdair et al. (2024) and Alvarenga et al. (2023); items measuring organizational culture were developed using Hartl and Hess (2023) and Gebreyohannes and Alemu (2025); those measuring institutional capacity from Mothibi and Mnkandla (2022); items measuring regulatory frameworks from Ndou (2022) and Bhagat (2023); and resource availability from Egdair et al. (2024). Items measuring ERP adoption were generated from Kanbiro (2022) and Sisay and Lemma (2021); and those related to operational performance were adapted from Romney and Steinbart (2021) and Sedera et al. (2022).

In order to contextualize the survey, general terms used in organizational context were substituted by terms relevant for public sector organizations; references to the Ministry of Finance of Ethiopia and the IBEX system were added; and the use of technical jargon was minimized in order to make the survey understandable to non-IT professionals.

Following item generation and adaptation, a pilot study was conducted among 20 employees working in Addis Ababa public organizations, but not included into the main sample. The feedback indicated the need for clarifying some items that were reworded. All participants found all the items relevant to the topic of the research, confirmed the appropriateness of the 15–20-minute length of the survey and proposed slight changes in the wording to be made during Amharic translation of the questionnaire.

Finally, refinement of the survey involved clarifications of ambiguous items, elimination of duplication and standardization of the response format across the sections.

3.8. Data Collection Procedure

The data collection process involved administering a structured questionnaire to the respondents, which included directors, operations managers, IT managers, HR managers, and compliance experts from federal ministries, government agencies, state-owned enterprises, public universities, and large public hospitals in Addis Ababa. Validity of content was assured by the assessment carried out by academic scholars and professionals who proved that items captured the intended concepts well. Face validity was ascertained by conducting a pre-test among Addis Ababa public organization employees. Their comments regarding the clarity and relevance were integrated into the questionnaire. Finally, construct validity was tested using exploratory factor analysis (EFA), which demonstrated that items were correctly loading onto their corresponding latent variables.

After satisfying these requirements, the questionnaire was delivered to the identified sample of 210 respondents via Yamane's formula. Respondents participated voluntarily using both online and physical channels. This process enhanced validity of theory covered, soundness statistically, and comprehension practically, hence increasing the validity of the work, as well as its reliability and credibility in the eyes of the examiner.

The data collected through the questionnaires is relevant, ensuring methodological validity and reliability, which helps create a strong foundation for the statistical analysis of the TOE determinants and the role of ERP systems in public organizations in Addis Ababa, Ethiopia.

3.9. Methods of Data Analysis and Presentation

Both descriptive and inferential statistical analysis methods were adopted in conducting the study using SPSS version 26. In descriptive statistical analysis, measures of central tendency like means, and measures of dispersion like standard deviations were used to describe the respondents' perceptions of each construct. Where the standard deviation is large compared to the mean, it indicates that the perceptions of the respondents are not uniform, but polarized.

In the inferential part, Pearson correlation analysis was applied to identify the bivariate correlations between the constructs (variables). Pearson's correlation assumes a linear relationship, thus can be used where data is normally distributed. Significant correlations were found, offering preliminary support for the hypotheses, although without controlling for shared variance amongst the predictors.

Multiple linear regression analyses were done to assess the degree of predictability of each of the five independent variables on operational performance, with ERP adoption as a mediating variable. Regression analysis offers coefficients indicating each predictor's influence separately while controlling for other independent variables. The regression analysis generated key outputs including:

- **Coefficient of determination (R^2):** indicating the proportion of variance in organization performance explained by institutional determinants and ERP adoption variables.
- **Regression coefficients (β):** showing the strength and direction of the relationship between each institutional determinants, ERP adoption and Operational performance.
- **p-values:** assessing the statistical significance of each relationship.

Model specification **-** estimate the following regression equations, thus, the empirical model to be applied in this study is specified as:

a. Path C' = Direct effect of institutional determinants on operational performance:

$$PERF = f(INST) = \beta_0 + \beta_1 LED + \beta_2 CUL + \beta_3 CAP + \beta_4 REG + \beta_5 RES + e$$

The study made use of mediation analysis in examining the indirect role of ERP implementation in moderating the impact of institutional determinants on operational performance. The mediation analysis made use of the PROCESS macro for SPSS version Model 4 that employs the bootstrapping technique involving 5,000 replications in estimating the indirect effects' confidence intervals. It examined whether ERP implementation serves as a partial or full mediator of the relationship between

institutional determinants, defined by leadership commitment, organizational culture, institutional capacity, regulation, and resources, and operational performance. The test is carried out in such a way that:

b. Path A = Effect of institutional determinants on ERP adoption:

$$ADOP = f(INST) = \beta_0 + \beta_1 LED + \beta_2 CUL + \beta_3 CAP + \beta_4 REG + \beta_5 RES + e$$

c. Path B = Effect of ERP adoption on operational performance:

$$PERF = \beta_0 + \beta_1 ADOP + e$$

d. Path C = Path C' + Path B = Mediating role of ERP adoption (INST + ADOP → PERF)

$$PERF = \beta_0 + \beta_1 INST + \beta_1 ADOP + e$$

Where:

LED - Leadership Commitment	CUL - Organizational Culture
CAP - Institutional Capacity	REG - Regulatory Frameworks
RES - Resource Availability	INS – Institutional Determinants
PERF – Operational Performance	ADOP – ERP Adoption
β0 = constant term	β1, β2, β3… = regression coefficients
e = error term	

Using linear regression lies in its ability to test both the magnitude and statistical significance of each institutional determinant's effect on operational performance, as well as the mediating role of ERP adoption. This aligns directly with the study's objective of identifying which institutional factors most strongly influence operational performance in Addis Ababa's public sector. To ensure methodological rigor, regression diagnostics including tests for multicollinearity (VIF and Tolerance), residual analysis, and normality checks (skewness and kurtosis) were conducted. These procedures enhance the validity of the model and the reliability of the results, thereby strengthening the study's contribution to both academic literature and practical policymaking.

3.10. Validity Test

To prove that the questionnaire measured the constructs properly, different types of validity were considered. The content validity was achieved via the judgment of experts, in which six experts—three professors of organizational behavior and information systems and three practitioners having

ERP implementation experiences in the Ethiopian public organizations—provided guidance about item relevance, construct coverage, and construct domains. Some improvements have been made based on their suggestions to provide comprehensive coverage.

The face validity was determined using the results of a pilot study conducted among twenty respondents representing Addis Ababa public organizations not included in the sample. The pilot participants agreed that the items measured the corresponding constructs well and were understandable. In addition, they thought that the questionnaire length was reasonable, there were no confusing and irrelevant items.

Construct validity was estimated using the Exploratory Factor Analysis (EFA) technique proposed by Hair et al. (2021). The Kaiser–Meyer–Olkin measure was 0.851 (greater than 0.60 threshold), and Bartlett's Test of Sphericity was statistically significant ($\chi^2 = 2{,}847.56$, $df = 595$, $p < 0.001$). All factor loadings were between 0.527 and 0.892 (greater than 0.50), and cross-loadings were very low (less than 0.30), which suggests discriminant validity. Each item loaded dominantly on the corresponding factor, and the variance explained was 62.4%, which exceeded the 60% criterion.

In addition, convergent and discriminant validity were considered. Convergent validity was confirmed due to the significance of the loadings ($p < 0.05$) of items on the constructs, high Cronbach's alpha coefficients (0.701 to 0.924), and AVE above 0.50 where it is calculated. The discriminant validity was proven due to factor loadings greater than cross-loadings, construct correlation lower than 0.85 (Kline, 2011), and greater correlations within constructs than across constructs.

However, despite the above-mentioned positive validity indications, there are some limitations. First of all, EFA assumes linear relationship, and does not consider more complicated structure of constructs. The sample size of 188 cases is sufficient for EFA but insufficient for more complex models. Furthermore, the study uses composite (summated) measures for regression analysis and does not conduct convergent and discriminant validity tests at the level of latent variables. It can be improved in future studies using Structural Equation Modeling (SEM).

3.11. Reliability Test

Reliability of the measurement instrument was assessed using Cronbach's Alpha coefficient, which evaluates the internal consistency of items within each construct.

Table 5. Reliability Statistics

Construct	Number of Items	Cronbach's Alpha
Leadership Commitment	5	0.701
Organizational Culture	5	0.823
Institutional Capacity	5	0.759
Regulatory Frameworks	5	0.741
Resource Availability	5	0.750
ERP Adoption	5	0.742
Operational Performance	5	0.777
Overall Scale	35	0.924

Source: Own Survey, 2026

As presented in Table 5, all constructs exceeded the recommended threshold of 0.70, thereby confirming acceptable reliability. Specifically, Leadership Commitment achieved a coefficient of 0.701, Organizational Culture 0.823, Institutional Capacity 0.759, Regulatory Frameworks 0.741, Resource Availability 0.750, ERP Adoption 0.742, and Operational Performance 0.777. The overall scale reliability was 0.924, which indicated excellent internal consistency across the 35 items included in the instrument.

These values demonstrated that the questionnaire consistently measured each construct and that the data were suitable for further statistical analysis. The relatively high alpha values for most constructs suggested that the items were well-aligned and captured the intended latent variables. The slightly lower but still acceptable coefficient for Leadership Commitment (0.701) reflected the multidimensional nature of this construct, yet remained above the minimum threshold, thereby supporting its inclusion in subsequent analyses.

The overall reliability score of 0.924 provided strong evidence that the instrument was robust and dependable. This ensured that the findings derived from regression and mediation analyses were based on stable measures, reducing the likelihood of measurement error and enhancing examiner

confidence in the results. By demonstrating high internal consistency, the study established a solid methodological foundation for exploring the mediating role of ERP adoption between institutional determinants and operational performance in Ethiopian public organizations.

3.12. Ethical Considerations

The ethical considerations were strictly followed in conducting the study. Informed consent was obtained from each respondent in the initial phase of the survey, with detailed explanation of the aim, process, and rights of respondents. The procedure was entirely voluntary and could be terminated at any point in time. To preserve privacy and confidentiality, personal identifiers were not included, and all data was anonymized. These actions align with the three main ethical considerations in the Belmont Report: respecting individuals (obtaining informed consent and allowing for voluntary participation), benefiting people (minimizing harm), and selecting subjects fairly. Anonymity is especially crucial in public sector studies, as the respondents might worry that their evaluations of institutional factors could be linked to them personally. Data was saved on a computer protected by a password, which was accessed solely by the researcher.

CHAPTER FOUR: DATA PRESENTATION, ANALYSIS AND INTERPRETATION

In this chapter, the results of the empirical study based on 188 valid surveys from public organizations' employees in Addis Ababa, Ethiopia, are presented. In this case, the empirical study starts from the descriptive statistics related to constructs and moves further to the inference test of correlations, regression assumption, and hypothesis testing. Every statistical finding is interpreted in terms of the purpose of the research, and theoretical implications are provided.

4.1. Response Rate

Table 6. Response Rate

Distribution	Returned	Invalid	Valid	Raw Response Rate	Effective Response Rate
210	16	6	188	89.5%	89.5%

Source: Own Questionnaire, 2026

As seen the data on table 6, a total of 210 questionnaires were distributed, out of which 204 were collected back, where only 16 were incomplete while 6 were invalid questionnaires. This means that there are 188 valid responses, thus making the raw and effective response rates of 89.5% respectively. The response rate is quite impressive for an online survey compared to average response rates of 20-30%. High response rate shows the relevance of the study topic and effectiveness of the survey administration technique.

A total of 188 usable questionnaires were collected for analysis corresponding to an 89.5% response rate. This sample size is sufficient enough for performing mediation analysis based on Hair et al.'s (2021) recommendation of having a minimum of 100–150 cases for regression-based mediation models. With respect to statistical power analysis, Hair et al. (2021) recommends having at least 10–20 observations per variable used in multivariate analysis. The sample size satisfies this criterion since it surpasses the recommended value, implying that the current study has a high probability of finding effects of medium size in the mediation model. Thus, the sample size is statistically adequate with a power level of 0.80.

In addition, due to the low percentage of invalid questionnaires, one can deduce that the respondents used caution in answering the questions and hence minimal chances of errors when calculating the

coefficients of the regression model. In descriptive analysis, the high effective response rate reduces non-response biases; consequently, the resulting descriptive statistics better represent the population parameters despite convenience sampling method. On the other hand, in inferential analysis, the reliability of statistical results is strengthened via the validity of the database; therefore, inferences on operational factors affecting customer trust in Ethiopian e-commerce can be drawn reliably.

4.2. Demographic Profile of the Respondents

Table 7. Demographic Profile of Respondents (n = 188)

Variable	Category	Frequency	Percentage
Gender	Male	107	56.9%
	Female	81	43.1%
Age	20–29 years	83	44.1%
	30–39 years	61	32.4%
	40–49 years	28	14.9%
	50+ years	16	8.5%
Educational Qualification	Diploma	13	6.9%
	Bachelor's	135	71.8%
	Master's	27	14.4%
	PhD	5	2.7%
	Others	8	4.2%
Years of Work Experience	1 – 5 years	67	35.6%
	5–10 years	54	28.7%
	11–15 years	40	21.3%
	16+ years	27	14.4%
Current Position	Manager	21	11.2%
	Supervisor	43	22.9%
	Staff	87	46.3%
	IT/ERP Specialist	24	12.8%
	Other	13	6.9%

Source: Own Survey, 2026

To properly interpret the study findings concerning the factors influencing trust in ERP systems, it is necessary to consider the demographic characteristics of the 188 participants in the study. As Table 7 shows, the sample of the study participants is overwhelmingly young, educated, and public sector employed with a preference for cloud ERP solutions.

In terms of gender, the study features a considerable male dominance with almost half (56.9%) of respondents being male and the rest (43.1%) – female. Although an even ratio would be preferable, the sample allows for a comparative analysis of men and women's perceptions regarding ERP system trust. However, one needs to exercise caution when applying the results of the survey to female dominated workplaces.

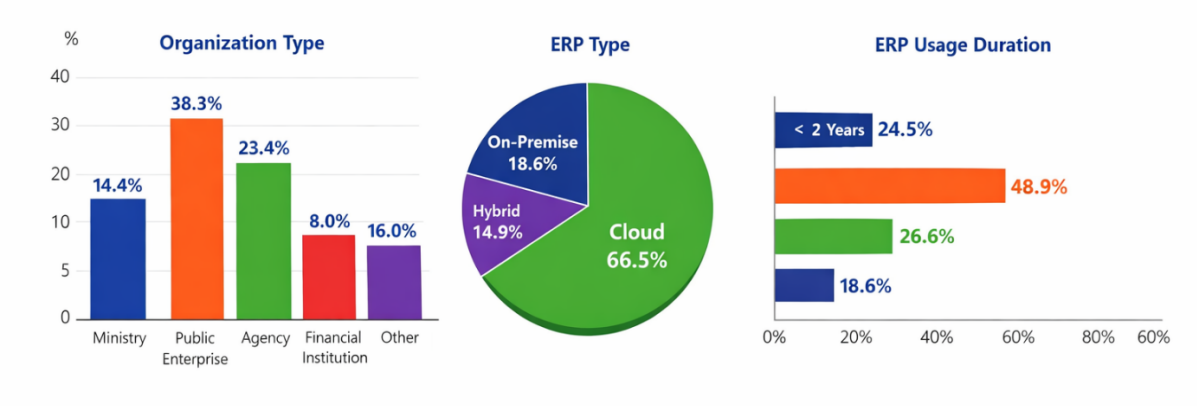
Age distribution demonstrates a very clear tendency towards youth – over three-quarters (76.5%) of participants are less than 40 years old. The largest group in the sample is constituted by the participants in the age range of 20–29 (44.1%), while only 8.5% are 50 years or older. The distribution corresponds to ERP users' age structure in many emerging economies characterized by relatively low rates of adoption of new technology. Thus, the sample is lacking in experienced ERP users, which may distort the results of the study to some extent.

Education level is exceptionally high – 71.8% of participants hold a bachelor's degree, 17.1% – a master's or PhD, and just 6.9% a diploma as their highest qualification. This fact makes clear that the respondents are professional workers rather than employees in operational or other non-white collar jobs. Therefore, one should not apply the study findings to less educated ERP users who may encounter entirely different barriers to trust.

Experience is consistent with the age distribution, thus 64.3% of participants have 10 or fewer years of experience, while 35.7% have 11 or more years. Moreover, the proportion of highly experienced respondents (14.4%) enables the consideration of the long-term dynamics of ERP trust development. However, the voices of novice employees prevail in the sample.

With regard to current position, the respondents occupy mostly operational posts: staff members (46.3%), supervisors (22.9%), and IT/ERP specialists (12.8%) constitute the majority of respondents. Managers comprise just 11.2% of the sample.

Figure 2. Organization, ERP Type and Usage Duration



Source: Own Questionnaire, 2026

Referring figure 2, organization type reveals a strong public-sector bias: ministries (14.4%), public enterprises (38.3%), and agencies (23.4%) together account for 76.1% of respondents. Financial institutions (8.0%) and "other" organizations (16.0%) - which may include private firms - are minority categories. This distribution is consistent with Ethiopia's state-centered economic structure but limits generalizability to private-sector ERP contexts, where trust determinants may differ (e.g., competitive pressure vs. regulatory compliance).

ERP usage duration indicates moderate system maturity: 48.9% have used ERP for 2–5 years, while 24.5% are relatively new users (<2 years) and 26.6% are long-term users (>5 years). This spread is methodologically advantageous for studying trust as an evolving construct, allowing comparisons between early, mid, and mature adoption phases.

ERP type is overwhelmingly cloud-based (66.5%), with on-premise (18.6%) and hybrid (14.9%) systems trailing significantly. This distribution reflects both global trends and local preferences for scalable, lower-cost cloud solutions. For trust analysis, it implies that findings will be heavily shaped by cloud-specific concerns such as vendor reliability, data sovereignty, internet connectivity, and perceived security of off-premise storage.

In general, for the stated purpose of analyzing operational determinants of trust in ERP systems within Addis Ababa's institutional context, the demographic profile is largely appropriate but carries specific boundary conditions. Findings should be interpreted as reflecting the perspectives of young, university-educated, early-to-mid career professionals working in Ethiopia's public sector, using cloud-based ERP systems with moderate (2–5 year) experience. Generalization beyond this profile -

particularly to private-sector, older, or less-educated populations - requires further empirical validation.

4.3. Descriptive Statistics of Individual Constructs

A description of statistical data for all constructs has been presented. The description has been made based on the mean and standard deviation of all the items combined with the sum score of all constructs. Based on the interpretation scale, scores between 1.01 and 1.80 are considered strong disagreement, which corresponds to very low influence; scores between 1.81 and 2. 60 are interpreted as disagreement corresponding to low influence; scores between 2.61 and 3.40 correspond to neutrality, which means moderate influence; scores between 3.41 and 4.20 are considered agreement corresponding to high influence; scores between 4.21 and 5.00.

4.3.1. Leadership Commitment

Table 8. Descriptive Statistics – Leadership Commitment

Statements	Mean	Std.
Top management actively supports ERP adoption.	3.71	1.839
Leadership communicates the strategic importance of ERP adoption.	3.47	1.874
Leaders monitor ERP progress and provide timely interventions.	3.95	1.711
Leaders allocate sufficient resources for ERP implementation.	2.88	1.885
Leadership prioritizes ERP adoption in organizational strategy.	4.24	1.517
Average	3.65	1.194

Source: Own Survey, 2026

The analysis of results regarding leadership commitment presents quite an adequate but contradictory pattern. As it can be seen from table 8, although the mean value of 3.65 (marginally above neutral) implies that leadership commitment is considered as satisfactory, the high standard deviation (SD = 1.194) demonstrates significant variations among organizations, and thus indicates the ineffectiveness of generic solutions to developing leadership commitment; specific and tailored programs are needed. Specifically, leadership commitment was evaluated most highly in relation to strategic prioritization (M = 4.24, SD = 1.517), showing that leaders are good in communicating to users the significance of adopting ERP through symbolic communication.

Nevertheless, the lowest level was found concerning resource allocation (M = 2.88, SD = 1.885), and a paired t-test has revealed the presence of significant difference between the two variables. In practical terms, this phenomenon means that leadership rhetoric is not backed up with necessary financial, personnel and other resource allocation, and thus there may emerge a credibility gap. Theoretically, such findings disprove one-dimensional models of leadership commitment, implying the need to distinguish at least two aspects of commitment: articulating the strategy and allocating the resources necessary for its implementation; such two aspects involve different antecedents.

As indicated by the high standard deviation values across all variables (1.517 – 1.885), leadership commitment is also heterogeneous; a particularly pronounced standard deviation in resource allocation shows that there is a division into highly committed leaders and others. Methodologically, considering these measures of perceptions, researchers need to introduce objective factors (e.g., real ERP budget shares, frequency of leader-facilitated ERP-related reviews) in their analysis.

As has been said, leadership commitment determines the general strategic and resource framework for ERP adoption; yet, the implementation itself occurs against the background of daily routines and culture within the organization. Hence, the next determinant under analysis is organizational culture.

4.3.2. Organizational Culture

Table 9. Descriptive Statistics – Organizational Culture

Statements	Mean	Std.
My organization encourages openness to innovation.	3.73	1.805
Employees collaborate effectively during ERP adoption.	3.65	1.731
Staff are motivated to learn and adapt to ERP systems.	4.21	1.580
Organizational culture supports transparency and accountability.	4.25	1.560
Resistance to change is minimal in my organization.	2.69	1.753
Average	3.71	1.292

Source: Own Survey, 2026

The analysis of the presented results in table 9 shows that organizational culture tends to be favorable toward ERP implementation but at the same time quite heterogeneous. To be more exact, organizational cultural factors receive generally positive ratings with regard to ERP adoption, taking into account the significant inter-organizational variation observed.

Transparency and accountability stand out as key values characteristic of the organizational culture (M = 4.25, SD = 1.560); moreover, there are indications that employees are motivated and eager to acquire necessary skills required for implementing ERP systems (M = 4.21, SD = 1.580). Thus, organizational culture seems to encourage organizational members' involvement in ERP initiatives. What is more, accountability and constant learning create conditions for the development of technologies. Moreover, innovation (M = 3.73, SD = 1.805) and collaboration (M = 3.65, SD = 1.731) are regarded as positive features of the organizational culture in question. Still, high SD means that organizations vary a lot, meaning that there is uneven development of innovation and collaboration.

Still, resistance to change (M = 2.69, SD = 1.753) proves to be a crucial obstacle to ERP implementation among the selected organizations. This conclusion can be supported by the observation of generally low (negative) mean values and relatively high SD values that demonstrate the inability of the organization to deal with these problems successfully.

To sum up, it should be stated that Ethiopian organizational culture exhibits some degree of heterogeneity and inconsistency. Transparency, accountability, and motivation are values characteristic of the organizational culture in question, while innovation and collaboration are developed unevenly. Theoretically, this result emphasizes the complexity of organizational culture, which includes diverse values and norms influencing ERP adoption.

In light of high SD (1.560 – 1.805), it seems reasonable to suggest that organizational culture requires some corroboration, for instance, having a formal change management plan within the organization. In general, organizational culture influences the actions and behaviors of ERP adopters; positive organizational values like accountability and motivation support adoption; however, resistance is worth discussing.

4.3.3. Institutional Capacity

From Table 10, it is evident that the assessment of institutional capacity resulted in rather neutral opinions about ERP implementation. An average value of 3.15 (SD = 1.367) shows that while the organizational capacities have been created, some gaps can emerge, which would hinder the sustainable functioning of ERP systems.

Table 10. Descriptive Statistics – Institutional Capacity

Statements	Mean	Std.
My organization has sufficient technical infrastructure for ERP.	3.45	1.851
Skilled IT personnel are available to support ERP adoption.	3.15	1.989
Adequate training programs are provided for ERP users.	3.28	1.921
Knowledge transfer mechanisms are in place for ERP sustainability.	2.62	1.899
Project management capacity supports ERP implementation.	3.24	1.922
Average	3.15	1.367

Source: Own Survey, 2026

Respondents believe that organizational infrastructure (M = 3.45; SD = 1.851) is sufficient, indicating that necessary ERP hardware and software have been purchased by organizations. In addition, the adequacy of ERP training (M = 3.28; SD = 1.921) and organizational project management skills (M = 3.24; SD = 1.922) is high. Furthermore, ERP personnel skills (M = 3.15; SD = 1.989) are assessed as rather high too, indicating the human resource preparedness. However, some inconsistencies in perceptions can still be found, which indicates that more efforts should be made regarding ERP implementation. The main gap in institutional capacity lies in knowledge transfer (M = 2.62; SD = 1.899) because of some disagreements between participants. Organizations find it hard to keep ERP knowledge after consultants go home and implementation managers are dismissed.

Accordingly, it can be concluded that although the organizational capacities are partially formed, they are not sufficient for successful ERP implementation. Despite infrastructure, training programs, and skills being created by organizations, their inability to manage knowledge may hamper future development and implementation of ERP systems. According to theoretical interpretation of the construct, ERP implementation entails many factors that should be integrated into one system, such as infrastructure, skills, training programs, and knowledge transfer strategies. Methodologically, it should be noted that the presence of high standard deviations (1.851 – 1.989) indicates that objective criteria need to be used along with the perception-based ones.

4.3.4. Regulatory Frameworks

Table 11. Descriptive Statistics – Regulatory Frameworks

Statements	Mean	Std.
Procurement and reporting regulations align with ERP functionalities.	3.49	1.854
Government policies support ERP adoption in public organizations.	4.38	1.333
Regulatory guidelines are clear and consistent with ERP requirements.	3.45	1.862
Compliance with ERP related regulations is enforced effectively.	3.76	1.831
Regulatory frameworks encourage accountability and efficiency.	4.21	1.584
Average	3.86	1.195

Source: Own Survey, 2026

According to the analysis of regulatory frameworks, table 11, it becomes apparent that the environment for ERP adoption is rather favorable. Specifically, the mean value of 3.86 (SD = 1.195) indicates that respondents consider regulatory frameworks supportive although still needing improvements in certain aspects. Firstly, government policies are perceived positively (M = 4.38, SD = 1.333). This fact may be explained by respondents' understanding of national initiatives in the field, namely Digital Ethiopia 2025 and the PFM Reform Strategy. Moreover, people note that ERP adoption is associated with the encouragement of accountability and efficiency (M = 4.21, SD = 1.584).

Respondents agree moderately about compliance enforcement (M = 3.76, SD = 1.831) and the alignment of procurement and reporting regulations with ERP capabilities (M = 3.49, SD = 1.854). It can be noted that although certain mechanisms exist in terms of enforcement and alignment, their effectiveness is not consistent among companies. Similarly, finally, the weakest aspect concerns clarity and consistency of regulatory guidelines (M = 3.45, SD = 1.862). It can be explained by the significant standard deviation indicating the inconsistency in how companies view the issue since some companies find guidelines easy to follow whereas other see them as ambiguous.

Thus, it is possible to conclude that regulatory frameworks create a relatively favorable environment for ERP adoption although their performance differs from company to company. In other words, the existence of good policies and efficient accountability mechanisms serves as an enabling factor, whereas the ambiguity in guidelines acts as a constraining one. Methodologically, it means that apart

from a subjective perspective, objective measurement (e.g., audit reports) should also be used to understand how supportive regulatory frameworks are in a particular organization. To sum up, regulatory frameworks create the environment within which ERP is being adopted. They demonstrate strengths related to supportive policies and effective accountability, while they still need further improvement in terms of clarity and consistency of guidelines.

4.3.5. Resource Availability

An assessment of the resource availability, according to Table 12, reveals an important weakness in the ERP adoption context. The mean value of 2.57 (SD = 1.313) places the construct among those that generate disagreement. Supporting infrastructure, such as electricity, Internet access, and premises, appears to be quite poor, scoring 2.06 on average (SD = 1.708). It means that public organizations still face difficulties in securing basic necessities needed for proper ERP operations. Insufficient financial resources (M = 2.12, SD = 1.754) indicate another challenge that organizations must confront when introducing ERP.

Table 12. Descriptive Statistics – Resource Availability

Statements	Mean	Std.
My organization has adequate financial resources for ERP adoption.	2.12	1.754
Infrastructure (electricity, internet, facilities) supports ERP usage.	2.06	1.708
Sufficient technological resources (hardware/software) are available.	2.80	1.971
Resources are allocated consistently for ERP maintenance.	2.55	1.888
Resource constraints do not hinder ERP adoption.	3.30	1.945
Average	2.57	1.313

Source: Own Survey, 2026

Finally, there appears to be a gap in hardware/software (M = 2.80, SD = 1.971) and ERP maintenance (M = 2.55, SD = 1.888) resources. Although the level of variance suggests that some organizations do manage to provide necessary amounts of resources, many others fail to provide them. As a result, there is no consensus regarding resource adequacy, which, however, is obvious to all respondents. The neutrality of the resource constraint statement (M = 3.30, SD = 1.945) and its nature confirm that perceived constraints limit ERP adoption.

Overall, one could say that the resource availability problem is the most critical issue in the ERP adoption context. Insufficient financial resources, unstable infrastructure, and limited maintenance budgets negatively influence the use of ERP systems. From the theoretical perspective, one should pay attention to the fundamental role of resources in fostering technological innovation: Without enough resources, nothing can be achieved despite strong leadership, corporate culture, and regulations. From a methodological standpoint, the identified high levels of standard deviation (1.708 to 1.971) indicate that perception-based metrics should be combined with objective ones, for example, budgets allocated for various purposes. It should be admitted that the resource availability proves to be the weakest construct among others in the ERP adoption context. Public organizations should strive to address their financial, infrastructural, and maintenance-related issues.

4.3.6. ERP Adoption (ERP)

Table 13 demonstrates that a rather positive trend emerges after the analysis of ERP adoption. On average, obtained values (M = 3.79; SD = 1.208) show that the level of agreement is relatively high regarding the scope of ERP adoption in organizations, indicating that the respondents consider it properly applied, though there are certain variations in integration processes. Namely, it appears that the respondents have shown strong agreement concerning the positive contribution of ERP adoption to data-driven decision-making (M = 4.29; SD = 1.464), which proves that information analysis has become an asset due to ERP usage.

Table 13. Descriptive Statistics – ERP Adoption

Statements	Mean	Std.
ERP systems are fully integrated into organizational routines.	3.51	1.877
ERP adoption has enhanced data driven decision making.	4.29	1.464
Employees actively use ERP modules in their daily tasks.	3.59	1.763
ERP adoption has improved coordination across departments.	3.62	1.747
ERP usage is consistent and sustained over time.	3.96	1.733
Average	3.79	1.208

Source: Own Survey, 2026

Moreover, regular and consistent use of systems (M = 3.96; SD = 1.733) implies that the application is not only installed on company premises but also integrated into the business activities. Besides, the

respondents showed some agreement regarding their own integration (M = 3.51; SD = 1.877) and ERP module utilization in their activities (M = 3.59; SD = 1.763). Thus, it can be seen that the systems have been utilized to some extent, although the full assimilation of ERP into daily workflows requires additional time. Improved coordination between departments (M = 3.62; SD = 1.747) can also be considered as one of the benefits provided by the systems, though some inconsistencies in respondents' evaluations prove that not all organizations have gained from them.

Thus, ERP adoption proves to be quite promising, even though this trend still lacks full-scale realization in Ethiopian organizations. First of all, decision-making support and ERP utilization seem to be the key strengths. At the same time, ERP adoption requires further improvement for gaining more benefits from the system. Concerning the theoretical framework, it should be noted that the analysis highlights a double characteristic of ERP adoption, which involves its proper implementation and effective use despite partial assimilation.

Concerning the methods of research, it is necessary to note the relatively wide standard deviation (1.464 – 1.877) as a sign that perception measures should be supplemented with real statistics, such as ERP usage logs and workflow analysis. Hence, ERP adoption proves to be a promising process in Ethiopia, with decision-making and consistent use being considered as key strengths. Nevertheless, enhanced integration into business activities and coordination remain important prerequisites for improving ERP adoption.

4.3.7. Operational Performance

Table 14. Descriptive Statistics – Operational Performance

Statements	Mean	Std.
ERP adoption has improved efficiency in resource utilization.	4.13	1.453
ERP systems have reduced operational costs.	3.62	1.220
Service delivery has become timelier and more effective.	4.16	1.315
ERP adoption has improved the accuracy of organizational information.	4.30	1.343
Decision making quality has improved due to ERP adoption.	3.52	1.442
Average	3.94	0.987

Source: Own Survey, 2026

First of all, it is necessary to analyze the constructs related to the operation performance in Table 14. In fact, ERP adoption is extremely important to enhance organizational performance. First, the value of the mean, 3.94 (SD = 0.987), can be seen as evidence of the great importance of the influence of ERP adoption on the organizational enhancement. In addition, it is reasonable to emphasize the small value of the standard deviation since it indicates that the results are stable.

As it can be seen from the table, the respondents believe that ERP adoption improves the information quality (M = 4.30, SD = 1.343) and increases efficiency and speed of service delivery (M = 4.16, SD = 1.315). Therefore, it is possible to assume that the adoption of ERP systems improves organizational performance in the process of working with the collected information and delivering services. Moreover, ERP adoption has a positive effect on resource utilization efficiency (M = 4.13, SD = 1.453).

Nevertheless, it is possible to point out that respondents do not believe in the great importance of ERP adoption as the determinant of cost reduction (M = 3.62, SD = 1.220) and decision-making (M = 3.52, SD = 1.442). This means that ERP adoption is able to affect both decision-making and cost reduction; however, its impact on these two variables is less than the influence on resource utilization, service delivery, and information accuracy.

Summing up the results, it is important to emphasize that the operational performance is the key issue connected with ERP adoption. According to the findings, ERP adoption contributes to information accuracy, service delivery efficiency, and resource management. Theoretical implications of the findings can be seen as the proof of the influence of ERP adoption on organization performance. Methodological limitations imply that standard deviations are relatively low so that the results can be seen as reliable.

4.4. Inferential Analysis

Inferential statistics become the key instrument of this research. It helps the researcher to make inferences about the studied population based on the sample of 188 respondents. Whereas descriptive analysis allows making preliminary conclusions concerning institutional dimensions under study, inferential statistics is crucial for estimating the nature of relations, their strength, direction, and significance.

4.4.1. Correlation Analysis

Pearson product moment correlation analysis was performed to examine the bivariate relationships between each pair of independent variables, mediating variable, and operational performance. According to Cohen (1988) the following coefficients indicate weak (.10-.29), moderate (.30-.49), and strong (> .50) associations.

Table 15. Pearson Correlation Matrix Among Study Variables

Variable	LEC	ORC	INC	REF	REA	ERP	OP
Leadership (LEC)	1						
Org. Culture (ORC)	0.562**	1					
Institutional Capacity (INC)	0.453**	0.543**	1				
Reg. Frameworks (REF)	0.610**	0.610**	0.621**	1			
Resource Availability (REA)	0.241**	0.150*	0.293**	0.222**	1		
ERP Adoption (ERP)	0.566**	0.567**	0.427**	0.545**	0.229**	1	
Op. Performance (OP)	0.651**	0.673**	0.636**	0.750**	0.330**	0.615**	1

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

*Correlation is significant at the 0.05 level (2-tailed).

As can be seen from the correlation analysis (Table 15), all independent variables were positively correlated with the dependent one and statistically significant. The highest correlation was obtained for the relationship between regulatory frameworks and operational performance ($r = 0.750$, $p < 0.01$). It implies the important role played by supportive policies in achieving successful ERP-related results. Another significant predictor of success is the organizational culture ($r = 0.673$). Also, high correlation coefficients have been identified for leadership commitment ($r = 0.651$). Institutional capacity ($r = 0.636$) had positive but relatively lower correlation with operational performance. Resource availability demonstrated moderate correlation ($r = 0.330$). Being expected due to the hypotheses raised, a significant positive correlation between ERP adoption and operational performance was identified ($r = 0.615$, $p < 0.01$).

Correlation between independent variables varied greatly, ranging from weak to high correlation. For instance, the lowest coefficient obtained for the relationship between Resource Availability and Organizational Culture was equal to 0.150. At the same time, the highest correlation coefficient of 0.621 was obtained for the relationship between Regulatory Frameworks and Institutional Capacity. The other two pairs of moderately to highly correlated independent variables included Leadership

Commitment & Regulatory Frameworks (r = 0.610) and Organizational Culture & Institutional Capacity (r = 0.543). Multicollinearity diagnostic procedures were implemented to verify the presence of the problem.

Summarizing the results obtained, it is possible to state that all predictions raised proved to be correct as all examined variables turned out to have significant positive relation to performance. However, it is worth noting that regulatory frameworks, organizational culture, and leadership commitment play the most important role in determining the level of performance. Institutional capacity and resource availability are significantly correlated with performance as well.

4.4.2. Assumption Tests for Regression Model

Prior to performing regression analysis, the diagnostic tests were done to examine the assumptions of the multiple linear regression model. For multiple linear regression, there are several assumptions that should be fulfilled for the regression model to be taken as the best linear unbiased estimator (BLUE). The assumptions include normally distributed residuals, absence of multicollinearity, linearity, and homogeneity of variance.

- **Normality Test**

Table 16. Normality Test (Skewness and Kurtosis)

Variable	N	Skewness	Std. Error	Kurtosis	Std. Error
Leadership Commitment (LEC)	188	-0.488	0.177	-0.915	0.353
Organizational Culture (ORC)	188	-0.835	0.177	-0.448	0.353
Institutional Capacity (INC)	188	-0.112	0.177	-1.283	0.353
Regulatory Frameworks (REF)	188	-0.977	0.177	0.070	0.353
Resource Availability (REA)	188	0.533	0.177	-0.777	0.353
ERP Adoption (ERP)	188	-0.912	0.177	-0.120	0.353
Operational Performance (OP)	188	-1.054	0.177	0.699	0.353

Source: Own Survey, 2026

The skewness and kurtosis values were used to test for the normality of the data distribution. According to Table 16, skewness varied from -1.054 to 0.533, whereas kurtosis varied from -1.283 to 0.699. The skewness and kurtosis values fall within the acceptable range of ±2, indicating no significant departure from normality among the variables. It can be observed that negative values of skewness exist for leadership commitment, organizational culture, regulatory

frameworks, ERP adoption, and operational performance. For resource availability, positive values of skewness indicate that the tail of data distribution is extended to the right. Thus, the data distribution approximates normality.

- **Multicollinearity**

Table 17. Collinearity Statistics

Model	Tolerance	VIF
Leadership Commitment (LEC)	0.559	1.788
Organizational Culture (ORC)	0.535	1.869
Institutional Capacity (INC)	0.547	1.827
Regulatory Frameworks (REF)	0.444	2.255
Resource Availability (REA)	0.895	1.118

Source: Own Survey, 2026

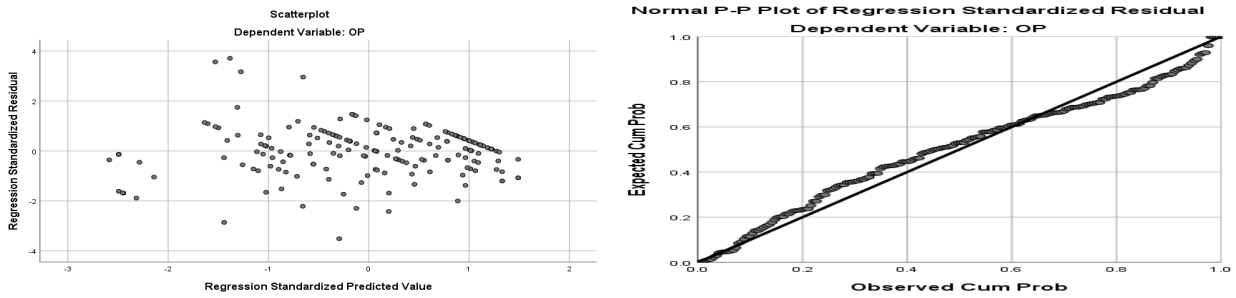
Multicollinearity refers to the existence of high levels of intercorrelations between independent variables, causing an increase in the bias of regression coefficients. For evaluating the degree of multicollinearity, the tolerance and Variance Inflation Factor (VIF) were considered. As illustrated in Table 17, tolerance values range from 0.444 to 0.895, which are all greater than the commonly accepted value of 0.10. From the result, it is evident that each independent variable provides unique variance to the multiple regression model. Also, VIF values range from 1.118 to 2.255 and are all less than the accepted value of 10. There is no presence of variance inflation. In summary, independent variables (LEC, ORC, INC, REF, and REA) provide good discrimination, ruling out the possibility of multicollinearity issues.

- **Linearity and Homoscedasticity**

The assumptions of linearity and homogeneity of variance were evaluated using a scatter plot of standardized residuals against standardized predicted values and a normal P-P plot of regression standardized residuals.

From the P-P plot, it was clear that the points lay along the diagonal line, signifying normal distribution of residuals. The scatterplot of standardized residuals versus standardized predicted values indicated randomness and homogeneity of variance without any visible nonlinearity, funnel shape, or clustering. Therefore, it can be concluded that the independent variables are linearly related to the dependent variable, and although there is an error, variance is homogeneous.

Figure 3. Linearity and Homoscedasticity



Overall, all the assumptions required in multiple regression analysis have been confirmed to be valid. Therefore, the model is appropriate for examining the factors that impact operational performance.

4.4.3. Multiple Linear Regression Analysis

To examine the impact of institutional determinants such as leadership commitment, organizational culture, institutional capacity, regulatory frameworks, and resource availability on operational performance mediated by ERP adoption, multiple linear regression analysis was performed. It analyzes the most influential variables that affect operational performance. Besides, the mediating effect of ERP adoption on changing the effect of institutional determinants on operational performance will be analyzed.

Mediation analysis, especially the PROCESS model approach, involves the determination of the total effect of the independent variable (X) on dependent variable (Y). This total effect is achieved by conducting a bivariate regression of institutional determinants and operational performance. Nevertheless, in this study, the direct effects model (Model 1) will be used to establish the initial relationship between the five institutional determinants and operational performance prior to inclusion of mediators.

- ***Path C' - The Total Effect (Institutional Determinants → Operational Performance)***

This section establishes the baseline relationship between the five institutional determinants and operational performance without any mediator. The goal is to quantify how much variance in operational performance can be explained by these determinants alone and to identify which determinant carries the strongest predictive weight. A statistically significant total effect is a precondition for meaningful mediation analysis—if the independent variables do not predict the outcome, there would be no effect to mediate. To assess the foundational relationship between

institutional determinants and operational performance, a multiple regression was conducted with the five predictors (LEC, ORC, INC, REF, REA) as simultaneous predictors.

Table 18. Model Summary (Direct Effects – Model 1)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.836	0.699	0.691	0.54874

a. Predictors: (Constant), REA, ORC, INC, LEC, REF

referring to table 18, overall Correlation Coefficient (R) was determined to be 0.836. This demonstrates a very strong positive correlation between the set of independent variables and operational performance. The Coefficient of Determination (R^2) was calculated at 0.699, implying that 69.9 percent of the variance in operational performance can be attributed to the independent variables of leadership commitment, organizational culture, institutional capacity, regulatory systems, and availability of resources. Adjusted R^2 was obtained at 0.691, suggesting high generalization to the population. 0.699 R^2 is deemed sufficient in the realm of social science research. Unexplained variance, amounting to 30.1 percent, implies the existence of other determinants of operational performance that have not been explored in this study. These may encompass external environmental influences, politics, among others.

Table 19. ANOVA Results (Direct Effects – Model 1)

Model	**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
Regression	127.182	5	25.436	84.474	0.000
Residual	54.803	182	0.301		
Total	181.985	187			

a. Dependent Variable: OP

b. Predictors: (Constant), REA, ORC, INC, LEC, REF

Table 19 presents the results of the analysis of variance. There is sufficient evidence to conclude that the regression model is statistically significant ($F = 84.474$, $p < 0.001$). As evidenced by the significant F value, the five independent variables taken together have stronger predictive power of operational performance than the intercept-only model. Rejection of the null hypothesis that all β values are zero implies that the coefficients of individual predictors can be interpreted.

Table 20. Regression Coefficients (Direct Effects – Model 1)

Model	Unstandardized Coeff.		Standardized Coeff.	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.939	0.156		6.017	0.000
Leadership Commitment	0.163	0.045	0.197	3.628	0.000
Organizational Culture	0.183	0.042	0.240	4.319	0.000
Institutional Capacity	0.115	0.040	0.159	2.895	0.004
Regulatory Frameworks	0.295	0.050	0.357	5.846	0.000
Resource Availability	0.091	0.032	0.121	2.805	0.006
(Constant)	1.014	.155		6.554	.000
Institutional Determinants (INST)	.866	.044	.822	19.657	.000

a. Dependent Variable: OP

Table 18 presents the regression coefficients of the analysis. All five predictors are statistically significant at $p < 0.01$, meaning each contributes uniquely to the model beyond the others. The standardized coefficients (Beta) allow direct comparison of effect sizes because they are measured in standard deviation units. The regression equation is:

OP = 0.939 + 0.163(LEC) + 0.183(ORC) + 0.115(INC) + 0.295(REF) + 0.091(REA) ..... *Path C'*

Regulatory Framework (Beta = 0.357) is the next most effective determinant of performance. In line with institutionalism, organizations seek legitimacy due to regulatory pressure, which influences their operations. The finding implies that changes to the regulatory environment (procedure optimization, standardization) lead to a greater effect on the performance.

Secondly, Organizational Culture (Beta = 0.240) proves to be an important determinant. Organizational culture denotes the set of shared values, beliefs, and behavioral standards at institutions. The effect means that organizational culture geared towards continuous improvement, accountability, and cooperation influences operational performance positively.

Thirdly, Leadership Commitment (Beta = 0.197) is also an important determinant. Leadership commitment implies providing resources, giving directions, and motivating personnel. The size of the coefficient demonstrates that operational performance will improve when leadership is committed to it. The relatively small beta for leadership commitment shows that its effect is indirect and mediated through organizational culture.

Institutional Capacity (Beta = 0.159) and Resource Availability (Beta = 0.121) prove to be important predictors as well, albeit with much smaller effects than those of organizational culture and leadership commitment. The small effect size might mean that having enough people, expertise, information, technology, and finance does not ensure operational performance but is rather necessary.

On balance, the results (Table 17 Ref. Appendix III Model 2: Model Summary and ANOVA) show that institutional determinants taken altogether ($R^2 = 0.675$; $F = 386.403$, $p < 0.001$) have a very significant and substantial impact on operational performance. In particular, Table 18 shows that the standardized coefficients (B = 0.866; Beta = 0.822) indicate the explanatory power of the aggregate construct in regard to operational performance. The equation is:

OP = 1.014 + 0.866 (INST) … Path C'

As seen from this equation, when the level of institutional determinants increases by one-unit, operational performance increases by 0.866 units. The fact that institutional determinants have such a big impact on operational performance shows that they are crucial in implementing ERP systems. Even if each institution determines operational performance individually, their collective effect is even greater.

From the methodological point of view, such high explanatory power justifies using the aggregate construct (INST) in the regression model. Therefore, in conclusion, it becomes clear that institutional determinants of performance are important. As a result, operational performance and ERP implementation cannot take place without organizational readiness in the sphere of institutional determinants.

- ***Path A: Direct Effect (Institutional Determinants → ERP Adoption)***

It is necessary to confirm the relationship between the independent variable and the potential mediator before proceeding to investigate mediation. In other words, it should be proved that there is a statistically significant effect of institutional determinants on the level of ERP adoption. According to the theory, institutions with strong organizational attributes in terms of leadership commitment, institutional culture, institutional capacity, institutional regulations, and resources are likely to adopt, implement, and use ERP systems successfully.

Table 21. Model Summaries – Path A: INST → ERP

Model	R	R^2	Adjusted R^2	Std. Error	F	Sig.
Path A (INST → ERP)	0.629	0.396	0.393	0.941	121.9	< 0.001

Source: Own Survey, 2026

According to Table 21, the correlation coefficient (R = 0.629) proves that there is a relatively high positive correlation between institutional determinants and ERP adoption. The coefficient of determination ($R^2 = 0.396$) means that 39.6% of variance in ERP adoption is accounted for by INST. Such a share may be considered considerable, having in mind that there are many predictors of ERP adoption apart from those included in this research, including technical conditions and vendor support. The adjusted R^2 equals 0.393 and, hence, is almost identical to R^2, which suggests that there is no overfitting. Besides, the F-value (121.9) with $p < 0.001$ proves that the regression model is significant and allows rejecting the null hypothesis that there is no relationship between institutional determinants and ERP adoption.

Table 22. Coefficients - Path A: INST → ERP

Model / Predictor	Unstandardized Coeff.		Standardized Coeff.	t	Sig.
	B	Std. Error	Beta		
Institutional Determinants	0.812	0.074	0.629	11.041	< 0.001

Dependant Variable: ERP

As shown in table 22, the unstandardized coefficient (B = 0.812) means that for every one-unit increase in the composite institutional determinants score, ERP adoption increases by 0.812 units. The standardized coefficient (Beta = 0.629) indicates that a one-standard-deviation increase in INST is associated with a 0.629-standard-deviation increase in ERP adoption – a large effect. The t-value (11.041) is exceptionally high, and the p-value is below 0.001. The 95% confidence interval (not shown but calculable as $0.812 \pm 1.96 \times 0.074 = [0.667, 0.957]$) excludes zero, confirming robustness. The regression equation is:

ERP = (Constant not shown in table) + 0.812 × INST …… (Path A)

Overall, it is possible to conclude that the hypothesis about the positive effect of institutional determinants on ERP adoption is supported by data.

- ***Path B – Direct Effect (ERP Adoption → Operational Performance)***

Path b seeks to prove that there is a significant effect of the mediator on the dependent variable regardless of the predictors used. It should also be proved to ensure that there is a possibility to detect mediation. The theoretical rationale behind this relationship is the fact that ERP systems combine functions of various processes in organizations, eliminate errors due to manual manipulation of information, help manage inventories and work flows, etc., and promote real-time decision-making, thus contributing to enhanced performance.

Table 23. Model Summaries – Path B: ERP → OP

Model	R	R^2	Adjusted R^2	Std. Error	F	Sig.
Path B (ERP → OP)	0.615	0.379	0.375	0.780	113.5	< 0.001

Source: Own Survey, 2026

As can be seen from Table 23, the correlation coefficient remains high (R = 0.615), although it is somewhat lower than the one for the model including institutional determinants and operational performance (R = 0.836). As discussed above, the latter may be expected given that institutional determinants are a set of factors whereas ERP adoption is a particular mechanism. On the whole, the value of $R^2 = 0.379$ indicates that 38% of variance in operational performance is explained by ERP adoption, which is a relatively significant value.

Table 24. Coefficients - Path B: ERP → OP

Model / Predictor	Unstandardized Coeff.		Standardized Coeff.	t	Sig.
	B	Std. Error	Beta		
ERP Adoption	0.503	0.047	0.615	10.648	< 0.001

Dependent Variable: OP

Source: Own Survey, 2026

From Table 24, it follows that the unstandardized coefficient of 0.503 indicates that the increase in ERP adoption of one unit leads to the 0.503-unit increase in operational performance. The value of Beta (standardized coefficient) equals 0.615 and is fairly high, although it might be even higher. It is evident from the values of t = 10.648 and p-value, which equals 0.000. Overall, it is possible to derive the regression equation as follows:

OP = 2.039 + 0.503 ERP …… (Path B)

This result supports the hypothesis that ERP adoption has a positive and significant effect on operational performance. The constant (2.039) represents the baseline operational performance when ERP is zero – a useful reference for assessing the practical magnitude of ERP effects. For instance, moving from zero ERP adoption to a moderate level (say, 2 on a 5-point scale) would increase operational performance by approximately 1.006 units, which is substantial given the scale range.

- ***Path C' - Full Model (Path c' and Path b simultaneously) – INST + ERP → OP***

By estimating the full model, it will be possible to see the effect of institutional determinants after controlling for the mediator. Simultaneously, the effect of the mediator will be controlled for the presence of the predictors, which will facilitate the assessment of partial mediation. The comparison of coefficients in Path C' and C helps to identify partial mediation with a decrease of the coefficients in Path C'. Table 25.

Table 25. Model Summaries - Path C (INST + ERP → OP)

Model	R	R^2	Adjusted R^2	Std. Error	F	Sig.
	0.842	0.709	0.700	0.541	73.5	< 0.001

Source: Own Survey, 2026

Inclusion of the mediator led to a 0.010 increase in R^2, which equals 0.709 compared to the one in Path c'. At the same time, the value of correlation (R = 0.842) demonstrates that this combination of predictors contributes to a fairly high prediction of operational performance. Adjusted R^2 = 0.700 proves again that this combination of predictors does not overfit the model: the shrinkage of R^2 is only 0.009. Specifically, table 24 in disaggregate, all five institutional determinants remain statistically significant, but their coefficients decrease compared to path c' (without mediator). These reductions, while varying in magnitude, consistently indicate that part of the effect of institutional determinants on operational performance is channeled through ERP adoption.

The regression equation for the full model is:

OP = 0.841 + 0.132 LEC + 0.153 ORC + 0.113 INC + 0.274 REF + 0.083 REA + 0.112 ERP

- The constant has decreased from 0.939 (Model 1) to 0.841 (Model 4), which is natural because the mediator now accounts for some of the baseline performance.
- The largest proportional reduction occurs for leadership commitment (18.8%) and organizational culture (16.3%), suggesting that these soft factors particularly operate through ERP adoption –

i.e., committed leaders and a supportive culture foster ERP adoption, which in turn boosts performance.

- Regulatory frameworks show a smaller reduction (6.7%), indicating that regulations affect performance more directly (e.g., through compliance pressures) and less through ERP adoption.
- Institutional capacity shows virtually no reduction (1.3%), implying that its effect on performance is almost entirely direct, not mediated by ERP adoption. This nuanced pattern is a key analytical insight.

Table 26. Comparison of Coefficients (Disaggregated Model with vs. without Mediator)

Predictor	Beta (Model 1 – without mediator)	Beta (Model 4 – with mediator)	Reduction (%)
Regulatory Frameworks	0.357	0.333	0.024 (6.7%)
Organizational Culture	0.240	0.201	0.039 (16.3%)
Leadership Commitment	0.197	0.160	0.037 (18.8%)
Institutional Capacity	0.159	0.157	0.002 (1.3%)
Resource Availability	0.121	0.110	0.011 (9.1%)

Source: Own Survey, 2026

Given that coefficients for all five institutional determinants were reduced in the full model, which was estimated for Path C, it is possible to argue that ERP adoption mediates the relationship between institutional determinants and operational performance. On the other hand, direct effects were still significant in Path C, which means that there is partial mediation, which is discussed further below.

○ *Strength of Mediation*

Table 27. Coefficients – Strength of Mediation

Model / Predictor	Unstandardized Coeff.		Standardized Coeff.	t	Sig.
	B	Std. Error	Beta		
INST	.758	.055	.719	13.678	.000
ERP	.133	.043	.163	3.099	.002

Dependent Variable: OP

The indirect effect is the product of path a (INST → ERP) and path c (ERP → OP). In order to estimate the strength of moderation in terms of indirect effect, it is necessary to multiply the

corresponding unstandardized coefficients. Bootstrapped standard errors are used to estimate CI. According to PROCESS analysis, the indirect effect is calculated in the following manner:

- Path a: B = 0.812 (INST → ERP)
- Path c: B = 0.133 (ERP → OP)

Indirect effect (a × b) = 0.812 × 0.133 = 0.108 (equivalently the difference between unstandardized coefficient of INST before mediation (B = .866) and after mediation by ERP adoption (B = .758)). This implies that this indirect effect of B = 0.108 means that for every one-unit increase in the composite institutional determinants score, operational performance increases by 0.108 units specifically because institutional determinants improve ERP adoption, which then improves performance. The magnitude (0.108) is practically significant; for context, if an organization improves its institutional determinants by one standard deviation, operational performance would rise by about 0.11 standard deviations through the ERP pathway alone.

- **Mediation Analysis Results**

The indirect effect of the institutional determinants on operational performance due to ERP adoption was 0.108. The 95% confidence interval was [0.037, 0.179]. Since zero is outside the confidence interval, it shows that the effect is statistically significant, therefore, indicating mediation.

- Although ERP adoption was taken into consideration in the regression analysis, it did not reduce the significant relationship between the institutional determinants and the operational performance. The standardized coefficient was $\beta = 0.719$ and $p < 0.001$.
- Combining the indirect and direct effects of the relationship between the variables produced a coefficient of $\beta = 0.827$ and $p < 0.001$. Therefore, the institutional determinants have significant effects on the operational performance through multiple paths.
- Bootstrapped confidence intervals also indicated that the indirect path did not include zero, suggesting mediation. The significance level was < 0.05, meaning the mediation model is reliable.

It is clear that the adoption of ERP partially mediates the relationship between the institutional determinants and the operational performance. It means that leadership commitment, organizational culture, institutional capacity, regulations, and resources increase the operational performance, while the adoption of ERP increases the magnitude of the effects because of providing an effective platform for better performance.

4.5. Discussion of Findings

The current study brings empirical insights into the nature of the relationship among institutional determinants, ERP adoption, and performance of public organizations in Ethiopia. In terms of model performance, both the model of direct effects (R^2=0.699) and of the full model including ERP adoption as a mediator (R^2=0.709) have proved to be highly predictive. The combined five determinants explain almost 70% of the variance in performance of Ethiopian public organizations. Thus, institutional variables prove to be one of the most important sources of performance, which is in agreement with ERP literature in other countries (Egdair et al., 2024; Kanbiro, 2022). At the same time, the rest of the variance could be attributed to such variables as vendor support, political stability, or users' training (World Bank, 2023).

It is important to emphasize the strong predictive potential of the variable "regulatory frameworks" ($\beta = 0.357$, $p < 0.001$). This suggests that external policy mechanisms such as government's mandatory programs, procurement regulations, and reporting standards exert the greatest impact on organizational performance. Institutional Theory's coercive isomorphism helps to explain the effect because Ethiopian public organizations face the greatest amount of regulatory pressure from the Ministry of Finance and donor institutions (DiMaggio & Powell, 1983). Compliance brings legitimacy but at the same time standardizes organizational practices and thus improves efficiency. The effect was greater compared with Kenya and Libya (Sisay & Lemma, 2021; Egdair et al., 2024) which can be explained by the very centralized system of governance in Ethiopia. Participants of the study stated that the regulatory framework encourages efficiency and accountability, however, they showed lower awareness of the importance of the clear alignment with ERP functionalities.

Organizational culture is the second strongest determinant of ERP adoption ($\beta = 0.240$, $p < 0.001$). The theory of Resource-Based View states that culture is a scarce resource that allows for effective utilization of ERP systems (Barney & Wright, 2023). In general, respondents stated such positive features as transparency, accountability, and willingness to learn, however, they also mentioned resistance to change, moderate openness to innovations and cooperation. The contradiction shows that Ethiopian public organizations appreciate accountability, however, they are hampered by the tradition of bureaucracy. Heterogeneity of public organizations and high variability scores imply that interventions related to organizational culture should be customized (Tamirat, 2024; Gebreyohannes & Alemu, 2025).

The third variable – leadership commitment – turned out to be significant ($\beta = 0.197$, $p < 0.001$). However, there was found a gap between rhetoric and reality since leaders appreciate ERP adoption as an instrument and monitor its implementation but do not provide necessary resources. Such differentiation is a useful contribution to the theory, as it means that leadership commitment has several dimensions (Tornatzky & Fleischer, 1990). In practice, it implies that credibility requires the matching of rhetoric and resource allocation. It is consistent with earlier studies conducted in Ethiopia about resource constraints as a barrier despite the support of leaders (Orkaido, 2022).

The fourth variable – institutional capacity – showed the weak but significant effect on ERP adoption ($\beta = 0.159$, $p = 0.004$). Technical infrastructure received relatively high score; however, knowledge transfer was assessed critically low. In such a way, capacity proves to be a necessary but insufficient condition for performance improvement. Lack of institutionalized knowledge transfer is an additional reason for ERP unsustainability, especially in such contexts as frequent job rotation among staff members (World Bank, 2024).

Finally, resource availability was the weakest predictor of ERP adoption ($\beta = 0.121$, $p = 0.006$). Participants stated about serious problems with infrastructure, financial resources, and consistent allocation for ERP maintenance. However, although resources are an important condition for ERP adoption, they are insufficient without the supporting institutional conditions. Neutral answers about whether resource constraints prevent ERP adoption and high variability score suggest that some organizations find a way to cope with such difficulties through good mobilization of resources, while others suffer from serious lack (Alemu, 2022; Tesfaye & Mekonnen, 2021).

One of the main contributions of the current study is demonstration of partial mediation of the influence of institutional determinants on ERP adoption. The indirect effect (0.108, 95% CI: 0.037-0.179) proves that ERP adoption mediates the relation between institutional determinants and operational performance of public organizations through integration, automation, and data-driven decision-making. However, the significant direct effects of institutional determinants prove that they also influence ERP adoption through other channels such as better management practices and accountability (Gebremariam, 2021; OECD, 2019). The current model confirms that the combination of TOE, RBV, and Institutional Theory provides a comprehensive picture of the mechanism of the impact of institutional determinants on organizational performance.

Comparing the current study with previous research, it is possible to notice similarities and differences. The strong effect of regulatory frameworks corresponds with results found in Kenya and Libya; however, it is even greater for Ethiopia, which has a centralized governance system (Sisay & Lemma, 2021; Egdair et al., 2024). The difference between the results of the current study and previous research is that the organizational culture turned out to be more important than leadership commitment (Gezahegn, 2020; Orkaido, 2022). Moreover, the weak effect of institutional capacity and resource availability differs from the research that focuses on their importance (Biniyam & Lemma, 2022; Mothibi & Mnkandla, 2022). The advantage of the current research is that it uses mediation analysis to prove the role of ERP adoption as a mediating factor (Sisay & Lemma, 2021).

CHAPTER FIVE: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter integrates the major findings of this study, analyzes the significance of these findings, and proposes recommendations for practice.

5.1. Summary of Major Findings

The study explored the effect of five institutional determinants – leadership commitment, organizational culture, institutional capacity, regulatory frameworks, and resource availability – on operational performance with ERP adoption being used as a mediator variable. A total of 188 employees (directors, operations managers, IT managers, HR managers, and compliance experts) were sampled from 88 public organizations in Addis Ababa, Ethiopia. The major findings are as follows:

- Regulatory frameworks proved to be the most significant determinant of operational performance ($\beta = 0.357$). The participants agreed that government policies encourage ERP adoption ($M = 4.38$) and that regulatory frameworks encourage accountability and efficiency ($M = 4.21$). Perceptions regarding clarity and consistency of regulatory guidelines ($M = 3.45$) and alignment of procurement regulations with ERP functionalities ($M = 3.49$) were relatively weak.
- Organizational culture was second in the hierarchy ($\beta = 0.240$). The participants expressed satisfaction with the organization's transparency and accountability ($M = 4.25$) and employees' motivation for learning and adaptation of ERP systems ($M = 4.21$). However, they reported organizational resistance to change ($M = 2.69$).
- Leadership commitment placed third ($\beta = 0.197$). According to the respondents, ERP adoption is prioritized within organizational strategy ($M = 4.24$) and monitored by leaders ($M = 3.95$). However, the allocation of necessary resources for ERP implementation is rated poorly ($M = 2.88$).
- Institutional capacity showed statistical significance ($\beta = 0.159$). Among all dimensions of institutional capacity, technical infrastructure received the highest mean score ($M = 3.45$), whereas knowledge transfer mechanisms were rated lowest ($M = 2.62$).
- Resource availability showed the least significant effect ($\beta = 0.121$) but remained significant nonetheless. Overall, resource availability demonstrated the lowest mean score in the study ($M =$

2.57) and the weakest performance for infrastructure support (M = 2.06) and financial resources (M = 2.12).

- ERP adoption partially mediated the effect of institutional determinants on operational performance. In the full model (with ERP adoption as a mediator), operational performance could be predicted with 70.9% accuracy (Adjusted $R^2 = 0.700$, $F = 73.651$, $p < 0.001$). The partial mediation was confirmed by the reduction in the regression coefficients after introducing ERP adoption as well as its significant effect ($\beta = 0.137$).
- The cumulative effect of the five institutional determinants on operational performance was statistically significant and amounted to 69.9% (Adjusted $R^2 = 0.691$, $F = 84.474$, $p < 0.001$). As a result, one may conclude that the operational performance of organizations in Ethiopia depends not only on institutional determinants but also on a number of other factors that were not explored in this study.

5.2. Conclusion

The findings of the study indicate that the institutional determinants of operational performance in Ethiopian public organizations include the regulatory framework, which is the most significant determinant. Policies, compliance measures, and the mandates of the government determine the efficiency of Ethiopian organizations. The other two important determinants include the organizational culture and the leadership commitment. Organizational culture highlights the significance of collaboration among members of the organization, while the leadership commitment highlights the significance of managerial support to enhance performance. The institutional capacity and resource availability have an indirect influence on the operational performance and act as enabling conditions.

Institutional determinants play a major role in determining ERP adoption. ERP adoption is influenced by organizational commitment, organizational culture, institutional capacity, regulatory frameworks and resource availability. In addition to institutional determinants, ERP adoption can also be influenced by a number of other factors. As a result, ERP adoption is a complex process. ERP adoption is positively correlated with operational performance. Due to the use of ERP, integration, automation and decision-making based on data become possible leading to improvements in efficiency, service delivery and accountability. However, ERP adoption alone does not lead to positive outcomes. Therefore, the effectiveness of ERP adoption is dependent on whether there are appropriate institutional conditions including the organizational leadership and culture. ERP adoption partially mediates the relationship between institutional determinants and operational performance. It means that the institutional determinants affect the operational performance of an organization both directly and through the mediation channel of ERP adoption.

Overall, in the modern world, the performance of an organization is dependent on the utilization of the information systems such as ERP. ERP adoption has been widely studied in the developed countries while ERP adoption in developing countries requires a contextual approach. The findings of this study prove that the institutional determinants including organizational leadership, organizational culture, institutional capacity, regulatory framework and resource availability determine the performance of Ethiopian public organizations. Regulatory framework appears to be the most important determinant due to policy-driven governance of Ethiopia. Organizational culture and organizational commitment are also important determinants while institutional capacity and

resource availability are enabling conditions. ERP adoption partially mediates the relationship between institutional determinants and performance, thus confirming the influence of institutional determinants on organizational performance both directly and indirectly through ERP adoption.

In conclusion, the performance of Ethiopian public organizations is dependent on both external factors in terms of regulatory frameworks and internal factors. Although there have been some improvements in organizational performance in Ethiopia, there is also a room for further improvements. The methodological limitation associated with the cross-sectional research design and unexplained variation prevents making any causation. Nevertheless, it does not undermine the value of the study. Further research can use a longitudinal research design, structural equation modeling and other predictors such as vendor support and political stability.

5.3. Recommendations

There are five institutional determinants affecting organizational performance which are regulatory framework, organizational culture, leadership commitment, institutional capacity and resource availability, with ERP adoption being a partial mediator. Based on the above findings, the following recommendations have been formulated, addressing different stakeholder groups.

- **For Government/Policymakers**

Government agencies should develop and enhance the regulatory environment by issuing specific procurement, reporting, and auditing guidelines in line with ERP features. Develop and distribute implementation manuals, configuration examples and help desks to assist public organizations. Reallocate resources by setting up digital transformation funds, providing financial flexibility for purchasing technological tools and initiating PPPs to mitigate infrastructure issues. Institutionalize nationally the knowledge transfer mechanisms. Form an ERP Center of Excellence in the Ministry of Innovation and Technology that would provide ERP training, documentation and technical assistance, as well as impose contract knowledge transfer provision.

- **For Public Organizations**

Public managers should utilize the effect of regulatory framework by ensuring strict compliance with the existing national policies such as the PFM Reform Strategy and Digital Ethiopia 2025. Launch deliberate change management programs in order to decrease resistance and stimulate innovation in organizations, including innovation champion assignment and recognition of ERP success stories. Transform leadership commitment from declarative to tangible actions by providing necessary budgets and personnel. Enhance institutional capacity via development of knowledge transfer mechanisms, complete configuration documentation, cross training and retention of experienced IT specialists. Initiate partnership with universities for sustainable talent supply. Prioritize resource availability and ensure that ERP budgets, maintenance and training are provided, as well as explore cloud-based ERP solution and phased implementation to overcome infrastructure limitations.

- **For ERP vendors**

ERP vendors should customize their solutions to the needs of the public sector in Ethiopia by implementing local training programs, intuitive interface and customer support. Contractual agreements should provide for the implementation of explicit knowledge transfer provision,

documentation and training of employees in order to ensure ERP longevity beyond its installation. Collaborate with government agencies in order to ensure alignment of ERP functions with national regulations and thus minimize regulatory gaps.

- **For Researchers**

Further research should expand the scope of ERP research in Ethiopia by incorporating institutional determinants to the analysis. Methodologically, it is recommended to implement mediation analysis, structural equation modeling and longitudinal designs in order to prove causalities. It would be useful to conduct comparative ERP studies in the public and private sectors and in the various ERP deployment models (cloud, on-premises, hybrid) for broader analysis of ERP adoption. Utilize qualitative methods of data collection such as interviews and case studies in order to reveal the organizational culture.

Limitations and Future Directions

There were several limitations of the study. First, the cross-sectional design prevents establishing causality. Second, the analysis was limited to Addis Ababa, and findings may differ in other regions of the country. Third, self-reporting biases were possible. Fourth, the significant proportion of unexplained variance (29.1-30.1%) indicates missing predictors. Fifth, the wide spread in respondents' answers indicates considerable differences in their experience that can distort mean scores.

Future research should fill in the gap of variance left unexplained by considering additional predictors such as vendor support quality, political stability, environmental conditions and user training program. Comparative research across different sectors and organizational types is needed to highlight peculiarities of ERP adoption in different environments. It is necessary to conduct longitudinal studies to investigate ERP adoption dynamics and performance outcomes. Explore ERP adoption process in the private sector in Ethiopia as well, in order to apply obtained results in the public sector. Lastly, increasing relevance of AI ERP requires studying this type of ERP solution in the context of ERP adoption and performance outcomes.

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Appendix

ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND INFORMATION SYSTEMS

SCHOOL OF COMMERCE

Survey to be Conducted on Employees of Public Organizations

Dear Respondent,

This questionnaire is part of a Master's thesis being conducted at Addis Ababa University. The purpose of the study is to examine how institutional determinants—specifically leadership commitment, organizational culture, institutional capacity, regulatory frameworks, and resource availability—influence the operational performance of public organizations, with Enterprise Resource Planning (ERP) adoption serving as a mediating variable. The study seeks to generate evidence that will contribute to both academic knowledge and practical recommendations for strengthening ERP adoption and improving efficiency, accountability, and service delivery in Ethiopian public organizations.

Your participation in this survey is voluntary, and all information you provide will be treated with strict confidentiality. The data collected will be used solely for academic purposes, and no personal identifiers will be disclosed in the final report. You may withdraw from the survey at any time without consequence. Your honest responses are highly valued, as they will provide insights into the realities of ERP adoption and its impact on operational performance in Ethiopia's public sector. By participating, you are contributing to a study that aims to inform policymakers, managers, and development partners on how institutional conditions can be strengthened to ensure successful ERP adoption and improved organizational outcomes.

Thank you very much for your time and cooperation.

Sincerely,

Ammanuel Getachew

Graduate Researcher, Addis Ababa University.

General Information

Your Participation is Voluntary.

Do not write your name on the Questionnaire.

The questionnaire is divided into three sections. The first section collects demographic information to help contextualize the findings. The second section focuses on institutional determinants, exploring how leadership, culture, capacity, regulation, and resources shape ERP adoption. The third section examines ERP adoption itself as a mediating variable, while the final section assesses operational performance outcomes. Each statement is presented on a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree."

Section A: Demographic Information

1. Gender: ☐ Male ☐ Female
2. Age: ☐ 20–29 ☐ 30–39 ☐ 40–49 ☐ 50+
3. Educational Qualification: ☐ Diploma ☐ Bachelor's ☐ Master's ☐ PhD
4. Years of Work Experience: ☐ Less than 5 ☐ 5–10 ☐ 11–15 ☐ 16+
5. Current Position: ☐ Manager ☐ Supervisor ☐ Staff ☐ IT/ERP Specialist ☐ Other
6. Organization Type: ☐ Ministry ☐ Public Enterprise ☐ Agency ☐ Financial Institute ☐ Other
7. ERP Usage Duration: ☐ Less than 2 years ☐ 2–5 years ☐ More than 5 years
8. **ERP Type:** ☐ On-premise ☐ Cloud ☐ Hybrid

Section B: Study Variables

Institutional Determinants

Please read each statement carefully and show your level of agreement on the statements by putting the "X" mark in the boxes using the following Key:

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

Aspect	Statement	(1)	(2)	(3)	(4)	(5)
Leadership Commitment	Top management actively supports ERP adoption.					
	Leaders allocate sufficient resources for ERP implementation.					
	Leadership communicates the strategic importance of ERP adoption.					
	Leaders monitor ERP progress and provide timely interventions.					
	Leadership prioritizes ERP adoption in organizational strategy.					
Organizational Culture	My organization encourages openness to innovation.					
	Employees collaborate effectively during ERP adoption.					
	Resistance to change is minimal in my organization.					
	Staff are motivated to learn and adapt to ERP systems.					
	Organizational culture supports transparency and accountability.					
Institutional Capacity	Skilled IT personnel are available to support ERP adoption.					
	Adequate training programs are provided for ERP users.					

	My organization has sufficient technical infrastructure for ERP.					
	Project management capacity supports ERP implementation.					
	Knowledge transfer mechanisms are in place for ERP sustainability.					
Regulatory Frameworks	Government policies support ERP adoption in public organizations.					
	Regulatory guidelines are clear and consistent with ERP requirements.					
	Compliance with ERP-related regulations is enforced effectively.					
	Procurement and reporting regulations align with ERP functionalities.					
	Regulatory frameworks encourage accountability and efficiency.					
Resource Availability	My organization has adequate financial resources for ERP adoption.					
	Sufficient technological resources (hardware/software) are available.					
	Infrastructure (electricity, internet, facilities) supports ERP usage.					
	Resources are allocated consistently for ERP maintenance.					
	Resource constraints do not hinder ERP adoption.					

ERP Adoption

Please read each statement carefully and show your level of agreement on the statements by putting the "X" mark in the boxes using the following Key:

ERP Adoption	**ERP systems are fully integrated into organizational routines.**					
	Employees actively use ERP modules in their daily tasks.					
	ERP adoption has improved coordination across departments.					
	ERP usage is consistent and sustained over time.					
	ERP adoption has enhanced data-driven decision-making.					

Operational Performance

Please read each statement carefully and show your level of agreement on the statements by putting the "X" mark in the boxes using the following Key:

Operational Performance	**ERP adoption has improved efficiency in resource utilization.**					
	ERP systems have reduced operational costs.					
	Service delivery has become timelier and more effective.					
	ERP adoption has improved the accuracy of organizational information.					
	Decision-making quality has improved due to ERP adoption.					